NORTHPOINT
CONSULTING GROUP, INC.

TECHNICAL MEMORANDUM

FROM: Annje Dodd, PhD, PE

TO: Humboldt County Planning Department

RE: Prime Agriculture Soils Determination
J. Bareilles, APN 201-322-006

DATE: **May 25, 2021**

The purpose of this Technical Memorandum (TM) is to provide a site specific determination regarding prime agricultural soils on APN 201-322-006 located at 1178 Highway 36, Alton, California.

Site Background and History
The site is zoned for Heavy Industrial uses and is currently in use by a Ken Bareilles Trucking and Lost Coast Hay. There are five structures on the Subject Property including two shop buildings, a dilapidated mill building, a restroom, and a well house. The majority of the site has been covered over time with compacted gravel.

A Phase I Environmental Site Assessment (ESA) was conducted for the site by Freshwater Environmental Services, dated November 19, 2020. The reason for performing the ESA was to comply with the Humboldt County Commercial Cannabis Land Use Ordinance (CCCLUO). According to the ESA the site has been an active industrial site since about 1949.

Prime Agricultural Soil Definition
Per the CCCLUO, "Prime Agricultural Soils" means all lands which have been classified or determined to be "prime" as shown on the most current mapping managed and prepared in concert with local soil survey efforts performed by the Natural Resources Conservation Service.

Prime agricultural soils are soils typically with Natural Resources Conservation Service Land Use Capability Classification (LCC) rating of Class 1 or Class 2. Class 1 Soils have slight limitations that restrict their use for agriculture while Class 2 soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.

Soils Information
According to the USDA NRCS Soil Survey, the entire of the site is classified as Soil Map Unit Jollygiant, 0 to 2, percent (Map Unit Symbol 127) (Figure 1, Attachment 1). These soils have a LCC rating of Class 2w prime farmland if irrigated and drained. The subclass "w" is made up of

soils for which excess water is the dominant hazard or limitation affecting their use. Poor soil drainage, wetness, a high water table, and overflow are factors that affect soils in this subclass. Measures to overcome these limitations are needed to consider these as prime agricultural soils and an onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures (Attachment 2). Since this site has been used as an industrial site since the 1940's, the limitations have not been overcome and the soils would not be considered prime agricultural soils.

Figure 1. Screen Capture of USDA NRCS Soil Survey of the Subject Site

According to the California Department of Conservation Farmland Mapping and Monitoring Program, Prime Farmland must meet the following criteria:

- Land Use – Has been used for irrigated agricultural production at some time during the four years prior to the Important Farmland Map date. Irrigated land use is determined by

FMMP staff by analyzing current aerial photos, local comment letters, and related GIS data, supplemented with field verification. AND

- Soil – The soil must meet the physical and chemical criteria for Prime Farmland or Farmland of Statewide Importance as determined by the USDA Natural Resources Conservation Service (NRCS). NRCS compiles lists of which soils in each survey area meet the quality criteria.

This site does not meet the definition of Prime Farmland since it has been an industrial site for over 60-years. It was converted from Prime Farmland when it was developed into a lumber mill in the 1940's.

The NRCS Soil Survey detail of mapping and accuracy of soil line placement is often misunderstood. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale. The Soil Survey in the area of the project site were mapped at a 1:24,000 scale, which is beyond the scale at which the map for the area shown in Figure 1 to be used. To account for the lack in accuracy of the Soil Survey mapping, two test borings were dug onsite to conduct an assessment of the in-situ soils. The locations are shown in Figure 1. The first 1.5-feet of the soil profile is composed of gravel/fill material; which is consistent with the historical use of the site. The remaining profile has slightly different characteristics compared to the Soil Map Unit. The results are summarized in Table 1.

Table 1. Test Boring Profiles

Boring	Approximate Depth		
	0"-18"	18"-30"	30"-48"
#1	Gravel/Fill	Loamy Clay	Mottled/Silty Clay
#2	Gravel/Fill	Loamy Clay	Mottled/Silty Clay
	0"-16"	16"-33"	33"-47"
Map Unit 127	Silty Clay Loam	Silty Clay Loam	Loam

Conclusion

Based on the site background, site history, and soils information, the soils on this site are not considered prime agricultural soils and the site would not be considered prime farmland.

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named, soils that are similar to the named components, and some minor components that differ in use and management from the major soils.

Most of the soils similar to the major components have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Some minor components, however, have properties and behavior characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Humboldt County, Central Part, California

127—Jollygiant, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: n7ln
Elevation: 0 to 160 feet
Mean annual precipitation: 35 to 80 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 275 to 330 days

Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Jollygiant and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jollygiant

Setting

Landform: Stream terraces, alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

Ap - 0 to 16 inches: silty clay loam
Bg1 - 16 to 33 inches: silty clay loam
Bg2 - 33 to 47 inches: loam
Bg3 - 47 to 63 inches: very fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 10 to 20 inches
Frequency of flooding: Rare
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Hydric soil rating: No

Minor Components

Urban land, residential

Percent of map unit: 8 percent
Landform: Marine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Canalschool

Percent of map unit: 3 percent
Landform: Flood-plain steps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Fluvaquentic endoaquolls

Percent of map unit: 3 percent
Landform: Depressions, flood-plain steps, backswamps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Weott

Percent of map unit: 3 percent
Landform: Backswamps, flood-plain steps, depressions
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: Yes

Urban land, industrial

Percent of map unit: 3 percent
Landform: Flood-plain steps
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 5, Sep 16, 2019

Prime and other Important Farmlands

This table lists the map units in the survey area that are considered important farmlands. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

For some of the soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

Report—Prime and other Important Farmlands

Prime and other Important Farmlands–Humboldt County, Central Part, California		
Map Symbol	**Map Unit Name**	**Farmland Classification**
127	Jollygiant, 0 to 2 percent slopes	Prime farmland if irrigated and drained
341	Fiedler-Petellen-Nanningcreek complex, 30 to 50 percent slopes	Not prime farmland

Data Source Information

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 6, Jun 1, 2020