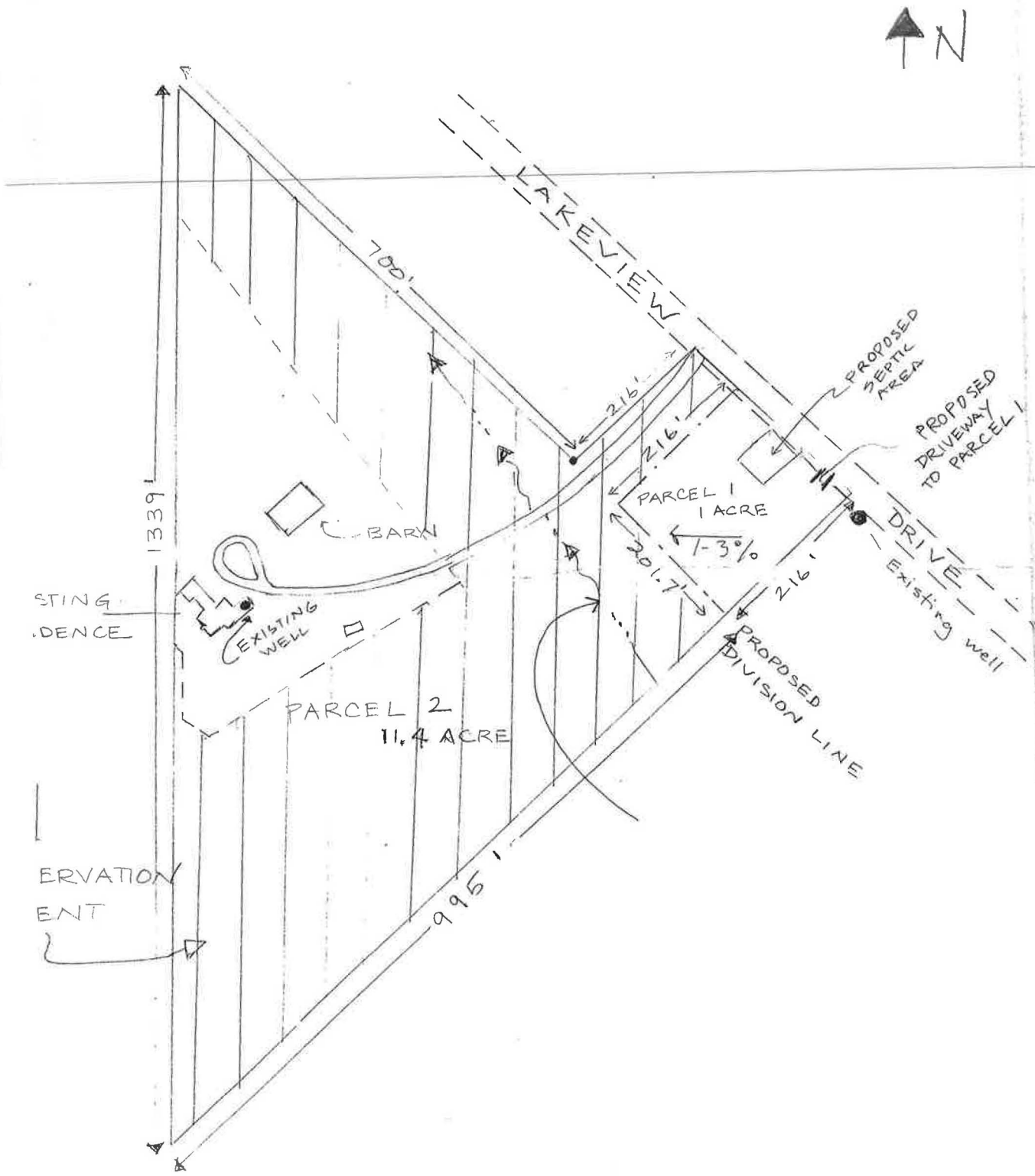
VE MINOR SUBDIVISION MAP

USE BLACK SOFT LEAD PENCIL

ARLY, PRESS HARD ENOUGH TO MAKE A CLEAR LINE



JAQUES, DEBORAH
MINOR SUBDIVISION

MS2002C
110-020-022

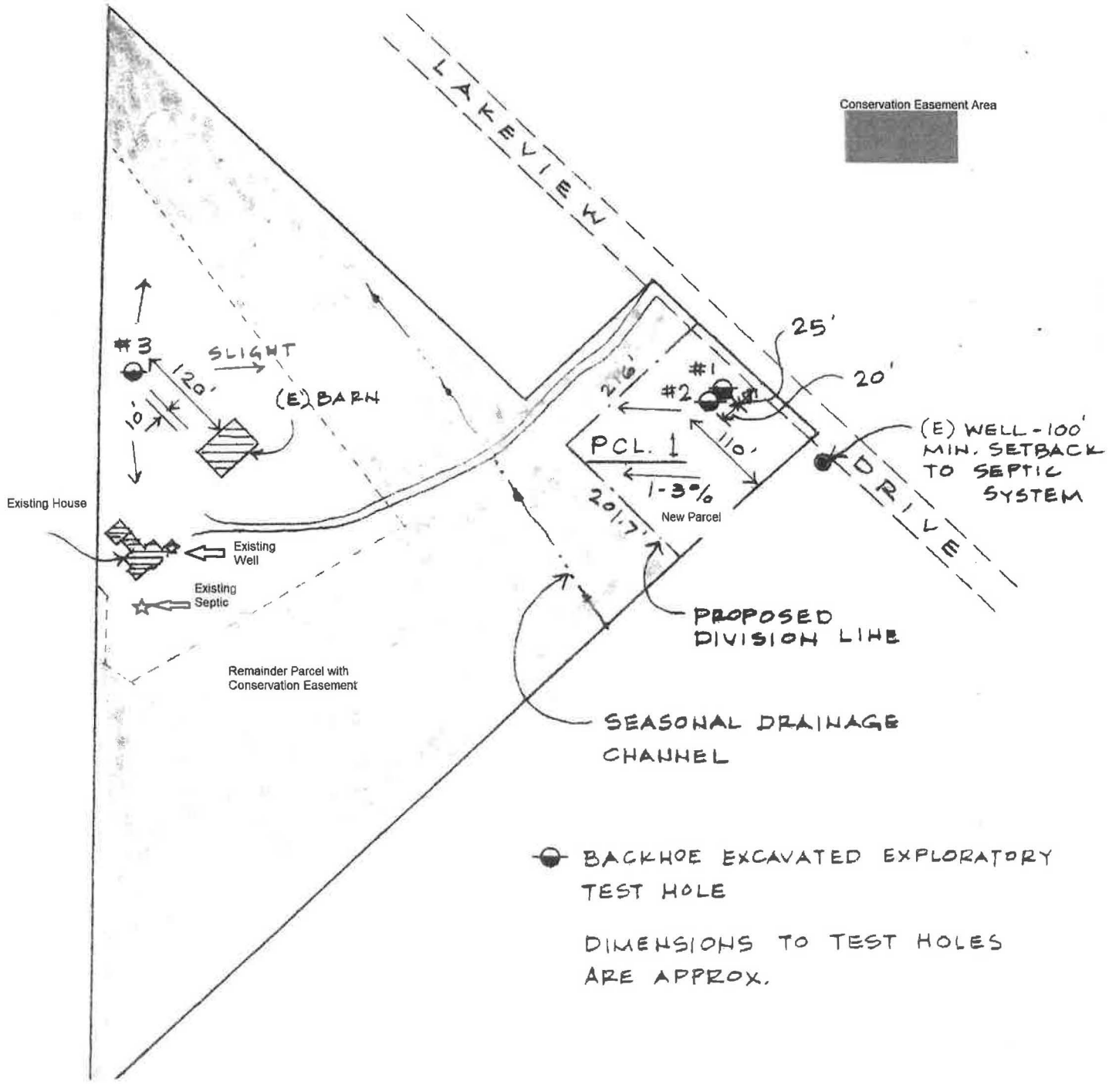
DATE 5/5/06

DATE

SUBJECT LOCATION MAP
APN 110-020-22
PLOT- TENTATIVE MAP

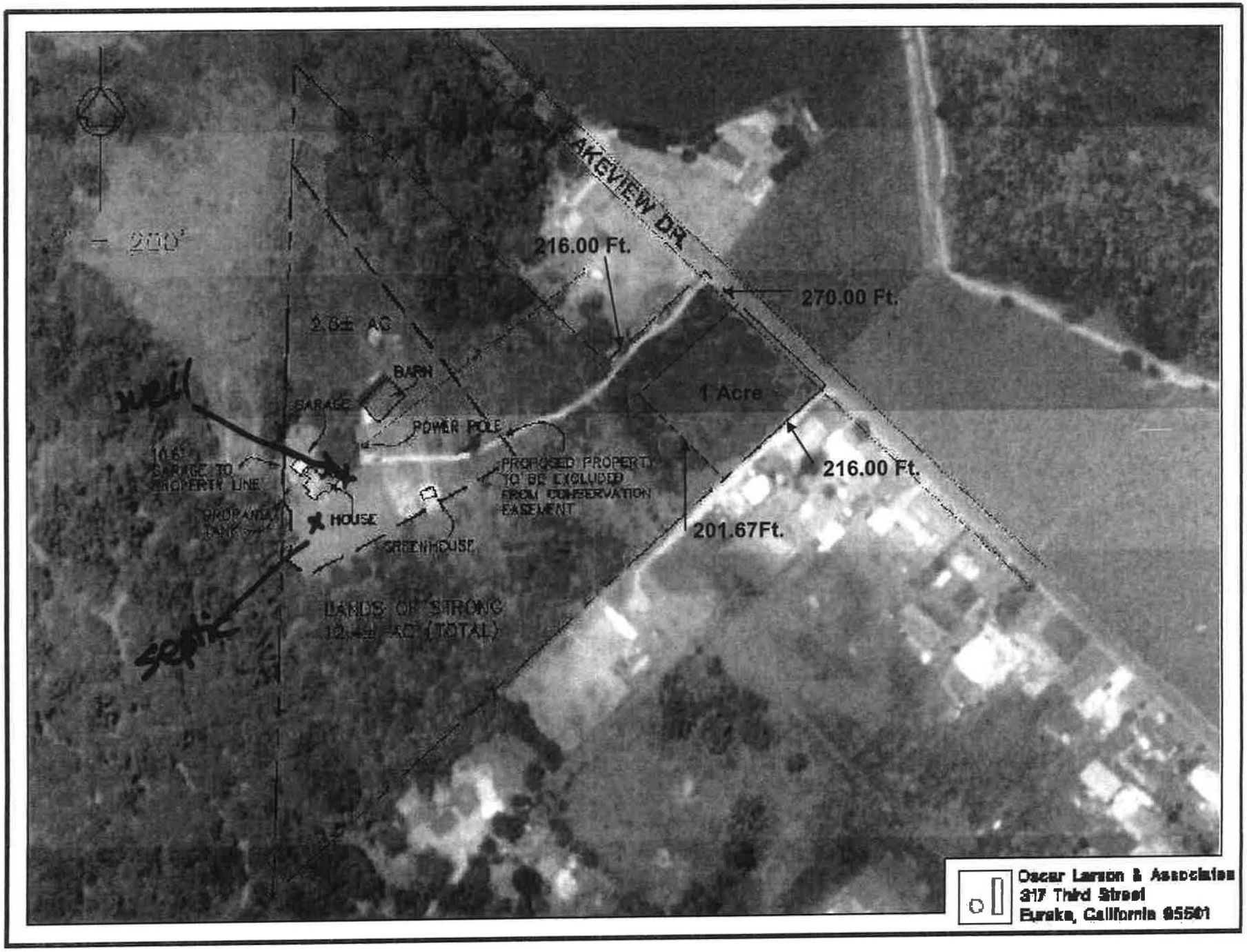
SHEET NO. 1 OF 1

JOB NO. 06032



BACKHOE EXCAVATED EXPLORATORY TEST HOLE

DIMENSIONS TO TEST HOLES ARE APPROX.



