

Ozanian Parcel Map Subdivision and Special Permit

(PLN-14126-PMS)

Initial Study/Mitigated Negative Declaration

February 2023



Prepared by:



Humboldt County Planning and Building Department

3015 H Street

Eureka, CA 95501

Project Information

Project Title: Ozanian Parcel Map Subdivision and Special Permit (PLN-14126-PMS)

Lead Agency

Humboldt County Planning and Building Department – Planning Division
3015 H Street
Eureka, CA 95501
(707) 445-7541

Property Owners

Charles & Elaine Ozanian
1355 Centerville Road
Ferndale, CA 95536

Project Applicant

Same as owner

Project Location

The project site is located in the Ferndale area, on the south side of Centerville Road, approximately 1,000 feet west of the intersection of Meridian Road and Centerville Road, on the property known as 1355 Centerville Road.

General Plan Designation

Residential Agriculture (RA); Humboldt County General Plan; density one unit per 5 – 20 acres.

Zoning

Unclassified (U).

Project Description

A Minor Subdivision of an approximately 46.5-acre parcel into three parcels of 6.7 acres, 18.2 acres and 21.6 acres. The parcel is currently vacant. A Special Permit is required for minor road improvements within the Streamside Management Area (SMA). Water will be provided by an existing well onsite and onsite wastewater treatment systems are proposed.

Baseline Conditions: Surrounding Land Uses and Setting

The project site is located on the south side of Centerville Road, approximately one mile west of the City of Ferndale. The parcel is just south of large agriculture lands to the north and wooded timberlands to the south and surrounded by similar rural residential parcels.

Other Public Agencies Whose Approval Is or May Be Required (permits, financing approval, or participation agreement): Humboldt County Public Works Department, Division of Environmental Health, Building Division, Calfire, California Department of Fish and Wildlife.

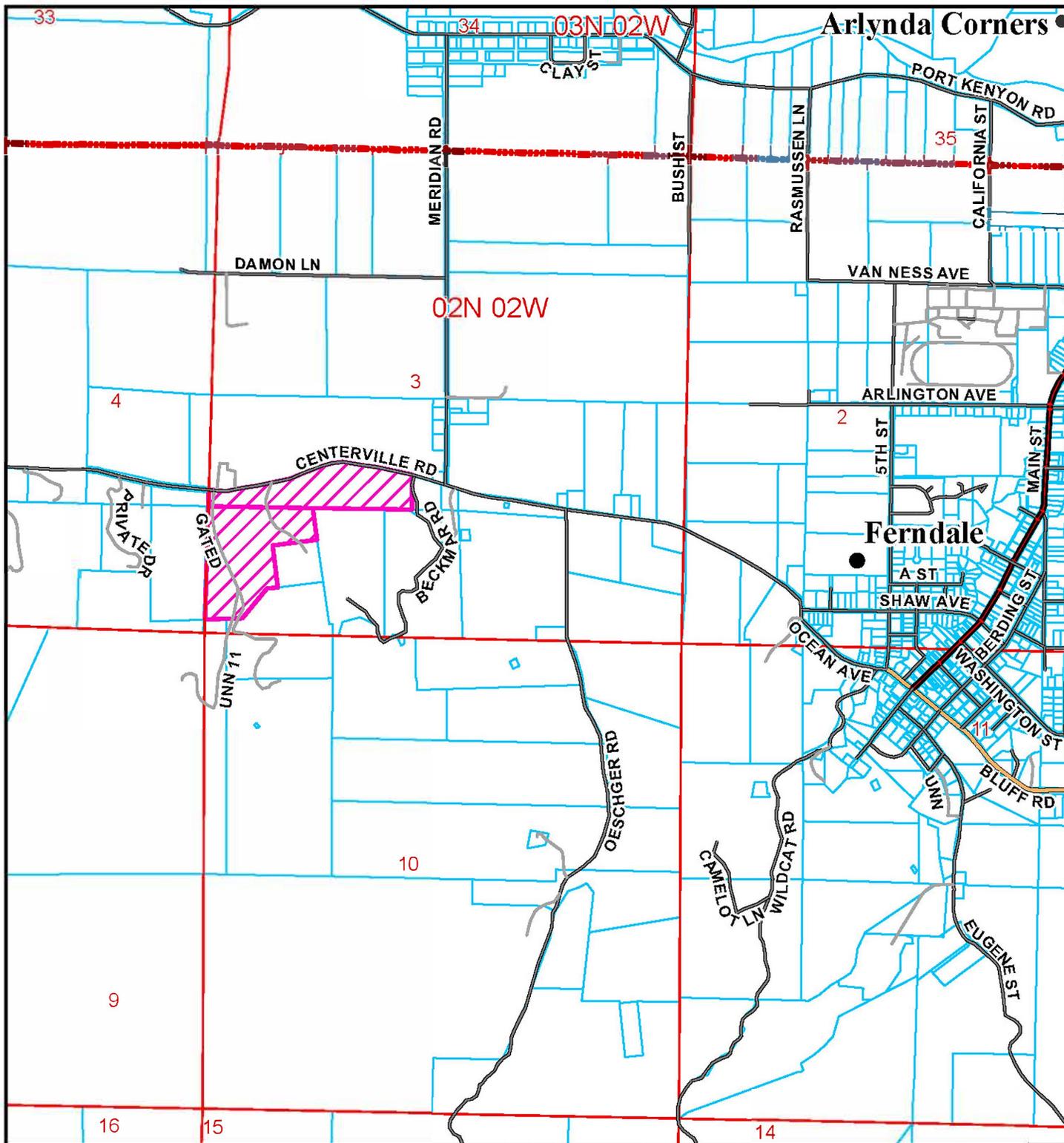
Appendices

Appendix A Tentative Map
Appendix B Biological Assessment Report
Appendix C Well Connection Study Report

Tribal Consultation

On May 23, 2018, Humboldt County staff sent 10-day early consultation notifications to the Bear River Band of Rohnerville Rancheria, and the Wiyot Tribe. Both tribes responded and indicated they were not aware of any tribal cultural resources on or immediately adjacent to the Project site, and therefore did not have immediate concerns. Both tribes recommended including procedures to address the inadvertent discovering of archaeological resources which have been incorporated into the MND.

On January 26, 2023, Humboldt County staff sent AB 52 referral letters to the tribes who have a cultural interest in the area, including the Bear River Band of Rohnerville Rancheria, and the Wiyot Tribe. The Tribes responded electing to not accept the request for consult.



LOCATION MAP

**PROPOSED OZANIAN
PARCEL MAP SUBDIVISION
FERNDALE AREA
PLN-14126-PMS**

**APN: 101-031-013, 100-311-019
T02N R02W S03 HB&M (Ferndale)**

Project Area = 

This map is intended for display purposes and should not be used for precise measurement or navigation. Data has not been completely checked for accuracy.



0 0.25 Miles


Environmental Factors Potentially Affected: The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|--|--|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agricultural and Forestry Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input checked="" type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards/Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

Determination: On the basis of this initial evaluation:

- I find that the proposed project **could not** have a significant effect on the environment, and a **Negative Declaration** will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **Mitigated Negative Declaration** will be prepared.
- I find that the proposed project **may** have a significant effect on the environment, and an **Environmental Impact Report** (EIR) is required.
- I find that the proposed project **may** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **Environmental Impact Report** is required, but it must analyze only those effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier **EIR** or **Negative Declaration** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **Negative Declaration**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature

2/10/2023

Date

Rodney Yandell, Senior Planner
Printed Name

Humboldt County Planning
and Building Department

Evaluation of Environmental Impacts

- (1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- (2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- (3) Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
- (4) "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).
- (5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. (California Code of Regulations, title 14 Section 15063(c) (3) (D)). In this case, a brief discussion should identify the following:
 - a) Earlier Analysis Used. Identify and state where they are available for review. **N/A**
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis. **N/A**
 - c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project. **N/A**

Environmental Checklist

Checklist and Evaluation of Environmental Impacts: An explanation for all checklist responses is included, and all answers take into account the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts. The explanation of each issue identifies (a) the significance criteria or threshold, if any, used to evaluate each question; and (b) the mitigation measure identified, if any, to reduce the impact to less than significance. In the **Checklist**, the following definitions are used:

"Potentially Significant Impact" means there is substantial evidence that an effect may be significant.

"Potentially Significant Unless Mitigation Incorporated" means the incorporation of one or more mitigation measures can reduce the effect from potentially significant to a less than significant level.

"Less Than Significant Impact" means that the effect is less than significant, and no mitigation is necessary to reduce the impact to a lesser level.

"No Impact" means that the effect does not apply to the proposed project, or clearly will not impact nor be impacted by the project.

I. Aesthetics. Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			X	

Discussion:

(a-d) Less Than Significant Impact: The project site is not within an area mapped or designated with scenic vistas or resources nor is it in the Coastal Zone where specified areas of scenic values are mapped and certified by the state. The proposed subdivision is consistent with the current zoning and general plan designation and is consistent with the planned build-out of the area. The parcels will be served by Centerville Road, a County Road, as well as private roads accessed via Centerville Road. The homesite for proposed Parcel 1 will be minimally visible from Centerville Road, as it will be set back over 200 feet. The homesites for proposed Parcels 2 and 3 will not be visible from any public roads. The Department finds no evidence that the division of the parcel within an area characterized as rural residential will have a substantial adverse aesthetic impact. No additional development is proposed, therefore, there is no indication that the project will significantly increase light or glare or effect nighttime views in the vicinity.

<p>II. Agriculture and Forestry Resources. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:</p>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			X	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			X	
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?			X	
d) Result in the loss of forest land or conversion of forest land to non-forest use?			X	
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?			X	
<p>Discussion:</p> <p>(a-e) Less Than Significant: Neither the subject property nor adjacent lands are within a Williamson Act contract. The site contains some mapped prime soils; however, it is relatively steep and wooded and not suitable for large scale agricultural uses. The site does not contain unique farmland, however, there is some small-scale grazing occurring on the lands. The subdivision will not inhibit the grazing activities and other agriculture activities may be possible. The neighborhood is characterized by rural residential development with on-site water and wastewater services. The proposed subdivision is consistent with the existing zoning and general plan designation. One-family residential is a primary and compatible use within the RA designation and is principally permitted in the U zoning district. General agriculture is an allowed use, and the subdivision will not limit future agricultural opportunities on the parcels. The Department finds no evidence that the project will result in a significant adverse impact on agricultural resources.</p>				

III. Air Quality. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

Discussion:

(a-d) Less than Significant: The project site is located within the North Coast Air Basin and the jurisdiction of the North Coast Unified Air Quality Management District (NCUAQMD). The North Coast Air Basin generally enjoys good air quality but has been designated non-attainment (does not meet federal minimum ambient air quality standards) for particulate matter less than ten microns in size (PM₁₀). To address this, the NCUAQMD adopted a Particulate Matter Attainment Plan in 1995. This plan presents available information about the nature and causes of PM₁₀ standard exceedance, and identifies cost-effective control measures to reduce PM₁₀ emissions, to levels necessary to meet California Ambient Air Quality Standards. These include transportation measures (e.g., public transit, ridesharing, vehicle buy-back programs, traffic flow improvements, bicycle incentives, etc.), land use measures (infill development, concentration of higher density adjacent to highways, etc.), and combustion measures (open burning limitations, hearth/wood burning stove limitations; NCUAQMD 1995).

The proposed subdivision divides a parcel into three parcels all suitable for residential development. The project would not: (1) obstruct implementation of the applicable air quality plan; (2) violate air quality standards; (3) contribute substantially to an existing or projected air quality violation; (4) expose sensitive receptors to substantial pollutant concentrations; or (5) create objectionable odors.

IV. Biological Resources. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		X		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		X		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?		X		
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?			X	

Discussion:

(a – e) Less Than Significant with Mitigation Incorporated:

The Tentative Map indicated an unnamed watercourse that flows through the subject property and a spring that feeds this watercourse is the water source serving the three parcels. The watercourse carries with it a 50-foot buffer which will be identified on the Development Plan as the Streamside Management Area (SMA) and unbuildable. This measure is included as **Mitigation Measure BIO-1**. An existing road provides access adjacent to this watercourse to proposed Parcel 3. The subdivision will require minor widening of this road, which in some locations is within the SMA. These improvements require a Special Permit pursuant to Section 314-61.1 of the Humboldt County Code. Provided standard Best Management Practices (BMPs) are utilized and any widening is done on the west side of the road, no impacts to the watercourse will occur. The project was referred to the California Department of Fish and Wildlife (CDFW) and they requested, in order to comply with the Migratory Bird Treaty Act and Fish and Game Code, tree removal and brush clearing must be conducted outside of the nesting season. This measure is included in **Mitigation Measure BIO-2**.

Natural Resources Management Corp. (NRM) conducted a Biological Assessment for the project site in October of 2022. The assessment report consisted of literature reviews and field observations and studies to identify potential sensitive biological resources that may occur within the Project area. A copy of the NRM Biological Assessment Report is provided in Appendix B and the key findings are provided below.

The biological assessment was conducted in order to describe the wildlife potentially present on the parcels and surrounding area, as well as to determine whether habitat exists for special status species, and to demonstrate no biological resources are present that would be affected by this subdivision. As there are currently no plans to develop the parcels, there are no impacts to special status species potentially present due to habitat. Should eventual development of these parcels involve ground disturbing activity, the following is recommended:

- Preconstruction surveys are to be conducted prior to any ground or vegetation disturbing activity, including tree and shrub removal, during the nesting season for raptors (January 1 to July 15) and migratory birds (February 1 to September 15). The survey area will include the area of disturbance and a 300-foot buffer. The survey will be done no more than 7 days prior to these activities. This recommendation has been incorporated into **Mitigation Measure BIO-2**.

(f) Less Than Significant: The project site is not within an adopted or proposed habitat conservation plan. The area is developed to suburban residential levels. The Department finds no evidence that the project will result in a significant adverse impact on any habitat conservation plan.

Mitigation Measure BIO-1. The Development Plan shall map the Streamside Management Area (SMA) and label it "unbuildable".

Mitigation Measure BIO-2. The Development Plan shall include the following language: "Tree removal and vegetation clearing associated with the Project should be conducted outside of the bird breeding season (the nesting season for raptors is generally January 1 to July 15 and the nesting season for migratory birds is generally February 1 to September 15) in order to avoid 'take' as defined and prohibited by Fish and Game Code (FGC) §3503, 3503.5, 3513, and by the Federal Migratory Bird Treaty Act (16 U.S. Code 703 et seq.). If work must be conducted during the bird nesting season, a qualified ornithologist (someone who is able to identify Northern California birds, and who has experience in nest-searching for passerines and raptors) should thoroughly survey the area no more than seven days prior to tree/vegetation removal to determine whether active nests (nests containing eggs or nestlings) are present. The survey area shall include the area of disturbance and a 300-foot buffer. If active nests are found, appropriate buffers should be developed in consultation with CDFW to avoid take."

V. Cultural Resources. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

Discussion:

(a) No Impact: No historical resources have been documented on site. The site is currently vacant, therefore, the project will have no impact on historical resources defined in California Environmental Quality Act (CEQA) §15064.5.

(b,d) Less Than Significant with Mitigation Incorporated: Pursuant to AB52, the project was referred to the Northwest Information Center (NWIC), the Bear River Band of the Rohnerville Rancheria and the Wiyot Tribe. The NWIC recommended a cultural resource study and consultation with the local Tribes. Upon further consultation with the Bear River Band of the Rohnerville Rancheria and the Wiyot Tribe, it was recommended that the project be approved with no further study provided a note regarding inadvertent discovery is included in the project. If archaeological resources are encountered during construction activities, the contractor will execute **Mitigation Measure CR-1**, by halting construction

and coordinating with a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines and appropriate tribes so resources can be evaluated so that there is not a substantial adverse change in the significance of an archaeological resource. The project is not expected to disturb any human remains, including those interred outside of formal cemeteries. However, implementation of **Mitigation Measure CR-1** has been included in the event that human remains are accidentally discovered during construction.

Mitigation Measure CR-1. The following note shall be placed on the Development Plan and carried out through project implementation: "If suspected archaeological resources are encountered during the project: 1. Stop work within 100 feet of the find; 2. Call the project representative, a professional archaeologist and representatives from the Bear River Band of the Rohnerville Rancheria and the Wiyot Tribe; 3. The professional historic resource consultant and Tribes will coordinate and provide an assessment of the find and determine the significance and recommend next steps.

"If human remains are encountered: 1. All work shall stop and per CA Health and Safety Code Section 7050.5: 2. Call the Humboldt County Coroner at (707) 445-7242; 3. The Coroner will determine if the remains are of prehistoric/historic Native American origin. If the remains are Native American Heritage Commission within 24 hours. 5. The NAHC is responsible under CA PRC 5097.98. (a) for identifying the most likely descendent (MLD) immediately and providing contact information. The MLD may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American human remains and may recommend to the owner means for treatment or disposition, with appropriate dignity, of the human remains and any associated grave goods. The descendants shall complete their inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site."

The applicant is ultimately responsible for ensuring compliance with this condition."

VI. Energy. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

Discussion:

(a-b) Less Than Significant Impact: The project will result in short-term energy consumption during the construction phase, with long-term energy consumption associated with the ongoing occupancy of the homes. The construction phase is not anticipated to utilize excessive energy and the homes will be constructed compliant with the energy requirements of Title 24 of the Building Code. Therefore, a less than significant impact will occur.