Plot Plan 1151 Lakeview Drive Jaques property
Existing Conditions

LEE TROMBLE ENGINEERING
879 J Street, Ste. A
Crescent City, CA 95531

Phone (707) 464-1293
FAX (707) 465-8358

May 8, 2006

Deborah Jaques
1151 Lakeview Drive
Crescent City, CA 95531

re: On-Site Sewage Disposal Evaluation
APN 110-020-22

Dear Ms. Jaques:

This is to report on our on-site sewage disposal evaluation of Assessor Parcel 110-020-22, Del Norte County. It is our understanding that you propose to subdivide this property into two (2) parcels. It is intended that both of those parcels will be used for a single family residence. It is further our understanding that the water supply will be from a private wells.

This evaluation report assumes that for each proposed parcel the estimated on-site waste water discharge will be 450 gallons per day which is typical design criteria for a three (3) bedroom residence.

Parcel 2, as shown on the attached map, is presently developed with a single family residence and has a functioning on-site disposal system, believed to be a conventional septic tank/leach field. As a result we limited our evaluation of that parcel to the availability of an adequate "reserve disposal field area".

The evaluation consisted of a site inspection, the examination of three (3) backhoe excavated exploratory pits, the collection and testing for textural qualities of a representative soil sample, and the review of data and reports for nearby properties previously evaluated by this office. Attached for your information is an evaluation summary, location map, exploratory logs, and the laboratory results of the soil sample.

The textural analysis of the soil sample indicates soil percolation qualities suitable for on-site disposal of septic tank quality effluent. The quality of the soils are such that field percolation tests were not necessary. In the absence of the percolation tests, we recommend the EPA long term loading rate of 0.65 gallons per day per square foot for the design of the disposal field.

Groundwater was encountered at a depth of just over 8 feet in our primary excavation on Parcel 1. We observed no groundwater to a depth of over 8 feet in our reserve area excavation on Parcel 2. These were "wet weather" observations, therefore, represent the high ground water condition. Soil on the site had in excess of 15% silt and clay which requires a 5 foot separation between the bottom of the leaching trenches and the "highest anticipated ground water". As a result, we recommend that the leaching trenches be no deeper than 3 feet on both Parcels 1 and 2.

Based on our field work and data analysis, it is our opinion that both proposed parcels as shown on the attached map are suitable for a conventional on-site sewage disposal system (septic tank/leach field system) within specified limitations and subject to system specifications.

For both proposed parcels with a three (3) bedroom residence, it is our recommendation that a 1200 gallon septic tank conforming to the requirements of the Uniform Plumbing Code be used. It is further our recommendation that for Parcels 1 and 2 the disposal field consist of 170 lineal feet of leaching trench as shown on the attached sketch. For Parcel 1 the leach field must be installed in the area of Hole #1. In the event it ever becomes necessary to replace the existing leach field on Parcel 2, the new leach field can be installed in the area of Hole #3.

As stated above, it is our opinion that both proposed parcels are suitable for a conventional on-site sewage disposal system (septic tank/leach field system) within some specified limitations and subject to certain system specifications. If a change in conditions occurs such as a change in the size of the project, change in the location of the disposal field, change in the disposal system specifications, a substantial physical change to the property or other similar change, it will be necessary to review this report and the data herein in the context of those changes. This could require additional field and laboratory work to confirm site suitability and/or to modify the specifications for the on-site sewage disposal system.

If you need any additional information on this matter or if we can be of further assistance please feel free to call.

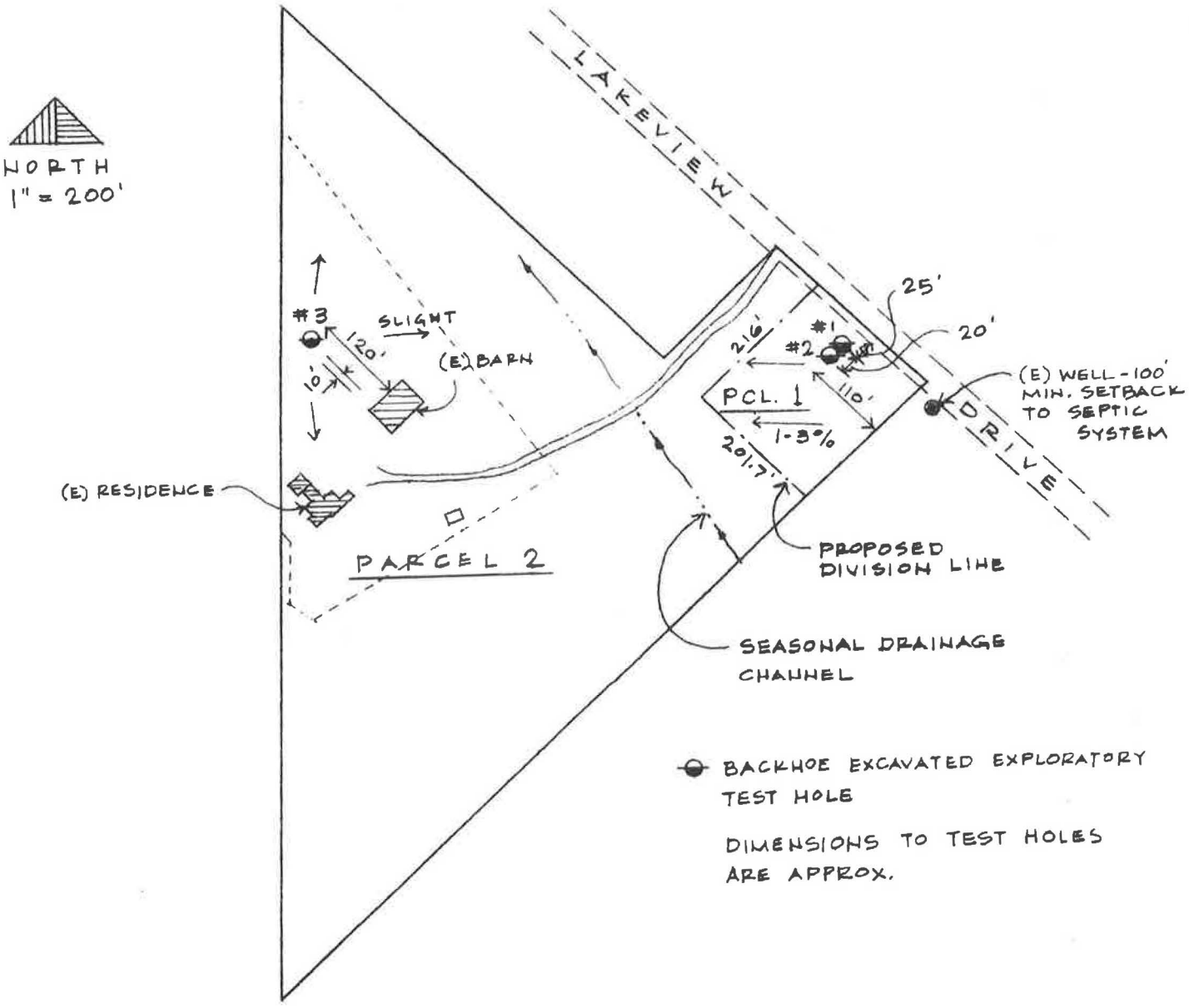
Very truly yours,



Lee Tromble

BY LT DATE 5/5/06 SUBJECT LOCATION MAP APN 110-020-22 SHEET NO. 1 OF 1

CHKD. BY ..... DATE ..... JOB NO. 06032



LEE TROMBLE ENGINEERING

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Crescent City, CA 95531

Phone (707) 464-1293
FAX (707) 465-8358

SITE EVALUATION SUMMARY

OWNER: DEBORAH JAQUES DATE: 5/5/06

ADDRESS: 1151 LAKEVIEW DRIVE

CRESCENT CITY, CA APN 110-020-22

LOCATION: END OF LAKEVIEW DRIVE

LOT SIZE: 13.87 AC WATER SYSTEM: PRIVATE WELL

GROUND SLOPE: SLIGHT - SEE LOCATION MAP

SETBACKS	SEPTIC TANK	LEACH FIELD
Well	100'	100'
Stream	100'	100'
Drainage Channel	50'	50'
Ocean, Lake, etc.	100'	100'
Bluff or Cutbank	25'	25'

EXCAVATION PRIMARY AREA: HOLE # 1 & #3

EXCAVATION REPLACEMENT AREA: HOLE # 2

OTHER EXCAVATIONS: NONE

DEPTH TO HARDPAN, BEDROCK, ETC.: NONE TO 8'

DEPTH TO GROUNDWATER: HOLE #1 - 8'-1"; HOLE # 2 - 7'-3"; HOLE #3 -> 8.3'

DEPTH TO MOTTLING: WET SEASON OBSERVATION

OTHER FACTORS: SEE ATTACHED

SOILS ANALYSIS ZONE: 2 PERCOLATION RATE: -

DEPTH OF SOIL UNDER LEACH FIELD REQUIRED: 3' ACTUAL: > 3'

REPLACEMENT AREA AVAILABLE: YES

ADEQUATE: YES

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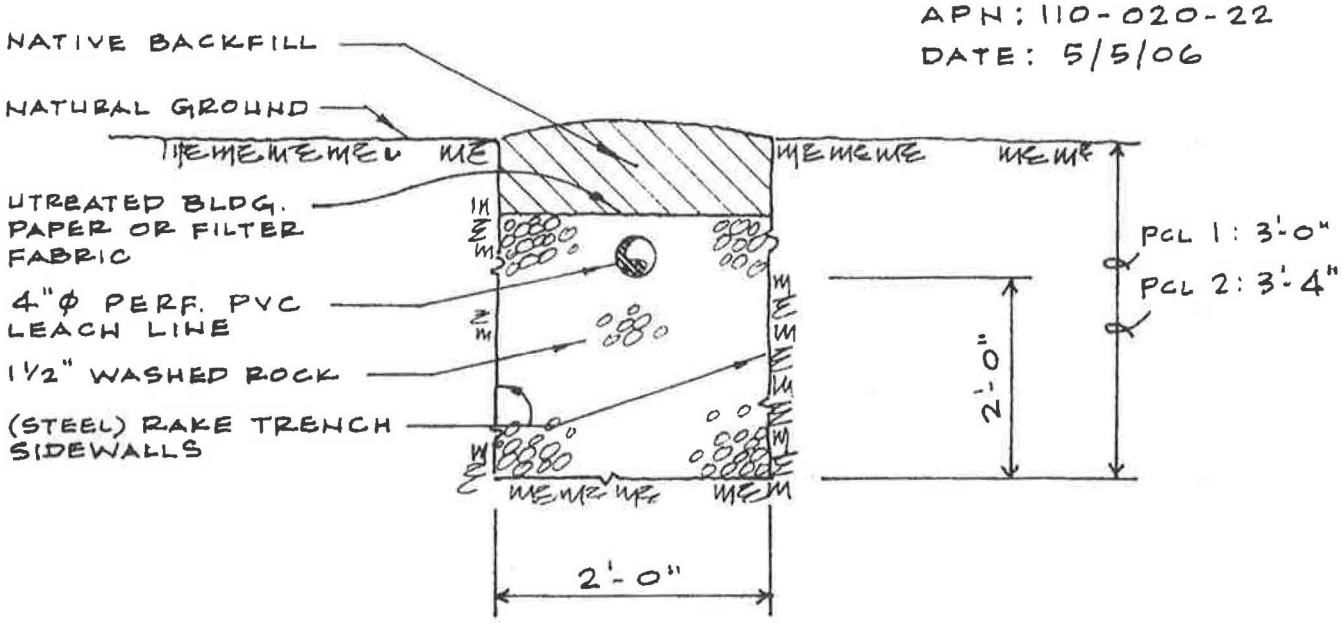
Crescent City, CA 95531
Phone (707) 464-1293
FAX (707) 465-8358

PARCELS 1 & 2

APN: 110-020-22
DATE: 5/5/06



SECTION - DISPOSAL TRENCH

NO SCALE

FLOW: (3) BDRM HOME, 150 GPD/BDRM

$Q = 3(150) = 450$ GPD

LOADING RATE:

USE 0.65 GPD/BDRM

ABSORPTION AREA:

$$AA = \frac{450}{0.65} = 690 \text{ FT}^2$$

TRENCH:

$$L = \frac{690}{4} = \underline{170 \text{ LIN. FT.}}$$

NOTES:

1. USE (3) – 57' LONG TRENCHES, 10' CENTER TO CENTER.
2. USE DISTRIBUTION BOX FOR EQUAL FLOW DISTRIBUTION BETWEEN TRENCHES.
3. TRENCHES SHALL PARALLEL NATURAL GROUND CONTOURS.

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EXPLORATION LOG

OWNER DEBORAH JAQUES
APN 110-020-22
ADDRESS 1151 LAKEVIEW DRIVE
DATE 4/27/06
CRESCENT CITY, CA
LOG BY LT
JOB NO. 06032
HOLE NO. 1
REMARKS BACKHOE

DEPTH (FT.)	DESCRIPTION / REMARKS	COLOR	MOIST.	SAMPLE
0				
1	LOAM TOPSOIL - BLOCKY FRIABLE	MED. BRN.	DAMP	No
	1.5'			
2	LOAM / SANDY LOAM, BLOCKY, FRIABLE	OR. BRN.	DAMP	No
	2.3'			
3	SANDY CLAY LOAM / SANDY LOAM BLOCKY → GRANULAR INCR. SAND W/ DEPTH	OR. TINT ABOVE, YELLOW BRN.	DAMP	YES (1)
4				
5				
6				
7	GROUNDWATER @ 8.1'			
8	8.1' LOAMY SAND W/ GRAVELS GRANULAR	GRAY & DULL YEL. BRN	SAT.	No
9				
10				

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Crescent City, CA 95531

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FAX (707) 465-8358

EXPLORATION LOG

OWNER DEBORAH JAQUES
ADDRESS 1151 LAKEVIEW DRIVE
CRESCENT CITY, CA
JOB NO. 06032
REMARKS BACKHOE

APN 110-020-22
DATE 4/27/06
LOG BY LT
HOLE NO. 2

DEPTH (FT.)	DESCRIPTION / REMARKS	COLOR	MOIST.	SAMPLE
0				
1	LOAM TOPSOIL - BLOCKY FRIABLE	MED-DARK BRN.	DAMP	No
2	1.9' LOAM / SANDY LOAM - BLOCKY, FRIABLE	DK. BRN.	DAMP	No
3	2.8' SANDY CLAY LOAM / SANDY LOAM BLOCKY → GRANULAR INCR. SAND W/ DEPTH	YELLOW BRN.	DAMP	No, LIKE (1)
4				
5				
6	GROUNDWATER @ 7.2'			
7	LOAMY SAND / GRAVEL GRANULAR	GRAY & DULL YEL. BRN.	SAT	No
8				
9				
10				

LEE TROMBLE ENGINEERING

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Crescent City, CA 95531

Phone (707) 464-1293
FAX (707) 465-8358

EXPLORATION LOG

OWNER DEBORAH JAQUES
APN 110-020-22
ADDRESS 1151 LAKEVIEW DRIVE
DATE 4/27/06
CRESCENT CITY, CA
LOG BY LT
JOB NO. 06032
HOLE NO. 3
REMARKS BACKHOE

DEPTH (FT.)	DESCRIPTION / REMARKS	COLOR	MOIST.	SAMPLE
0				
1	LOAM TOPSOIL - BLOCKY FRIABLE	DARK BRN	DAMP	NO
2	2.2'			
	SANDY LOAM/ SANDY CLAY LOAM BLOCKY, FRIABLE	DULL YEL. OR. BRN.	DAMP	NO
3	2.8'			
4	SANDY CLAY LOAM/ SANDY LOAM BLOCKY → GRANULAR INCR. SAND W/ DEPTH	YELLOW BRN.	DAMP	NO, LIKE (1)
5				
6	NO GROUNDWATER TO 8.3'			
7				
8	8.1'			
	SAND / GRAVELS, GRANULAR	GRAY & YEL. BRN.	MOIST	NO
9				
10				

Sample	6032
Pan	8.10
Sample+P	481.80
Dry S+P	403.10
Grav+Siev	465.20
Sieve	437.50
Soil+Dish	79.30
Dish	8.10
HR40s	32.50
T40s	68.50
HR2hr	18.00
T2hr	69.00
Samp Wgt	473.70
Dry Samp	395.00
Moisture	78.70
WC%	16.61
Gravel	27.70
CP%	7.01
Soil	71.20
HR40s	32.50
adj	-6.40
Dens40s	26.10
HR2hr	18.00
adj	-6.30
Dens2hr	11.70
Sand	63.34
Clay	16.43
Silt	20.22

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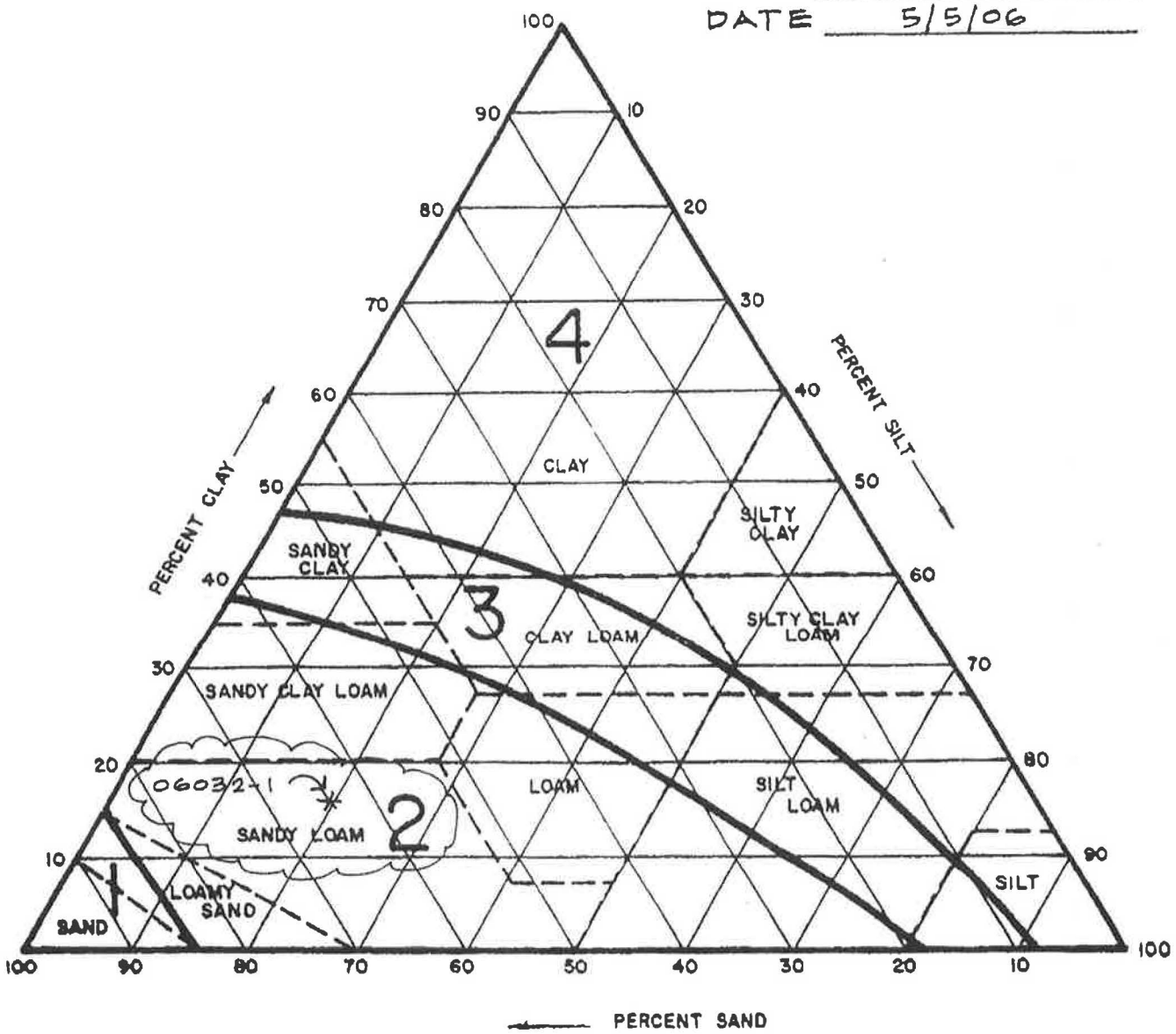
Crescent City, CA 95531