VII. Geology and Soils. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:			X	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?			X	
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

Discussion:

(a) (i-iv) Less Than Significant impact: The proposed project divides one parcel into three. The subject property is located within an area of moderate geologic instability (Humboldt County General Plan Geology, General Plan Map) and is not within the Alquist-Priolo Fault Hazard Zone. An R-2 Geologic Soils Report was prepared by A.M. Baird Engineering and Surveying. The report was reviewed and approved by the Building Division. The project will not expose people or structures to potential substantial adverse effects from rupture of a known earthquake fault, strong seismic ground shaking, or seismic-related ground failure, including liquefaction. The project is not within an area subject to landslides; therefore, the project will not expose people or structures to risk of lost, injury, or death involving landslides.

(b) Less Than Significant impact: Any future development or road improvements will utilize appropriate Best Management Practices (BMPs) which will prevent soil erosion and loss of topsoil.

(c) Less Than Significant impact: The project is not located on geologic units or soils that are unstable or that will become unstable as a result of the project. The project will not result in the creation of new unstable areas either on or off site due to physical changes in a hill slope affecting mass balance or material strength.

(d) No impact: The R-2 Geologic Soils Report prepared for the project states that no expansive soils were encountered during the investigation that require specific recommendations.

(e) Less Than Significant impact: A Septic Suitability study was conducted by A.M. Baird Engineering & Surveying, Inc. in March of 2018. The report concludes that the available septic field areas and soils on the lot appear suitable for onsite wastewater treatment for a single-family residence in accordance with all County and State codes.

(f) Less Than Significant with Mitigation Incorporated: No unique paleontological or geologic features are known to exist on the Project Site. However, **Mitigation Measure GEO-1** is included to address the unlikely event that buried paleontological resources are discovered during Project activities. Impacts would be less than significant after mitigation.

Mitigation Measure GEO-1: The following note shall be placed on the Development Plan and carried out through project implementation: "In the event that paleontological resources are discovered, work shall be stopped within 100 feet of the discovery and a qualified paleontologist shall be notified. The paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in State CEQA Guidelines Section 15064.5. If fossilized materials are discovered during construction, excavations within 100 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist. The paleontologist shall notify the appropriate agency to determine procedures that would be followed before construction is allowed to resume at the location of the find."

VIII. Greenhouse Gas Emissions. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

Discussion:

(a-b) Less Than Significant Impact: In 2002 the California legislature declared that global climate change was a matter of increasing concern for the state's public health and environment, and enacted law requiring the California Air Resources Board (CARB) to control GHG emissions from motor vehicles (Health & Safety Code §32018.5 et seq.). In 2006, the California Global Warming Solutions Act (Assembly Bill 32) definitively established the state's climate change policy and set GHG reduction targets (health & Safety Code §38500 et sec.), including setting a target of reducing GHG emissions to 1990 levels by 2020. AB 32 requires local governments to take an active role in addressing climate change and reducing greenhouse gas (GHG) emissions. While methodologies to inventory and quantify local GHG emissions are still being developed, recommendations to reduce residential GHG emissions include promoting energy efficiency in new development.

The proposed project involves the division of a parcel into three and the ultimate development of each parcel. The eventual residential construction on the vacant lots would contribute temporary, short-term increases in air pollution from equipment usage. Because of the temporary nature of the greenhouse

gas contributions, coupled with the modest quantity of emission, the proposed project would not have a significant impact on the environment, nor conflict with applicable plan, policy, or regulation for the purposes of reducing greenhouse gas emissions. Future residential use would emit limited greenhouse gases.

IX. Hazards and Hazardous Materials. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			X	
f) Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?			X	

Discussion:

(a-g) Less Than Significant impact: The project site is not included on a list of hazardous material sites, nor does the proposed subdivision involve routine transport, use or disposal of hazardous materials. The project site is over eight miles from the nearest airport (Rohnerville Airport). There are no private airstrips within the vicinity of the project site. The site will not result in unanticipated risk to the occupants of the site. The Department finds no evidence that the project will create, or expose people or property to, hazardous materials, or impair implementation of, or physically interfere with, an adopted emergency response plan. The site is within the Ferndale Fire Protection District as well as the State Responsibility Area (SRA) for fire protection. Future development of the site will require compliance with the Uniform Fire Code and UBC. According to the Fire Hazard Severity map, the parcel is located in a high fire hazard area. Ferndale Fire Protection District did not respond with any concerns and Calfire responded with their standard comment letter. For these reasons, the Planning Division expects that the subdivision will not result in significant impacts in terms of hazardous materials.

X. Hydrology and Water Quality. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner, which would:				
(i) result in substantial erosion or siltation on- or off-site;			X	
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;			X	
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			X	
(iv) impede or redirect flood flows?			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

Discussion:

(a-e) Less than significant impact: The proposed subdivision is consistent with the planned density of the area, in terms of both the County's Housing Element and the recently adopted Humboldt County General Plan 2017. The project site is an area that relies upon on-site water and wastewater systems. LACO Associates Inc. (LACO) conducted a Well Connection Study for the existing well in January of 2023. The Well Connection Study evaluated the site well, surrounding wells, seeps, springs, and wetlands, regional and local geology, groundwater recharge areas, diversions from surface waters, and aquifer testing. The purpose of the study was to evaluate potential impacts to the sustainability goals presented in the Eel River Valley Basin's (ERVB) Groundwater Sustainability Plan (GSP) by the proposed domestic water supply well that will support the proposed Parcel Map Subdivision. A copy of the LACO Well Connection Study Report is provided in Appendix C and the conclusions are provided below.

1. The well is completed in an alluvial aquifer within the ERVB, a SGMA-designated medium-priority basin.
2. The well is adjacent to the Wildcat Ridge, and it appears that recharge of the sandy gravelly alluvial aquifer is primarily via surface water infiltration on the Ridge.
3. An airlift test performed by the driller following well installation indicated a maximum well yield of 5 (gallons per minute) gpm.

4. A subsequent dry weather pumping test performed at a stabilized discharge rate of approximately 6.3 gpm showed virtually no aquifer response once water stored in the well casing was removed.
5. Planned use of the well by three residences of 450 gpd per residence estimated from usage rates for Humboldt County's OWTS guidelines equates to approximately 1 gpm using.
6. The rate of use appears sustainable by the aquifer with no anticipated additional negative impacts to SGMA goals as described in the GSP.

The Division of Environmental Health (DEH) reviewed this information and found that each parcel will have adequate water availability. DEH has not identified any concerns with regard to the project interfering with groundwater recharge. The Department finds no evidence indicating that the subdivision will violate any water quality or waste discharge standards, or otherwise substantially degrade water quality. According to the Flood Insurance Rate Map, the project site is located in Flood Zone C, which is defined as "areas of minimal flooding" and is outside the 100- and 500-year floodplains. The project site is not within a mapped dam or levee inundation area and is outside the areas subject to tsunami run-up. The site begins at about 40 feet in elevation and climbs to about 250 feet in elevation.

A drainage report was not required due to the large parcel sizes and the ability to accommodate stormwater runoff on-site. The project was reviewed by Public Works and they recommended as a condition of approval that the applicant submit a complete hydraulic report and drainage plan for their approval. No streams, creeks or other waterways will be altered as a result of this subdivision. The Department finds no evidence that the proposed project will result in significant hydrologic or water quality impacts.

XI. Land Use and Planning. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?			X	
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			X	

Discussion:

(a-b) Less Than Significant Impact: The project site is designated Residential Agriculture (RA) by the Humboldt County General Plan 2017 and is zoned Unclassified (U). One-family residential is a primary and compatible use within the RA designation and is principally permitted in the U zoning district. The neighborhood is characterized as rural residential with larger agriculture operations on the north side of Centerville Road. The division of the existing parcel is consistent with the zoning and land use density (one unit per 5 – 20 acres). The proposed subdivision is consistent with the planned build-out of the area, and is consistent with the policies and regulations specified in the Humboldt County General Plan. There are no habitat conservation or natural community conservation plans proposed or adopted for this area. The Department finds there is no evidence that the project will result in significant adverse impact with regard to land use and planning.

XII. Mineral Resources. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

Discussion:

(a,b) No Impact: On-site soils and geologic resources are not suitable as commodity materials that would be of value to the region or the state. The site is not designated as an important mineral resource recovery site by a local general plan, specific plan, or other land use plan.

XIII. Noise. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Generation of excessive groundborne vibration or ground borne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X	

Discussion:

(a) Less Than Significant: This parcel is not located within the Noise Impact combining zone and will not generate a substantial increase in ambient noise levels in the vicinity of the project in excess of local standards.

(b) Less Than Significant Impact: Noises generated by the proposed project will result in a temporary increase during road construction because the proposed project may require the use of heavy equipment (excavator, grader, loader and backhoe). The construction does not include equipment that would result in groundborne vibration. These activities are consistent with the current uses at the site and no permanent change in noise from the existing conditions would result from this project.

(c) Less Than Significant Impact: The project area is over eight miles from the Rohnerville Airport, the nearest airport. The noise impacts associated with the airport are not anticipated to be excessive. Therefore, noise impacts will remain less than significant.

XIV. Population and Housing. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and/or businesses) or indirectly (e.g., through extension of roads or other infrastructure)?			X	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			X	

Discussion:

(a, b) Less Than Significant Impact. The proposed project divides a parcel into three parcels suitable for residential development. One-family residential uses are primary and compatible uses within the plan designation and zoning district. The subdivision is consistent with the planned density of the area, one unit per 5 - 20 acres. The Department finds no evidence that the project will result in a significant adverse impact on population and housing.

XV. Public Services. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Fire protection?			X	
b) Police protection?			X	
c) Schools?			X	
d) Parks?			X	
e) Other public facilities?			X	

Discussion:

(a-e) Less Than Significant: Emergency response in the project area is the responsibility of the Ferndale Fire Protection District, Calfire and the Humboldt County Sheriff's Office. The proposed project will divide a parcel into three, with the potential development of each. The parcel is accessed by Centerville Road, a County maintained road. Although all parcels will have frontage on Centerville Road, they will take access over existing private roads off of Centerville Road. Easements are already in place for these private roads. The proposed project would not impair fire or police protection services, because the project would not: alter or block existing streets, result in development, or include uses that would require amendment of the County's emergency planning (such as a chemical storage facility or large industrial plant).

No new or physically altered government facilities are required as a result of the project. The project would not result substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental

impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, parks, or other public facilities. Therefore, **a less than significant impact** would occur.

XVI. Recreation. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X	

Discussion:

(a-b) Less Than Significant Impact: The project does not include recreational facilities. The Department finds no evidence that the project will require construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

XVII. Transportation. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?			X	

Discussion:

(a,b) Less Than Significant Impact: The parcel is accessed by Centerville Road, a County maintained road. Although all parcels will have frontage on Centerville Road, they will take access over existing private roads off of Centerville Road. Easements are already in place for these private roads. The Land Use Division of Public Works has recommended standard conditions of approval including minor road improvements to the existing roads.

The Department finds there is no evidence that the project will exceed the level of service standard, will result in a change in air traffic patterns, will result in vehicle miles traveled beyond that expected, will result in inadequate emergency access, inadequate access to nearby uses or inadequate parking capacity; or will conflict with adopted policies supporting transportation.

(c,d) Less Than Significant Impact: The project would use existing, public roadways to access the project site and would use gravel access roads internal to the parcels. The internal access roads would be constructed or improved to standards consistent with the envisioned level of use associated with future development. The project does not include construction of roads outside of the project parcels and does not propose driving or operating farm equipment external to the parcels. Future development of the parcels will be required to comply with the California State Fire Safe Regulations 2020. The California State Fire Safe Regulations provide specific standards for roads providing ingress and egress, signage, and setback distances for maintaining defensible space. Compliance with the California State Fire Safe Regulations will ensure that adequate access for emergency vehicles is provided.

XVIII. Tribal Cultural Resources.	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resource Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resource Code section 5020.1(k), or		X		
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?		X		

Discussion:

(a) (i – ii) Less Than Significant with Mitigation Incorporated: The project was referred to the Northwest Information Center (NWIC), the Bear River Band of the Rohnerville Rancheria and the Wiyot Tribe. The NWIC recommended a cultural resource study and consultation with the local Tribes. Upon further consultation with the Bear River Band of the Rohnerville Rancheria and the Wiyot Tribe, it was recommended that the project be approved with no further study provided a note regarding inadvertent discovery is included in the project. The standard condition of inadvertent discovery has been included as **Mitigation Measure CR-1**.

XIX. Utilities and Service Systems. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

Discussion:

(a-e) Less than significant: The Department finds there is no evidence that the project will be inconsistent with the planned build-out of the area or will result in a significant adverse to utilities and service systems. The parcel is not zoned for commercial or industrial uses. The lots will be served by on-site water and on-site wastewater treatment systems. The Department of Environmental Health has recommended approval of the project. The parcel currently drains northerly to the bottomlands. The Division of Public Works reviewed the project and did not identify any drainage issues. The applicant will be required to provide a complete hydraulic report and drainage plan. The Department finds the project impact to be less than significant.

XX. Wildfire. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire?			X	

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?			X	
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?			X	

Discussion:

(a-d) Less than significant: The project is located within the State Responsibility Area (SRA) for fire protection and served by the Ferndale Fire Protection District. The Ferndale Fire Protection District provides a mobile water tender in compliance with the State's Fire Safe Regulations (§3114-3(c)), therefore, individual on-site storage is not mandatory. The project site is within a high fire hazard severity zone. The Department finds the project impact to be less than significant.

XXI. Mandatory Findings of Significance.	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).			X	
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

Discussion:

(a - c) Less Than Significant Impact: The proposed project divides one parcel into three parcels suitable for residential development. Staff finds no evidence that the proposed project will significantly degrade the quality of the environment, nor will it have impacts that are individually limited but cumulatively considerable. Based on the project as described in the administrative record, comments from reviewing agencies, a review of the applicable regulations, and discussed herein, the Department finds there is no significant evidence to indicate the proposed project as mitigated will have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

Mitigation Monitoring and Reporting Program

Biological Resources

Mitigation Measure BIO-1. The Development Plan shall map the Streamside Management Area (SMA) and label it "unbuildable".

Timing for Implementation/Compliance: Throughout project construction

Person/Agency Responsible for Monitoring: Applicant and successors

Monitoring Frequency: Throughout construction

Evidence of Compliance: Visible evidence

Mitigation Measure BIO-2. The Development Plan shall include the following language: "Tree removal and vegetation clearing associated with the Project should be conducted outside of the bird breeding season (the nesting season for raptors is generally January 1 to July 15 and the nesting season for migratory birds is generally February 1 to September 15) in order to avoid 'take' as defined and prohibited by Fish and Game Code (FGC) §3503, 3503.5, 3513, and by the Federal Migratory Bird Treaty Act (16 U.S. Code 703 et seq.). If work must be conducted during the bird nesting season, a qualified ornithologist (someone who is able to identify Northern California birds, and who has experience in nest-searching for passerines and raptors) should thoroughly survey the area no more than seven days prior to tree/vegetation removal to determine whether active nests (nests containing eggs or nestlings) are present. The survey area shall include the area of disturbance and a 300-foot buffer. If active nests are found, appropriate buffers should be developed in consultation with CDFW to avoid take."

Timing for Implementation/Compliance: Throughout project construction

Person/Agency Responsible for Monitoring: Applicant and successors

Monitoring Frequency: Throughout construction

Evidence of Compliance: Visible evidence

Cultural Resources

Mitigation Measure CR-1. The following note shall be placed on the Development Plan and carried out through project implementation: "If suspected archaeological resources are encountered during the project: 1. Stop work within 100 feet of the find; 2. Call the project representative, a professional archaeologist and representatives from the Bear River Band of the Rohnerville Rancheria and the Wiyot Tribe; 3. The professional historic resource consultant and Tribes will coordinate and provide an assessment of the find and determine the significance and recommend next steps.

"If human remains are encountered: 1. All work shall stop and per CA Health and Safety Code Section 7050.5: 2. Call the Humboldt County Coroner at (707) 445-7242; 3. The Coroner will determine if the remains are of prehistoric/historic Native American origin. If the remains are Native American Heritage Commission within 24 hours. 5. The NAHC is responsible under CA PRC 5097.98. (a) for identifying the most likely descendent (MLD) immediately and providing contact information. The MLD may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American human remains and may recommend to the owner or the person responsible for the excavation work means for treatment or disposition, with appropriate dignity, of the human remains and any associated grave goods. The descendants shall complete their inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site."

The applicant is ultimately responsible for ensuring compliance with this condition.

Timing for Implementation/Compliance: Throughout project construction

Person/Agency Responsible for Monitoring: Applicant and successors

Monitoring Frequency: Throughout construction

Evidence of Compliance: Visible evidence

Geology and Soils

Mitigation Measure GEO-1: The following note shall be placed on the Development Plan and carried out through project implementation: "In the event that paleontological resources are discovered, work shall be stopped within 100 feet of the discovery and a qualified paleontologist shall be notified. The paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in State CEQA Guidelines Section 15064.5. If fossilized materials are discovered during construction, excavations within 100 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist. The paleontologist shall notify the appropriate agency to determine procedures that would be followed before construction is allowed to resume at the location of the find."