Phone (707) 464-1293
FAX (707) 465-8358

SOIL PERCOLATION SUITABILITY CHART

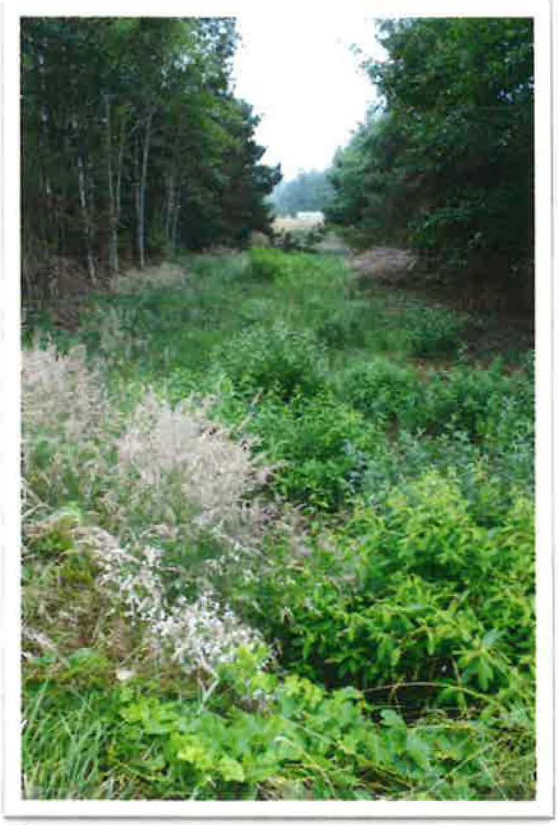
APN 110-020-22
DATE 5/5/06



ZONE 1 = COARSE
ZONE 2 = ACCEPTABLE
ZONE 3 = MARGINAL
ZONE 4 = UNACCEPTABLE

JOB NO. 06032
CLIENT NAME: JAQUES

BIOLOGICAL ASSESSMENT
1151 LAKEVIEW DRIVE SUBDIVISION
CRESCENT, CITY, CA



Prepared by

Crescent Coastal Research, Wildlife Consulting

Prepared for:
Deborah Jaques,
375 3rd Street, Astoria, Oregon 97103

18 March 2019

CONTENTS

Introduction 3
Legal Description, Proposed action and Zoning compliance 3
Regional and Biological Setting 6
Natural Setting 6
Human Uses and Development in the Area 8
Methods 9
Results: Existing Conditions 10
Habitat Types 10
Special Status Species 12
Special Habitat Element 14
Effects of Proposed Action on Habitat 17
Recommendation 17
References 18
Qualifications 18

FIGURES

1: General location of subject property 4
2: Approximate property boundaries, conservation easement and proposed subdivision ... 5
3: Subject property during flood stage of Lake Earl 6
4: FEMA flood map in area of the subject property 7
5: Diagram of major habitat types found on the subject property 11

TABLES

1: Partial plant list for 'action area' of proposed subdivision 12
2: Listed and special concern species 14

Cover photo: Drainage ditch adjacent to proposed subdivision in 2012, after recent clearing by Del Norte County.

INTRODUCTION

The purpose of this biological resource assessment is to evaluate the potential for negative impacts on sensitive natural resources from a minor subdivision on a 12.4-acre property near Lake Earl in Del Norte County, California. The landowner seeks to split off one acre from the parent parcel, resulting in one new unit consistent with existing zoning and deed restrictions. The parcel lies within the coastal zone and is subject to conditions outlined in the Del Norte County Local Coastal Plan.

LEGAL DESCRIPTION, PROPOSED ACTION AND ZONING COMPLIANCE

The subject property is a 12.4 acre parcel (No. 110-020-22) located approximately four miles northeast of downtown Crescent City in rural Del County in the California Coastal Zone, west of Lake Earl Drive (Fig. 1, https://www.coastal.ca.gov/maps/czb/). The property lies within planning Area 3 of the Local Coastal Plan (County of Del Norte, 1983).

Legal Description

1151 Lakeview Drive: A.P. # 110-020-22. Owner: Deborah Jaques (djaques@pacificecologic.org). The Del Norte County Assessor's office recorded the parcel as 13.87 acres, however, a survey conducted by R.B. Davis in 1981 indicate that it is a 12.4-acre parcel (Oscar Larson and Associates, R.B. Davis Company, recorded January 30, 1981, Book 9 of maps, page 39). Hereafter the parcel will be considered as 12.4 acres.

Proposed Modification / Action

The landowner proposes a minor subdivision to split off one acre at the north end of the property along Lakeview Drive from the rest of the property (Fig. 2). This proposed action has been planned such that the remainder of the property will retain the existing wildlife habitat value and uses, with minimal environmental impacts from the lot split. The location of the proposed action is hereafter referred to as Parcel B, whereas the remainder of the property is referred to as 'A'. We refer to Parcel B as the 'action area' and the existing parcel as "the property." An application for this subdivision was previously submitted by the same landowner (9/13/2007) but regarded incomplete due to the occurrence of a drainage ditch near the proposed action area and the need for a biological assessment addressing the wetland Environmentally Sensitive Habitat Area (ESHA).

Zoning

There are two different zonings on the property (Del Norte County Zoning Map Area C-8). Approximately 7 acres along the southeastern side of the property are zoned RRA-1 and are completely undeveloped. The remaining 5 acres are in A-5 zoning; this area includes all existing structures, which

include a single-family residence. There has not been any agricultural use of the property in over 15 years

Conservation Easement Deed Restriction

Most of the existing parcel was permanently preserved as natural habitat through a conservation easement with the State of California Wildlife Conservation Board in 2006 (App. A). The easement was established on 8.6 acres of the property to protect native species, coastal forest habitat and wetlands in the vicinity of the Lake Earl Wildlife Area. This action prevented potential subdivision of up to 7 additional lots in the RRA-1 zoning area. Two portions of the original parcel are excluded from the conservation easement. These areas were mutually agreed upon to 1) allow the landowner flexibility build additional structures and manage vegetation around the house and 2) provide an opportunity to subdivide one lot. The areas excluded from the easement include 2.8 acres of open field surrounding and including the existing structures and the one-acre currently proposed for subdivision along Lakeview Drive (Fig. 2).

Consistency with Deed Restriction, Zoning, and Existing Uses

The proposed subdivision will be consistent with current zoning, the Local Coastal Plan, and surrounding land uses. The remainder parcel (A) will be reduced to 11.4 acres with an existing home in Ag-5 zoning, encumbered by an 8.6-acre conservation easement. The proposed subdivision will keep the conservation easement area in single ownership, as verbally mandated by the CDFW (D. Jaques, pers. comm). The CDFW has also stated that the easement has no bearing on land use not included in the deed, therefore there is no conflict with splitting off the one-acre parcel as proposed.

The one-acre parcel (B) will be within the RRA-1 zoning and contiguous with the low-density residential area along the south side of Lakeview Drive. The new parcel will be consistent with average parcel size in that rural residential area and will not be encumbered by the conservation easement.

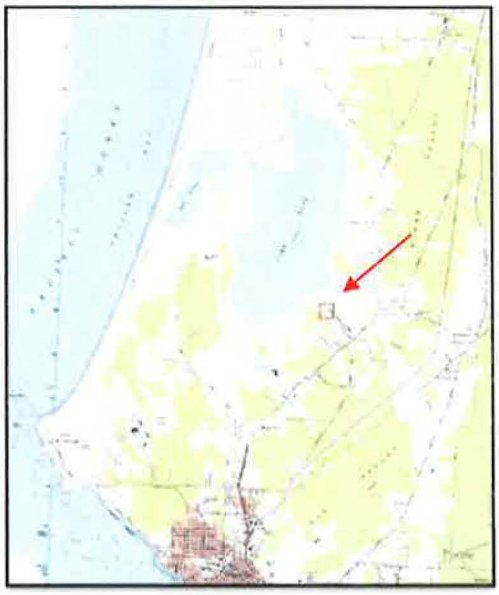


Figure 1. General location of subject property indicated by red rectangle. Base map is USGS7.5 min quadrangle, Crescent City, CA.