The applicant is ultimately responsible for ensuring compliance with this condition.

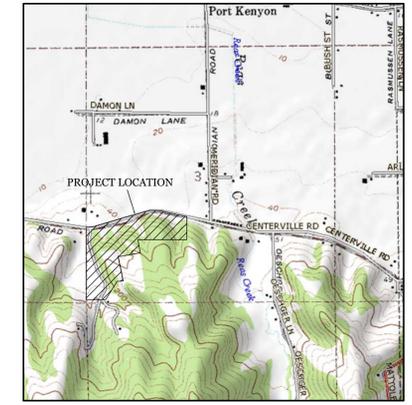
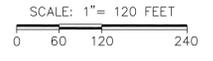
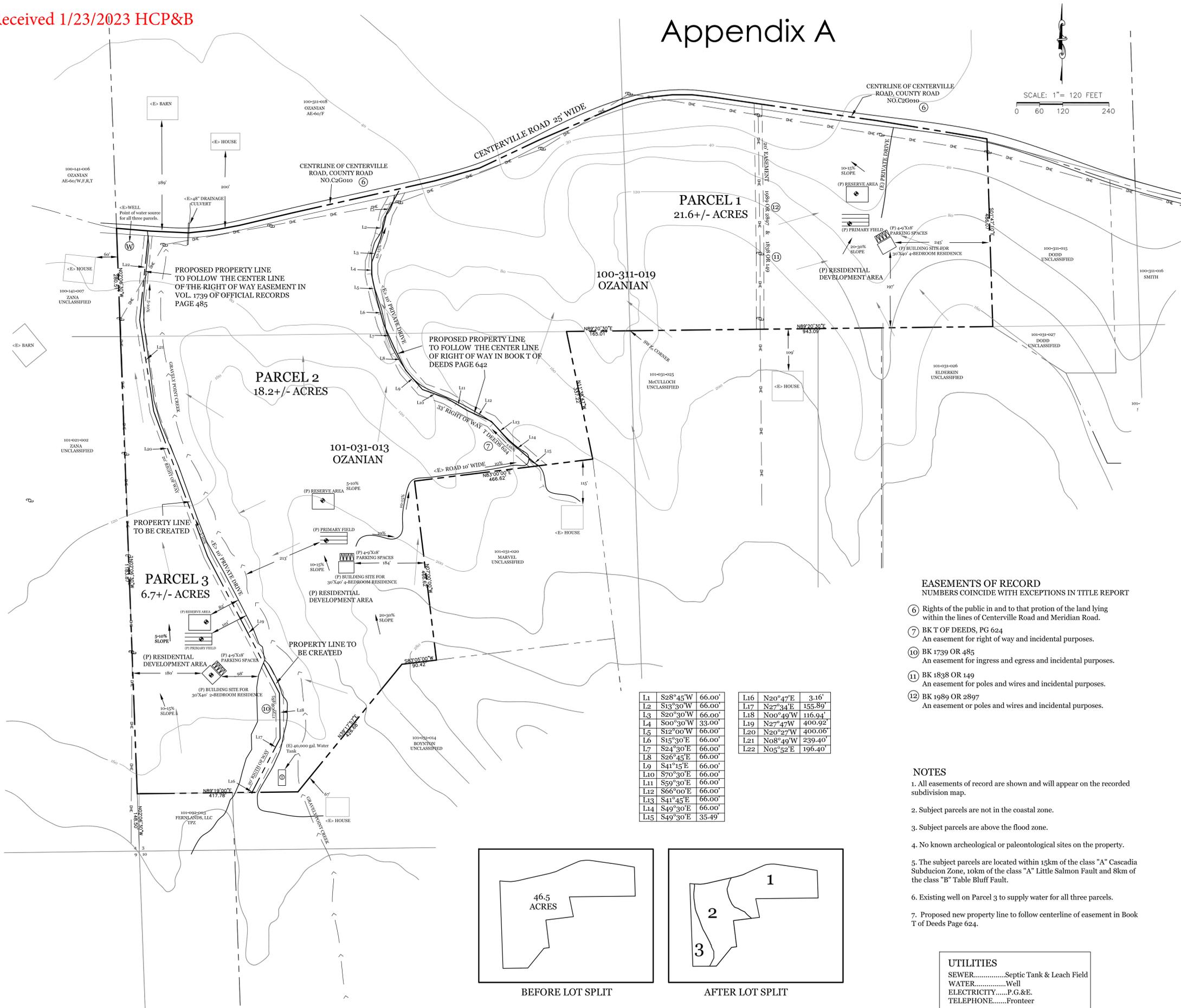
Timing for Implementation/Compliance: Throughout project construction

Person/Agency Responsible for Monitoring: Applicant and successors

Monitoring Frequency: Throughout construction

Evidence of Compliance: Visible evidence

Appendix A



VICINITY MAP
CENTERVILLE RD., FERNDALE
NOT TO SCALE

PROJECT INFORMATION	
THREE WAY LOT SPLIT MINOR SUBDIVISION	
OWNER: CHARLES & ELAINE OZANIAN 1355 CENTERVILLE RD. FERNDALE, CA 95536	
APN'S: 101-031-013 100-311-019	
TOTAL AREA: 46.5 ACRES	
PARCEL "1" 21.6+/- ACRES	
PARCEL "2" 18.2+/- ACRES	
PARCEL "3" 6.7+/- ACRES	
ZONES: 101-031-013 AG/UNCLASSIFIED 100-311-019 AG/UNCLASSIFIED	

EASEMENTS OF RECORD NUMBERS COINCIDE WITH EXCEPTIONS IN TITLE REPORT

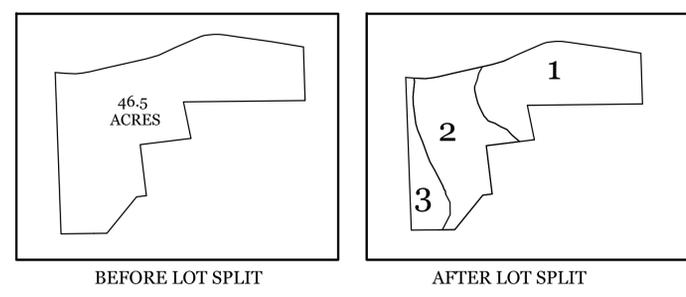
- ⑥ Rights of the public in and to that portion of the land lying within the lines of Centerville Road and Meridian Road.
- ⑦ BK T of DEEDS, PG 624
An easement for right of way and incidental purposes.
- ⑩ BK 1739 OR 485
An easement for ingress and egress and incidental purposes.
- ⑪ BK 1838 OR 149
An easement for poles and wires and incidental purposes.
- ⑫ BK 1989 OR 2897
An easement for poles and wires and incidental purposes.

L1	S28°45'W	66.00'	L16	N20°47'E	3.16'
L2	S13°30'W	66.00'	L17	N27°34'E	155.89'
L3	S20°30'W	66.00'	L18	N00°49'W	116.94'
L4	S00°30'W	33.00'	L19	N27°47'W	400.92'
L5	S12°00'W	66.00'	L20	N20°27'W	400.06'
L6	S15°30'E	66.00'	L21	N08°49'W	239.40'
L7	S24°30'E	66.00'	L22	N05°52'E	196.40'
L8	S26°45'E	66.00'			
L9	S41°15'E	66.00'			
L10	S70°30'E	66.00'			
L11	S59°30'E	66.00'			
L12	S66°00'E	66.00'			
L13	S41°45'E	66.00'			
L14	S49°30'E	66.00'			
L15	S49°30'E	35.49'			

NOTES

1. All easements of record are shown and will appear on the recorded subdivision map.
2. Subject parcels are not in the coastal zone.
3. Subject parcels are above the flood zone.
4. No known archeological or paleontological sites on the property.
5. The subject parcels are located within 15km of the class "A" Cascadia Subduction Zone, 10km of the class "A" Little Salmon Fault and 8km of the class "B" Table Bluff Fault.
6. Existing well on Parcel 3 to supply water for all three parcels.
7. Proposed new property line to follow centerline of easement in Book T of Deeds Page 624.

UTILITIES	
SEWER.....	Septic Tank & Leach Field
WATER.....	Well
ELECTRICITY.....	P.G.&E.
TELEPHONE.....	Fronteer



LEGEND	
	PROPERTY LINE
	PROPOSED PROPERTY LINE
	ADJACENT PROPERTY LINE
	OVERHEAD ELECTRIC, PHONE, AND CABLE
	GROUND CONTOURS AT 40 FEET
	SECTION LINES
	UNDERGROUND PHONE LINE
	GRAVELLY POINT CREEK
	EASEMENT
	EDGE OF PAVEMENT
	EXISTING GRAVEL ROAD
	PERK TEST HOLE
	POWER POLE
	PROPOSED
	EXISTING
	WATER TANK
	WELL

REVISIONS		
NO.	DATE	DESCRIPTION

A.M. Baird
Engineering & Surveying
1257 Main St., P.O. Box 396, Fortuna, CA 95540
(707)725-5182



SCALE	1"=120'
DRAWN BY	LBA
CHKD	A.M.B.
DATE	01/23/23

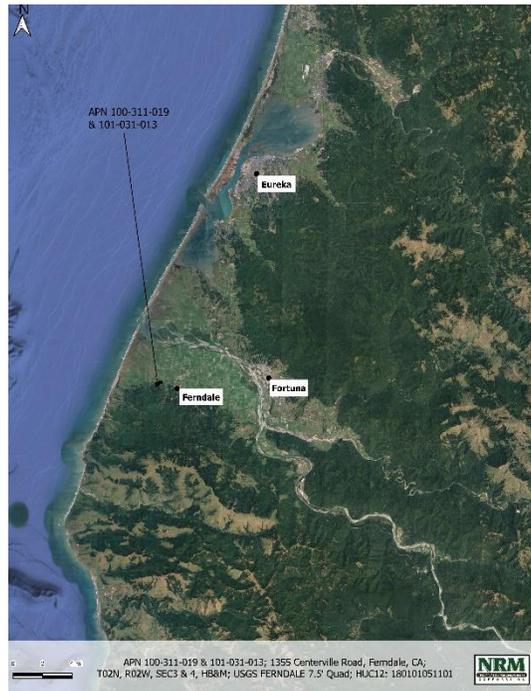
CHARLES & ELAINE OZANIAN
1355 CENTERVILLE ROAD
FERNDALE, CA. 95536
A.P.N. 100-311-019/101-031-013
LOT SPLIT TENTATIVE MAP

JOB NO. 08-2359-4
SHEET NO. 1 OF 1

Appendix B

Received 11/9/2022 HCP&B

Biological Assessment Report Ferndale, Humboldt County, California APNs 101-031-013 & 100-311-019



Prepared for:
Chuck and Elaine Ozanian

Prepared by:
Natural Resources Management Corporation
1434 Third Street
Eureka, CA 95501

October 2022



Contents

I. Summary of Findings and Conclusions 1

II. Introduction, Background, and Project Understanding..... 1

 Project Site 1

 Biological Description..... 3

 Project Description..... 3

III. Methods..... 3

 Pre-field Review 3

 Field Survey 7

IV. Results and Discussion..... 8

 Field Survey Results..... 8

V. Conclusions and Mitigation Measures 15

VI. References Cited 16

Appendix A: Photos (October 7, 2022)

Figures

Figure 1. Vicinity map for APNs 101-031-013 and 100-311-019 2

Figure 2. NSO Activity Centers in the vicinity of the project parcels 6

Figure 3. CNDDDB species in the vicinity of the project parcels 7

Tables

Table 1. CNDDDB list of potential special status wildlife species in the Ferndale nine-quad area..... 4

Table 2. Species detected during October 7, 2022 site visit..... 8

Table 3. Special status species, suitable habitat present, potential impacts 9

I. Summary of Findings and Conclusions

The project at the Ozanian parcels involves the subdivision of two parcels into three, and reconfiguring the boundaries to be oriented off of Centerville Road, in Ferndale, California. The two APNs, 100-311-019 and 101-031-013, are approximately 40 acres in total. The landowner(s) have no development plans at this time. This biological assessment was conducted in order to describe the wildlife potentially present on the parcels and surrounding area, as well as to determine whether habitat exists for special status species, and to demonstrate no biological resources are present that would be affected by this subdivision. As there are currently no plans to develop the parcels, there are no impacts to special status species potentially present due to habitat. Should eventual development of these parcels involve ground disturbing activity, the following is recommended:

- Preconstruction surveys are to be conducted prior to any ground or vegetation disturbing activity, including tree and shrub removal, during the nesting season for raptors (January 1 to July 15) and migratory birds (February 1 to September 15). The survey area will include the area of disturbance and a 300-foot buffer. The survey will be done no more than 7 days prior to these activities.

II. Introduction, Background, and Project Understanding

The purpose of this Biological Assessment Report is to review the parcels in sufficient detail to determine potential impacts to wildlife species currently listed or formally proposed for listing as endangered or threatened under the Federal and State Endangered Species Act (ESA); or designated as a Species of Special Concern (SSC), Fully Protected (FP), or on the Watch List (WL) of the California Department of Fish and Wildlife (CDFW); these species are hereinafter referred to as special status species. All wildlife species known to occur in the nine-quad area surrounding the project are listed in Table 1. A biological assessment of the parcels was conducted to evaluate any potential habitat and project impacts for special status wildlife (Table 3), and to describe all species observed in the area (Table 2).

Project Site

The parcels are located 1.5 air miles west of the town of Ferndale, in Humboldt County, California (Figure 1). The legal description of the site is within the USGS 7.5' Ferndale quadrangle, T02N, R02W, Sections 3 and 4, HB&M. The site address is 1355 Centerville Road, Ferndale. The project involves two APNs: 100-311-019 (APN 019) and APN 101-031-013 (APN 013), that the landowner(s) are reconfiguring into three separate parcels. There are no development plans at this time.

The northern boundary of APN 019 is along Centerville Road with an assessed lot size of 21.05, and GIS acres at 18.6 in size (Humboldt County 2022). The second parcel, APN 013, is located uphill from the southwest boundary of APN 019, with an assessed lot size of 24.94, and 23.7 GIS acres (Humboldt County 2022). The Centerville Road demarcates the transition from slopes of forested habitat on the south side, to flat pasturelands to the north (Figures 1-3).



Figure 1. Vicinity map for APNs 101-031-013 and 100-311-019 in Ferndale, Humboldt County, California

Biological Description

The parcels are situated on slopes that range from 40 feet in elevation along Centerville Road to 100 feet at the southern boundary of APN 019, and up to 200 feet at the southern boundary of APN 013. The parcels are at the transition from forested hillslopes to flat, open pastureland habitat, and subject to maritime fog. The parcels were previously harvested for timber and replanted with 4,000 redwood saplings. Due to the high survival rate of the planted trees, the parcels are thick with young redwood, interspersed with components of Sitka spruce and some Douglas-fir; red alder and willow are interspersed with these conifers along a Class III ephemeral watercourse (Photos 1-3).

There are no watercourses on the parcels (Figure 3) except for this unmapped drainage, locally known as Gravelly Point Creek, which parallels an existing access road and right-of-way on APN 013 (Photo 4), passes under Centerville Road via culvert (Photos 5-6) and disperses in the pasturelands. This drainage flows during winter rains and typically dries up by mid-summer. There was no water in this heavily vegetated drainage during the site visit.

Approximately 800 feet east of the APN 019 eastern parcel boundary is Reas Creek, and approximately 1,900 feet west of the APN 019 western parcel boundary is Smith Creek. These watercourses flow north from the forested hillside into the pastureland to Salt Creek, which originates east of Ferndale in the pastureland that is adjacent to the Eel River. Flowing west northwest, Salt Creek enters the Eel River at the mouth to the Pacific Ocean.

Project Description

Being proposed is the subdivision of two parcels into three parcels, with access for all parcels from Centerville Road. As proposed, the access / right-of-way road (Photo 4) defines the border between Parcels #2 and #3. Parcel #3 would be located on the west side of the road (~6.7 ac); Parcel #2 on the east side of the road (~18.2 ac); and Parcel #1 east of the boundary for Parcel #2 (~21.6 ac).

There is a well on APN 013 (proposed Parcel #3), near Centerville Road that was drilled in 2021 (Fisch Drilling), with a draw down test completed in 2022 (Photo 7).

III. Methods

Pre-field Review

Prior to the survey, a query was made of the CDFW California Natural Diversity Data Base (CNDDDB 2022) for wildlife species occurrences within a nine-quad topographical map area of the parcels. This provided a comprehensive target species list from which to evaluate potential habitat on the parcels, as well as any known locations for special status species in the general area (Table 1, *Species with no protective status will not be evaluated for potential impacts). This query included records for the northern spotted owl (NSO) and associated activity centers (ACs), where nesting, foraging, and reproduction occur. CNDDDB records for special status species within 1 mile of the parcels are shown in Figure 3.

Due to the parcels proximity to the Pacific Ocean, several species / subspecies (n=19) associated with marine and beach habitats were included in the CNDDDB query. There is no habitat on the parcels to support these species, and no watercourses connecting the parcels to the Pacific Ocean. **Therefore,

the following species will not be impacted directly or indirectly by any proposed project on the parcels and are removed from further analysis: yellow rail (*Coturnicops noveboracensis*), mountain plover (*Charadrius montanus*), western snowy plover (*Charadrius nivosus nivosus*), tufted puffin (*Fratercula cirrhata*), California brown pelican (*Pelecanus occidentalis californicus*), double-crested cormorant (*Phalacrocorax auritus*), southern sea otter (*Enhydra lutris nereis*), Steller sea lion (*Eumetopias jubatus*), green sturgeon (*Acipenser medirostris*), white sturgeon (*Acipenser transmontanus*), tidewater goby (*Eucyclogobius newberryi*), longfin smelt (*Spirinchus thaleichthyus*), eulachon (*Thaleichthys pacificus*), Pacific lamprey (*Entosphenus tridentatus*), western brook lamprey (*Lampetra richardsoni*), coast cutthroat trout (*Oncorhynchus clarkii clarkii*), coho salmon (*O. kisutch pop. 2*), steelhead (*O. mykiss irideus pop. 48 and 49*), summer-run steelhead (*O. mykiss irideus pop. 36*), and chinook salmon (*O. tshawytscha pop. 17*).

Table 1. CNDDDB list of potential special status wildlife in the Ferndale nine-quad area.

Common Name	Scientific Name	Fed/State Listing
Birds		
northern spotted owl	<i>Strix occidentalis caurina</i>	Federal & State Threatened
golden eagle	<i>Aquila chrysaetos</i>	Fully Protected, Watch List
bald eagle	<i>Haliaeetus leucocephalus</i>	State Endangered, Fully Protected
northern goshawk	<i>Accipiter gentilis</i>	Species of Special Concern (SSC)
Cooper's hawk	<i>Accipiter cooperii</i>	Watch List
sharp-shinned hawk	<i>Accipiter striatus</i>	Watch List
northern harrier	<i>Circus hudsonius</i>	SSC
American peregrine falcon	<i>Flaco peregrinus anatum</i>	Delisted, Fully Protected
osprey	<i>Pandion haliaetus</i>	Watch List
bank swallow	<i>Riparia riparia</i>	State Threatened
western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	Federal Threatened, State Endangered
yellow-breasted chat	<i>Icteria virens</i>	SSC
tri-colored blackbird	<i>Agelaius tricolor</i>	State Threatened, SSC
black-capped chickadee	<i>Poecile atricapillus</i>	Watch List
great egret*	<i>Ardea alba</i>	None
great blue heron*	<i>Ardea herodias</i>	None
snowy egret*	<i>Egretta thula</i>	None
black-crowned night heron*	<i>Nycticorax nycticorax</i>	None
yellow rail**	<i>Coturnicops noveboracensis</i>	SSC
mountain plover**	<i>Charadrius montanus</i>	SSC
western snowy plover**	<i>Charadrius alexandrinus nivosus</i>	SSC
tufted puffin**	<i>Fratercula cirrhata</i>	SSC
California brown pelican**	<i>Pelecanus occidentalis californicus</i>	Delisted, Fully Protected
double-crested cormorant**	<i>Phalacrocorax auritus</i>	Watch List
Mammals		
fisher	<i>Pekania pennanti</i>	SSC
Humboldt mountain beaver*	<i>Aplodontia rufa humboldtiana</i>	None
North American porcupine*	<i>Erethizon dorsatum</i>	None

Sonoma tree vole	<i>Arborimus pomo</i>	SSC
American badger	<i>Taxidea taxus</i>	SSC
pallid bat	<i>Antrozous pallidus</i>	SSC
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	SSC
hoary bat*	<i>Lasiurus cinereus</i>	None
southern sea otter**	<i>Enhydra lutris nereis</i>	Federal Threatened, Fully Protected
Steller sea lion**	<i>Eumetopias jubatus</i>	Delisted
Herpetofauna		
Pacific tailed frog	<i>Ascaphus truei</i>	SSC
northern red-legged frog	<i>Rana aurora</i>	SSC
foothill yellow-legged frog	<i>Rana boylei pop. 1</i>	SSC
southern torrent salamander	<i>Rhyacotriton variegatus</i>	SSC
western pond turtle	<i>Emys marmota</i>	SSC
Fish		
green sturgeon**	<i>Acipenser medirostris pop. 2</i>	SSC
tidewater goby**	<i>Eucyclogobius newberryi</i>	Federal Endangered
longfin smelt**	<i>Spirinchus thaleichthyus</i>	State Threatened
Eulachon**	<i>Thaleichthys pacificus</i>	Federal Threatened
Pacific lamprey**	<i>Entosphenus tridentatus</i>	SSC
western brook lamprey**	<i>Lampetra richardsoni</i>	SSC
coastal cutthroat trout**	<i>Oncorhynchus clarkii clarkii</i>	SSC
pink salmon**	<i>O. gorbuscha</i>	None
coho salmon**	<i>O. kisutch pop. 2</i>	State Threatened
steelhead – s. OR, n. CA**	<i>O. mykiss irideus pop. 1</i>	SSC
steelhead – Klamath Mtns**	<i>O. mykiss irideus pop. 16</i>	Federal Threatened
summer-run steelhead**	<i>O. mykiss irideus pop. 36</i>	Candidate State Endangered, SSC
chinook salmon - CA coastal**	<i>O. tshawytscha pop.17</i>	Federal Threatened
chinook salmon – Klamath, Trinity Rivers ESU**	<i>O. tshawytscha pop. 30</i>	Candidate Federal and State Endangered, SSC

The survey protocol for NSO (USFWS Revised 2012) Activity Centers (ACs) in coastal habitat (USFWS 2011) requires a 0.7-mile habitat analysis buffer for determining potential project impacts. The nearest ACs to the parcels are greater than 2 miles south in appropriate forested habitat (Figure 2), where no impacts will occur.

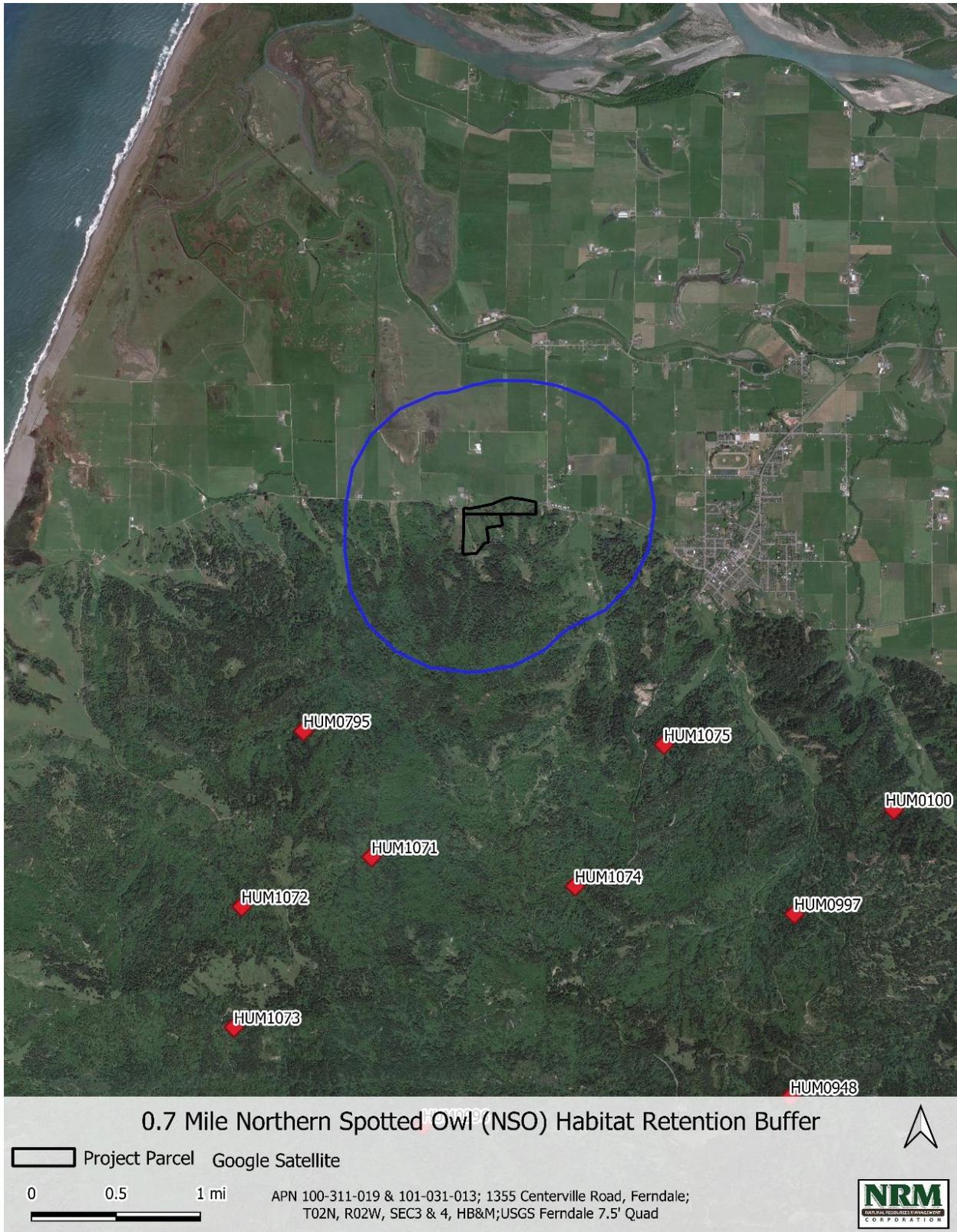


Figure 2. Northern spotted owl ACs in the vicinity of the project parcels

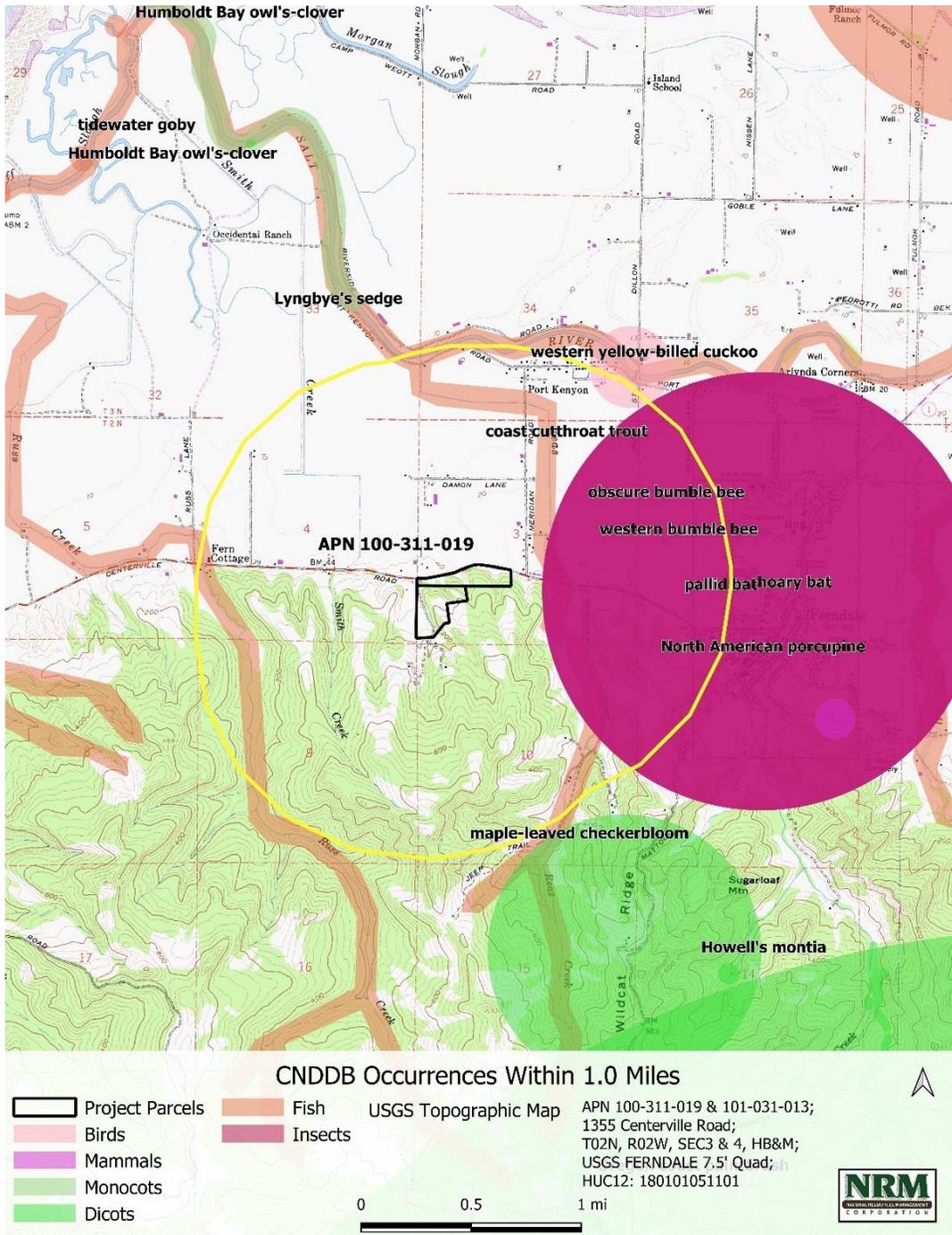


Figure 3. CNDDB species records within a 1-mile radius of the project parcels

Field Survey

On October 7th, 2022 NRM wildlife biologist Michelle McKenzie conducted a site visit to survey the parcel for sign or observation of wildlife species present, or their habitats. The survey was conducted for approximately 2 hours (1000-1200) on a mild (63°F/17°C), foggy day.

IV. Results and Discussion

Field Survey Results

The temperatures were cool during this late season survey, and the majority of songbirds had migrated out of the area for winter.

Table 2. Species detected at APNs 101-031-013 and 100-311-019 on October 7, 2022.

Common Name	Federal or State Listing	Detection Method
turkey vulture	None	auditory
American kestrel	None	visual
white-tailed kite	Fully Protected	visual
wrentit	None	visual
Pacific wren	None	auditory
white-crowned sparrow	None	visual
cedar waxwing	None	auditory
black phoebe	None	visual
American robin	None	visual
California quail	None	auditory
Stellar's jay	None	visual
common raven	None	visual
lesser goldfinch	None	visual
northern flicker	None	visual
Pacific chorus (treefrog) frog	None	auditory
black-tailed deer	None	visual
gray fox	None	scat
coyote	None	scat

The CNDDDB query identified 4 special status species occurring within a mile of the parcels: pallid bat (SSC), western yellow-billed cuckoo (FT, SE), western bumble bee (State Candidate), and coastal cutthroat trout (SSC). Habitat on the parcels has the potential to support multiple species (Table 3), however, there is no habitat to support these species and no direct or indirect impacts are expected.

Table 3, below, summarizes the potential impacts to special status species by the proposed parcel subdivision project. Categories for a species potential to occur, based on available habitat, are defined as Low (little to no habitat present on the parcels), Moderate (some habitat present but not optimal), and High (optimal habitat is present).