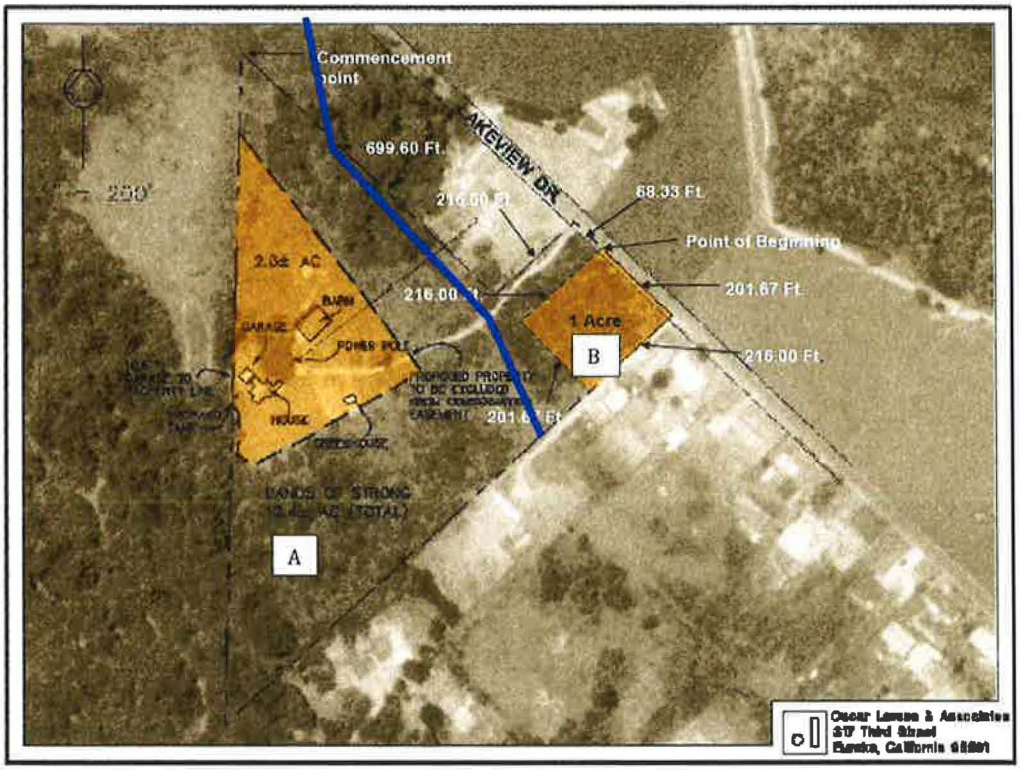


Figure 2. Lands excluded from conservation easement, approximate location of drainage (heavy line) and proposed subdivision at 1151 Lakeview Drive.

REGIONAL AND BIOLOGICAL SETTING

NATURAL SETTING

The property is located on a prehistoric marine terrace and more recent alluvial floodplain originating from the Smith River. The area is characterized by low elevation, low relief forested lands, open grasslands, and wetlands in the coastal zone. Nearby native forest communities are dominated by Sitka Spruce (*Picea sitchensis*). Redwood dominated forests occur at slightly higher elevations further inland. The parcel is near the southeastern shore of the Lake Earl Wildlife Area (LEWA), a wetland complex owned and managed by the CDFW.

Lake Earl is an intermittent estuary associated with diverse habitat types and high species richness. The brackish waters of the lagoon are separated from the ocean by a sand berm much of the year. The lagoon fills with rainwater during the wet season. The beach berm typically breaches in winter and spring, usually artificially but sometimes naturally, and the lagoon shrinks from about 5300 acres of water surface to 2200 acres. Shoreline contours change with variation in water levels and can cause flooding in some surrounding areas, however most flooded areas are included in the state owned LEWA. Jordan Creek, in the southeastern sector of the lagoon, is one of the primary tributaries and is an occasional salmon bearing stream.

Lake Earl lagoon waters do not encroach on any portion of the subject property under flood conditions (Fig. 3). The shoreline is greater than 200 m away from the subject property at the highest water levels. On the northwest side of the property, near the house, a large open meadow gradually drops in elevation eventually giving way to a wide fringe of freshwater emergent plants inside the border of the LEWA. There is no fringing freshwater emergent wetland associated with Lake Earl on the subject property. The property lies outside the 100- year floodzone mapped by FEMA (Fig. 4). Most of the property is at or above 20 feet msl.



Figure 3. Subject property in relation to Lake Earl at very high-water levels in 2008. White polygon indicates approximate boundary of existing parcel, yellow placemark indicates approximate location of septic tank site on the 1-acre subject area. Image from Google Earth.

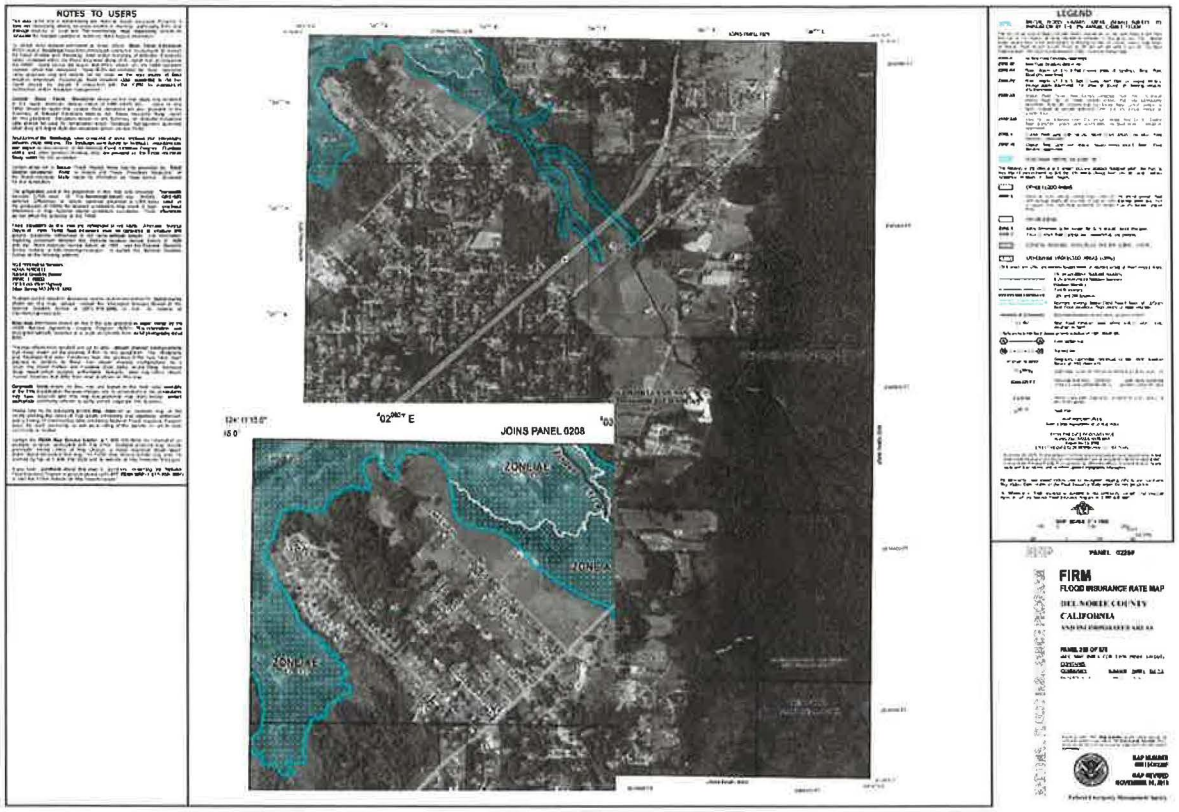


Figure 4. FEMA flood insurance rate map no. 06015C0220F, revised November 26, 2010, with inset close-up of the property area.

HUMAN USES AND DEVELOPMENT IN THE AREA

The subject property lies within a mixed use rural and rural-residential area including private and public lands. The northeast side of Lakeview Drive is agricultural, with grazed pasture lands and one single family residence. The southwest side of the road is lined with single family homes, many on one-acre parcels. Lakeview Drive ends at the LEWA, where there is an undeveloped boat launch (gravel road) that provides public access to Lake Earl. The subject property and a neighboring property adjacent to the wildlife area are the largest parcels on the southwest side of Lakeview Drive, at roughly 12 and 4 acres, respectively. Further southwest of the subject property lies a 20-acre undeveloped tract of privately-owned coastal forest and wetland, accessed through roads associated with the Vipond Subdivision (see Figs 2 and 3). All three of these larger properties share borders with the LEWA.

The house at 1151 Lakeview Drive was built in the 1950's and has been used as used as a single- family residence. It is currently used as a rental property and maintained for wildlife habitat. The house has its own well and septic tank. Existing structures include a house, large storage shed, and greenhouse. Cows and horses have historically grazed on some of the pasture associated with the property but there has been no agricultural use in recent decades. There is an old stock well on Parcel A, an area that was used for hobby farming by the original owners in the 1960's (D. Jaques, pers. comm). About three acres of

grassland around the house have been maintained by mowing. Much of the forested area was logged in the past century, although many large old-growth Sitka Spruce trees remain, surrounded by grassland or younger forest.

A seasonal drainage runs through the property and empties into Lake Earl. During stormwater runoff, water flows through two 42-inch metal culverts under the gravel driveway leading to the house. Both culverts had less than 10% obstruction from gravel and debris on their base and appeared in good functioning condition. This channel was apparently historically artificially dug or deepened to help funnel rainwater away from nearby housing and into the lagoon. The drainage flows across other private properties and pastures upstream, and into a vegetated slough downstream of the property, reaching Lake Earl through a larger culvert under Lakeview Drive.

The drainage ditch was historically maintained by the Del Norte County Public Works Department using crews from the California Conservation Corps through an agreement with previous landowners. Wetland and riparian vegetation clearing occurred along the entire length of the ditch on the subject parcel. As recently as 2013, Rural Human Services coordinated cutting and removal of vegetation in the riparian corridor using chainsaws and weed-eaters. The landowner notified the Del Norte County Planning Department that the habitat was protected under a Conservation Easement with the State of California and that the County had earlier considered the ditch an ESHA. No ditch maintenance or wetland alteration is known to have occurred since then and mature trees and other woody vegetation are currently well-established in the channel (D. Jaques, pers. comm).

METHODS

This biological assessment included multiple site visits and field surveys at different times of year during 2017-2019. We characterized vegetative habitat types, inspected the area for wetlands, surveyed the drainage for fish habitat, documented special wildlife and habitat elements, and assessed habitat suitability for threatened and endangered and other special status species. The California Wildlife Habitat Relationship System (CWHR) was used for classifying habitat types. We searched the CNDDB database and CDFW websites to compile a list of special status species. We use the CNDDB quick viewer to compile a list of species for the Crescent City Quadrangle and narrowed that list to those potentially occurring on the subject property. The ACOE Wetlands Delineation Manual, online research, Google Earth imagery, and personal consultation with Del Norte County staff and adjacent landowners were also used to inform this assessment. A formal wetland delineation along the drainage ditch near the action area was performed by B. Bogar, Critical Areas Consulting, Astoria, Oregon (Appendix B). No other wetlands occurred near the action area.

This assessment addresses habitat conditions and biologically sensitive elements of the property as a whole. However, for all functional purposes, the only area affected by the lot split (Parcel B) is northeast of the drainage described above, and on the eastern side of the driveway. No impacts from development of the proposed separated acre are anticipated beyond this action area due to elevational barriers (driveway, drainage), the adjacent conservation easement, and surrounding private property status (Figs. 2).

RESULTS: EXISTING CONDITIONS

HABITAT TYPES

There are 5 basic habitat types on the subject property: riparian, freshwater emergent, Sitka Spruce forest, shrub (mixed herbaceous), and developed/pasture (Fig. 5). The habitat type in the action area (Parcel B) is mixed herbaceous/scrub.