Table 3. Special status species, suitable habitat in project area, and potential impacts

Common Name	Listing Status	General Habitat Description	Presence of Suitable Habitat on Parcel?	Potential Occurrence Based on Habitat?	Potentially Impacted by Project?	Comments
BIRDS						
northern spotted owl	FT, ST	Old-growth forests or mixed stands of old-growth and mature trees; occasionally in younger forests with patches of big trees	No	Low	No	No impacts; nearest ACs are greater than 1 mile south of parcels
golden eagle	FP, WL	Resident of foothills and mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes; adjacent large trees for nesting	No	Low	No	No impacts; this species expected in open grassland prairies of the coastal mountains east of the parcels
bald eagle	SE	Requires large bodies of water or free flowing rivers with abundant fish and adjacent perches; nests near water in large dominant trees	No	Low	No	No impacts; this species expected to forage and breed within the Eel River watershed
northern goshawk	SSC	Breeds in North Coast ranges, preferring middle to higher elevations in mature, dense, conifer forests; usually nests on north slopes with openings and riparian areas required	Yes	High	No	No impacts due to no development; there is optimal habitat across the parcels that would require preconstruction surveys prior to ground-disturbing activity

Common Name	Listing Status	General Habitat Description	Presence of Suitable Habitat on Parcel?	Potential Occurrence Based on Habitat?	Potentially Impacted by Project?	Comments
Cooper's hawk	WL	Woodlands with open, interrupted, or marginal elements, typically breeding near riparian habitats	Yes	High	No	No impacts due to no development; there is optimal habitat across the parcels that would require preconstruction surveys prior to ground-disturbing activity
sharp-shinned hawk	WL	Dense stands in close proximity to open areas and edges; prefers dense, even-aged single layer forests such as riparian; north facing slopes critical requirement	Yes	High	No	No impacts due to no development; there is optimal habitat across the parcels that would require preconstruction surveys prior to ground-disturbing activity
northern harrier	SSC	Frequents meadows, grasslands, open rangelands and wetlands; nests on ground in shrubby vegetation, usually at marsh edge	No	Low	No	No impacts; no habitat on parcels but expected to forage in the general vicinity of pasturelands
peregrine falcon	FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures	No	Low	No	No impacts; no habitat present for this species
osprey	WL	Ocean shore, bays, freshwater lakes, and larger streams. Large nests built in tree-tops within 15 miles of a good fish-producing body of water	No	Low	No	No impacts; this species expected to forage and breed within the Eel River watershed

Common Name	Listing Status	General Habitat Description	Presence of Suitable Habitat on Parcel?	Potential Occurrence Based on Habitat?	Potentially Impacted by Project?	Comments
bank swallow	ST	Found primarily in riparian and other lowland habitats; restricted to lacustrine, riparian, and coastal areas with vertical banks, bluffs, cliffs to dig nest holes	No	Low	No	No impacts; no extensive bank habitat for nesting
western yellow-billed cuckoo	FT, SE	Uncommon to rare summer resident of valley foothill and desert riparian habitats in scattered locations in California; known in Humboldt County at Cock Robin Island near the mouth of the Eel River; inhabits extensive riparian thickets	No	Low	No	No impacts; no extensive riparian habitat for this species
yellow-breasted chat	SSC	Requires riparian thickets of willow or other brushy tangles near watercourses	Yes	Low	No	No impacts; no permanent water on parcels may discourage presence in minimal riparian habitat
tricolored blackbird	ST, SSC	Common locally throughout Central Valley and in coastal districts from Sonoma County south; requires freshwater wetland with dense vegetation for breeding	No	Low	No	No impacts; no habitat for this species on the parcels
black-capped chickadee	SSC	Uncommon; occurs locally in montane riparian habitat from coast to inland mountains	Yes	Moderate	No	No impacts; no development would occur in riparian areas due to required protective buffers

Common Name	Listing Status	General Habitat Description	Presence of Suitable Habitat on Parcel?	Potential Occurrence Based on Habitat?	Potentially Impacted by Project?	Comments
yellow warbler	SSC	Breeds in coast range from Del Norte County, east to Modoc and south along western slope of Sierra Nevada; requires riparian deciduous habitats for breeding and foraging	Yes	Moderate	No	No impacts; no development would occur in riparian areas due to required protective buffers
willow flycatcher	SE	Requires dense willow thickets for nesting and roosting from coastal areas up to 8,000 feet	No	Low	No	No impacts; no suitable habitat for this species
grasshopper sparrow	SSC	An uncommon, local summer resident of dense, dry or well-drained grasslands for foraging and nesting	No	Low	No	No impacts; no suitable habitat for this species
MAMMALS						
fisher	FC, SSC	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure	No	Low	No	No impact; dense understory foraging habitat on the parcels for this species but no structures for reproduction; disconnected from more suitable habitat, presence unlikely
Sonoma tree vole	SSC	North coast fog belt from Oregon border to Sonoma County; in Douglas-fir (primary food source), redwood, and montane hardwood-conifer forests	Yes	Low	No	No impacts; little suitable habitat for this species on the parcels; no Douglas-fir habitat being removed

Common Name	Listing Status	General Habitat Description	Presence of Suitable Habitat on Parcel?	Potential Occurrence Based on Habitat?	Potentially Impacted by Project?	Comments
American badger	SSC	Uncommon, permanent resident found in open stages of most shrub, forest, and herbaceous habitats with friable soils	No	Moderate	No	No impacts; the only suitable habitat is located on the proposed Parcel #3, no sign of burrows observed during site visit
pallid bat	SSC	Found in a variety of lower elevation habitats including grasslands, shrublands, and mixed conifer forests; prefers rocky outcrops and cliffs with access to open habitats for foraging	No	Low	No	No impacts; this species expected further inland in appropriate habitat
Townsend's big-eared bat	SSC	Throughout California in a wide variety of habitats; most common in mesic sites; found in caves, mines, manmade structures	No	Low	No	No impacts; no suitable habitat for this species
HERPETOFAUNA						
Pacific tailed frog	SSC	Occurs in cold, permanent streams in conifer-dominated habitats, more frequent in mature or late-successional stands	No	Low	No	No impacts; no permanent flowing water on the parcels; no development would occur in riparian areas due to required protective buffers

Common Name	Listing Status	General Habitat Description	Presence of Suitable Habitat on Parcel?	Potential Occurrence Based on Habitat?	Potentially Impacted by Project?	Comments
northern red-legged frog	SSC	Humid forests, woodlands, grasslands, and stream sides in northwestern California, usually near dense riparian cover. Highly aquatic, little movement from streams or pond	Yes	Moderate	No	No impacts; no permanent flowing water on the parcels but drainage may retain year-round pools; no development would occur in riparian areas due to required protective buffers
foothill yellow-legged frog	SC (T)	Partly-shaded, permanent shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying	No	Moderate	No	No impacts; no permanent flowing water on the parcels; no development would occur in riparian areas due to required protective buffers
southern torrent salamander	SSC	Cold, well-shaded, permanent streams seepages, springs in redwood, Douglas fir; suitable habitat is likely present within most flowing streams and seeps within Humboldt County	No	Low	No	No impacts; no permanent flowing water on the parcels; no development would occur in riparian areas due to required protective buffers
western pond turtle	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation	No	Low	No	No impacts; this species expected in the Eel River watershed

State: FP Fully protected (legally protected), SC Candidate: (T)hreatened or (E)ndangered, SE Endangered (legally protected), SSC Species of special concern (no formal protection other than CEQA consideration), ST Threatened (legally protected). Federal: FE Endangered (legally protected), FT Threatened (legally protected), FP Proposed: (T)hreatened or (E)ndangered

V. Conclusions

As there are currently no plans to develop the parcels, there are no impacts to special status species potentially present due to habitat. Species with suitable habitat present and a high potential of occurring on the parcels (Table 3) are three raptor species: northern goshawk (SSC), Cooper's hawk (WL), and sharp-shinned hawk (WL). In addition, there are five other species with the potential to occur but habitat present was considered of low to moderate quality: yellow-breasted chat (SSC), black-capped chickadee (WL), yellow warbler (SSC), Sonoma tree vole (SSC), and northern red-legged frog (SSC). These species are expected within the riparian habitats of the parcels, mainly along Gravelly Point Creek, with the exception of the black-capped chickadee, which could be found in most forested habitats; and the Sonoma tree vole, a strictly arboreal rodent that feeds almost exclusively on the needles of Douglas-fir trees.

Should eventual development of these parcels involve ground disturbing activity, the following is recommended:

- Preconstruction surveys are to be conducted prior to any ground or vegetation disturbing activity, including tree and shrub removal, during the nesting season for raptors (January 1 to July 15) and migratory birds (February 1 to September 15). The survey area will include the area of disturbance and a 300-foot buffer. The survey will be done no more than 7 days prior to these activities.

VI. References Cited

- California Natural Diversity Database (CNDDDB). 2022. Quick view Tool. California Department of Fish and Wildlife. Accessed October 2022.
- California Wildlife Habitat Relationships (CWHR). 2022. California Department of Fish and Wildlife <https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range>.
- Google Earth Pro. 2022. Aerial historical imagery 1993-2020. Website <https://www.google.com/earth/>. Accessed October 2022.
- Humboldt County Web GIS. 2022. Website <https://webgis.co.humboldt.ca.us/HCEGIS2.0/>. Accessed October 2022.
- United States Fish and Wildlife Service (USFWS). (Revised) 2012. Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls.
- United States Fish and Wildlife Service (USFWS). 2011. Attachment A: Take and Avoidance Analysis for California Coast Forest District. Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls.

Appendix A: Photos (October 7, 2022)



Photo 1. View south from Centerville Road to APN 019, with dense stands of young redwood



Photo 2. View from east side of APN 019 with more dense redwood, interspersed with spruce



Photo 3. View north from access road off (Centerville Road ahead); alders in Gravelly Point Creek (right)



Photo 4. View south from same location as Photo 3; proposed Parcel #2 to left, Parcel #3 to right



Photo 5. View south of the inlet side of Gravelly Point Creek drainage (dry since July)



Photo 6. View north of Gravelly Point Creek outlet



Photo 7. Well drilled in 2021 on APN 013, west of the access road to neighboring parcels; looking northwest, Centerville Road in view

Appendix C

Well Connection Study Report

1355 Centerville Road, Ferndale, CA

January 18, 2023

Prepared for:
Dr. Charles Ozanian

Prepared By:
LACO Associates, Inc
21 W Fourth Street
Eureka, California 95501
707-443-5054

Received 1/18/2023 HCP&B

Project No. 10417.00

LACO

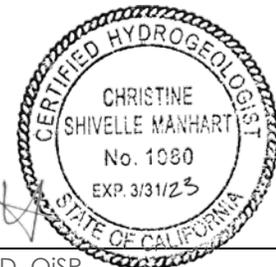
advancing the quality of
life for generations to come

Design
Planning
Engineering
Geology and Geotechnical
Environmental Science
Materials Testing
Survey

800 515-5054

www.lacoassociates.com

Eureka | Ukiah | Santa Rosa | Chico



A handwritten signature in black ink, appearing to read "Christine Shivelle Manhart".

Christine Manhart, PG, CHG, QSP/D, QISP
CHG Lic. No. 1080, Exp. 3/31/2023

TABLE OF CONTENTS

1.0 Project Description 2
 1.1 Pumping Schedule 2
2.0 Site Description 2
 2.1 Existing Uses and Water Supply Sources..... 2
 2.2 Planned Uses and Water Supply Sources..... 2
 2.3 Site Well 3
 2.4 Surrounding Wells, Seeps, Springs, and Wetlands .3
3.0 Regional and Local Geology 3
4.0 Hydrogeological Conceptual Model 4
 4.1 Groundwater Recharge Areas..... 4
 4.2 Diversions from Surface Waters 4
 4.3 Data Deficiencies and Gaps 4
5.0 AQUIFER TESTING 4
6.0 Data Deficiencies and Gaps..... 6
7.0 Conclusions 7
8.0 References 8

Figures

- Figure 1 Location Map
- Figure 2 Site Map
- Figure 3 Existing Wetland Map
- Figures 4a-b Geologic Map and Legend
- Figure 5 Geo/Hydrologic Cross Section

Appendix 1

Well Completion Reports

Appendix 2

Dry Season Well Test



1.0 PROJECT DESCRIPTION

LACO Associates (LACO) was retained by Dr. Charles Ozanian (Client) to evaluate potential impacts to the sustainability goals presented in the Eel River Valley Basin's (ERVB) Groundwater Sustainability Plan (GSP) by a proposed domestic water supply well located at 1355 Centerville Road, Ferndale, California (hereafter referred to as the "Site") identified as Assessor's Parcel Number (APN) 100-311-019 (Figure 1) This well will support a planned minor subdivision of the above-referenced parcel into three residential lots.

As the well will have a new planned use with the subdivision, it is subject to Sustainable Groundwater Management Act (SGMA) and subsequent review by the Groundwater Sustainability Agency for conformance with GSP goals. Therefore, it is required to show that the new uses of the well will not negatively impact sensitive resources identified in the GSP. Humboldt County Planning and Building Department identified the following as the primary GSP goals of interest:

1. Diversions from surface waters
2. Capability of sustainably providing the proposed use
3. Ability to provide proposed supply without negatively impacting existing groundwater users.

1.1 Pumping Schedule

As this is a new well with no existing usage, planned usage rates were estimated based on Humboldt County's On-Site Wastewater Treatment System (OWTS) regulations and Technical Manual guidance for single-family dwellings (2017). It was assumed that each new parcel in the subdivision would have a three-bedroom single-family dwelling which equates to 450 gallons per day (gpd) for each dwelling, or approximately 1 gallon per minute (gpm) averaged over time. The planned water use for the well is summarized in Table A, below.

Table A. Planned Annual Well Use

Planned Discharge Rate (gpd)	Mean Annual Usage (gal/yr)	Mean Annual Usage (ac-ft/yr)
1,350	492,750	1.51

2.0 SITE DESCRIPTION

The Site is located on a 30-acre parcel that is zoned as AE/RE5-20 (agricultural exclusive/residential estates of 5 to 20 acres). The Site is located within the (ERVB), a SGMA-designated basin. The Site sits at the foot of Wildcat Ridge on the south side of Centerville Road, with, according to Google Earth Pro, topography sloping from an elevation of approximately 200 feet to 30 feet along Centerville Road. Flat agricultural grazing land occupies the northern surrounding region. Figure 2 presents a Site Map with the location of the site well identified.

2.1 Existing Uses and Water Supply Sources

The Site is currently undeveloped and forested. Historically, the Site was used as agricultural grazing land with no water supply on the parcel. Since the site well's installation in 2021, the well has not been used as a water source.

2.2 Planned Uses and Water Supply Sources

As stated above, the Client plans to subdivide the parcel into three separate parcels and develop them as residential lots. The planned water supply source for all three of the planned residences is the site well.

2.3 Site Well

The well was installed under permit by Fisch Drilling on September 30, 2021. The location of the well is reported at 40.58092, -124.29314 and is shown on Figure 2. The resulting well completion report is included as Appendix 1. The well was completed to a depth of 100 feet below ground surface (bgs) with well screen in the bottom 60 of the well, 80 feet of gravel in the annular space, and a bentonite sanitary seal in the upper 20 feet. An airlift test at the time of installation indicated an estimated well yield of 5 gpm.

With the site located at the base of Wildcat Ridge, the well is fed by water flowing off the mountains to the river valley where it feeds the lower Eel River alluvial aquifer (GSP 2022 Section 3.6.1). The well is screened in beds of alternating sand and gravel layers that extend from approximately 50 feet to the total depth of completion. The upper 50 feet of the unit in which the well is completed is described as various layers of clay, silt, and gravel. Overall, these units are indicative of the Quaternary and recent alluvium. "Tree debris" was noted between 63 and 68 feet bgs. This is interpreted as a landslide deposit.

2.4 Surrounding Wells, Seeps, Springs, and Wetlands

No additional wells were identified within 1,000 feet of the subject well (DWR, 2022b). Wetlands were located north and downgradient of the subject well (DWR 2022a). According to the DWR dataset viewer, the wetlands are defined as palustrine, emergent, persistent, and continuously saturated. A map of the wetlands in relation to the subject well is provided in Figure 3. No seeps or springs were identified in the DWR dataset viewer. Based on the location of the subject well in relation to the wetlands, the lack of seeps, springs, and additional wells within the subject well vicinity, the probability of the subject wells impact to the sustainability goals of the GSP is low.

3.0 REGIONAL AND LOCAL GEOLOGY

The Site is located in the southern portion of the ERVB, which lies within northern portion of the Coast Ranges Geomorphic Province, a seismically active region approximately 20 miles north of the Mendocino Triple Junction. This Province is characterized by northwest-trending mountain ranges comprising sedimentary strata with interspersed valleys containing alluvial deposits derived from the overlying mountain ranges. The ERVB's morphology is influenced by compressional structural deformation and contains a fold mapped as the Eel River Syncline. Exposures of the quaternary-aged Wildcat group are located in the mountain ranges north and south of the quaternary alluvial and riverbed deposits that lie within the central portion of the ERVB. Faults within this Province include, but are not limited to, the Ferndale fault, the Little Salmon fault, and the Cascadia Subduction Zone.

Published mapping (McLaughlin et al., 2000, Figure 4) indicates the Site to be underlain by quaternary-aged alluvial deposits derived from the Wildcat Group, which is exposed south and upslope of the site and represents the uppermost stratigraphic unit on the southern limb of the Eel River Syncline (Ogle). The Site is located near the base of a moderate slope that contains the southern limb of the Syncline and is underlain by approximately 94 feet of alluvium (Qal). Based on well completion report number WCR2021-012765 (Fisch, 2021), the Wildcat Group (Qtw) is located approximately 94 feet below ground surface at the Site. A landslide deposit was also observed from 63 to 68 feet bgs during installation of the Site's well.

A regional geologic map for the Site is provided in Figure 4. A cross-section showing stratigraphic units with structural and hydrologic features is provided in Figure 5.

4.0 HYDROGEOLOGICAL CONCEPTUAL MODEL

4.1 Groundwater Recharge Areas

The ERVB's alluvial aquifer is primarily recharged via infiltration from surface runoff and flow from the hydrologically connected Eel and Van Duzen rivers and their associated tributaries. Secondary streams from the Wildcat Ridge, located south of and immediately adjacent to the Site, provide tributary flow to the ERVB and are a significant source of recharge for both the alluvial aquifer and this well specifically. Recharge of this aquifer occurs primarily within the western ERVB where infiltration is facilitated by permeable, coarse-grained alluvial deposits (GSP 2022, Figure 14).

The Carlotta aquifer is located below the alluvial aquifer and is the second primary aquifer of the ERVB. In the eastern portion of the ERVB, the Carlotta aquifer is recharged through direct contact with the Van Duzen River and Yager Creek in areas where coarser-grained units within the Carlotta Formation allow for infiltration from channel alluvium (GSP 2022). A secondary source for recharge of the Carlotta aquifer is along exposures of the Carlotta Formation in the southern ERVB area, located less than one mile south of the Site.

Recharge within the Site boundary is assumed to be via surface flow infiltration into the ERVB's alluvial aquifer along the slope located south of the Site. Inferred aquifer boundaries and groundwater flow direction are delineated in Figure 5.

4.2 Diversions from Surface Waters

One surface water diversion was located within a 1-mile radius of the subject well. The point of diversion (POD) is located approximately 5,250 feet northeast of the subject well and draws from Reas Creek (eWRIMS, 2022). No other information pertaining to the POD was located within the eWRIMS database.

4.3 Data Deficiencies and Gaps

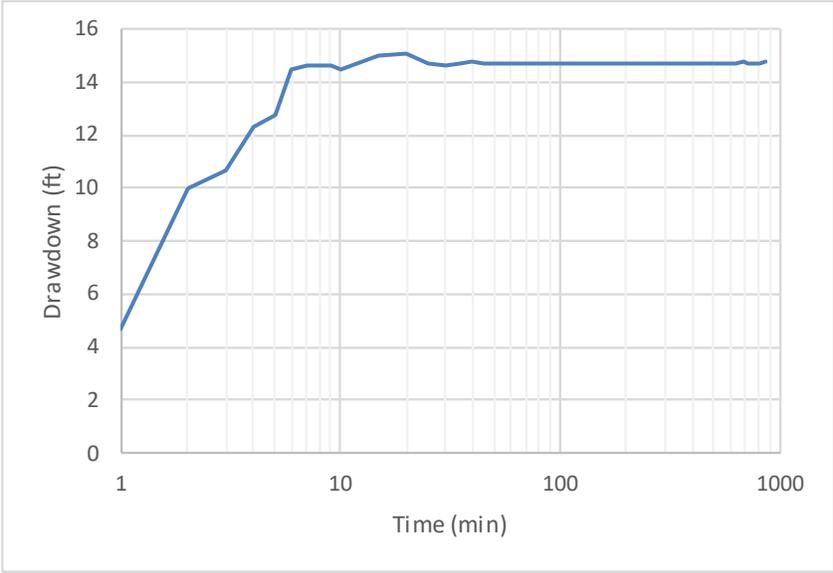
The pumping test described in Section 5.0 was performed using only the pumping well. Without observation wells, aquifer conditions can only be determined for the immediate vicinity of the well. We can only infer conditions in further reaches of the aquifer based on these observations.

5.0 AQUIFER TESTING

As per County well permitting requirements, a dry weather drawdown test was conducted by Fisch Drilling on September 9, 2022. Static water level at the time of the test was 63.6 feet bgs. Following 18 hours of pumping at a discharge rate initially at 8 gpm and averaging of 6.5 gpm, recovery in the well was monitored for ½ hour, after which the water level recovered to within 10 percent of the static water level. Data sheets for the drawdown and recovery tests are included as Appendix 2.

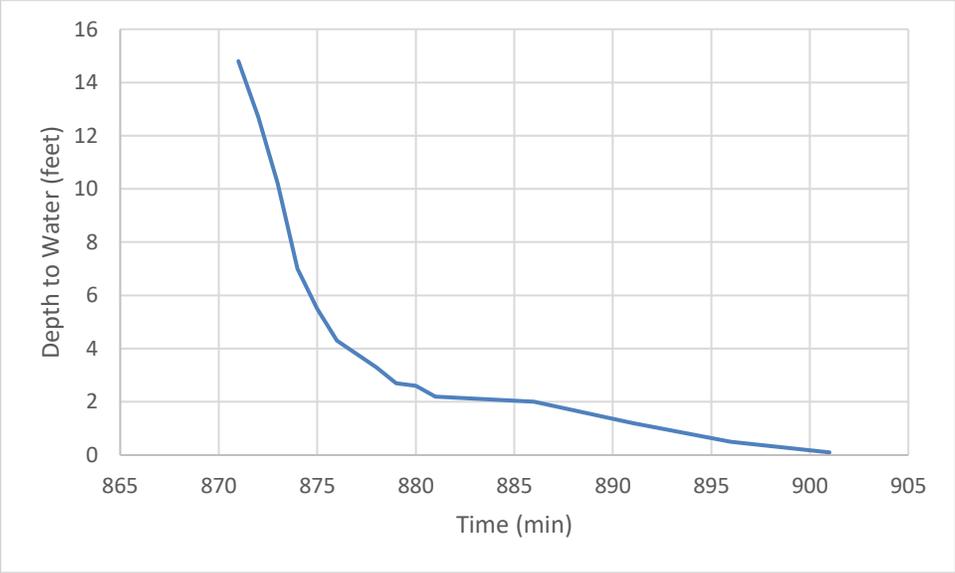
Chart A illustrates the change in drawdown over time. The drawdown observed occurred almost entirely within the initial 6 minutes of the start of the test. As the calculated volume of the well casing is 10.7 cubic feet, equivalent to 45 gallons, using the initial discharge rate of 8 gpm shows that this drawdown was entirely due to emptying the well casing. Once the well casing emptied and the discharge rate stabilized, there was virtually no impact on the aquifer.

Chart A: Pumping test drawdown over time



The recovery rate also shows that the test had virtually no impact on the aquifer (Chart B). The well casing refilled in less than 10 minutes. The remaining 2 feet of water level recovery occurring in less than 20 minutes represents recovery of the aquifer to pre-test conditions but the minimal changes in water level and the quick timeframe over which it occurred demonstrates minimal impact to the aquifer overall.

Chart B: Pumping test recovery results



Specific capacity was determined using the following relationship:

$$SC = \frac{Q}{H_0 - h}$$

Where: SC is specific discharge (gpm/ft drawdown)

Q is discharge (gpd)

H₀-h is drawdown (ft)

With stabilized discharge at 9,374 gpd (converted from the 6.36 gpm recorded during the test) and drawdown at 14.7 feet this yields a specific capacity of 623 gpd/ft drawdown. With specific capacity, we can estimate the aquifer parameters transmissivity and, because this well fully penetrates the aquifer, hydraulic conductivity. Using the empirical relationship in Driscoll (1989):

$$\frac{Q}{SC} = \frac{T}{1500}$$

Where: Q is discharge (gpd)

SC is specific capacity (gpd)

T is transmissivity (gpd/ft)

1500 is an empirically derived factor for alluvial aquifers

This yields an estimated transmissivity of 22,500 gpd/ft. Since the well is fully penetrating, we can use the static water level of 63.6 feet bgs to estimate a saturated thickness of the aquifer of 36.4 feet (100 feet total well depth minus 63.6 feet bgs water level as measured). Since this was recorded during a dry season test, this estimate should be considered conservative. Using the following relationship:

$$T = Kb$$

Where: T is transmissivity (gpm/ft)

K is hydraulic conductivity (gpd/ft²)

b is saturated aquifer thickness (ft)

This yields a hydraulic conductivity value of approximately 225 gpd/ft². These estimated values for transmissivity and hydraulic conductivity are within the expected range for an alluvial sandy gravelly aquifer.

Given the description of the aquifer stratigraphy presented in Section 2.3 and the results of the pumping test, the well is in an alluvial aquifer with no significant confining pressure. Alluvial aquifers by definition have relatively limited radii of influence. Since this test was performed without observation wells, we cannot calculate a site-specific radius of influence; however, the test results confirm that the planned use of this well to provide approximately 1.5 AFY to three residences should have no significant impact on the aquifer or to existing users of this groundwater basin.

6.0 DATA DEFICIENCIES AND GAPS

The pumping test described in Section 5.0 was performed using only the pumping well. Without observation wells, aquifer conditions can only be determined for the immediate vicinity of the well. We can only infer conditions in further reaches of the aquifer based on these observations. As discussed above, in our opinion, this data gap is not significant.

7.0 CONCLUSIONS

Based on the information presented above, LACO makes the following conclusions:

1. The well is completed in an alluvial aquifer within the ERVB, a SGMA-designated medium-priority basin.
2. The well is adjacent to the Wildcat Ridge, and it appears that recharge of the sandy gravelly alluvial aquifer is primarily via surface water infiltration on the Ridge.
3. An airlift test performed by the driller following well installation indicated a maximum well yield of 5 gpm.
4. A subsequent dry weather pumping test performed at a stabilized discharge rate of approximately 6.3 gpm showed virtually no aquifer response once water stored in the well casing was removed.
5. Planned use of the well by three residences of 450 gpd per residence estimated from usage rates for Humboldt County's OWTS guidelines equates to approximately 1 gpm using.
6. This rate of use appears sustainable by the aquifer with no anticipated additional negative impacts to SGMA goals as described in the GSP.

8.0 REFERENCES

- Department of Water Resources, 2022a. Natural Communities Commonly Associated with Groundwater Dataset Viewer. <https://gis.water.ca.gov/app/NCDatasetViewer/#> [Accessed November 2022].
- Department of Water Resources, 2022b. Well Completion Reports Dataset. [Well Completion Reports - Datasets - California Natural Resources Agency Open Data](#) [Accessed November 2022].
- Driscoll, F.G. 1989. Groundwater and Wells. Johnson Filtrations Systems, Inc. St. Paul, MN. 1089 pp.
- Fisch Drilling, 2021. Well Completion Report, Form DWR 188 Submitted 10/4/2021, Report Number WCR 2021-012765
- Electronic Water Rights Information System (eWRIMS), (2022), *Electronic Water Rights Information System* https://www.waterboards.ca.gov/waterrights/water_issues/programs/ewrims/ [Accessed November 2022].
- Humboldt County Department of Health and human Services, (2017), *Humboldt County Onsite Wastewater Treatment System (OWTS) Regulations and Technical Manual* <https://humboldt.gov/DocumentCenter/View/62933/Onsite-Wastewater-Treatment-System-OWTS-Regulations-and-Technical-Manual-PDF>

FIGURES

Figure 1	Location Map
Figure 2	Site Map
Figure 3	Existing Wetland Map
Figure 4	Geologic Map
Figure 5	Geo/Hydrologic Cross Section

LACO

EUREKA • UKIAH • SANTA ROSA

1-800-515-5054 www.lacoassociates.com

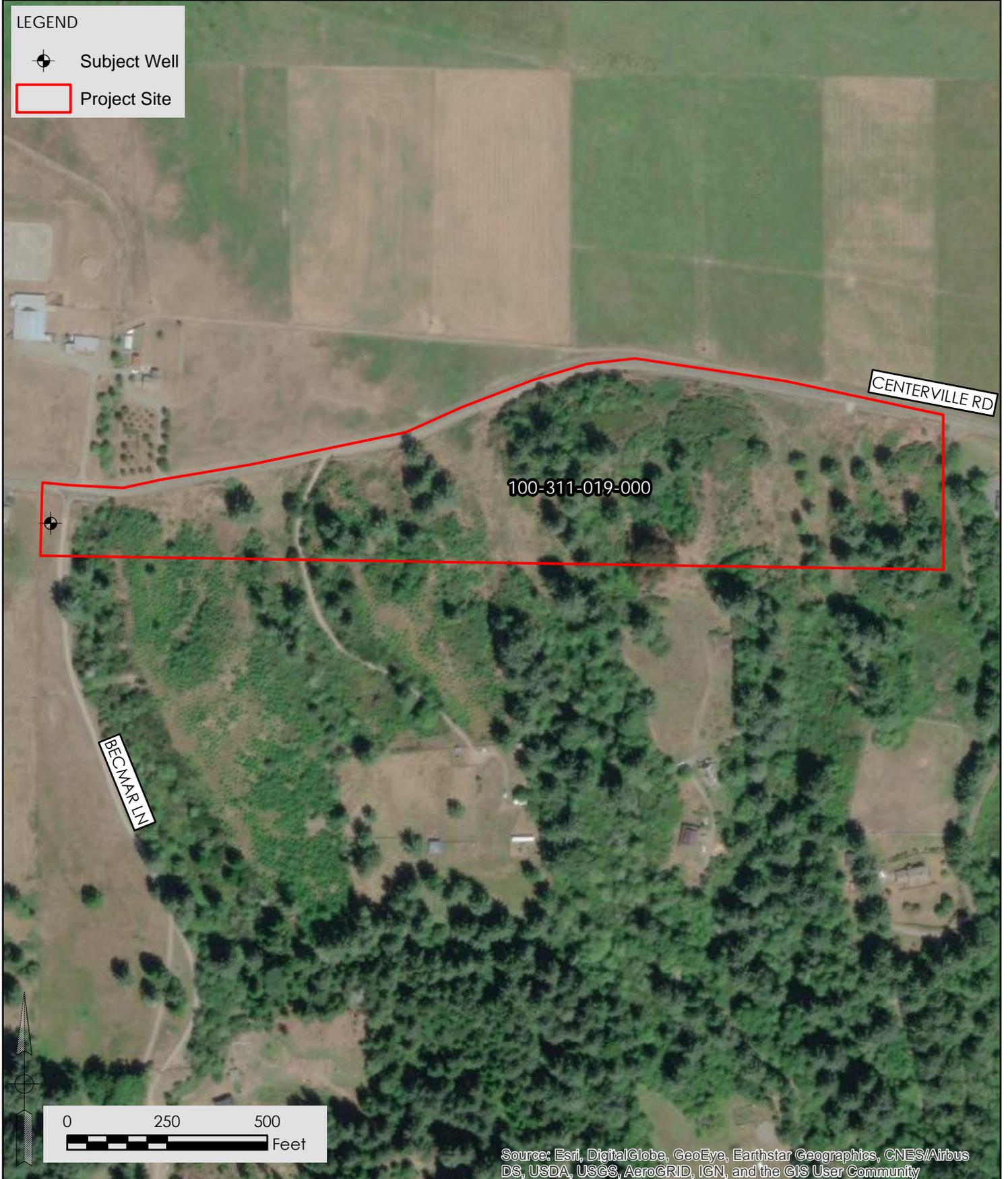
PROJECT	WELL CONNECTIVITY STUDY	BY	FRR	FIGURE	2
CLIENT	DR. CHARLES OZANIAN	CHECK	CSM		
LOCATION	1355 CENTERVILLE RD, FERNDALE, CA	DATE	11/10/2022	JOB NO.	10417.00
SITE MAP					

REUSE OF DOCUMENTS: This document and the ideas and design incorporated herein, as an instrument of professional service, is the property of LACO Associates and shall not be reused in whole or part for any other project without LACO Associates express written authorization.

LEGEND

 Subject Well

 Project Site



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

LACO

EUREKA • UKIAH • SANTA ROSA

1-800-515-5054 www.lacoassociates.com

PROJECT WELL CONNECTIVITY STUDY

CLIENT DR. CHARLES OZANIAN

LOCATION 1355 CENTERVILLE RD, FERNDALE, CA

WETLAND MAP

BY VSD

CHECK CSM

DATE 11/17/2022

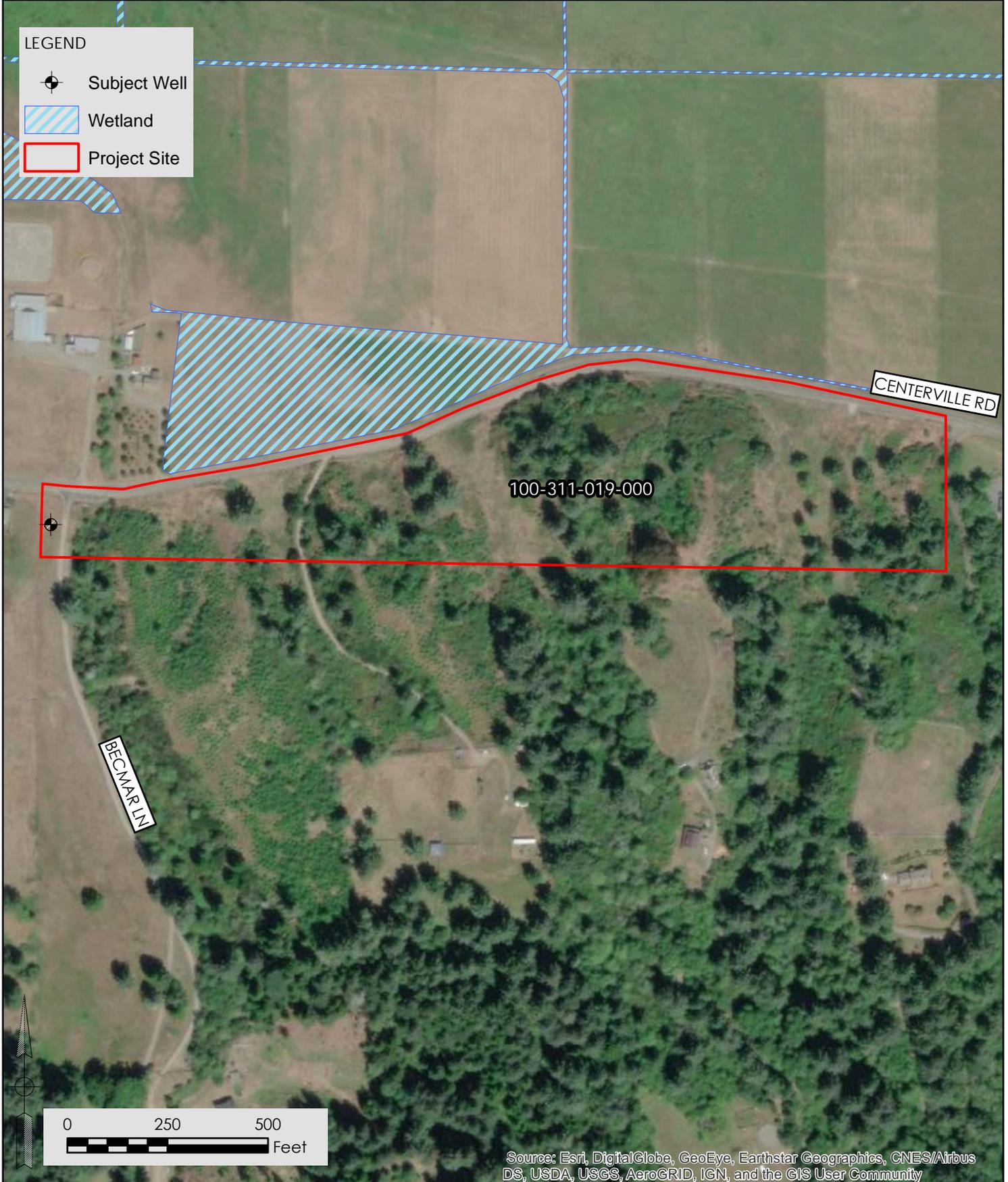
FIGURE

3

JOB NO.