Riparian/Freshwater Emergent

A narrow riparian strip associated with the drainage described above, occurs on the property and connects to the wetlands at Lake Earl. The drainage runs east to west through short grass pastures and backyards of homes along Lakeview Drive but most other properties 'upstream' have not allowed development of significant riparian vegetation. The drainage deepens where it meets the property to a channel about 4 feet deep and 12 feet wide. Vegetation in the drainage adjacent to the lot split action area is sedge dominated, with willow and ranunculus also. This upper drainage area is seasonal and flows only during periods of heavy rainfall, it is dry most of the year. No wetland habitat associated with the ditch extends onto the proposed subdivision (Parcel B, see Appendix B).

West of the driveway, the drainage is wider, the soil is less well-drained and the plant assemblage includes a few 'true' wetland species such as skunk cabbage and water parsley, though still dominated by carex sedge (a facultative wetland species in Del Norte Co). Here the drainage lies within closed canopy Sitka Spruce forest habitat. Where the habitat of the drainage is labeled 'Freshwater emergent/Riparian', the only well-developed wetland flora exists at the low end of the property in the wettest areas. The riparian strip associated with the drainage may still be recovering from County directed clearing prior to 2013.

High water levels in Lake Earl do not enter the drainage as far up as the subject property. For example, on October 14, 2007, the lake level was >10 ft. above msl but there was no water in the drainage on the property.

Sika Spruce Forest, Coniferous

The two patches of Sitka Spruce forest on the property connect with larger tracts of mature Spruce forest on adjacent properties (Fig. 5). Western hemlock and a few redwood occur but are not dominant. The forest stand south of the house is dense early to mid-seral stage closed canopy spruce with several large residual old growth trees. Understory consists largely of invasive English ivy, sword fern, and Himalayan blackberry. The forest associated with the riparian strip west of the driveway has more structural complexity, generally larger Spruce mixed with Alder, and includes carex and sedge in the understory. Both stands are negatively impacted by invasive European Ivy.

The forested area south of the house includes about 5 acres of the subject property. Both forested areas are included in the conservation easement and are not affected by the proposed lot split.

Mixed Herbaceous /Scrub

This habitat occurs on both sides of the drainage and both sides of the driveway, including the entirety of Parcel B (Fig. 5). Common flora in these areas include Red Alder, Cascara, Cotoneaster, Willow,

Himalayan blackberry, Scotch broom, and annual grasses. The action area also includes shore pines, and a few apple trees (Table 1). The tallest vegetation in the action area was around 25 ft.

Developed/Pasture

The area surrounding the house and outbuildings is a typical grass yard with nonnative annuals with a few isolated large Spruce trees and one large Monterey Cypress. Field pasture habitat is comprised primarily of non-native grasses, shrubs and wildflowers, historically disturbed by grazing and mowing. Mowing takes place to manage Scotch broom.

Table 1. Partial plant list for the 'action area' of proposed lot split, 1151 Lakeview Drive. Shown are native and non-native flora in rough order of dominance.

Common Name	Scientific Name
Non-native Plants	
Cotoneaster	*Cotoneaster sp.*
Himalayan Blackberry	*Rubus discolor*
Unknown annual grasses	*Poaceae*
Scotch Broom	*Cytisus scoparius*
Holly sp.	*Llex sp.*
Bull thistle	*Cirsium vulgare*
Tansy Ragwort	*Senesio jacobaea*
Queen Anne's Lace	*Daucus carota*
Native plants	
Willow	*Salix sp.*
Red Alder	*Alnus rubra*
Blackberry	*Rubus ursinus*
Thimbleberry	*Rubus parviflorus*
Cascara	*Rhamnus purshiana*
Shore pine	*Pinus contorta*
Douglas iris	*Iris douglasiana*
Shasta daisy	*Leucanthemum* variety



Figure 5. Basic habitat types found on the Jaques property (contained in labeled polygons) and the action area of the 1 acre proposed lot split.

SPECIAL STATUS SPECIES

Federal and State Listed Species

There are nine federal or state listed plant and animal species that occur in the Crescent City quadrangle, including two species of bird, four fishes, one mammal, one insect and one plant (Table 2). In addition, there is one state endangered candidate mammal. No occurrences of any of these listed species were observed or previously recorded and the subject property is generally unsuitable for all of them. We discuss the most relevant species briefly below.

Tidewater goby occur and breed in brackish waters near the mouth of the lagoon and salmonids occasionally occur in Jordon Creek, a small stream that drains into Lake Earl about 1 km from the property. (USFWS 2006). Tidewater goby or juvenile salmonids, including coho, steelhead, and coast cutthroat trout could potentially swim from Lake Earl through the culvert and venture upstream into the slough/drainage ditch on the subject property during the rainy season. None of these fish have ever been observed in the drainage and occurrence seems unlikely based on habitat. The unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*) is the most abundant fish in Lake Earl, and was observed in the lower reaches of the drainage on the property during periods of high runoff in winter

Western lily and Oregon silverspot butterfly have very specific habitat requirements and are located in only a few isolated areas in the Crescent City quadrangle. The subject property lacks features that would support these species (G. Falxa, USFWS, pers. comm.).

California Species of Special Concern (CSC)

Fourteen species of special concern occur in the Crescent City quadrangle (CDFW Bios) and some of these do occur on the subject property. Known visitors include the northern red-legged frog, black capped chickadee, osprey and northern harrier. The only potentially breeding species in this group is the black capped chickadee. Table 1 summarizes the CSC listed species with respect to the subject property.

Birds

Black-capped chickadee nest in cavities of rotten trees or branches, often in backyards of developed areas. They have been observed foraging in trees on the property. Potential nesting habitat exists in the coniferous forest habitat included in the conservation easement lands of Parcel A, but a lack of large conifers and the generally small, brushy and early successional stage of vegetation on Parcel B provide poor potential nesting habitat for Black-capped chickadees.

Of the raptor Species of Special Concern, osprey, Northern harrier, white-tailed kite, and bald eagle are known in the area. Osprey nest in trees and snags at the LEWA as do the harrier and kite, but not on the property. Osprey have been observed flying over the property, but no nests, or roosting activities have been seen on the land. The parcel does not have trees adjacent to open water to provide favored foraging perches for osprey or bald eagle

The forested area on Parcel A, along the drainage northwest of the driveway does support nesting by red shouldered hawk, probably owls and other common raptors.

Amphibians

Northern red-legged frogs are found in wetlands and low elevation habitats through Washington, Oregon, and at least as far as Point Arena in California. Northern red-legged frogs require standing water to reproduce. There is no standing water suitable for breeding anywhere on Parcel B, but frogs have been observed foraging in the fields throughout the property.

The Del Norte salamander is listed as "Unprocessed" (unknown) in the Crescent City Quadrangle. Their habitat is described as 'terrestrial, strongly associated with moist talus in humid shaded and closed-canopy coastal forests of mixed hardwoods and conifers, but also found in rock rubble of old riverbeds, and under bark and logs on forest floor, usually in rocky areas' (http://www.californiaherps.com/salamanders/pages/p.elongatus.html). Further, the species is generally found at higher elevations. Due to lack of rocky substrate and lack of mixed and older forest, there is no habitat, and the species is not found in the area. Similarly, no habitat exists for the and Pacific tailed frog or Southern torrent salamander.

SPECIAL HABITAT ELEMENT

Colonial Nesting Birds

Two species of wading birds, great blue heron (*Ardea herodias*) and great egret (*Ardea alba*) have nested on the subject property in small numbers on lands protected by the conservation easement (Parcel A). These birds also use the subject property and the larger tract of adjacent forested lands for communal roosting in the non-breeding season (D. Jaques, pers. comm). No trees of suitable structure for colonial nesting birds occur on Parcel B.

Wetlands

The California Coastal Act defines ESHA habitat as "any areas in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments." (Section 30107.5) Wetland habitats are generally considered in this category.

Table 2. Federal, California, and CDFW listed animal and plant species in the Crescent City Quadrangle (USGS 4112172), with notes on presence of breeding habitat and potential of occurrence on the Jaques property (APN 110-020-22).

Common_Name, *Scientific_Name*	Listing Status*			Breeding habitat?	Forage / resting habitat?	Observed or likelihood of occurrence	Comments
	Federal	State	CDFW				
Marbled Murrelet, *Brachyramphus marmoratus*	FT	CE		No	No	No	No habitat present for this species
Western Snowy Plover, *Charadrius alexandrinus nivosus*	FT	None	SSC	No	No	No	No habitat present for this species
Northern harrier, *Circus cyaneus*	None	None	SSC		Yes	Obs.	Seen flying over property
White-tailed Kite, *Elanus leucurus*	None	None	FP			Likely	Seen perching in snags on adjacent LEWA property
Osprey, *Pandion haliaetus*	None	None	WL			Obs.	Seen flying over LEWA
Rhinoceros Auklet, *Cerorhinca monocerata*	None	None	WL	No	No	No	No habitat present for this species
Tufted Puffin, *Fratercula cirrhata*	None	None	SSC	No	No	No	No habitat present for this species
Fork-tailed Storm Petrel, *Oceanodroma furcate*	None	None	SSC	No	No	No	No habitat present for this species
Black-capped Chickadee, *Poecile atricapillus*	None	None	WL	Yes	Yes	Obs.	Breeding habitat is coniferous woods. Seen foraging on property
green sturgeon, *Acipenser medirostris*	FT	None	SSC	No	No	No No	No habitat present for this species
tidewater goby, *Eucyclogobius newberryi*	FE	None	SSC	No	No	Possible	Occurs in Lake Earl. Unlikely visitor to lower end of drainage on property
coho salmon, *Oncorhynchus kisutch*	FT	CT	-	No	No	No	Can occur in Lake Earl. No suitable habitat on property.
Steelhead, *Oncorhynchus mykiss irideus*	FT	None	-	No	No	No	Can occur in Lake Earl. No suitable habitat on property.
Coast cutthroat trout, *Oncorhynchus clarkii clarkii*	None	None	SSC	No	No	Possible	May forage at low end of property at high runoff and lake levels.

Pacific lamprey, *Entosphenus tridentatus*	None	None	SSC	No	No	No	No habitat present for this species
Oregon silverspot butterfly, *Speyeria zerene hippolyta*	FT	None	-	No	No	No	Historic breeding west of Lake Earl. No habitat on east side.
western lily, *Lilium occidentale*	FE	CE	1B.1*	No	No	Not known (unlikely)	Not known on this property
Humboldt marten, *Martes caurina humboldtensis*	None	CE	SSC	No	No	No	No habitat present for this species
Townsend's big-eared bat, *Corynorhinus townsendii*	None	CCE	SSC	No	No	Not known (unlikely)	No records for western Del Norte Co.
Pacific tailed frog, *Ascaphus truei*	None	None	SSC	No	No	No	No habitat present for this species
Del Norte salamander, *Plethodon elongatus*	None	None	WL	No	No	No	Habitat is rocky slopes in higher elevation forested land
Northern red-legged frog, *Rana aurora*	None	None	SSC	No	Yes	Obs.	Ephemeral drainage water not suitable for breeding
Foothill yellow-legged frog *Rana boylii*	None	None	SSC	No	No	No	No habitat present for this species
Southern torrent salamander *Rhyacotriton variegatus*	None	None	SSC	No	No	No	No habitat present for this species
Western pond turtle, *Emys marmorata*	None	None	SSC	No	No	Possible	Occurs in Lake Earl, not seen on property

EFFECTS OF PROPOSED ACTION ON HABITAT

The California Coastal Act (1972) specifies that new development shall not adversely impact sensitive coastal habitats (County of Del Norte 1983). No wildlife or habitat impacts from the proposed action are expected on the remainder parcel (A) of the property and no significant negative impacts are expected in the action area (Parcel B). To protect the ESHA associated with the drainage ditch, a 100-foot buffer separating the wetland zone from the developed property is recommended as a requirement of the lot split permit. This 100-foot buffer will preclude a 30-45 feet swath of the southwest corner of the proposed acre from development. The wetland buffer will allow for development on the acre as far back as 170 feet off Lakeview Drive. The entire parcel is essentially flat and does not drain towards the wetland.

The remainder parcel (A) includes an existing residence and surrounding forested and wetland habitat is legally protected by the conservation easement. The parcel will be buffered from development in Parcel B by the required wetland buffer between the two parcels and the conservation easement restrictions along the driveway. The proposed subdivision does not fragment sensitive habitat and leaves a wildlife corridor along the existing driveway. No increase or change in human use of Parcel A is anticipated, since the driveway will continue to serve only the existing residence and remain private from the split acre. An approximately 70-foot wide strip along the driveway will remain in native state and is not included in the subdivision. The driveway corridor serves as a visual screen as well as a wildlife corridor between the driveway and the action area.

A potential single-family residence on Parcel B would be sited between two existing homes on Lakeview Drive, and contiguous with the rural residential neighborhood. The best location for a septic tank/leach field has been determined to be within about 30 feet of Lakeview Drive (Fig. 2). The septic tank would be about 150 feet away from the wetland under this scenario. An experienced local developer (D. Hartley) noted that the best site for a home is near the road and access to the property will be directly off Lakeview Drive.

Residential development would result in some alteration of the mixed invasive herb habitat in Parcel B along Lakeview Drive and with some expected conversion of native and weedy species to annual grasses and ornamentals. A positive impact of development would be control of invasive weeds, which would deter spread of tansy ragwort and scotch broom, etc. on the surrounding agricultural lands and natural habitats, including the Lake Earl Wildlife Area.

RECOMMENDATION

With respect to listed species and sensitive habitat protections, the proposed lot split is expected to have no negative effects. From a perspective of wildlife habitat value, future development of a residence abutting Lakeview Drive would displace an unknown but small amount of mixed herbaceous flora and associated birds, rodents, and other fauna. This is typical for most new construction in the County. Mitigation measures for the proposed action include 1) adherence to the existing conservation easement

protecting a corridor of mixed herbaceous habitat along the driveway, 2) a 100-foot setback from the wetland habitat associated with the drainage, and 3) projected removal of aggressive invasive species (Tansy ragwort, English ivy, Himalayan blackberry).

It is my professional recommendation that the proposed lot split be permitted, with the conditions noted in this Biological Assessment.

REFERENCES

California Department of Fish and Wildlife, Natural Diversity Database. April 2017. Special Animals List. Periodic publication. 51 pp.

California Department of Fish and Wildlife BIOS https://map.dfg.ca.gov/bios

County of Del Norte. 1983. General Plan. Coastal Element 1983 LCP. 356 pp.

Mayer, K. E. and William F. Laudenslayer, Jr. (eds.). **A Guide to Wildlife Habitats of California. 1988.** State of California, Resources Agency, Department of Fish and Game Sacramento, CA. 166 pp. https://www.wildlife.ca.gov/Data/CWHR/Wildlife-Habitats

U.S. Fish and Wildlife Service. 2005. Recovery Plan for the Tidewater Goby (*Eucyclogobius newberryi*). U.S. Fish and Wildlife Service, Portland, Oregon. vi + 199 pp.

QUALIFICATIONS

Craig S. Strong was the principal investigator and author of this assessment. Craig holds a Bachelor of arts in Biology from UC Santa Cruz (1984) and a Master of Science in Marine Science from San Francisco State University (1991). Craig was employed as a wildlife technician between 1984 and 1992. In 1991 he moved with family to Del Norte county and began his own consulting business 'Crescent Coastal Research' in 1992. Crescent Coastal Research has completed over 45 contractual jobs in wildlife consulting, largely for state and federal agencies. Since 2005, Crescent Coastal Research began conducting biological assessments and wildlife surveys for local agencies and private parties as a supplement to his primary work in coastal and marine habitats. Since then, he has conducted 10 assessments for private parties, all in the 'lowlands' plain between Crescent City and Smith River. Craig was also a former co-owner of the subject property.

Craig was assisted in the documentation and imagery in this assessment by Deborah Jaques. Deborah, the property owner, is a wildlife biologist (MSc. UC Davis, 1996), and operates her own consulting business (Pacific Eco Logic) from Astoria, Oregon. It was her concept, in developing the Conservation Easement in 2008 in coordination with the CDFW, that a lot split at the front of the property could be designed to have minimal negative impacts to the overall wildlife value of the property and surrounding area.

Appendix A. Description of areas excluded from development by the Conservation Easement.

APN: 110-020-022

EXHIBIT 'A'

LEGAL DESCRIPTION
FOR A CONSERVATION EASEMENT
OVER THE LANDS OF STRONG

All that real property situated in the State of California, County of Del Norte, lying within the East half of Section 4, Township 16 North, Range 1 West, Humboldt Meridian, granted to Craig S. and Deborah Strong in that deed recorded as Document Number 2002-5306, Del Norte County Records;

EXCEPTING THEREFROM the following portion thereof:

COMMENCING at the most northerly corner of said lands of Strong referenced above, and as shown on Book 9 of Maps, Page 39, Del Norte County Records;

Thence South along the west line of the lands of Strong, 161.71 feet to the **POINT OF BEGINNING;**

Thence South 39 degrees, 13 minutes, 22 seconds East, 598.35 feet;

Thence South 59 degrees, 38 minutes, 22 seconds West, 387.44 feet;

Thence North 59 degrees, 0 minutes, 13 seconds West, 38.71 feet;

Thence North 2 degrees, 23 minuets, 36 seconds East 80.38 feet;

Thence North 36 degrees, 14 minutes, 34 seconds West 24.08 feet, more or less, to said west line of the lands of Strong;

Thence North along said west line, 539.71 feet, more or less, to the **POINT OF BEGINNING.**

ALSO EXCEPTING THEREFROM the following portion thereof:

COMMENCING at the most northerly corner of said lands of Strong referenced above, and as shown on Book 9 of Maps, Page 39, Del Norte County Records;

Thence South 47 degrees, 50 minutes, 00 seconds East, 699.60 feet;

Thence North 46 degrees, 15 minutes, 00 seconds East, 216.00;

Thence South 47 degrees, 50 minutes, 00 seconds East, 68.33 feet to the **POINT OF BEGINNING;**

Thence South 47 degrees, 50 minutes, 00 seconds East, 201.67 feet;

Thence South 46 degrees, 15 minutes, 00 seconds West, 216.00 feet;

Thence North 47 degrees, 50 minutes, 00 seconds West, 201.67 feet;

Thence North 46 degrees, 15 minutes, 00 seconds East, 216.00 feet;

more or less, to the **POINT OF BEGINNING.**

Containing an area of 8.5 acres, more or less.



August 16, 2019

Prepared for: Deborah Jaques
375 3rd Street
Astoria, Oregon 97103

Subject: 1151 Lakeview Drive
Parcel No. 110020022000
Wetland Delineation

Dear Ms. Jaques,

This report documents a wetland delineation conducted on a portion of parcel 110020022000 of Section 4, Township 16N, Range 1W, Humboldt Meridian (Figure 1). This investigation, conducted by Robert S. Bogar of Critical Areas Consulting & Associates, identified and classified a palustrine wetland near the project site. This report summarizes observations used to define a wetland boundary within the proposed subdivision of parcel 110020022000. The subdivision will create an additional 1-acre parcel near its northern boundary (see Figure 4). Site observations in this report were made in July 2018.

Investigation Methodology

This investigation utilized methodologies defined in *Corps of Engineers Wetlands Delineation Manual*, January 1987 and in the Regional Supplement. The Regional Supplement recognizes that differences in climate, geology, soils, hydrology, and other factors vary regionally and provides wetland indicators, delineation guidance, and other information specific to the western mountains, valleys, and coastal regions of the Western United States. The investigation also incorporated vegetation, soils and hydrology criteria used to define wetland boundaries in the California Coastal Zone (CCR § 13577(b). The project site lies in USDA Land Resource Region (LRR) A.

Project Site Description

Areas immediately surrounding the proposed parcel are moderate to low intensity development with agricultural land across Lakeview Drive to the northeast. The proposed subdivision will create a square-shaped parcel measuring approximately 208.7 ft on a side and occupying about 1.0 acre. The proposed parcel will be accessed by Lakeview Drive. Wetlands identified in this investigation are located within 100 feet southwest of the proposed parcel. The project site parcel slopes moderately to the southwest toward the wetlands identified in this investigation.

Precipitation

Rainfall data from the national Weather Service Climate Data for Crescent City, California indicates that from October 1 through June the area received approximately 46 inches of rain, short of normal precipitation by over 15 inches. No compensation for unusual rainfall or surface water conditions were taken during this investigation.

Observations

Wetland boundaries northeast of the drainage were flagged using orange and white wetland delineation flagging (see Table 1 photographs below). Wetland buffers were flagged using white flagging placed about 100 ft northeast of the wetland/upland boundary within the proposed parcel.