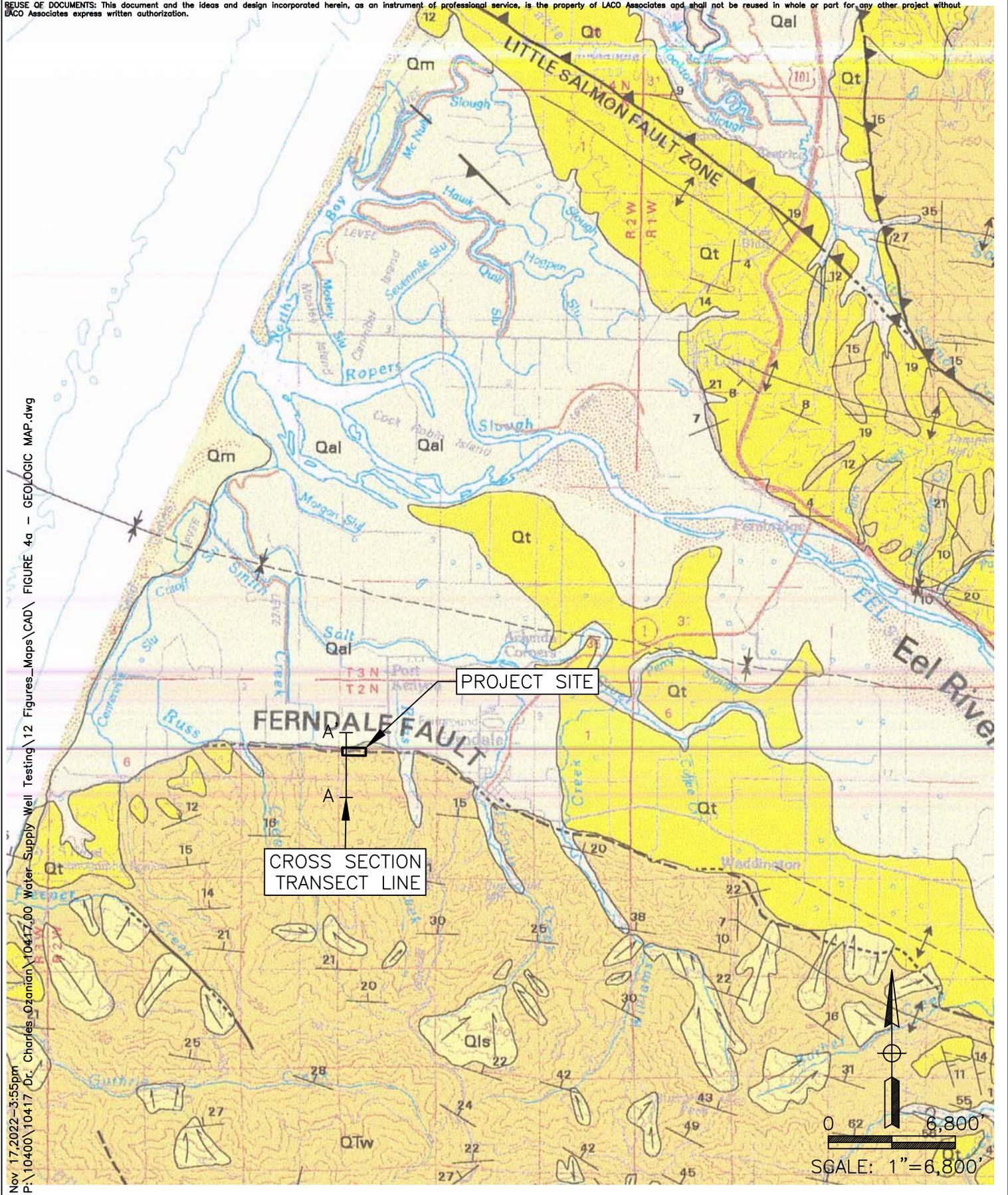
10417.00

REUSE OF DOCUMENTS: This document and the ideas and design incorporated herein, as an instrument of professional service, is the property of LACO Associates and shall not be reused in whole or part for any other project without LACO Associates express written authorization.



PROJECT	WELL CONNECTIVITY STUDY	BY	AAA	FIGURE	4a
CLIENT	DR. CHARLES OZANIAN	DATE	11/17/22		
LOCATION	1355 CENTERVILLE RD, FERNDALE, CA	CHECK	CSM	JOB NO.	10417.00
GEOLOGIC MAP		SCALE	1"=6,800'		

REUSE OF DOCUMENTS: This document and the ideas and design incorporated herein, as an instrument of professional service, is the property of LACO Associates and shall not be reused in whole or part for any other project without LACO Associates express written authorization.



Nov 17, 2022 - 3:55pm
P:\10400\10417 Dr. Charles Ozanian\10417.00 Water Supply Well Testing\12 Figures_Maps\CAD\ FIGURE 4a - GEOLOGIC MAP.dwg

PROJECT	WELL CONNECTIVITY STUDY	BY	AAA	FIGURE 4b
CLIENT	DR. CHARLES OZANIAN	DATE	11/17/22	
LOCATION	1355 CENTERVILLE RD, FERNDALE, CA	CHECK	CSM	JOB NO. 10417.00
GEOLOGIC MAP LEGEND		SCALE	NONE	

REUSE OF DOCUMENTS: This document and the ideas and design incorporated herein, as an instrument of professional service, is the property of LACO Associates and shall not be reused in whole or part for any other project without LACO Associates express written authorization.

DESCRIPTION OF MAP UNITS

QUATERNARY AND TERTIARY OVERLAP DEPOSITS

Qal

Alluvial deposits (Holocene and late Pleistocene?)-Clay, silt, sand, gravel, and boulders, deposited in stream beds, alluvial fans, terraces, flood plains and ponds; and soils formed on these deposits. Includes largely Holocene deposits in modern stream channels and on flood plains

Qm

Undeformed marine shoreline and aolian deposits (Holocene and late Pleistocene)-Gravel and sand deposited in marine terraces, on benches, and on dunes along present shorelines. In northern Eureka quadrangle, near Arcata, includes older late Pleistocene dune sands (Carver and others, 1984)

Qt

Undifferentiated nonmarine terrace deposits (Holocene and Pleistocene)-Dissected and (or) uplifted gravel, sand, silt, and clay, deposited in fluvial settings. In western Eureka quadrangle (Sheet 1) unit includes minor shallow marine intertongues and warped and tilted beds of late Pleistocene Hookton and Rohnerville Formations of Ogle (1953), in addition to younger late Pleistocene and Holocene fluvial terrace units a few feet to a few tens of feet higher than normal modern high-water level

Qls

Landslide deposits (Holocene and Pleistocene)-Unsorted clay- to boulder-size debris and broken rock masses that have moved downslope in debris flows, earth flows, and as more-or-less intact rotational or translational blocks, largely from Pleistocene to present. Only large landslides, occupying tens to hundreds of acres, are depicted here.

QTog

Older alluvium (Pleistocene and (or) Pliocene)-Weakly consolidated to unconsolidated alluvial sand and gravel in patches as much as 700 feet higher than the present stream level; locally may be related to remnants of old upland surfaces such as preserved along the upper reaches of Plummer, Naufus, and Bear Wallow Creeks in the Pickett Peak area of the Garberville quadrangle (Sheet 3). Also includes alluvium in upland basins to the west of the Eastern belt of the Franciscan Complex, such as Hoaglin and Kettenpom Valleys in the Zenia and Lake Mountain 1:24,000 quadrangles (Sheet 3)

QTW

Marine and nonmarine overlap deposits (late Pleistocene to middle Miocene)-Thin-bedded to massive, weakly lithified siltstone, fine- to medium-grained sandstone, silty to diatomaceous mudstone and locally soft, scaly mudstone. Locally includes lenses of pebble to boulder conglomerate, carbonate concretions, abundant molluscan fossils, woody debris, and horizons of rhyolitic volcanic ash that are greater than 1 meter thick in some areas. Includes the Wildcat Group (Ogle, 1953), the Bear River beds (Haller, 1980), and related outlier Neogene deposits isolated along faults near Briceland, Garberville, Benbow, Piercy, Bridgeville and northeast of Weott. Unit also includes minor fault-bounded blocks along or near the coast between Bear River and the Mattole River that are incorporated into melange of the Coastal terrane; the Neogene Falor Formation northeast of Eureka (Manning and Ogle, 1950); and equivalent deposits in the offshore area deposited in shelf, slope, and slope basin settings. A few poorly exposed erosional remnants of shallow marine to brackish water strata mapped along high ridge crests overlying the Franciscan Complex in the 1:24,000 Zenia quadrangle are tentatively assigned to this unit. South of this map, unit correlates with valley-fill, perched gravel and shallow marine to nonmarine coal-bearing sedimentary rocks of Quaternary and Tertiary age in the Round Valley area of Covelo 1:100,000 quadrangle (Jayko and others, 1989)

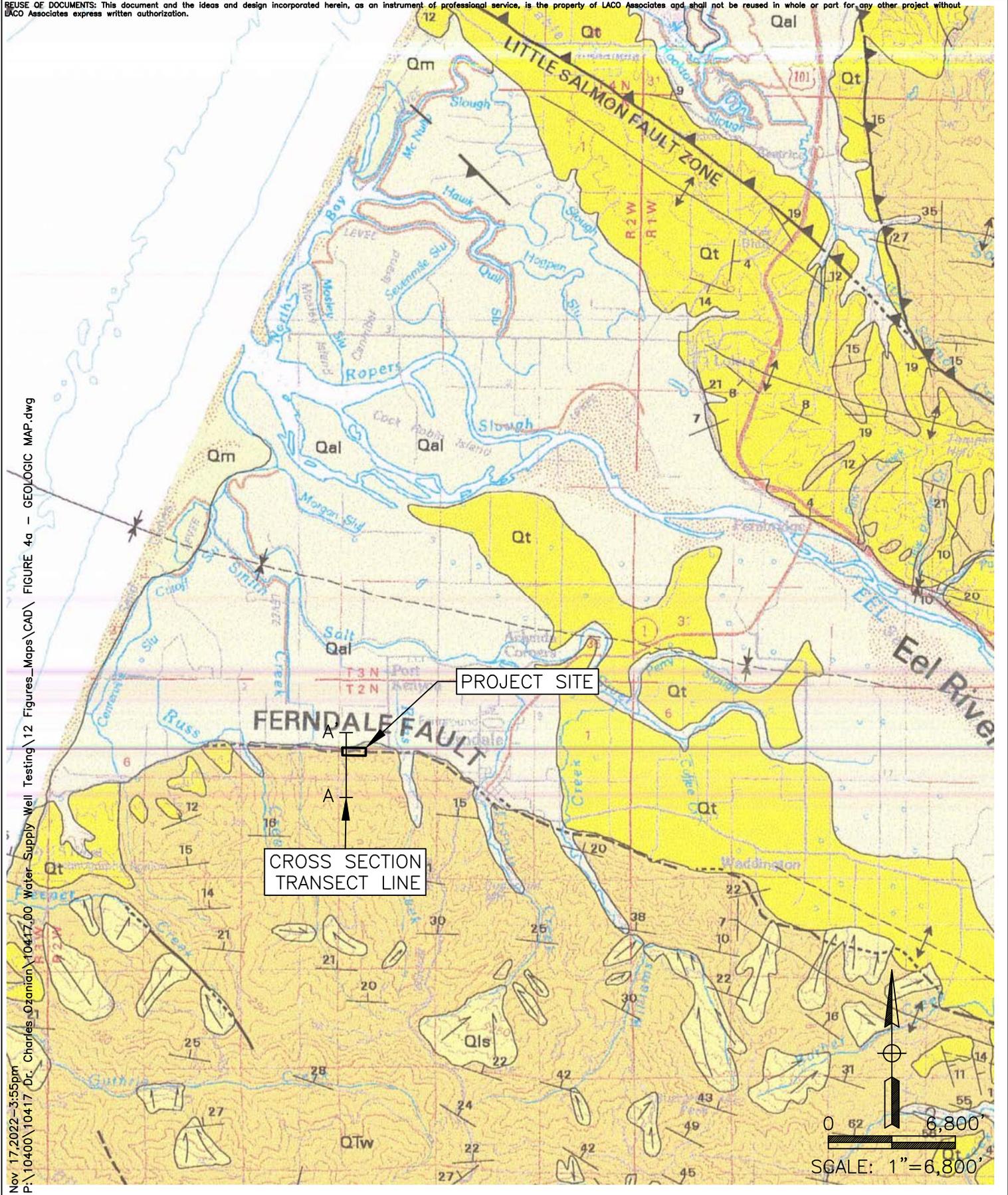
Ti

Volcanic rocks of Fickle Hill (Oligocene)-Trachytic alkalic volcanic rocks, which intrude rocks of the Central belt of the Franciscan Complex northeast of Arcata. A small sill-like intrusive exposed in a roadcut along Highway 299 north of Arcata on the Eureka quadrangle (Sheet 3), is dated by fission track methods (zircon) at 36.0–0.9 Ma (Meyer and Naeser, 1970). A larger volcanic plug of trachyte intrudes the Central belt at Granite Butte along Fickle Hill ridge, about 5 km south of the Highway 299 locality. Here, zircon is dated at 35.3–2.0 Ma by fission track methods (Meyer and Naeser, 1970)

GEOLOGIC MAP LEGEND EXCERPT FROM: McLaughlin et al., *Geology of the Cape Mendocino, Eureka, Garberville, and southwestern part of the Hayfork 30 X 60 minute quadrangles and adjacent offshore area, northern California* (2000)

PROJECT	WELL CONNECTIVITY STUDY	BY	AAA	FIGURE	4a
CLIENT	DR. CHARLES OZANIAN	DATE	11/17/22		
LOCATION	1355 CENTERVILLE RD, FERNDALE, CA	CHECK	CSM	JOB NO.	10417.00
GEOLOGIC MAP		SCALE	1"=6,800'		

REUSE OF DOCUMENTS: This document and the ideas and design incorporated herein, as an instrument of professional service, is the property of LACO Associates and shall not be reused in whole or part for any other project without LACO Associates express written authorization.



Nov 17, 2022 - 3:55pm
P:\10400\10417 Dr. Charles Ozanian\10417.00 Water Supply Well Testing\12 Figures_Maps\CAD\ FIGURE 4a - GEOLOGIC MAP.dwg

PROJECT	WELL CONNECTIVITY STUDY	BY	AAA	FIGURE 4b
CLIENT	DR. CHARLES OZANIAN	DATE	11/17/22	
LOCATION	1355 CENTERVILLE RD, FERNDALE, CA	CHECK	CSM	JOB NO. 10417.00
GEOLOGIC MAP LEGEND		SCALE	NONE	

REUSE OF DOCUMENTS: This document and the ideas and design incorporated herein, as an instrument of professional service, is the property of LACO Associates and shall not be reused in whole or part for any other project without LACO Associates express written authorization.

DESCRIPTION OF MAP UNITS

QUATERNARY AND TERTIARY OVERLAP DEPOSITS

Qal

Alluvial deposits (Holocene and late Pleistocene?)-Clay, silt, sand, gravel, and boulders, deposited in stream beds, alluvial fans, terraces, flood plains and ponds; and soils formed on these deposits. Includes largely Holocene deposits in modern stream channels and on flood plains

Qm

Undeformed marine shoreline and aolian deposits (Holocene and late Pleistocene)-Gravel and sand deposited in marine terraces, on benches, and on dunes along present shorelines. In northern Eureka quadrangle, near Arcata, includes older late Pleistocene dune sands (Carver and others, 1984)

Qt

Undifferentiated nonmarine terrace deposits (Holocene and Pleistocene)-Dissected and (or) uplifted gravel, sand, silt, and clay, deposited in fluvial settings. In western Eureka quadrangle (Sheet 1) unit includes minor shallow marine intertongues and warped and tilted beds of late Pleistocene Hookton and Rohnerville Formations of Ogle (1953), in addition to younger late Pleistocene and Holocene fluvial terrace units a few feet to a few tens of feet higher than normal modern high-water level

Qls

Landslide deposits (Holocene and Pleistocene)-Unsorted clay- to boulder-size debris and broken rock masses that have moved downslope in debris flows, earth flows, and as more-or-less intact rotational or translational blocks, largely from Pleistocene to present. Only large landslides, occupying tens to hundreds of acres, are depicted here.

QTog

Older alluvium (Pleistocene and (or) Pliocene)-Weakly consolidated to unconsolidated alluvial sand and gravel in patches as much as 700 feet higher than the present stream level; locally may be related to remnants of old upland surfaces such as preserved along the upper reaches of Plummer, Naufus, and Bear Wallow Creeks in the Pickett Peak area of the Garberville quadrangle (Sheet 3). Also includes alluvium in upland basins to the west of the Eastern belt of the Franciscan Complex, such as Hoaglin and Kettenpom Valleys in the Zenia and Lake Mountain 1:24,000 quadrangles (Sheet 3)

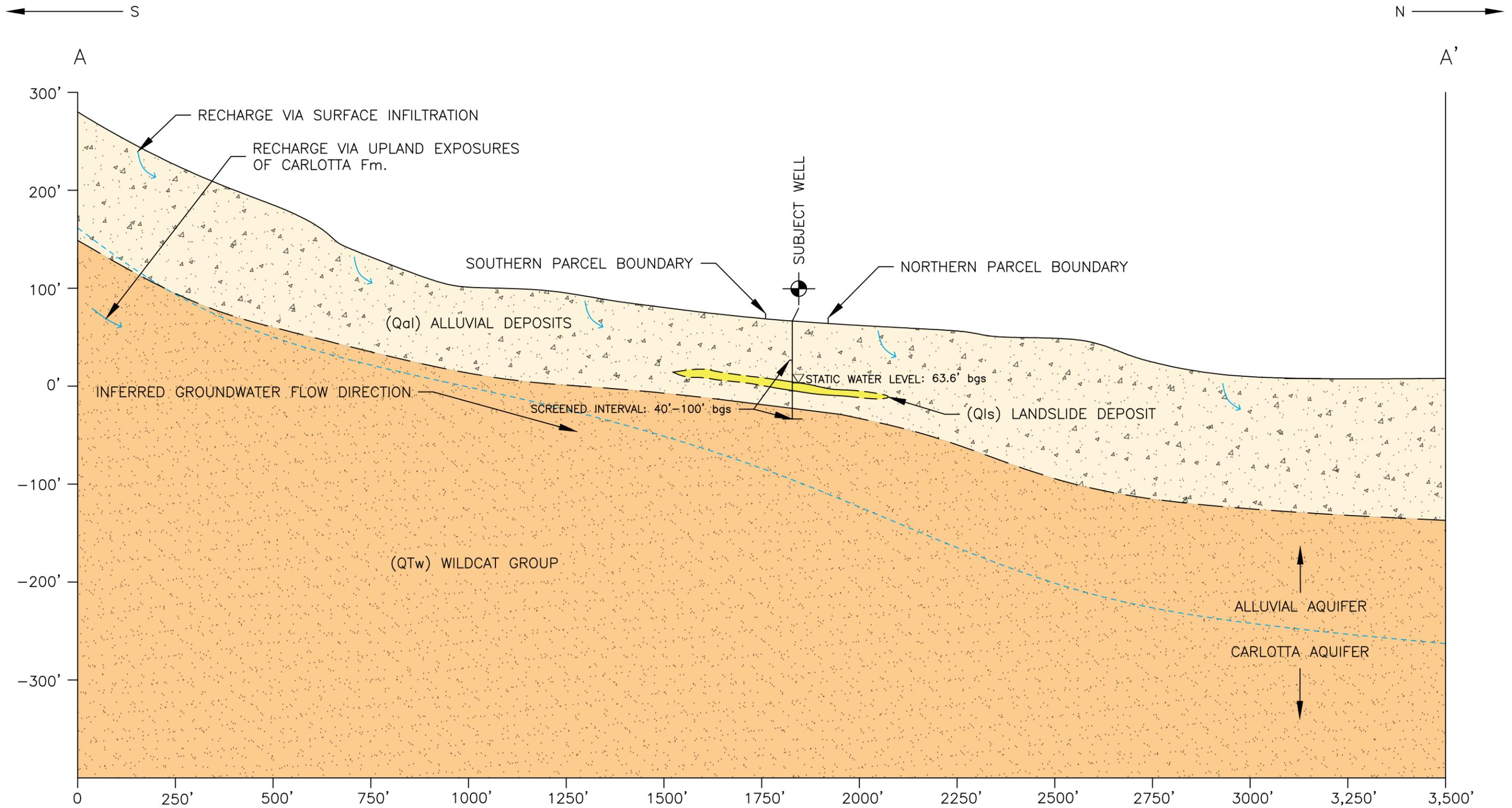
QTW

Marine and nonmarine overlap deposits (late Pleistocene to middle Miocene)-Thin-bedded to massive, weakly lithified siltstone, fine- to medium-grained sandstone, silty to diatomaceous mudstone and locally soft, scaly mudstone. Locally includes lenses of pebble to boulder conglomerate, carbonate concretions, abundant molluscan fossils, woody debris, and horizons of rhyolitic volcanic ash that are greater than 1 meter thick in some areas. Includes the Wildcat Group (Ogle, 1953), the Bear River beds (Haller, 1980), and related outlier Neogene deposits isolated along faults near Briceland, Garberville, Benbow, Piercy, Bridgeville and northeast of Weott. Unit also includes minor fault-bounded blocks along or near the coast between Bear River and the Mattole River that are incorporated into melange of the Coastal terrane; the Neogene Falor Formation northeast of Eureka (Manning and Ogle, 1950); and equivalent deposits in the offshore area deposited in shelf, slope, and slope basin settings. A few poorly exposed erosional remnants of shallow marine to brackish water strata mapped along high ridge crests overlying the Franciscan Complex in the 1:24,000 Zenia quadrangle are tentatively assigned to this unit. South of this map, unit correlates with valley-fill, perched gravel and shallow marine to nonmarine coal-bearing sedimentary rocks of Quaternary and Tertiary age in the Round Valley area of Covelo 1:100,000 quadrangle (Jayko and others, 1989)

Ti

Volcanic rocks of Fickle Hill (Oligocene)-Trachytic alkalic volcanic rocks, which intrude rocks of the Central belt of the Franciscan Complex northeast of Arcata. A small sill-like intrusive exposed in a roadcut along Highway 299 north of Arcata on the Eureka quadrangle (Sheet 3), is dated by fission track methods (zircon) at 36.0–0.9 Ma (Meyer and Naeser, 1970). A larger volcanic plug of trachyte intrudes the Central belt at Granite Butte along Fickle Hill ridge, about 5 km south of the Highway 299 locality. Here, zircon is dated at 35.3–2.0 Ma by fission track methods (Meyer and Naeser, 1970)

GEOLOGIC MAP LEGEND EXCERPT FROM: McLaughlin et al., *Geology of the Cape Mendocino, Eureka, Garberville, and southwestern part of the Hayfork 30 X 60 minute quadrangles and adjacent offshore area, northern California* (2000)



Nov 18, 2022 - 10:04am P:\10400\10417 Dr. Charles Ozanian\10417.00 Water Supply Well Testing\12 Figures_Maps\CAD\ Figure 3 - Cross Section.dwg

<p>LACO EUREKA • UKIAH • SANTA ROSA 1-800-515-5054 www.lacoassociates.com</p>	PROJECT	WELL CONNECTIVITY STUDY	BY	AAA	FIGURE	5
	CLIENT	DR. CHARLES OZANIAN	DATE	11/17/22		
	LOCATION	1355 CENTERVILLE RD, FERNDALE, CA	CHECK	CSM	JOB NO.	10417.00
	GEO/HYDROLOGICAL CROSS SECTION		SCALE	VARIES		

APPENDIX 1

Well Completion Reports

State of California
Well Completion Report
 Form DWR 188 Submitted 10/4/2021
 WCR2021-012765

Owner's Well Number 1 Date Work Began 09/28/2021 Date Work Ended 09/30/2021
 Local Permit Agency Humboldt County Department of Health & Human Services - Land Use Program
 Secondary Permit Agency _____ Permit Number 20/21-0120 Permit Date 08/12/2020

Well Owner (must remain confidential pursuant to Water Code 13752)	Planned Use and Activity
Name <u>Charles Ozanian</u>	Activity <u>New Well</u>
Mailing Address <u>1355 Centerville Road</u>	Planned Use <u>Water Supply Domestic</u>
City <u>Ferndal</u> State <u>CA</u> Zip <u>95536</u>	

Well Location	
Address _____	APN <u>100-311-019</u>
City _____ Zip _____ County <u>Humboldt</u>	Township <u>02 N</u>
Latitude <u>40 34 51.3119</u> N Longitude <u>-124 17 35.3039</u> W	Range <u>02 W</u>
Deg. Min. Sec. Deg. Min. Sec.	Section <u>03</u>
Dec. Lat. <u>40.58092</u> Dec. Long. <u>-124.29314</u>	Baseline Meridian <u>Humboldt</u>
Vertical Datum _____ Horizontal Datum <u>WGS84</u>	Ground Surface Elevation _____
Location Accuracy _____ Location Determination Method _____	Elevation Accuracy _____
	Elevation Determination Method _____

Borehole Information	Water Level and Yield of Completed Well
Orientation <u>Vertical</u> Specify _____	Depth to first water <u>28</u> (Feet below surface)
Drilling Method <u>Direct Rotary</u> Drilling Fluid <u>Bentonite</u>	Depth to Static _____
Total Depth of Boring <u>100</u> Feet	Water Level <u>31</u> (Feet) Date Measured <u>09/30/2021</u>
Total Depth of Completed Well <u>100</u> Feet	Estimated Yield* <u>5</u> (GPM) Test Type <u>Air Lift</u>
	Test Length <u>4</u> (Hours) Total Drawdown <u>69</u> (feet)
	*May not be representative of a well's long term yield.

Geologic Log - Free Form		
Depth from Surface	Feet to Feet	Description
0	2	Top Soil
2	16	Brown Silt & Gravel
16	23	Brown Silt
23	48	Brown Gravel & Clay
48	49	Blue Clay
49	51	Blue Sand
51	63	Blue Gravel & Sand
63	68	Tree Debris
68	77	Blue Sand & Gravel
77	89	Blue Sand
89	94	Blue Gravel & Sand
94	100	Wildcat Formation

Casings										
Casing #	Depth from Surface Feet to Feet		Casing Type	Material	Casings Specifications	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size if any (inches)	Description
1	0	40	No Casing Installed	PVC	OD: 5.563 in. SDR: 21 Thickness: 0.265 in.	0.265	5.563			
1	40	100	Screen	PVC	OD: 5.563 in. SDR: 21 Thickness: 0.265 in.	0.265	5.563	Milled Slots	0.032	

Annular Material					
Depth from Surface Feet to Feet	Fill	Fill Type Details		Filter Pack Size	Description
0	20	Bentonite	Other Bentonite		Sanitary Seal
20	100	Filter Pack	Other Gravel Pack	#3	Well Sand

Other Observations:

Borehole Specifications		
Depth from Surface Feet to Feet	Borehole Diameter (inches)	
0	100	10

Certification Statement			
I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief			
Name	FISCH DRILLING		
	Person, Firm or Corporation		
3150 JOHNSON ROAD	HYDESVILLE	CA	95547
Address	City	State	Zip
Signed	<i>electronic signature received</i>	10/04/2021	683865
	C-57 Licensed Water Well Contractor	Date Signed	C-57 License Number

Attachments
Ozanian Map.pdf - Location Map

DWR Use Only			
CSG #	State Well Number	Site Code	Local Well Number
		N	W
Latitude Deg/Min/Sec		Longitude Deg/Min/Sec	
TRS:			
APN:			

APPENDIX 2

Dry Season Well Test

DRY WEATHER WATER PRODUCTION TEST DRAWDOWN DATA

Owner: Charles Ozanian

APN: 100-311-019

Well Location latitude: 40.58092

Longitude: -124.29314

_____1/4	_____1/4	_____1/4	Section: 03	Township: 02 N	Range 02 W
----------	----------	----------	--------------------	-----------------------	-------------------

Type of Water Measuring Equipment: Water Meter

Date Test Performed: September 9, 2022

Company Performing Test: Fisch Drilling

Measured By: Matt F., David F.

TIME DATA	WATER LEVEL DATA	DISCHARGE DATA
<p><u>PUMP ON</u> Date: 9/6/22 Time: 6:30 am (t₀)</p> <p><u>PUMP OFF</u> Date: 9/6/22 Time: 10:30 pm (t₁)</p> <p><u>DURATION OF AQUIFER TEST</u> Pumping: 16 hrs Recovery: 30 min</p>	<p>STATIC WATER LEVEL: 63.6'</p> <p>MEASURING POINT: Well head</p> <p>HEIGHT OF MEASURING POINT ABOVE GROUND: 0.5'</p>	<p>HOW WAS DISCHARGE MEASURED? Water Meter</p> <p>DEPTH OF PUMP/AIRLINE: 98'</p>

Pumping Data:

Specific Capacity:

Date	Clock Time	Time Since Pump Started (min.) t ₀	Pumping Water Level Measurement (ft)	Pump Rate (discharge) gpm	Comments on Factors Affecting Test Data
9/8	06:30	0	63.6'	8	
9/8	06:31	1	68.3'	8	
9/8	06:32	2	73.6'	8	
9/8	06:33	3	74.3'	8	
9/8	06:34	4	75.9'	8	
9/8	06:35	5	76.4'	8	
9/8	06:36	6	78.1'	8	
9/8	06:37	7	78.2'	8	
9/8	06:38	8	78.2'	6.57	
9/8	06:39	9	78.2'	6.57	
9/8	06:40	10	78.1'	6.57	
9/8	06:45	15	78.6'	5.34	
9/8	06:50	20	78.7'	6.13	
9/8	06:55	25	78.3'	6.36	
9/8	07:00	30	78.23'	6.36	
9/8	07:05	35	78.3'	6.36	
9/8	07:10	40	78.4'	6.51	
9/8	07:15	45	78.3'	6.51	

Date	Clock Time	Time Since Pump Started (min.) t_0	Pumping Water Level Measurement (ft)	Pump Rate (discharge) gpm	Comments on Factors Affecting Test Data
9/8	07:30	1:00	78.3'	6.52	
9/8	07:45	1:15	78.3'	6.52	
9/8	08:00	1:30	78.3'	6.52	
9/8	08:30	2:00	78.3'	6.52	
9/8	09:00	2:30	78.3'	6.52	
9/8	10:00	3:30	78.3'	6.52	
9/8	11:00	4:30	78.3'	6.52	
9/8	12:00	5:30	78.3'	6.52	
9/8	13:00	6:30	78.3'	6.52	
9/8	14:00	7:30	78.3'	6.52	
9/8	14:30	8:00	78.3'	6.52	
9/8	15:00	8:30	78.3'	6.52	
9/8	16:00	9:30	78.3'	6.52	
9/8	17:00	10:30	78.3'	6.52	
9/8	18:00	11:30	78.4'	6.52	
9/8	18:30	12:00	78.3'	6.52	
9/8	19:00	12:30	78.3'	6.52	
9/8	20:00	13:30	78.3'	6.52	
9/8	21:00	14:30	78.4'	6.52	
9/8	22:00	15:30	78.4'	6.52	
9/8	22:30	16:00	78.4'	6.52	End of drawdown test
		16:30			
		17:30			
		18:30			
		19:30			
		20:30			
		21:30			
		22:30			
		23:30			
		24:00			

DRY WEATHER WATER PRODUCTION TEST RECOVERY DATA

Owner: Charles Ozanian

APN: 100-311-019

Well Location latitude: 40.58092

Longitude: -124.29314

_____1/4	_____1/4	_____1/4	Section: 03	Township: 02 N	Range 02 W
----------	----------	----------	--------------------	-----------------------	-------------------

Type of Water Measuring Equipment: Water Meter

Date Test Performed: September 9, 2022

Company Performing Test: Fisch Drilling

Measured By: Matt F., David F.

TIME DATA	WATER LEVEL DATA	DISCHARGE DATA
<p><u>PUMP ON</u> Date: 9/6/22 Time: 6:30 am (t₀)</p> <p><u>PUMP OFF</u> Date: 9/6/22 Time: 10:30 pm (t₁)</p> <p><u>DURATION OF AQUIFER TEST</u> Pumping: 16 hrs Recovery: 30 min</p>	<p>STATIC WATER LEVEL: 63.6'</p> <p>MEASURING POINT: Well head</p> <p>HEIGHT OF MEASURING POINT ABOVE GROUND: 0.5'</p>	<p>HOW WAS DISCHARGE MEASURED? Water Meter</p> <p>DEPTH OF PUMP/AIRLINE: 98'</p>

Recovery Data:

Date	Clock Time	Time Since Pump Shutoff (min.) t ₁	Recovery Water Level Measurement (ft)	Comments on Factors Affecting Test Data
9/8	22:30	0	78.4'	
9/8	22:31	1	76.3'	
9/8	22:32	2	73.8'	
9/8	22:33	3	70.6'	
9/8	22:34	4	69.1'	
9/8	22:35	5	67.9'	
9/8	22:36	6	67.4'	
9/8	22:37	7	66.9'	
9/8	22:38	8	66.3'	
9/8	22:39	9	66.2'	
9/8	22:40	10	65.8'	
9/8	22:45	15	65.6'	
9/8	22:50	20	64.8'	
9/8	22:55	25	64.1'	
9/8	23:00	30	63.7'	End of recovery test
		35		
		40		
		45		