Soil

Soils in the area are mapped as Timmons and Lepoli soils (see Figure 2), well drained soils formed on marine terraces. Soils were excavated in two test pits as part of this investigation. Wetland soils exhibited redox mottling within 12" below ground surface (BGS).

Hydrology

The project site wetland drains upgradient parcels, located southeast of the project site, to the northwest into a vegetated slough associated with Lake Earl. The wetland identified for this investigation extends the width of the project site in a relatively narrow vegetated swale. Standing water was not noted near the surveyed wetland edge.

Vegetation

The National Wetlands Inventory (NWI) map (Figure 3) shows seasonally inundated palustrine forested wetland systems immediately to the south and west in the project site but not on the project site itself. Dominant vegetation in the wetland drainage typically consisted of *Carex obnupta* (slough sedge), under an overstory of *Salix scouleriana* (Scoulers willow), *Myrica californica* (wax myrtle), and *Alnus rubra* (red alder). Adjacent upland vegetation was typically dominated by *Polysticum munitum* (sword fern), *Gaultheria shallon* (salal), *Vacinium ovatum* (Evergreen huckleberry), *Malus fusca* (crabapple), and *Catoneaster salicifolius* under an overstory of *Pinus contorta* (shore pine), Picea sitchensis (Sitka spruce), and *Alnus rubra* (red alder).

Table 1
Site Photographs

	
Photograph No. 1: View from above of Test Pit No.1 (TP-1), upland test pit. Soil slices were not able to be excavated due to the number of roots adjacent to the wetland/upland boundary.	Photograph No. 2: View from above of Test Pit No.2 (TP-2), wetland test pit. Soil mottling was noted in soils within 12-inches of the ground surface.



Photograph No. 3: View to the southeast of flagged wetland boundary as seen from the adjacent driveway.



Photograph No. 4: View to the southeast of flagged wetland boundary. *C. obnupta* is the dominant herbal vegetation.



Photograph No. 5: View to the northwest of flagged 100 ft wetland boundary.



Photograph No. 6: View to the south of flagged 100 ft wetland boundary.

Results and Conclusions

Results of this investigation identified a palustrine wetland within approximately 60 feet southwest of the proposed parcel. A 100 ft setback will encroach upon the proposed parcel by a maximum of approximately 40 ft near the southwest border allowing over 160 feet of the depth of the parcel (over ¾ of an acre) to be unencumbered by the wetland buffer (Figure 4).

Limitations

This report documents the investigation, best professional judgment and conclusions of the investigator(s). It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by Del Norte County, the California Coastal Commission and Department of Fish and Wildlife, if required. Estimates of property line locations (septic systems, domestic water wells, etc.) are often made using visual or verbal data. These estimates should be verified by

the site owner, surveyor, and/or private contractor independently prior to initiating any construction activity.

Thank you for allowing me to conduct your wetland delineation. Please contact me at the below phone number or email address if you have questions or require additional information.

Sincerely,



Robert S. Bogar
WA Licensed Hydrogeologist
OR Registered Geologist
949 14th Street, Astoria, OR
Ph: 360-244-2630
Email: rbogar@gmail.com

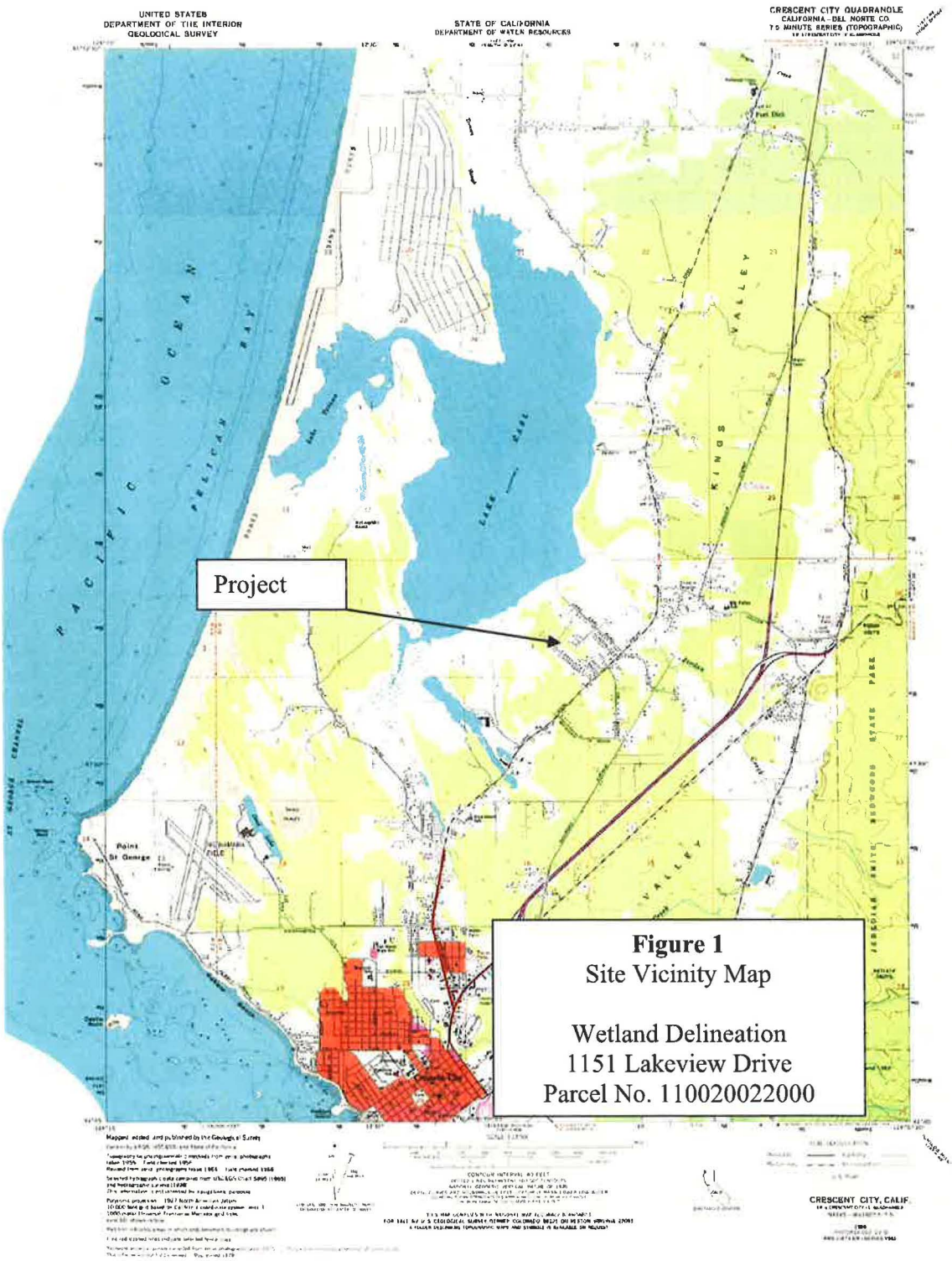


Figure 1
Site Vicinity Map

Wetland Delineation
1151 Lakeview Drive
Parcel No. 110020022000


Soil Map—Humboldt and Del Norte Area, California
Map Unit Legend
Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI
185 | Trinmore and Lepel soils, 0 to 2 percent slopes | 13.5 | 100.0%
Totals for Area of Interest | 13.5 | 100.0%
Project Site
185
Lakeview Dr
Clayton Rd
Figure 2
NRCS Soil Map
Wetland Delineation
1151 Lakeview Drive
Parcel No. 110020022000
Map Scale: 1:1,780 if printed on A landscape (11" x 8.5") sheet.
Meters
Feet
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84
Natural Resources Conservation Service
Web Soil Survey
National Cooperative Soil Survey
8/21/2019
Page 1 of 3



Figure 3
National Wetlands Inventory Map

Wetland Delineation
1151 Lakeview Drive
Parcel No. 110020022000



Figure 4. Proposed subdivision of parcel 11002022, showing approximate property boundary (yellow line), proposed 1-acre subdivision (red line), drainage channel (blue line), wetland boundary within 100 feet of 1 acre parcel (points adjacent to drainage) and wetland buffer (gray shading and points > 100 feet from wetland boundary).

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 1151 (1151) PC City/County: Del Norte Sampling Date: 7/15/19

Applicant/Owner: D Jones State: _____ Sampling Point: TP-1

Investigator(s): ESB Section, Township, Range: 4/16N/1W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 2

Subregion (LRR): A Lat: 41.809463 Long: -124.178044 Datum: Geog

Soil Map Unit Name: Tomanos / Lepel NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks: ~117' #1SM TRANSECT; 9.1 S. of WETD/UPL BNDRY

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. C. Pine (P. contorta)	10	N	FAC
2. Alder (A. rubra)	20	Y	FAC
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15'-15')			
1. Scouler's willow (Salix)	50	Y	FAC
2. Ceanothus	15	Y	FACU
3. Bog myrtle (Morella)	5	N	FAC
4. Baccharis (B. pilularis)	5	N	FAC
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1. Carex sp.	20	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: 5')			
1. H. Rib.	10	N	
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: Sapl: Pine 1/5 of wtd

SOIL

Sampling Point: TP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16"	5YR 3/3	(DL. Dep)					GM	Gravelly sandy clay loam, Cobbles = 5% (Mottles) Buried soil
			2.5YR 3/6	(D, CS)				
				15%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

* Mottles from 3" to 16"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- X Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 151 LAUREL TR City/County: DEL NORTE Sampling Date: 7/19/18

Applicant/Owner: D JAQUES State: CA Sampling Point: PT 2

Investigator(s): DSB Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR): Lat: 41.809463 Long: -124.178044 Datum: Google

Soil Map Unit Name: Tinmans / Lepel NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: 125' OU TRANSECT : 5' JSE, FLAG WE" CULVERTS)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' R)	Absolute % Cover	Dominant Species?	Indicator Status
1. P. sitch	25	Y	FAC
2. Spruce (P. sitchensis)	25	Y	FAC
3. Alder (A. rubra)	20	Y	FAC
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1. Willow (S. scouleriana)	20	Y	FAC
2. Huckleberry	25	Y	FACU
3. Rhododendron	25	Y	FACU
4. Salmonberry (R. spectabilis)	20	Y	FAC
5.			
= Total Cover			
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover			
Woody Vine Stratum (Plot size: 5')			
1. H. Oak	5'	U	—
2.			
= Total Cover			

% Bare Ground In Herb Stratum 90

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (No data - / road)

SOIL

Sampling Point: TP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	5YR 3/4	100					SM	Fine sandy silt
								dry
			X	n/a				No redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: Not Hydric to 18"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: