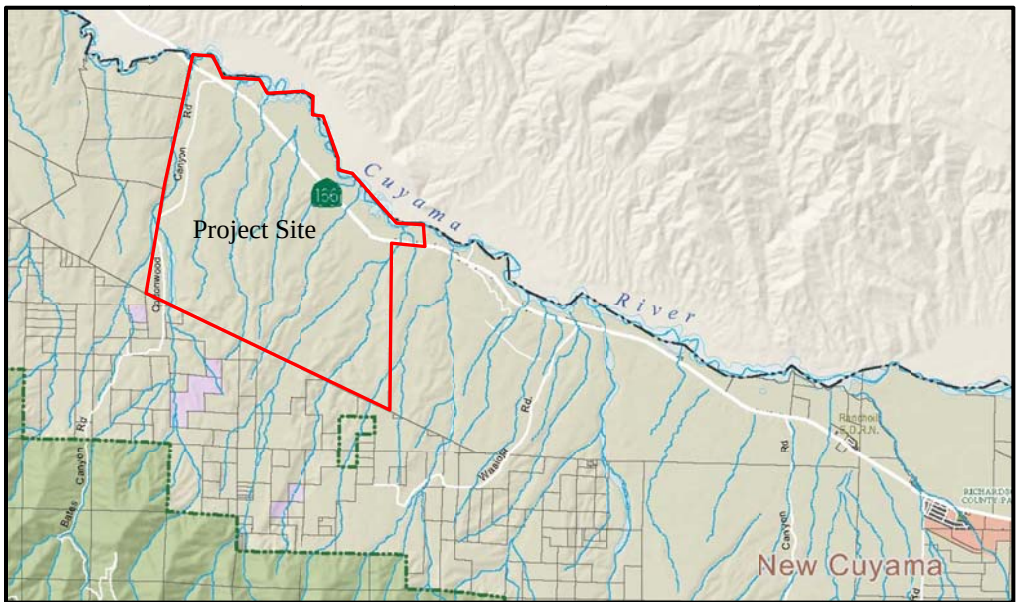
COUNTY OF SANTA BARBARA
Planning and Development
www.sbcountyplanning.org

Attachment D

Final Mitigated Negative Declaration 17NGD-00000-0004

North Fork Ranch Frost Ponds 16CUP-00000-00005

August 1, 2018



Owner/Applicant
Matt Turrentine – Brodiaea, Inc.
P.O. Box 6565
Santa Maria, CA 93455

Agent
Brian A. Tetley – Urban Planning Concepts
2624 Airpark Drive
Santa Maria, CA 93455

1.0 REQUEST/PROJECT DESCRIPTION

A request of Brian Tetley, agent for Brodiaea, Inc, owner, to consider Case No. 16CUP-00000-00005. The North Fork Ranch Frost Pond project is a request to construct and operate three frost ponds (reservoirs) that would store water to be used for frost protection at the North Fork Ranch Vineyards. The project also includes the construction of new underground pipelines that would extend between each of the proposed reservoirs and the existing vineyard irrigation system.

The proposed reservoirs would serve approximately 1,000 acres of existing vineyards. ~~an existing 535-acre vineyard and an additional 100-acre area that is to be planted in the future.~~ Reservoir No. 1 would be located on the eastern portion of the project site adjacent to Schoolhouse Canyon Road (a private road). Reservoir No. 2 would be located in the central portion of the project site, and Reservoir No. 3 would be located on the western portion of the project site approximately 0.75 mile east of Cottonwood Canyon Road. Access to the reservoirs would be from existing roads that connect to State Highway 166.

Frost protection would be achieved by sustained spray irrigation when frost has the potential to damage the grape vines. Frost protection would generally be required during the months of February, March and April. The reservoirs would be maintained at a full condition between February and April. A maximum of three feet of well-supplied water would be maintained in the reservoirs between May 1st through January 31st. ~~, and would be emptied of well-supplied water between May and January.~~ Water above a depth of three feet contained in the reservoirs after May 1 would be distributed for vineyard irrigation.

Each reservoir would have a water storage capacity of 49 acre-feet and would be lined with a high-density polyethylene plastic liner to prevent water seepage. Each reservoir would also have an emergency overflow discharge system that would prevent stored water from over-topping the reservoir. Water to be stored in the reservoirs would be supplied by existing agricultural wells located on the project parcel and ~~on~~ the north side of State Highway 166. Water from the wells would be conveyed to the reservoirs by existing vineyard irrigation pipelines that extend beneath the highway and throughout the vineyard. A six foot high fence would be installed around the exterior perimeter of each reservoir to prevent unauthorized entry. Life ring stations and floating pool ropes would also be provided for rescue purposes.

A total of approximately 257,945 cubic yards of cut and fill grading would be required to construct the three proposed reservoirs. The reservoirs would have a maximum depth of 27-28 feet, and in total would occupy an area of approximately 15.6 acres. Proposed pipelines that would convey water from the vineyard's existing irrigation system to each of the reservoirs would have a total length of 1,350 feet. Proposed pipelines that would convey water from each of the reservoirs to the vineyard's existing spray irrigation system would have a total length of 976 feet. Construction details for each of the proposed reservoirs are summarized on Table 1. It is estimated that the construction period for the three proposed reservoirs would be approximately one year.

Proposed project plans are provided as Attachment 1.

Table 1
North Fork Ranch Frost Ponds
Construction Characteristics

Reservoir	Proposed Grading			Reservoir Area		Reservoir Depth			Proposed Pipelines	
	Cut (cu. yds.)	Fill (cu. yds.)	Total (cu. yds.)	Approximate Dimensions (feet)	Acres	Top of Reservoir Elevation	Bottom of Pond Elevation	Depth (feet)	Fill Line (feet)	Drain Line (feet)
No. 1	44,062	44,589	88,651	590 x 370	5.0	1,955	1,927	28	624	517
No. 2	44,064	42,205	86,269	580 X 410	5.7	1,788	1,761	27	370	202
No. 3	42,771	40,254	83,025	590 x 360	4.9	1,744	1,717	27	356	257
TOTAL	**130,897**	**127,048 (1)**	**257,945**	**--**	**15.6**	**--**	**--**	**--**	**1,350**	**976**

(1) Due to shrinkage of fill material, no soil would be exported from the project site

Surface water drainage from upslope areas adjacent to the reservoirs would be collected by proposed drainage swales. The collected water would be discharged and allowed to sheet flow at downslope locations adjacent to the reservoirs. Rock energy dissipaters would be installed at each discharge location to reduce potential erosion-related impacts. Stormwater discharge from Reservoir No. 1 would be conveyed beneath Schoolhouse Canyon Road by a proposed culvert beneath the road.

The application involves Assessor Parcel Number 147-020-045, a 6,565-acre parcel that is zoned AG-II-100.

2.0 PROJECT LOCATION

The project site is on the south side of State Highway 166, between Cottonwood Canyon Road and Schoolhouse Canyon Road, approximately nine miles west of the community of New Cuyama, Fifth Supervisorial District.

2.1 Site Information	
Comprehensive Plan Designation	Agricultural Commercial (AC)
Zoning District, Ordinance	Land Use and Development Code, AG-II-100, Agriculture, 1 unit per 100 acres.
Site Size	The project property is 6,565 acres. The three proposed reservoirs would occupy a combined area of approximately 15 acres.
Present Use & Development	The proposed reservoir sites are vacant. Areas adjacent to the proposed reservoir sites are planted with vineyards.
Surrounding Uses/Zoning	North: AG-II-100, open space South: AG-II-100, open space East: AG-II-100, open space West: AG-II-100, open space
Access	State Highway 166 and existing unpaved ranch/vineyard roads

3.0 ENVIRONMENTAL SETTING

3.1 PHYSICAL SETTING

The 6,565-acre project parcel is located in the Cuyama Valley, approximately nine miles west of the community of New Cuyama. The project parcel is located on the south side of State Highway 166, and the proposed reservoir sites are approximately 4,000 to 5,000 feet south of the Cuyama River. The proposed reservoir sites are currently vacant and adjacent to existing vineyards. Irrigation lines have been installed throughout the vineyards and are located near the proposed reservoir project sites. The existing irrigation lines would also be used to deliver water to the proposed reservoirs.

Slope/Topography. The proposed reservoir sites are generally level and slope gently towards named and unnamed ephemeral drainages.

The Reservoir No. 1 project site is located on the eastern end of the project property adjacent to Schoolhouse Canyon Road. This project site ranges in elevation from approximately 1,958 feet above sea level in the southwest corner to approximately 1,938 feet in the southeast corner, which results in a slope gradient of approximately five percent. The site generally slopes to the east and is approximately 500 feet west of Schoolhouse Canyon Creek.

The Reservoir No. 2 project site is located on the central portion of the project property. This project site ranges in elevation from approximately 1,790 feet above sea level in the southwest corner to approximately 1,766 feet in the northwest corner, which results in a slope gradient of approximately six percent. The site generally slopes to the east and is approximately 100 feet west of a small ephemeral drainage.

The Reservoir No. 3 project site is located on the western end of the project property approximately one mile east of Cottonwood Canyon Road. Small ephemeral drainages are located approximately 100 feet to west and approximately 250 feet to the east of the reservoir site. This project site ranges in elevation from approximately 1,740 feet above sea level in the southeast corner to approximately 1,726 feet in the northwest corner, which results in a slope gradient of approximately two percent. The site generally slopes to the northeast towards the adjacent drainage.

Flora/Fauna. Flora and fauna conditions at and near the proposed reservoir sites are described in a report titled *Biological Resources Assessment for the Reservoir an Operations Yard Project, North Fork Ranch, Santa Barbara County, California* (February 24, 2016, Attachment 2a). The operations yard and vineyard irrigation pipelines described by this report are not part of the proposed frost pond project.

The proposed reservoir sites and surrounding areas have been historically used for cattle grazing and vegetation at and near the sites is sparse and consists predominately of non-native weeds and annual grasses. The proposed reservoir sites and areas adjacent to the sites were recently disked in preparation of planting grape vines. As a result of the disking operations conducted in 2016, much of the proposed reservoir sites are nearly devoid of vegetation. The drainages located near the proposed reservoirs are dry most of the year and generally flow briefly during the summer monsoon season and after winter rains. The drainages support patches of native habitat. 13 species of sensitive plants are known to exist in the project region, although no suitable habitat for sensitive plant species was observed at the project sites, and seasonally timed surveys conducted in 2015 did not observe any sensitive plant species in project-

related disturbance areas. Sensitive wildlife species that have the potential to occur in the project area include San Joaquin kit fox and American badger.

Vegetation coverage at the project sites is sparse and wildlife observed during site visits was limited to coyote tracks and a large flock of American crows in a disked area (KMA, 2016). 12 special status animal species are known to occur in the project region. Species that may still occur in the region include giant kangaroo rat, American badger, San Joaquin kit fox, blunt-nosed leopard lizard, California red-legged frog and prairie falcon. Due to lack of prey or habitat requirements, it is unlikely that these species would be found on the project site, however, species such as the San Joaquin kit fox, if present in the project area, could move through the project sites during foraging or migration activities.

Archaeological Sites. Archaeological resources located on or near the project site are described in a report titled *Phase 1 Cultural Resources Study for the North Fork Reservoir Project, Santa Barbara County, California* (August, 2016). The Phase 1 investigation included a survey of the proposed reservoir sites and the location of the proposed pipelines that would connect the reservoirs to existing irrigation water pipelines. The Phase 1 survey did not identify any archaeological resources within the proposed project site boundaries. The survey report does, however, state that human remains were identified during the excavation of a trench for the installation of an irrigation pipeline on the north side of State Highway 166. Due to the presence of this pre-historic burial, the proposed reservoir sites are considered to be sensitive for cultural resources.

Soils: Reservoir sites 1 and 3 are located on Pleasanton sandy loam, and reservoir site 2 is on Panoche loam. Both soil types have a land capability classification of 2e if irrigated and 3e if non-irrigated.

3.2 ENVIRONMENTAL BASELINE

The environmental baseline from which the project's impacts are measured consists of the on the ground conditions described above.

4.0 POTENTIALLY SIGNIFICANT EFFECTS CHECKLIST

The following checklist indicates the potential level of impact and is defined as follows:

Potentially Significant Impact: A fair argument can be made, based on the substantial evidence in the file, that an effect may be significant.

Less Than Significant Impact with Mitigation: Incorporation of mitigation measures has reduced an effect from a Potentially Significant Impact to a Less Than Significant Impact.

Less Than Significant Impact: An impact is considered adverse but does not trigger a significance threshold.

No Impact: There is adequate support that the referenced information sources show that the impact does not apply to the subject project.

Reviewed Under Previous Document. The analysis contained in a previously adopted/certified environmental document addresses this issue adequately for use in the current case and is summarized in the discussion below. The discussion should include reference to the previous documents, a citation of the page(s) where the information is found, and identification of mitigation measures incorporated from the previous documents.

4.1 AESTHETICS/VISUAL RESOURCES

Will the proposal result in:	Poten. Signif.	Less than Signif. With Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
a. The obstruction of any scenic vista or view open to the public or the creation of an aesthetically offensive site open to public view?			X		
b. Change to the visual character of an area?			X		
c. Glare or night lighting which may affect adjoining areas?			X		
d. Visually incompatible structures?			X		

Setting

Physical

State Highway 166 provides regional access through the project region and views from the highway in the project area predominately consist of fore- and mid-ground views of open space and agricultural operations. Background views available from the highway include the Caliente Mountains to the north and the Sierra Madre Mountains to the south.

The proposed reservoir sites are vacant and have little or sparse vegetation coverage. The topography of the sites generally slopes gently towards adjacent drainages. Grape vines have been recently planted in areas adjacent to the proposed reservoir sites. Proposed reservoir site Nos. 1, 2 and 3 would be approximately 3,000, 1,200, and 1,500 feet south/southeast of State Highway 166, respectively.

Regulatory

County Environmental Thresholds: The County's Visual Aesthetics Impact Guidelines classify coastal and mountainous areas, the urban fringe, and travel corridors as "especially important" visual resources. A project may have the potential to create a significantly adverse aesthetic impact if (among other potential effects) it would impact important visual resources, obstruct public views, remove significant amounts of vegetation, substantially alter the natural character of the landscape, or involve extensive grading visible from public areas. The guidelines address public, not private views.

Impact Discussion

(a-d) Less than significant impact: The proposed reservoirs would be constructed by excavating soil below existing grade and using the excavated soil to construct berms that would impound stored water. The height of the water impoundment berms would vary but in general would be approximately three to 20 feet above the adjacent ground surface. Vegetation, likely consisting of an approved erosion control seed mix, would be required on the outside surfaces of the berms for erosion control purposes. The proposed water delivery pipelines that would extend between the reservoirs and existing irrigation water pipelines would be below ground and not visible.

The proposed reservoirs would result in the construction of new above ground facilities that would be visible from public viewing locations such as State Highway 166. Due to the setback distances between the three

reservoir sites and State Highway 166 the reservoirs would not be prominently visible to persons traveling on the highway. Grading required to construct the reservoirs would not result in the creation of grading scars or other alterations to existing topography or vegetation that would result in a significant visual impact. Erosion control planting on the reservoir berms would help to make the appearance of the berms blend with undisturbed areas near the reservoir sites. The proposed reservoir berms would have a maximum height of approximately 20 feet above surrounding grade and would not adversely affect existing views of the Sierra Madre Mountains to the south of the project site from public viewpoints such as State Highway 166. No nighttime lighting would be used at the project sites. Therefore, the project would not obstruct a scenic vista, substantially change the visual character of the project sites, or result in structures that are incompatible with surrounding open space and agricultural uses. Therefore, the project's aesthetic/visual resource impacts would be **less than significant**.

Cumulative Impacts: Proposed grading to construct the three reservoirs would result in relatively minor alterations to the topography of the project sites, and the project would not result in the development of new buildings or structures that would be incompatible with surrounding land uses. Therefore, the project would not result in cumulatively considerable changes to existing aesthetic/visual resource conditions at the project sites or the project area, and would result in **less than significant** cumulative aesthetic/visual resource impacts.

Mitigation and Residual Impact: The project's impacts would be less than significant and no mitigation is required.

4.2 AGRICULTURAL RESOURCES

Will the proposal result in:	Poten. Signif.	Less than Signif. With Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
a. Convert prime agricultural land to non-agricultural use, impair agricultural land productivity (whether prime or non-prime) or conflict with agricultural preserve programs?			X		
b. An effect upon any unique or other farmland of State or Local Importance?			X		

Background: Agricultural lands play a critical economic and environmental role in Santa Barbara County. Agriculture continues to be Santa Barbara County's major producing industry with a gross production value of almost $1.5 billion (Santa Barbara County 2014 Crop Production Report). In addition to the creation of food, jobs, and economic value, farmland provides valuable open space and maintains the County's rural character.

***Physical*:** The project parcel has been used for grazing in the past, and the areas near the proposed frost ponds have been recently planted with grape vines. The proposed reservoir sites would encompass a total area of approximately 15 acres. Proposed reservoir sites 1 and 3 are located on Pleasanton sandy loam, and reservoir site 2 is on Panoche loam. Both soil types have a land capability classification of 2e if irrigated and 3e if non-irrigated. Therefore, the proposed reservoir sites are considered to have prime agricultural soils if irrigated. The project sites and adjacent areas are classified as "Grazing Land" by the California Department of Conservation (Farmland Mapping and Monitoring Program, 2016). The project parcel is subject to agricultural preserve contract 95-AP-024.

Regulatory

County Thresholds Manual: The County's Agricultural Resources Guidelines (approved by the Board of Supervisors, August 1993) provide a methodology for evaluating agricultural resources. These guidelines utilize a weighted point system to serve as a preliminary screening tool for determining significance. The tool assists planners in identifying whether a previously viable agricultural parcel could potentially be subdivided into parcels that are not considered viable after division. A project that would result in the loss or impairment of a agricultural resources would result in a potentially significant impact. The proposed project does not include land subdivision, nor would it impair agricultural uses located on the project parcel. Therefore, the weighted point system was not used for this analysis.

Impact Discussion

(a - b) Less than significant impact. The proposed reservoirs would be used to provide frost protection for approximately 400 acres of grape vines that have been recently planted near the reservoir sites. The proposed reservoirs would be located on prime (if irrigated) agricultural soils, however, they would be an agricultural accessory use that supports an irrigated agriculture operation. The proposed reservoirs would not convert prime agricultural land to a non-agricultural use, or impair agricultural land productivity. The project parcel is under an agricultural preserve contract. The proposed project was reviewed by the Agricultural Preserve Advisory Committee on April 1, 2016 and found it to be compatible with the Uniform Rules for agricultural preserves. Therefore, the project would not conflict with an agricultural preserve contract, and its impacts to agricultural recourses would be **less than significant**.

Cumulative Impacts: The proposed reservoirs would support the long-term use of the project parcel for irrigated agriculture. Therefore, the project would not contribute to a cumulatively considerable loss of agricultural resources and its cumulative impacts would be **less than significant**.

Mitigation and Residual Impact: The project's impacts would be less than significant and no mitigation is required.

4.3a AIR QUALITY

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
a. The violation of any ambient air quality standard, a substantial contribution to an existing or projected air quality violation, or exposure of sensitive receptors to substantial pollutant concentrations (emissions from direct, indirect, mobile and stationary sources)?			X		
b. The creation of objectionable smoke, ash or odors?			X		
c. Extensive dust generation?			X		

Existing Setting: The project site is located within the South Central Coast air basin, a federal and state non-attainment area for ozone (O_3) and a state non-attainment area for particulate matter (PM_{10}). Reactive organic compounds (ROC) and nitrogen oxides (NO_x), which are precursors to ozone, are considered to be non-attainment pollutants. The major sources of ozone precursor emissions in the County are motor vehicles, the petroleum industry and solvent use. Sources of PM_{10} include grading, road dust and vehicle exhaust.

County Environmental Thresholds: Chapter 5 of the Santa Barbara County Environmental Thresholds and Guidelines Manual addresses the subject of air quality. The thresholds provide that a proposed project will not have a significant impact on air quality if operation of the project will:

- emit (from all project sources, mobile and stationary), less than the daily trigger for offsets (55 pounds per day for NO_x and ROC, 80 pounds per day for PM_{10});
- emit less than 25 pounds per day of oxides of nitrogen (NO_x) or reactive organic compounds (ROC) and from motor vehicle trips only;
- not cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone);
- not exceed the APCD health risk public notification thresholds adopted by the APCD Board; and
- be consistent with the adopted federal and state Air Quality Plans.

As indicated above, long-term/operational emissions thresholds have been established to address mobile emissions (i.e., motor vehicle emissions) and stationary source emissions (i.e., stationary boilers, engines, paints, solvents, and chemical or industrial processing operations that release pollutants). No thresholds have been established for short-term impacts associated with construction activities. However, the County's Grading Ordinance and the Air pollution Control District requires standard dust control conditions for all projects involving grading activities.

Impact Discussion

(a - b) Less than significant impact. Short-term emissions of ozone precursors (NO_x and ROC) during project construction would result primarily from the use of earthmoving equipment. Project-related grading to construct the three proposed reservoirs would require approximately 130,897 cubic yards of cut, and 127,048 cubic yards of fill. Due to soil shrinkage, it is not expected that any excess soil would be exported from the project site. Minor amounts of grading (trenching) would also be required for the installation of approximately 2,326 linear feet of proposed reservoir fill and drain lines. Since short-term construction-related emissions are not considered to result in significant air quality impacts, project-related construction emissions of NO_x and ROC would be **less than significant** on a project-specific and cumulative basis. However, due to the non-attainment status of the air basin for ozone, the project would be required to implement standard conditions required by the APCD to reduce construction-related emissions of ozone precursors to the extent feasible. The implementation of these standard conditions is routinely required for all new development in the County.

The operation of the proposed reservoirs would not generate a substantial amount of traffic (Section 4.15, Transportation/Circulation) or result in substantial direct or indirect emissions from stationary sources. The project would not result in industrial or other operations that would have the potential to result in emissions of smoke, ash, or objectionable odors. Therefore, the project would not be a substantial long-term source of emissions and would result in **less than significant** project-specific and cumulative air emission impacts.

(c) Less than significant impact. Project-related grading would have the potential to be a short-term source of fugitive dust that could have the potential to impact adjacent agricultural operations. Project-related

grading would also contribute to regional emissions of PM_{10} and $PM_{2.5}$. Dust emissions resulting from project-related construction would be reduced to the extent feasible through the implementation of County Grading Ordinance and the Air Pollution Control District requirements, which require the implementation of standard dust control measures. Therefore, short-term dust emissions from project-related grading would be **less than significant** under project-specific and cumulative conditions.

Mitigation and Residual Impact: The project's impacts would be less than significant and no mitigation is required.

4.3b AIR QUALITY - GREENHOUSE GAS EMISSIONS

Greenhouse Gas Emissions - Will the project:	**Poten. Signif.**	**Less than Signif. with Mitigation**	**Less Than Signif.**	**No Impact**	**Reviewed Under Previous Document**
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		

Greenhouse Gas Emissions

Existing Setting: Greenhouse gases include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). The largest source of greenhouse gas emissions from human activities in the United States is from fossil fuel combustion for electricity, heat, and transportation. Specifically, the *Inventory of U.S. Greenhouse Gasses and Sinks* (U.S. Environmental Protection Agency, 2013) states that the primary sources of greenhouse gas emissions in 2013 included electricity production (31%), transportation (27%), industry (21%), commercial and residential (12%), and agriculture (9%). This release of gases creates a blanket around the earth that allows light to pass through but traps heat at the surface, preventing its escape into space. While this is a naturally occurring process known as "the greenhouse effect," there is strong evidence to support that human activities have accelerated the generation of greenhouse gases beyond natural levels. The overabundance of greenhouse gases in the atmosphere has led to a warming of the earth and has the potential to severely impact the earth's climate system. For instance, Santa Barbara County is projected to experience an increase in the number of wildfires, land vulnerable to 100-year flood events, and temperature increases, even under a low-emissions scenario (California Energy Commission, 2015).

Climate change results from greenhouse gas emissions "*…generated globally over many decades by a vast number of different sources*" rather than from greenhouse gas emissions generated by any one project (County of Santa Barbara Planning and Development, 2008). As defined in CEQA Guidelines Section 15355 and discussed in Section 15130, "…a cumulative impact consists of an impact which is created as a result of the combination of the [proposed] project…evaluated…together with other projects causing related impacts." Therefore, by definition, climate change under CEQA is a cumulative impact.

Environmental Threshold: CEQA Guidelines Section 15183.5(a) states,

> Lead agencies may analyze and mitigate the significant effects of greenhouse gas emissions at a programmatic level, such as in…a separate plan to reduce greenhouse gas emissions. Later project-specific environmental documents may tier from…that existing programmatic review…a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously adopted plan…

In May 2015, the County of Santa Barbara Board of Supervisors adopted the *Energy and Climate Action Plan* (ECAP) (County of Santa Barbara Long Range Planning Division, 2015) and certified the accompanying EIR (SCH# 20144021021) (PMC, 2015). The ECAP includes a greenhouse gas emissions forecast for unincorporated Santa Barbara County to 2035 and otherwise meets the criteria in CEQA Guidelines Section 15183.5(b) for a "plan to reduce greenhouse gas emissions." The ECAP commits the County to reduce community-wide greenhouse gas emissions by 15 percent below 2007 levels by 2020 consistent with the California Global Warming Solutions Act of 2006 (AB 32) and the related *Climate Change Scoping Plan* (California Air Resources Board, 2008). The ECAP concludes that the County can meet this emission reduction target by implementing 53 existing and new County projects, policies, and programs ("emission reduction measures"). As a result, specific projects included in the ECAP's emission forecast are not currently required to incorporate emission reduction measures listed in the ECAP or any other mitigation measures to reduce greenhouse gas emissions. Concurrent with the ECAP, the Board of Supervisors also adopted an amendment to the Energy Element of the Comprehensive Plan that requires the County to monitor progress meeting the emission reduction target and, as necessary, update the ECAP.

The growth estimates used in the ECAP's greenhouse gas emissions forecast were based on the *Santa Barbara County Regional Growth Forecast 2005-2040* (Santa Barbara County Association of Governments, 2007) and the 2010 U.S. Census. The growth estimates were based on factors such as population projections, vehicle trends, and planned land uses. The sources of greenhouse gas emissions included various sectors, such as transportation, residential energy, commercial energy, off-road, solid waste, agriculture, water and wastewater, industrial energy, and aircraft. As a result, most residential and commercial projects that are consistent with the County's zoning (in 2007) were included in the forecast. However, certain projects were not included in the emissions forecast, such as stationary source projects (e.g., large boilers, gas stations, auto body shops, dry cleaners, oil and gas production facilities, and water treatment facilities), Comprehensive Plan amendments, and community plans that exceed the County's projected population and job growth.

A proposed project that was included in the ECAP's emissions forecast may tier from the ECAP's EIR for its CEQA analysis of greenhouse gas emissions. A project that tiers from the ECAP's EIR is considered to be in compliance with the requirements in the ECAP and, therefore, its incremental contribution to a cumulative effect is not cumulatively considerable (Class III).

Impact Discussion

(a - b) Less than significant impact. The proposed reservoirs would not result in an increase in population or the development of land uses that would result in substantial long-term emissions of greenhouse gases. Therefore, long-term GHG emissions that may result from the operation of the reservoirs were included in the ECAP's forecasted 2020 emissions as they are a conditionally permitted use in the AG-II-100 zone district and consistent with the growth projections for the County. As such, GHG emission impacts that may result from the project are mitigated by the 53 emission reduction measures specified in the ECAP.

Therefore, the impact of this individual project is **less than significant** and no mitigation measures are required.

Cumulative Impacts: The ECAP quantifies and forecasts greenhouse gas emissions for certain non-stationary sectors within unincorporated Santa Barbara County through 2020. As discussed for items "a-b" above, the proposed project was included in the ECAP's greenhouse gas emissions forecast. As a result, the proposed project would tier from the ECAP's certified EIR for its cumulative impact analysis of greenhouse gas emissions. The EIR contains a programmatic analysis of greenhouse gas emissions for unincorporated Santa Barbara County. The ECAP contains 53 County and community-wide programmatic emission reduction measures to achieve the 15 percent greenhouse gas emissions reduction target by 2020. The County recently created the Energy and Sustainability Initiatives Division and is taking other steps to implement and monitor the effectiveness of these measures throughout the unincorporated county. The ECAP does not require the proposed project to incorporate any project-specific emission reduction measures or any mitigation measures to reduce greenhouse gas emissions. Therefore, the project complies with the requirements of the ECAP and, as provided in CEQA Guidelines 15183.5(b), its incremental contribution to the cumulative effect is not cumulatively considerable and would have a **less than significant impac**t on the environment.

Mitigation and Residual Impact: Since the proposed project would not have a significant impact on the environment, no additional mitigation is necessary. Therefore, residual impacts would be less than significant.

4.4 BIOLOGICAL RESOURCES

Will the proposal result in:	**Poten. Signif.**	**Less than Signif. with Mitigation**	**Less Than Signif.**	**No Impact**	**Reviewed Under Previous Document**
Flora					
a. A loss or disturbance to a unique, rare or threatened plant community?			X		
b. A reduction in the numbers or restriction in the range of any unique, rare or threatened species of plants?			X		
c. A reduction in the extent, diversity, or quality of native vegetation (including brush removal for fire prevention and flood control improvements)?			X		
d. An impact on non-native vegetation whether naturalized or horticultural if of habitat value?			X		
e. The loss of healthy native specimen trees?			X		
f. Introduction of herbicides, pesticides, animal life, human habitation, non-native plants or other factors that would change or hamper the existing habitat?			X		
Fauna					
g. A reduction in the numbers, a restriction in the range, or an impact to the critical habitat of any unique, rare, threatened or endangered species of animals?		X			
h. A reduction in the diversity or numbers of animals onsite (including mammals, birds, reptiles,		X			

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
amphibians, fish or invertebrates)?					
i. A deterioration of existing fish or wildlife habitat (for foraging, breeding, roosting, nesting, etc.)?			X		
j. Introduction of barriers to movement of any resident or migratory fish or wildlife species?			X		
k. Introduction of any factors (light, fencing, noise, human presence and/or domestic animals) which could hinder the normal activities of wildlife?			X		

Background and Methods

A biological resources assessment for the reservoir project (Kevin Merk Associates, February 24, 2016) was prepared for the project and is provided as Attachment 2a. This report describes the existing conditions at and near the proposed reservoir sites, identifies special-status biological resources known to exist in the project region, and includes recommendations to minimize potential impacts to sensitive wildlife that could result from the implementation of the proposed project. The February 24, 2016 report was peer reviewed and the results of that review are summarized in a memo (Dudek, March 21, 2016) provided as Attachment 2b. Responses to the peer review comments (Kevin Merk Associates, June 24, 2016) are provided as Attachment 2c.

Existing Plant and Animal Communities/Conditions

Plants. The proposed reservoir sites have historically been used for grazing and in 2016 were disked in preparation of planting grape vines in adjacent areas. Botanical surveys on the project property were conducted in April, May, June, August, and September 2015 to search for special status plants and characterize the on-site habitat types. Additional surveys were conducted in the winter and spring 2016 over large areas of the property, including the proposed reservoir sites. In general, the reservoir sites lack plant species diversity and do not support any native plants, and plants observed at the project sites in the spring and summer of 2015 consisted of a mix of non-native weeds including red-stemmed filaree and Russian thistle, and sparse non-native grasses.

The California Natural Diversity Data Base (CNDDB) identifies 13 recorded special status plant species within a five mile radius of the proposed reservoir sites. Table 1 in Attachment 2a lists the special status plants identified by the CNDDB. Based on the habitat requirements of the identified plants, existing conditions at the project sites, and the results of seasonally timed surveys in 2015, it was determined that it is unlikely that any of the identified sensitive plants are located on or near the proposed reservoir sites.

Wildlife. Wildlife observed at the proposed reservoir sites during site visits was limited to coyote tracks and a large flock of American crows in a disked area. The CNDDB identified 13 known occurrences of sensitive wildlife species within five miles of the proposed reservoir sites. Table 1 in Attachment 2a lists the special status wildlife species identified by the CNDDB. The potential for sensitive animal species to occur on or near the proposed reservoir sites is summarized below.

Giant kangaroo rat was last identified in the project area in 1979 and is now identified as “possibly extirpated” by the CNDDB. Surveys of the proposed reservoir sites did not locate any burrow complexes characteristic of the giant kangaroo rat, therefore, this species is unlikely to occur in the project areas.

No evidence (i.e., direct observations, scat or tracks) of the federally endangered San Joaquin kit fox or American badger were observed at the project sites during surveys conducted in 2015 and 2016. The project sites are within the historic range of the San Joaquin kit fox, however, agricultural activities have encroached upon suitable habitat and previous disking has reduced the potential small mammal prey base and potential den sites from the project sites. It is possible that a kit fox, if present in the region, could move through the project area during foraging and/or migration activities, although the lack of a well-developed prey base and limited suitable denning habitat within the project areas indicate a very low potential for this species to occur. The last recorded occurrences of San Joaquin kit fox in the immediate project area are from 1975, and on-going agricultural operations would have restricted any recent denning activities to either higher elevations of the project property or riverbank/terrace areas outside the proposed project footprint areas. Therefore, there is a very low potential for kit fox or American badger to occur at the reservoir project sites. However, due to suitable kit fox and badger denning and foraging habitat in the project area, those species could be a rare transient through the proposed project sites.

Designated critical habitat for California red-legged frog is located beyond the five mile CNDDB search radius conducted for the proposed project. The ephemeral drainages on the project property do not provide suitable aquatic habitat for red-legged frog. Therefore, it is considered highly unlikely that red-legged frog is located on or near the proposed project sites.

Blunt-nosed leopard lizard (BNLL) was not identified by the CNDDB as occurring within five miles of the project sites, BNLL has a known occurrence at a site just over five miles east of the eastern project parcel border, and well as other occurrences in the project region. Prior to disking the proposed project sites, 18 protocol-level surveys for BNLL were conducted within the highest quality potential habitat in the eastern portion of the project property. Those surveys did not detect the presence of BNLL. Additional non-protocol condition surveys were also conducted at proposed Reservoir site 2 and 3. Overall, the surveys determined that BNLL were unlikely to occur on or near the proposed reservoir sites. Based on the survey results, it was also determined that is unlikely for coast horned lizard to be present at the project sites.

Special status bird species, including raptors (long-eared owl and prairie falcon), would be expected to forage over or around the proposed project area. However, due to the lack of trees and the encroachment of agriculture, no suitable prey base or nesting habitat is present at the project sites. Therefore, these species are not expected to occur in the project area for long periods.

Other special status animal species known to occur in the project area include: crotch bumble bee, western pond turtle, Kern primrose sphinx moth, San Joaquin whipsnake, Tulare grasshopper mouse, and coast horned lizard. The biological resources assessment prepared for the proposed project concluded that these species are not expected to occur at the project sites, or are unlikely to be found at the sites due to the absence of suitable habitat, such as perennial water, suitable vegetation, and/or prey base.

County Environmental Thresholds: The County of Santa Barbara Environmental Thresholds and Guidelines Manual establishes thresholds for significant impacts to biological resources. Thresholds applicable to the proposed project include:

***Other Rare Habitat Types*:** The Manual recognizes that not all habitat-types found in Santa Barbara County are addressed by the habitat-specific guidelines. Impacts to other habitat types or species may be considered significant, based on substantial evidence in the record, if they substantially: (1) reduce or eliminate species diversity or abundance; (2) reduce or eliminate the quality of nesting areas; (3) limit reproductive capacity through losses of individuals or habitat; (4) fragment, eliminate, or otherwise

disrupt foraging areas and/or access to food sources; (5) limit or fragment range and movement; or (6) interfere with natural processes, such as fire or flooding, upon which the habitat depends.

Impact Discussion

(a-f) Less than significant impact: The proposed reservoir sites have been extensively disturbed by historic grazing operations and recent disking in preparation of planting vineyards in adjacent areas. Vegetation coverage at the project sites is sparse and the minimal vegetation growth consists primarily of non-native weeds and grasses. The biological resources assessment prepared for the proposed project determined it is unlikely that any of the sensitive plants identified by the CNDDB occur at or near the proposed project sites. This is due primarily to the disturbed character of the project sites and general absence of suitable habitat. In addition, no sensitive plants were observed at the project sites during seasonally appropriate surveys conducted in 2015. The CNDDB did not identify any sensitive plant communities that are known to exist in the project area. Therefore, the project would have **less than significant** impacts related to sensitive plant communities or species, the quality or extent of native vegetation, or the habitat value of non-native vegetation.

(g - h) Less than Significant with Mitigation: The biological resources assessment prepared for the proposed project determined it is unlikely that most of the sensitive wildlife species identified by the CNDDB exist at or near the proposed project sites. This is due primarily to the disturbed character of the project sites, absence of suitable habitat, and regular human presence. However, the assessment concluded that while unlikely, there is a potential for San Joaquin kit fox and American badger to move through the proposed project sites while in search of food or suitable denning habitat. Therefore, project-related construction activities would have the potential to result in significant impacts to San Joaquin kit fox and American badger.

In the unlikely event that San Joaquin kit fox is located at the proposed project sites, potential impacts would be reduced to a less than significant level by implementing U.S. Fish and Wildlife Service (2011) Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance avoidance measures during construction of the proposed reservoirs (Mitigation Measure No. 1). In general, these avoidance measures require surveys to identify potential kit fox habitat in proposed disturbance areas, and if necessary, additional preconstruction/pre-activity surveys. The U.S. Fish and Wildlife Service must be contacted if surveys detect an active kit fox den. If an inactive den is observed, specified measures to preclude the use of the den are to be implemented. Implementation of the proposed survey and avoidance measures would be sufficient to ensure that impacts to San Joaquin kit fox are reduced to a less than significant level. Proposed Mitigation Measure No. 3 provides requirements to reduce potential impacts to American badger to a less than significant level. In general, this measure requires preconstruction surveys to identify active dens, includes specified measures to avoid active dens and to discourage the use of inactive dens located in project-related disturbance areas. The mitigation measures for San Joaquin kit fox and American badger would also reduce the potential for less than significant impacts to common wildlife species that may also be present at the project sites by identifying species located in project areas, which would facilitate the implementation of appropriate impact avoidance and/or minimization measures.

(i - k) Less than significant impact: Vegetation at the proposed project sites is sparse and has been disturbed by disking operations. Therefore, construction of the reservoirs would not result in the removal of trees or shrubs, and would not result in the removal of potential breeding, roosting or nesting habitat. The proposed reservoirs would be at least 50 feet from the top of bank of the small ephemeral drainage channels located near the reservoir sites. Therefore, the project would not interfere with the potential use of the channels by wildlife. No lighting would be provided at the project sites and safety fencing that

would be installed around the reservoirs would not interfere with wildlife migration through the project area and would substantially reduce the potential for animals becoming trapped in the reservoirs. Operation of the reservoirs would not result in a substantial increase in noise or other conditions that would result in significant long-term habitat quality impacts to areas at or near the project sites. Therefore, the project would have **less than significant** impacts related to habitat deterioration.

Cumulative Impacts: The proposed project sites have been extensively disturbed and it is unlikely that the sites contain or support sensitive plant or wildlife species. Although unlikely, project-related construction activities would have the potential to result in significant short-term effects to sensitive wildlife. Those temporary impacts would be reduced to a less than significant level with the implementation of proposed mitigation measures. The long-term operation of the proposed reservoirs would not significantly impact biological resources located on or near the project sites. Therefore the project would not have a cumulatively considerable effect on biological resources and the project's contribution to biological resource impacts would be **less than significant.**

Mitigation and Residual Impact

Implementation of the following mitigation measure would reduce the project's short-term impacts to San Joaquin kit fox in the unlikely event that it inhabits the project site. The required pre-construction surveys would also reduce potential impacts to American badger. Implementation of this measure would reduce potential impacts to San Joaquin kit fox and American badger to a **less than significant** level (Class II). Residual impacts would be less than significant.

1. **Special Condition: San Joaquin Kit Fox Avoidance Measures**. Project-related pre-construction / pre-activity surveys shall be conducted prior to the beginning of ground disturbance and/or construction activities, or any project activity that has the potential to impact the San Joaquin kit fox and/or American badger. Required pre-construction / pre-activity surveys and project-related construction activities shall be conducted in accordance with the requirements of the U.S. Fish and Wildlife Service's *Standardized Recommendations for Protection of The Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (*January, 2011). Similar measures and procedures shall be implemented to minimize the potential for impacts to American badger. The Standardized Recommendations are provided as Attachment 3.

   PLAN REQUIREMENTS AND TIMING: Prior to the start of any project-related pre-construction / pre-activity, the areas that would be affected by reservoir construction and the construction of the proposed reservoir fill and drain lines shall be marked in the field and surveyed by a qualified biologist. Project-related pre-construction / pre-activity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities. The qualified biologist shall conduct weekly site visits during site disturbance activities that proceed longer than 14 days for the purpose of monitoring compliance with the attached Standardized Recommendations. Site disturbance activities lasting up to 14 days do not require weekly monitoring by the biologist unless observations of kit fox or their dens are made on-site or the qualified biologist recommends additional monitoring. This measure shall be printed on all grading and construction plans.

   MONITORING: The qualified biologist shall document the methods and results of site visits in weekly monitoring reports that are to be submitted to P&D. If incidental take of kit fox during project activities is possible, before project activities commence, the applicant must consult with the USFWS and CDFW. The results of this consultation may require the applicant to obtain a federal and/or state permit for incidental take during project activities.

2. **Bio-09 Fish and Wildlife Jurisdiction Advisory**. The project site is within the range of San Joaquin kit fox, a species listed as Endangered by the U.S. Fish and Wildlife Service, and Threatened by the California Department of Fish and Wildlife. Based upon reports prepared by Kevin Merk Associates, dated February 24, 2016 and June 24, 2016, it has been determined that the probability for San Joaquin kit fox occurrence on the site is very low. The issuance of this permit does not relieve the permit-holder of any duties, obligations, or responsibilities under the federal or California Endangered Species Act or any other law. The permit-holder shall contact the necessary jurisdictional agencies to ascertain his or her level of risk under the federal and California Endangered Species Act in implementing the project herein permitted.

   Indemnity for Violation of the Endangered Species Act: The applicant shall defend, indemnify and hold harmless the County or its agents, officers and employees from any and all claims, actions, proceedings, demands, damages, costs, expenses (including attorney's fees), judgments or liabilities, against the County or its agents, offices or employees brought by any entity or person for any and all actions or omissions of the applicant or his agents, employees or other independent contractors arising out of this permit alleged to be in violation of the federal or California Endangered Species Acts (16 USC Sec. 1531 et seq.; Cal. Fish and Game Code Sec. 2050 et sec.). This permit does not authorize, approve or otherwise support a "take" of any listed species as defined under the federal or California Endangered Species Acts. Applicant shall notify County immediately of any potential violation of the federal and/or California Endangered Species Act.

3. **American Badger Avoidance and Minimization Measures**. A minimum of 14 days prior to initiation of ground disturbing activities, a survey for badger burrows shall be conducted within the disturbance footprint by an approved biologist (a biologist familiar with, including identification of, the wildlife species in the region). Dens found within the survey area shall be mapped and monitored using a tracking medium, remote camera system, and/or spotlighting at night for a minimum of three days to assess the presence of badgers. Inactive dens shall be collapsed by hand with a shovel to prevent badgers from re-using them during construction. Active dens located within the survey area shall be avoided during the breeding season (March 1 through June 30). A minimum buffer of 50 feet around the active den within the proposed area of disturbance shall be demarcated by construction fencing. The fencing shall be installed one foot above ground to permit movement of badgers in and out of the buffer zone. Once the biologist has determined that active dens are no longer in use, the den shall be collapsed by shovel. Prior to ground disturbing activities occurring outside of the breeding season, badgers may be discouraged from using currently active dens by partially blocking the entrance of the den with sticks, debris, and soil for three (3) to five (5) days. Access to the den would be incrementally blocked to a greater degree over this period. This would cause the badger to abandon the den site and move elsewhere. After badgers have stopped using active dens within the project site, the dens would be collapsed by hand with a shovel.

   Plan Requirements and Timing. The name, qualifications, scope of biological surveys and contact information for the surveying biologist must be submitted to P&D and CDFW in advance of the surveys. The above measures shall be included on all land use, grading, and building plans for the construction of the reservoirs, water pipelines, and utility line improvements. A report of the results of the badger survey shall be submitted to P&D for review and approval prior to Zoning Clearance. **Monitoring**. P&D will review and approve the reports. A County-approved biologist shall be present during the initial ground-disturbing activity.

4.5 CULTURAL RESOURCES

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
Archaeological Resources					
a. Disruption, alteration, destruction, or adverse effect on a recorded prehistoric or historic archaeological site (note site number below)?		X			
b. Disruption or removal of human remains?		X			
c. Increased potential for trespassing, vandalizing, or sabotaging archaeological resources?		X			
d. Ground disturbances in an area with potential cultural resource sensitivity based on the location of known historic or prehistoric sites?		X			
Ethnic Resources					
e. Disruption of or adverse effects upon a prehistoric or historic archaeological site or property of historic or cultural significance to a community or ethnic group?			X		
f. Increased potential for trespassing, vandalizing, or sabotaging ethnic, sacred, or ceremonial places?			X		
g. The potential to conflict with or restrict existing religious, sacred, or educational use of the area?			X		

Setting

For at least the past 10,000 years, the area that is now Santa Barbara County has been inhabited by Chumash Indians and their ancestors. A Phase 1 investigation (*Phase 1 Cultural Resources Study for the North Fork Reservoir Project, Santa Barbara County, California,* Rincon Consultants, 2016) of the proposed reservoir and pipeline construction sites was conducted. The survey did not identify any archaeological resources. However, prior to the preparation of the Phase 1 investigation, human remains were identified during the excavation of an irrigation pipeline at a location on the north side of Highway 166. Based on the previous discovery of the burial, the project site is considered sensitive for cultural resources.

County Environmental Thresholds: The County Environmental Thresholds and Guidelines Manual contains guidelines for identification, significance determination, and mitigation of impacts to important cultural resources. Chapter 8 of the Manual, the *Archaeological Resources Guidelines: Archaeological, Historic and Ethnic Element*, specifies that if a resource cannot be avoided, it must be evaluated for importance under CEQA. CEQA Section 15064.5 contains the criteria for evaluating the importance of archaeological and historical resources. For archaeological resources, the criterion usually applied is: (D), "Has yielded, or may be likely to yield, information important in prehistory or history." A project that may cause a substantial adverse effect on an archaeological resource may have a significant effect on the environment.

Impact Discussion

(a-d) Less than significant with mitigation: Background research and the survey of the project sites did not identify any archaeological resources that would be impacted by the construction of the proposed reservoirs or associated pipelines. Therefore, the project would not impact any recorded cultural resource sites. However, based on the previous discovery of pre-historic human remains in the vicinity of the project sites, the project area is considered sensitive for cultural resources. Therefore, there is a potential for unanticipated discoveries of cultural resources during project construction. Mitigation measure No. 4 requires that an archaeological monitor and Native American representative be present during initial ground disturbance at each of the proposed reservoir and pipeline installation sites. Mitigation measure No. 5 describes actions to be implemented in the event that previously unidentified cultural resources are discovered during site development; and mitigation measure No. 6 requires that construction workers be informed about the cultural resources sensitivity of the project area. The proposed mitigation measures would reduce impacts to cultural resources to **a less than significant** level.

(e-g) Less than significant impact. Based on the Phase 1 investigation there is no indication that the proposed reservoir sites are religiously important or that the project site is a sacred site. In addition, under the requirements of AB 52 (Gatto, 2014), the Barbareño/Venentureño Band of Mission Indians was formally notified of the proposed project by a letter dated March 13, 2017. No response to this notification has been received. The use of the proposed reservoirs would not increase the number of people located on the project property or increase the potential for the collection or vandalizing ethnic resources. As a result, impacts would be **less than significant**.

Cumulative Impacts: The project would have a low potential to encounter previously undetected cultural resources during project construction. However, if the project were to result in the disturbance of previously undetected resources, that impact would be reduced to a less than significant level with the implementation of proposed project-specific mitigation measures. Therefore, the project would not have a cumulative considerable effect on the County's cultural resources and its cumulative cultural resource impacts would be **less than significant**.

Mitigation and Residual Impact: Implementation of the following measures would reduce the project's potential impacts to cultural resources to a less than significant level (Class II). Residual impacts would be less than significant.

4. **CulRes-07 Cultural Resource Monitor**. The Owner/Applicant shall have all earth disturbances including scarification and placement of fill within the proposed project sites monitored by a P&D approved archaeologist and a Native American consultant in compliance with the provisions of the County Archaeological Guidelines. ~~The duration and depth of grading below the ground surface that requires monitoring shall be determined by the approved archaeologist and Native American consultant.~~ Ground-disturbing construction work within native soils shall be monitored by a County-qualified archaeologist and a Native American monitor during construction to a depth of 10 feet below the ground surface.

   TIMING: Prior to the approval of a grading permit, the Owner/Applicant shall submit for P&D review and approval, a contract or Letter of Commitment between the Owner/Applicant and the archaeologist, consisting of a project description and scope of work, and once approved, shall execute the contract. This condition shall be printed on all building and grading plans.

MONITORING: The Owner/Applicant shall provide P&D compliance monitoring staff with the name and contact information for the assigned onsite monitor(s) prior to grading permit issuance and pre-construction meeting. P&D compliance monitoring staff shall confirm monitoring by archaeologist and Native American consultant and P&D grading inspectors shall spot check field work. The P&D permit processing planner shall check plans prior to approval of all building and grading permits and P&D compliance monitoring stall shall spot check in the field.

5. **CulRes-09 Stop Work at Encounter.** The Owner/Applicant and/or their agents, representatives or contractors shall stop or redirect work immediately in the event archaeological remains are encountered during grading, construction, landscaping or other construction-related activity. The Owner/Applicant shall retain a P&D approved archaeologist and Native American representative to evaluate the significance of the find in compliance with the provisions of Phase 2 investigations of the County Archaeological Guidelines and funded by the Owner/Applicant. If remains are found to be significant, they shall be subject to a Phase 3 mitigation program consistent with County Archaeological Guidelines and funded by the applicant.

   PLAN REQUIREMENTS: This condition shall be printed on all building and grading plans.

   MONITORING: The P&D permit processing planner shall check plans prior to the issuance of a Zoning ~~Zone~~ Clearance and P&D compliance monitoring staff shall spot check in the field.

6. **Special Condition: Pre-Construction Meeting.** A pre-construction meeting shall be conducted by a County-qualified archaeologist and a local Native American representative funded by the applicant. Meeting attendees shall include the applicant, archaeologist, local Chumash representative, construction supervisors, and heavy equipment operators to ensure that all parties understand the cultural resources monitoring program and their respective roles and responsibilities. All construction personnel who would work on the site during any phase of ground disturbance shall be required to attend the meeting. The names of all personnel who attend the meeting shall be recorded denoting that they have received the required training.

   The meeting shall review the following: types of archaeological resources that may be uncovered; provide examples of common archaeological artifacts and other cultural materials to examine; describe why monitoring is required; what makes an archaeological resource significant; identify monitoring procedures; what would temporarily halt construction and for how long; describe a reasonable resource discovery scenario (i.e., feature or artifact); and describe reporting requirements and the responsibilities of the construction supervisor and crew. The meeting shall make attendees aware of prohibited activities, including vehicle use in protected areas, and educate construction workers about the inappropriateness of unauthorized collecting of artifacts that can result in impacts on cultural resources.

   PLAN REQUIREMENTS: The pre-construction meeting requirements shall be shown on approved grading and building plans.

   TIMING: The pre-construction meeting shall be conducted prior to the start of ground disturbing activities.

   MONITORING: The Owner/Applicant shall provide P&D compliance monitoring staff with the names and responsibilities of persons who attended the meeting.

Residual impacts would be less than significant with the implementation of proposed mitigation measures.

4.6 ENERGY

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
a. Substantial increase in demand, especially during peak periods, upon existing sources of energy?			X		
b. Requirement for the development or extension of new sources of energy?			X		

Setting

The County has not identified significance thresholds for electrical and/or natural gas service impacts (Thresholds and Guidelines Manual). Private electrical and natural gas utility companies provide service to customers in Central and Southern California, including the unincorporated areas of Santa Barbara County.

(a-b) Less than significant impact: The proposed project would result in the construction and operation of three water reservoirs. It is not anticipated that energy use to operate the reservoirs would result in a substantial increase in demand for energy; use energy in a wasteful manner; or require the development of new energy sources. Therefore, project-related energy use would be **less than significant**.

Cumulative Impacts: The project's contribution to the regional demand for energy would not be cumulatively considerable and its cumulative effect would be **less than significant**.

Mitigation and Residual Impact: Project-related energy demand would be less than significant. Therefore, no mitigation measures are required.

4.7 FIRE PROTECTION

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
a. Introduction of development into an existing high fire hazard area?			X		
b. Project-caused high fire hazard?			X		
c. Introduction of development into an area without adequate water pressure, fire hydrants or adequate access for fire fighting?			X		
d. Introduction of development that will hamper fire prevention techniques such as controlled burns or backfiring in high fire hazard areas?			X		
e. Development of structures beyond safe Fire Dept. response time?			X		

Setting

Physical: The project site is located within a designated High Fire Hazard area (CalFire, 2007). Vegetation at the project sites is sparse and vegetation near the project sites predominately consists of irrigated vineyards and non-native grasses. Fire protection and suppression services for the project would be provided by Santa Barbara County Fire Station 41 (41 Newsome Street, New Cuyama), which is approximately 9-12 miles from the proposed reservoir sites.

Impact Discussion

(a - e) Less than significant impact: The proposed reservoir project would not result in the construction of habitable or combustible structures, would not increase the population of the area, would not restrict future wildfire suppression activities, and would not result in a substantial demand for fire protection services. Therefore, the project would have a **less than significant** impact on fire protection services.

Cumulative Impacts: The proposed project would not result in a cumulatively considerable increase in the demand for fire protection services and would have a **less than significant** cumulative fire protection impact.

Mitigation and Residual Impact

No mitigation is required. Residual impacts would be less than significant.

4.8 GEOLOGIC PROCESSES

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
a. Exposure to or production of unstable earth conditions such as landslides, earthquakes, liquefaction, soil creep, mudslides, ground failure (including expansive, compressible, collapsible soils), or similar hazards?			X		
b. Disruption, displacement, compaction or overcovering of the soil by cuts, fills or extensive grading?			X		
c. Exposure to or production of permanent changes in topography, such as bluff retreat or sea level rise?			X		
d. The destruction, covering or modification of any unique geologic, paleontologic or physical features?			X		
e. Any increase in wind or water erosion of soils, either on or off the site?		X			
f. Changes in deposition or erosion of beach sands or dunes, or changes in siltation, deposition or erosion which may modify the channel of a river, or stream, or the bed of the ocean, or any bay, inlet or lake?		X			

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
g. The placement of septic disposal systems in impermeable soils with severe constraints to disposal of liquid effluent?				X	
h. Extraction of mineral or ore?				X	
i. Excessive grading on slopes of over 20%?			X		
j. Sand or gravel removal or loss of topsoil?				X	
k. Vibrations, from short-term construction or long-term operation, which may affect adjoining areas?				X	
l. Excessive spoils, tailings or over-burden?			X		

Setting

Regulatory/Physical

The proposed reservoir sites are generally level and have gentle slopes of approximately six (6) percent or less. Borings conducted at each of the proposed reservoir sites (*Geotechnical Investigation, North Fork Vineyards, Highway 166, New Cuyama, California,* GSI Soils Inc., January 2016) did not encounter standing groundwater at a depth 20 feet below the ground surface. There are no known faults located in the project area (*2016 Santa Barbara County Multi-Jurisdictional Hazard Mitigation Plan*).

County Environmental Thresholds: Pursuant to the County's Adopted Thresholds and Guidelines Manual, impacts related to geological resources may have the potential to be significant if the proposed project involves any of the following characteristics:

1. The project site or any part of the project is located on land having substantial geologic constraints, as determined by P&D or PWD. Areas constrained by geology include parcels located near active or potentially active faults and property underlain by rock types associated with compressible/collapsible soils or susceptible to landslides or severe erosion. "Special Problems" areas designated by the Board of Supervisors have been established based on geologic constraints, flood hazards and other physical limitations to development.

2. The project results in potentially hazardous geologic conditions such as the construction of cut slopes exceeding a grade of 1.5 horizontal to 1 vertical.

3. The project proposes construction of a cut slope over 15 feet in height as measured from the lowest finished grade.

4. The project is located on slopes exceeding 20% grade.

Impact Discussion

(a, b, c, i, l) Less than significant impact: Construction of the proposed reservoirs would result in the excavation of approximately 130,897 cubic yards of excavation and 127,048 cubic yards of fill, for a total of 257,945 cubic yards of grading. The excavated soil would be used to construct the proposed reservoir's water impoundment berms, which would be approximately three to 20 feet above surrounding grade. Due to soil compaction and shrinkage, no excess soil would be exported from the project site.

Graded slopes and water impoundment berms would have a gradient of 2.5:1. The geotechnical investigation prepared for the project (GSI, 2016) concluded that instability of the proposed slopes is anticipated to be negligible due to the shear strength and cohesion properties of the native soils and the compactability of these materials. The geotechnical evaluation also concluded that based on a preliminary evaluation of on-site soil and groundwater conditions, the potential for liquefaction at the project sites is low. There are no known faults at the project sites, and the geotechnical evaluation prepared for the project identifies seismic design parameters that comply with building code requirements. All proposed project-related design parameters would be reviewed and included in the grading permit required by the Building and Safety Division for the project. Implementation of requirements included in approved grading plans and adherence to the requirements set forth in the Santa Barbara County Code, Chapter 14 Grading Ordinance would reduce potential seismic and soil-related impacts to a **less than significant** level.

(d) Less than significant impact. There are no unique geologic features at the proposed reservoir sites and proposed modifications to the topography of the project property would not be extensive. Therefore, impacts to unique features would be **less than significant**.

(e, f,) Less than significant with mitigation: The topography of the project site is generally level with gentle slopes. Grading to construct the proposed reservoirs would have the potential to result in significant short- and long-term erosion-related impacts to nearby ephemeral drainages that drain to the Cuyama River, which in general is approximately 4,000 feet northeast of the proposed reservoir sites. The Santa Barbara County Code, Chapter 14 Grading Ordinance (2010) contains the minimum standards and procedures necessary to minimize grading-related hazards. The Ordinance also addresses compliance with the National Pollutant Discharge Elimination System Phase II storm water regulations and sets forth local storm water requirements for project that disturb more than one acre. The implementation of these requirements would reduce the potential for the project to result in erosion- and sedimentation-related impacts to water resources. Mitigation Measure No. 7 provides specific erosion control requirements that would reduce the project's potential erosion-related impacts to a **less than significant** level.

(g, h, j, k) No impact. The project would not require the use of septic systems and would not result in mining operations. The project would not result in construction operations that would be a substantial source of vibrations (i.e., pile driving) and no sensitive vibration receptors are located near the project site.

Cumulative Impacts: Geologic impacts are generally project-specific in nature and addressed based on the characteristics of individual project site. However, erosion and off-site sedimentation from a project site may contribute to off-site water quality and other sedimentation-related impacts. With the implementation of proposed project-specific mitigation, the project would not result in significant short- or long-term erosion impacts and the project's geologic impacts would not be cumulatively considerable and its cumulative effect would be less than significant.

Mitigation and Residual Impact

The following mitigation measure would reduce the project's potential erosion- and sedimentation-related impacts to a less than significant level.

7. **Geo-02. Erosion and Sediment Control Plan**. Where required by the latest edition of the California Green Code and/or Chapter 14 of the Santa Barbara County Code, a Storm Water Pollution Prevention Plan (SWPPP), Storm Water Management Plan (SWMP) and/or an Erosion and Sediment Control Plan (ESCP) shall be implemented as part of the project. Grading and erosion and sediment control plans shall be designed to minimize erosion during construction and

shall be implemented for the duration of the grading period and until re-graded areas have been stabilized by structures, long-term erosion control measures or permanent landscaping. The Owner/Applicant shall submit the SWPPP, SWMP or ESCP using Best Management Practices (BMP) designed to stabilize the site, protect natural watercourses/creeks, prevent erosion, convey storm water runoff to existing drainage systems keeping contaminants and sediments onsite. The SWPPP or ESCP shall be a part of the Grading Plan submittal and will be reviewed for its technical merits by P&D. Information on Erosion Control requirements can be found on the County web site re: Grading Ordinance Chapter 14 (http://sbcountyplanning.org/building/grading.cfm) refer to Erosion and Sediment Control Plan Requirements; and in the California Green Code for SWPPP (projects greater than 1 acre) and/or SWMP requirements.

PLAN REQUIREMENTS: The grading and SWPPP, SWMP and/or ESCP shall be submitted for review and approved by P&D prior Zoning Clearance. The plan shall be designed to address erosion, sediment and pollution control during all phases of development of the site until all disturbed areas are permanently stabilized. **TIMING**: The SWPPP requirements shall be implemented prior to the commencement of grading and throughout the year. The ESCP/SWMP requirements shall be implemented between November 1st and April 15th of each year, except pollution control measures shall be implemented year round.

MONITORING: P&D staff shall perform site inspections throughout the construction phase.

4.9 HAZARDOUS MATERIALS/RISK OF UPSET

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
a. In the known history of this property, have there been any past uses, storage or discharge of hazardous materials (e.g., fuel or oil stored in underground tanks, pesticides, solvents or other chemicals)?			X		
b. The use, storage or distribution of hazardous or toxic materials?			X		
c. A risk of an explosion or the release of hazardous substances (e.g., oil, gas, biocides, bacteria, pesticides, chemicals or radiation) in the event of an accident or upset conditions?			X		
d. Possible interference with an emergency response plan or an emergency evacuation plan?			X		
e. The creation of a potential public health hazard?			X		
f. Public safety hazards (e.g., due to development near chemical or industrial activity, producing oil wells, toxic disposal sites, etc.)?			X		
g. Exposure to hazards from oil or gas pipelines or oil well facilities?			X		
h. The contamination of a public water supply?			X		

Setting

The areas that would be used for the construction of the proposed reservoirs are vacant and have been used for grazing in the past. According to the SWRCB Geotracker website (accessed March 30, 2017) there are no known contamination or permitted hazardous waste sites located on the project property, and there are no active contamination or remediation sites near the project property.

County Environmental Threshold:

Pursuant to the County's Adopted Thresholds and Guidelines Manual, the County's safety threshold addresses involuntary public exposure from projects involving significant quantities of hazardous materials. The threshold addresses the likelihood and severity of potential accidents to determine whether the safety risks of a project exceed significant levels.

Impact Discussion:

(a-h) Less than Significant Impact. The proposed project would result in the development and operation of three water storage reservoirs. The construction and operation of the reservoirs would not result in or require the use of hazardous materials at levels that would have the potential to result in a significant hazard to human health or the environment. Minor amounts of traffic that may be generated by the project would generally be for maintenance-related purposes, and project-related traffic would not substantially interfere with emergency response capabilities to the project site or to other properties in the project area. Therefore, the project's potential hazard-related impacts would be **less than significant**.

Cumulative Impacts

The project would not result in significant impacts with respect to hazardous materials and/or risk of upset. Therefore, the project would not have a cumulatively considerable effect on safety within the County and the project's cumulative impact would be **less than significant**.

Mitigation and Residual Impact: No impacts are identified. No mitigations are necessary.

4.10 HISTORIC RESOURCES

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
a. Adverse physical or aesthetic impacts on a structure or property at least 50 years old and/or of historic or cultural significance to the community, state or nation?				X	
b. Beneficial impacts to an historic resource by providing rehabilitation, protection in a conservation/open easement, etc.?				X	

Existing Setting:

The project property does not contain any structural development that could be considered historical.

County Environmental Threshold

Environmental Threshold: Historic Resource impacts are determined through use of the County's Cultural Resources Guidelines. A significant resource a) possesses integrity of location, design, workmanship, material, and/or setting; b) is at least fifty years old, and c) is associated with an important contribution, was designed or built by a person who made an important contribution, is associated with an important and particular architectural style, or embodies elements demonstrating outstanding attention to detail, craftsmanship, use of materials, or construction methods.

Impact Discussion

(a,b) No Impact: The proposed project site does not include any structures that could be considered historical, and the project would not alter the contextual nature of the site. As a result, **no impacts** to historic resources would result.

Cumulative Impacts: The proposed project would not affect any historic structures and its cumulative impacts to historic resources would not be significant.

Mitigation and Residual Impact: No mitigation is required. Residual impacts would be less than significant.

4.11 LAND USE

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
a. Structures and/or land use incompatible with existing land use?			X		
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			X		
c. The induction of substantial growth or concentration of population?			X		
d. The extension of sewer trunk lines or access roads with capacity to serve new development beyond this proposed project?			X		
e. Loss of existing affordable dwellings through demolition, conversion or removal?				X	
f. Displacement of substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X	
g. Displacement of substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X	
h. The loss of a substantial amount of open space?			X		

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
i. An economic or social effect that would result in a physical change? (i.e. Closure of a freeway ramp results in isolation of an area, businesses located in the vicinity close, neighborhood degenerates, and buildings deteriorate. Or, if construction of new freeway divides an existing community, the construction would be the physical change, but the economic/social effect on the community would be the basis for determining that the physical change would be significant.)			X		
j. Conflicts with adopted airport safety zones?				X	

Setting

The project site is located approximately nine miles west of the community of New Cuyama, and is south of and adjacent to Highway 166. The 6,565-acre project property is zoned AG-I1-100 and is mostly open space, although the area near the proposed reservoirs was recently planted with grape vines. The proposed reservoirs would be approximately 1,200 to 3,000 feet south of Highway 166, and approximately 4,000 to 5,000 feet south of the Cuyama River.

County Environmental Threshold

The Thresholds and Guidelines Manual contains no specific thresholds for land use. Generally, a potentially significant impact can occur if a project would result in substantial growth inducing effects.

Impact Discussion

(a, b) Less than significant: Land uses on and adjacent to the proposed reservoir sites are open space and agriculture, and the project property is zoned AG-II-100. The reservoirs are a conditionally permitted use by the zoning of the project site, and would not result in land use conflicts with nearby land uses. Therefore, the proposed project would result in **less than significant** land use conflicts with existing land uses and land use requirements.

***(c, d) Less than significant*:** The project would not result in an extension of urban services that could serve new development beyond the proposed project, and would not result in an increase in the population of the project area. Therefore, potential growth inducing impacts would be **less than significant.**

(e, f, g) No impact: The project would not result in the removal of any housing or the displacement of any people. Therefore, the project would have **no impact** to existing housing supplies.

(h) Less than significant: The proposed reservoirs would occupy approximately 15.6 acres of the 6,565-acre project property, and would be used to support an existing agricultural operation. Therefore, impacts to open space would be **less than significant**.

(i) Less than significant: Construction of the proposed reservoirs would not result in adverse economic or social effects that would have the potential to result in physical changes to existing environmental

conditions on the project sites or in the project area. Operation of the reservoirs would require the use of groundwater and the project's contribution to existing groundwater overdraft conditions in the Cuyama Valley would result from evaporative losses of water from the reservoirs. It is estimated the project would result in evaporative losses of approximately ~~eight (8)~~ 26 acre feet per year. This water loss would not result in a significant project-specific or cumulative water use impact based on the County's adopted groundwater use thresholds (Section 4.16, Water Resources/Flooding). Due to the relatively minor increase in groundwater use that would result from the operation of the reservoirs, the proposed project would not result in substantial economic or social changes in the project area, and the project-related physical change in existing groundwater conditions would result in a **less than significant** land use impact.

(j) No Impact: There are no airports in the project area. Therefore, the project would have **no impact** on airport operations.

Cumulative Impacts: The project would not result in any significant project-specific land use impacts. The project would be consistent with the zoning of the project site and would be compatible with surrounding land uses and development. The project's contribution to cumulative land use impacts would not be cumulatively considerable and its cumulative impacts would be **less than significant**.

Mitigation and Residual Impact: No mitigation is required. Residual impacts would be less than significant.

4.12 NOISE

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
a. Long-term exposure of people to noise levels exceeding County thresholds (e.g. locating noise sensitive uses next to an airport)?			X		
b. Short-term exposure of people to noise levels exceeding County thresholds?			X		
c. Project-generated substantial increase in the ambient noise levels for adjoining areas (either day or night)?			X		

Setting/Threshold: Setting/Threshold: Noise is generally defined as unwanted or objectionable sound which is measured on a logarithmic scale and expressed in decibels (dB(A)). The duration of noise and the time period at which it occurs are important values in determining impacts on noise-sensitive land uses. The Community Noise Equivalent Level (CNEL) and Day-Night Average Level (L_{dn}) are noise indices which account for differences in intrusiveness between day- and night-time uses. County noise thresholds are: 1) 65 dB(A) CNEL maximum for exterior exposure, and 2) 45 dB(A) CNEL maximum for interior exposure of noise-sensitive uses. Noise-sensitive land uses include: residential dwellings; transient lodging; hospitals and other long-term care facilities; public or private educational facilities; libraries, churches; and places of public assembly.

Highway 166 is the major noise source in the project area. No other roadways, public facilities, airport approach and take-off zones, or other land uses that are substantial noise sources are located in the project area. No noise-sensitive uses (i.e., residences) are located in the vicinity of the project site.

Impact Discussion

(a, c) Less than significant: The operation of the proposed reservoirs would not result in the generation of noise that would have the potential to result in significant noise impacts to persons or uses located on or near the proposed reservoir sites. Minor amounts of traffic that may be generated by the project would generally be for periodic maintenance-related purposes, and such traffic would not substantially increase existing noise conditions along Highway 166. Therefore, the project's potential long-term noise impacts would be **less than significant**.

(b) Less than significant: The construction of proposed reservoirs would result in a temporary increase in noise levels at the construction sites. However, no construction activities would occur within 1,600 feet of residences or other sensitive receptors located on or adjacent to the project sites. Therefore, the project's potential short-term noise impacts would be **less than significant**.

Cumulative Impacts: The project would not be a substantial source of noise. Therefore, the project's noise impacts would not be cumulatively considerable and its cumulative impacts would be **less than significant.**

Mitigation and Residual Impact: No mitigation is required. Residual impacts would be less than significant.

4.13 PUBLIC FACILITIES

Will the proposal result in:	**Poten. Signif.**	**Less than Signif. with Mitigation**	**Less Than Signif.**	**No Impact**	**Reviewed Under Previous Document**
a. A need for new or altered police protection and/or health care services?				X	
b. Student generation exceeding school capacity?				X	
c. Significant amounts of solid waste or breach any national, state, or local standards or thresholds relating to solid waste disposal and generation (including recycling facilities and existing landfill capacity)?				X	
d. A need for new or altered sewer system facilities (sewer lines, lift-stations, etc.)?				X	
e. The construction of new storm water drainage or water quality control facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X		

Setting:

The proposed project site does not contain any structural development or any public facilities.

County Environmental Thresholds

Schools: A significant level of school impacts is generally considered to occur when a project would generate a sufficient number of students to require an additional classroom.

Solid Waste: A project is considered to result in significant impacts to landfill capacity if it would generate 196 tons per year of solid waste. This volume represents 5% of the expected average annual increase in waste generation, and is therefore considered a significant portion of the remaining landfill capacity. In addition, construction and demolition waste from remodels and rebuilds is considered significant if it exceeds 350 tons. Waste generation of 40 tons per year is considered a potentially significant contribution to cumulative waste generation.

Impact Discussion

(a-d) No impact: The proposed project would not result in the development of habitable structures and would not increase population on the project site or in the project area. The project would not result in a demand for law enforcement, generate additional school-age children, generate solid waste, or be a source of sewage generation. Therefore, the project would have **no impact** on these services.

***(e) Less than significant*:** Stormwater runoff from slopes south of and adjacent to Reservoir No. 1 (the eastern-most reservoir) would be collected in a proposed drainage swale located adjacent to the southern end of the reservoir. The swale would extend to the east away from the reservoir, and when it reaches Schoolhouse Canyon Road, which is east of and adjacent to the reservoir site, the swale would be convey collected runoff beneath the roadway through a proposed culvert. The runoff would then be discharged over a proposed rock energy dissipater at a site approximately 50 feet east of the road and allowed to sheet flow across native soil towards Schoolhouse Canyon Creek. The proposed drainage culvert beneath Schoolhouse Canyon Road would not substantially alter existing runoff characteristics or result in significant impacts to Schoolhouse Canyon Road. Therefore, the project would have a **less than significant** impact on stormwater drainage facilities.

Cumulative Impacts: The proposed project would not result in a population increase that would contribute to significant public facilities impacts. Solid waste generation would be below the County threshold of 40 tons per year for a significant cumulative impact. The project would not result in a substantial increase in impermeable surfaces at the project sites that would substantially increase runoff water volumes. Therefore, the project's contribution to public facility impacts would not be cumulatively considerable and its cumulative effects would be **less than significant**.

Mitigation and Residual Impact

No mitigation is required. Residual impacts would be less than significant.

4.14 RECREATION

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
a. Conflict with established recreational uses of the area?				X	
b. Conflict with biking, equestrian and hiking trails?				X	
c. Substantial impact on the quality or quantity of existing recreational opportunities (e.g., overuse of an area with constraints on numbers of people, vehicles, animals, etc. which might safely use the area)?				X	

Setting

There are no recreation facilities on or near the project sites.

County Environmental Thresholds: The Thresholds and Guidelines Manual contains no threshold for park and recreation impacts. However, the Board of Supervisors has established a minimum standard ratio of 4.7 acres of recreation/open space per 1,000 people to meet the needs of a community. The Santa Barbara County Parks Department maintains more than 900 acres of parks and open spaces, as well as 84 miles of trails and coastal access easements. The County's Comprehensive Plan, Land Use Element, Parks/Recreation Policies state, in part: "Opportunities for hiking and equestrian trails should be preserved, improved, and expanded wherever compatible with surrounding uses."

Impact Discussion

(a-c) No impact. There are no parks or public trails located on or near the project sites, and the project would not result in a population increase that would contribute to significant impacts to recreation facilities. Therefore, the project would have **no impact** on existing recreational facilities or increase the demand for recreation opportunities.

Cumulative Impacts: The proposed project would not result in an increase in population in the project area and would not directly or indirectly impact any existing recreation facilities. Therefore, the project's contribution to cumulative recreation impacts would not be cumulatively considerable and its cumulative impacts would be **less than significant.**

Mitigation and Residual Impact: No mitigation is required. Residual impacts would be less than significant.

4.15 TRANSPORTATION/CIRCULATION

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
a. Generation of substantial additional vehicular movement (daily, peak-hour, etc.) in relation to existing traffic load and capacity of the street system?			X		
b. A need for private or public road maintenance, or need for new road(s)?			X		
c. Effects on existing parking facilities, or demand for new parking?			X		
d. Substantial impact upon existing transit systems (e.g. bus service) or alteration of present patterns of circulation or movement of people and/or goods?				X	
e. Alteration to waterborne, rail or air traffic?				X	
f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians (including short-term construction and long-term operational)?			X		
g. Inadequate sight distance?			X		
ingress/egress?			X		
general road capacity?			X		
emergency access?			X		
h. Impacts to Congestion Management Plan system?			X		

Setting

Regional access to the proposed reservoir sites is provided by State Highway 166. Access to the Reservoir No. 1 project site is provided by Schoolhouse Canyon Road. Access to the Reservoir Nos. 2 and 3 sites is provided by existing ranch roads.

County Environmental Thresholds: The Public Works Department, Roads Division's general standards governs all project proposals within the County. In addition, according to the County's Environmental Thresholds and Guidelines Manual, a significant traffic impact would occur when:

a. The addition of project traffic to an intersection increases the volume to capacity (V/C) ratio by the value provided below, or sends at least 15, 10 or 5 trips to an intersection operating at LOS D, E or F.

LEVEL OF SERVICE (including project)	INCREASE IN VOLUME/CAPACITY RATIO GREATER THAN
A	0.20
B	0.15
C	0.10
	Or the addition of:
D	15 trips
E	10 trips
F	5 trips

b. Project access to a major road or arterial road would require a driveway that would create an unsafe situation, or would require a new traffic signal or major revisions to an existing traffic signal.

c. Project adds traffic to a roadway that has design features (e.g., narrow width, road side ditches, sharp curves, poor sight distance, inadequate pavement structure) or receives use which would be incompatible with substantial increases in traffic (e.g. rural roads with use by farm equipment, livestock, horseback riding, or residential roads with heavy pedestrian or recreational use, etc.) that will become potential safety problems with the addition of project or cumulative traffic. Exceeding the roadway capacity designated in the Circulation Element may indicate the potential for the occurrence of the above impacts.

d. Project traffic would utilize a substantial portion of an intersection(s) capacity where the intersection is currently operating at acceptable levels of service (A-C) but with cumulative traffic would degrade to or approach LOS D (V/C 0.81) or lower. Substantial is defined as a minimum change of 0.03 for intersections which would operate from 0.80 to 0.85 and a change of 0.02 for intersections which would operate from 0.86 to 0.90, and 0.01 for intersections operating at anything lower.

Impact Discussion

(a-c, f-h) Less than significant impact: Short-term traffic generated by the proposed project would be primarily from the transportation of construction equipment and materials to and from the reservoir site sites, and by construction workers commuting to and from the project sites. Long-term traffic would likely result from periodic maintenance activities. Overall, traffic generated by the project would be very low and would not adversely affect the operation of State Highway 166 or substantially increase the need for road maintenance. Adequate area would be available adjacent to the proposed reservoir sites to accommodate construction and maintenance vehicle parking. Adequate sight distance is provided along State Highway 166 to accommodate project-related vehicles that would enter and leave the project sites. The small amount of traffic generated by the project would result in **less than significant** traffic-related impacts.

(d, e) No impact: The proposed project would not result in an increased demand for transit services, and would have no effect air, rail, or waterborne traffic. Therefore, the project would have **no impact** on these services.

Cumulative Impacts: Long-term traffic generated by the proposed project would primarily be for periodic maintenance of the reservoirs. Therefore, the traffic generated by the project would not cumulatively considerable and the project's cumulative traffic-related impacts would be less than significant.

Mitigation and Residual Impact: No mitigation required. Residual impacts would be less than significant.

4.16 WATER RESOURCES/FLOODING

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
a. Changes in currents, or the course or direction of water movements, in either marine or fresh waters?			X		
b. Changes in percolation rates, drainage patterns or the rate and amount of surface water runoff?			X		
c. Change in the amount of surface water in any water body?			X		
d. Discharge, directly or through a storm drain system, into surface waters (including but not limited to wetlands, riparian areas, ponds, springs, creeks, streams, rivers, lakes, estuaries, tidal areas, bays, ocean, etc) or alteration of surface water quality, including but not limited to temperature, dissolved oxygen, turbidity, or thermal water pollution?			X		
e. Alterations to the course or flow of flood water or need for private or public flood control projects?				X	
f. Exposure of people or property to water related hazards such as flooding (placement of project in 100 year flood plain), accelerated runoff or tsunamis, sea level rise, or seawater intrusion?				X	
g. Alteration of the direction or rate of flow of groundwater?			X		
h. Change in the quantity of groundwater, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations or recharge interference?			X		
i. Overdraft or over-commitment of any groundwater basin? Or, a significant increase in the existing overdraft or over-commitment of any groundwater basin?			X		
j. The substantial degradation of groundwater quality including saltwater intrusion?			X		
k. Substantial reduction in the amount of water otherwise available for public water supplies?			X		
l. Introduction of storm water pollutants (e.g., oil, grease, pesticides, nutrients, sediments, pathogens, etc.) into groundwater or surface water?		X			

Setting:

A series of ephemeral drainages that are tributaries to the Cuyama River bisect the project property in a primarily south to north direction. The largest of these drainages are Cottonwood Creek on the western portion of the project property, and Schoolhouse Canyon Creek on the eastern side. The on-site drainages are dry for most of the year and convey periodic/flashy flow during monsoonal rain events and the winter rain season. The proposed Reservoir No. 1 project site is approximately 500 feet west of Schoolhouse

Canyon Creek, and small unnamed drainage channels are a minimum of approximately 50 feet to the east and west of the project site. The Reservoir No. 2 project site is approximately 100 feet west and approximately 1,000 feet east of small unnamed drainage channels. The Reservoirs No. 3 project site is approximately 250 feet west and 100 feet east of small unnamed drainage channels, and is approximately one mile east of Cottonwood Canyon Creek.

The proposed reservoir sites are located in the western portion of the Cuyama Valley Groundwater Basin. The 2014 Groundwater Basins Status Report (Santa Barbara County Water Agency, 2014) indicates that groundwater level measurements in the Cuyama Valley Groundwater Basin show substantial declines throughout history and over the last three years. In some areas, historical groundwater level declines exceed 400 feet. The County of Santa Barbara Environmental Thresholds and Guidelines Manual (1992) indicates that groundwater overdraft in the Cuyama Valley Groundwater Basin is 28,525 acre feet per year (AFY). The 2014 Groundwater Basins Status Report indicates that long-term overdraft within the basin is estimated to be nearly 30,000 acre feet per year (AFY). In 2015, the Santa Barbara County Water Agency reported that under recent conditions (2000 -2010) total annual net recharge for the Basin is 33,400 acre feet and net discharge (outflow from springs, subsurface flow out of the basin, and groundwater pumping) is 68,300 acre feet, resulting in a difference or "imbalance" of -34,900 acre feet per year (Santa Barbara County Water Agency, *Cuyama Groundwater Basin Balance Summary*, July 13, 2015).

County Environmental Thresholds: A project is determined to have a significant effect on water resources if it would exceed established threshold values which have been set for each overdrafted groundwater basin. These values were determined based on an estimation of a basin's remaining life of available water storage. If the project's net new consumptive water use [total consumptive demand adjusted for recharge less discontinued historic use] exceeds the threshold adopted for the basin, the project's impacts on water resources are considered significant. The water demand threshold for the Cuyama Valley Groundwater Basin is 31 AFY. The adopted threshold applies only to projects subject to discretionary review by the County, and do not apply to uses, such as agricultural operations, that do not require approval of a discretionary permit.

Water Quality Thresholds: A significant water quality impact is presumed to occur if the project:

- Is located within an urbanized area of the county and the project construction or redevelopment individually or as a part of a larger common plan of development or sale would disturb one (1) or more acres of land;
- Increases the amount of impervious surfaces on a site by 25% or more;
- Results in channelization or relocation of a natural drainage channel;
- Results in removal or reduction of riparian vegetation or other vegetation (excluding non-native vegetation removed for restoration projects) from the buffer zone of any streams, creeks or wetlands;
- Is an industrial facility that falls under one or more of categories of industrial activity regulated under the NPDES Phase I industrial storm water regulations (facilities with effluent limitation; manufacturing; mineral, metal, oil and gas, hazardous waste, treatment or disposal facilities; landfills; recycling facilities; steam electric plants; transportation facilities; treatment works; and light industrial activity);

- Discharges pollutants that exceed the water quality standards set forth in the applicable NPDES permit, the Regional Water Quality Control Board's (RWQCB) Basin Plan or otherwise impairs the beneficial uses[1] of a receiving water body;
- Results in a discharge of pollutants into an "impaired" water body that has been designated as such by the State Water Resources Control Board or the RWQCB under Section 303 (d) of the Federal Water Pollution Prevention and Control Act (i.e., the Clean Water Act); or
- Results in a discharge of pollutants of concern to a receiving water body, as identified by the RWQCB.

Impact Discussion

Each of the proposed reservoirs would impound up to 49 acre feet of water between February 1st and April 30th, and would impound a maximum of three feet of water between May 1st and January 31st, and would include an emergency overflow system that would discharge water from the reservoir in the event that a precipitation event or mechanical malfunction results in excess water in a reservoir. A maximum of three feet of water would be stored in the reservoirs between May 1st and January 31st to prevent air from entering the pumps and to provide the minimum amount of hydraulic head necessary to operate the pumps (Tetley, August 9, 2017).

Stormwater drainage from upslope areas adjacent to the reservoirs would be collected by proposed drainage swales. Collected stormwater runoff and discharges from the reservoir's overflow control system would be discharged over rock energy dissipaters and allowed to sheet flow at downslope locations adjacent to the reservoirs. Each reservoir would be lined with a high-density polyethylene plastic liner to prevent water seepage beneath the reservoirs and into the reservoir's water impoundment berms.

(a-d) Less than significant impact: Each of the proposed reservoir's stormwater drainage systems would collect water from a limited area upslope of the reservoirs, and water from the reservoir overflow and stormwater drainage systems would be discharged over rock energy dissipaters. After discharge over the energy dissipaters, the water would sheetflow over the ground surface, which in the vicinity of proposed discharge locations has a gradient of five percent or less. Therefore, the amount of stormwater discharged from the drainage systems and the reservoir overflow systems would be limited and would not substantially alter existing drainage patterns, the course or direction of runoff water, or substantially increase or decrease the amount of water in the ephemeral drainages located adjacent to the reservoir sites. With the use of rock energy dissipaters and due to the presence of gentle slope gradients below proposed discharge locations, the proposed water discharges would not be a substantial source of erosion (turbidity) that would have the potential to adversely affect the water quality of the drainages near the reservoirs, which are tributaries to the Cuyama River. The interior of the reservoirs would be provided with an impermeable liner and precipitation that falls within the reservoirs would be retained and would not percolate into the ground. However, most of the retained precipitation would eventually be used for crop production, either for frost protection or irrigation after the end of the frost season. Therefore, the retained precipitation would ultimately be returned to the ground surface and not result in substantial long-term changes to percolation conditions at or near the project

[1] Beneficial uses for Santa Barbara County are identified by the Regional Water Quality Control Board in the Water Quality Control Plan for the Central Coastal Basin, or Basin Plan, and include (among others) recreation, agricultural supply, groundwater recharge, fresh water habitat, estuarine habitat, support for rare, threatened or endangered species, preservation of biological habitats of special significance.

sites. Overall, the project would have **less than significant** impacts on existing drainage conditions at the project site.

(e-f) No impact: The proposed reservoir sites are not located in within the 100-year floodplain for the Cuyama River, and proposed Reservoir Nos. 2 and 3 would be located near but not within the 100-year floodplains identified for tributaries to the Cuyama River (Flood Insurance Rate Maps 06083C0115G and 06083C0305G). The proposed project would be required to comply with County Grading Ordinance requirements, which would ensure that the proposed reservoir berms are structurally adequate to contain the water impounded by the reservoirs. Therefore, the project would have **no impact** related to flood-related hazards.

(g-k) Less than significant: Water that would be impounded in the proposed reservoirs would be supplied by existing agricultural wells located on the north side of State Highway 166. Water would be delivered to the reservoirs by existing irrigation pipelines that extend beneath the highway towards the project sites, and proposed pipelines that would connect the reservoirs to the existing irrigation pipelines.

The County of Santa Barbara Environmental Thresholds Manual states that all projects subject to discretionary review by the County are subject to the water use thresholds included in the Manual. Projects that would use more water than the applicable threshold identified by the Manual would result in a significant water use impact. The water use threshold for projects in the Cuyama Valley Groundwater Basin is 31 AFY.

Agricultural operations conducted on properties with agricultural zoning are an allowed use and no land use entitlements are required for such uses (LUDC Section 35.21.030). The existing vineyard operations that the proposed water storage reservoirs would support are located on property with agricultural zoning (AG-II-100). Therefore, the vineyard operations and water used by the vineyards do not require any discretionary land use entitlements from the County, and water impounded in the proposed reservoirs that would be used to support (i.e., provide frost protection) the existing vineyards is not subject to the water use threshold established for the Cuyama Valley Groundwater Basin.

The amount of water that may be used for vineyard frost protection can vary substantially each year depending on the number, duration, and severity of frost events. The project applicant has indicated that during a frost event, water would be sprayed on the vines at a rate of 45 gallons per minute per acre; typically the vines would be sprayed for a duration of two to three hours; and not all frost events require that the entire vineyard be sprayed. If it is assumed that a frost event required the entire 1,000-acre vineyard to be sprayed for three hours, approximately 8.29 acre feet of frost protection water would be used per hour[2] and approximately 25 acre feet of water would be used during the three hour frost event. As indicated above, however, the use of water for frost protection supports an allowed agricultural use and is not subject to the water use threshold established for the Cuyama Valley Groundwater Basin.

The proposed water storage reservoirs are a conditionally permitted use in the AG-II-100 zone and require the approval of a discretionary Minor Conditional Use Permit. Therefore, water impounded in the reservoirs that is not directly or indirectly used in support of the existing vineyards is subject to the water use thresholds of the Environmental Thresholds Manual. Water impounded in the reservoirs that would not be directly or indirectly used in support of the vineyards would be the water that evaporates from

[2] $\frac{1{,}000 \text{ acres} \times 45 \text{ gallons/minute} \times 60 \text{ minutes/hour}}{325{,}851 \text{ gallons/acre foot}} = 8.29 \text{ acre feet/hour}$

reservoirs. As proposed, ~~water would be stored in~~ the reservoirs would be maintained in a full condition during the months of February, March and April, which is the part of the year when frost would have the greatest potential to result in damage to the existing vineyards, and a maximum of three feet of water would be maintained in the reservoirs during the months of May through January. If the amount of water that evaporates from the proposed reservoirs ~~during the proposed three month storage period~~throughout the year exceeds the threshold of 31 AFY, the project would result in a significant water use impact.

Evaporation from the reservoirs was estimated by a report titled *North Fork Vineyards Frost Protection Reservoirs #1, #2 & #3 – Analysis of Reservoir Evaporative Losses* (Monsoon Consultants, August 10, 2017), and the report is provided in Attachment 4. In summary, the report estimated net evaporative losses from the reservoirs based on a variety of factors, including the months of the year that the reservoirs would be maintained in a full condition; the months of the year that the reservoirs would contain three feet of water; precipitation that occurs throughout the year; ~~when the reservoirs are being used for water storage;~~ and evaporative losses. Data regarding precipitation rates were obtained from the New Cuyama Fire Station records, and evaporative losses were based on data from California Irrigation Management Information System. Please refer to Attachment 4 for additional information regarding the data used to calculate project-related evaporation losses. It was estimated that the combined average annual net evaporative losses from all three proposed reservoirs would be approximately ~~8.14~~26.28 AFY. Therefore, net evaporative losses from the reservoirs would not exceed the water use threshold of 31 AFY and the project would result in a **less than significant** water use impact.

(l) Less than significant with mitigation: Grading and construction activities could result in temporary runoff, erosion, and the use of concrete and other substances that have the potential to result in short-term water quality impacts. To mitigate the project's potential short-term impacts to runoff and water quality, the project proposes to implement a variety or erosion/sedimentation control Best Management Practices. These measures include the use of silt fences and straw bales, and the maintenance of proposed erosion control measures throughout the rainy season (October 15 through April 15). In addition, proposed Mitigation Measure No. 7 requires the preparation and implementation of a Storm Water Pollution Prevention Plan, and proposed Mitigation Measure Nos. 8 and 9 include additional requirements to provide designated construction equipment washout and equipment storage areas. With implementation of these measures, potential short-term water quality impacts would be **less than significant**.

The operation of the proposed reservoirs would not require the use of fertilizers, pesticides or other substances that would have the potential to result in significant water quality impacts. The project would not result in the use of an on-site wastewater disposal system that could have the potential to contribute to the degradation of groundwater quality. Long-term erosion from proposed reservoir water impoundment berms would have the potential to result in erosion and sediment impacts to drainage channels adjacent to the project sites, however, this potential impact would be reduced to a less than significant level by complying with Grading Ordinance requirements and proposed Mitigation Measure No. 7, which requires the preparation and implementation of a Stormwater Management Plan and/or Erosion and Sediment Control Plan. Therefore, potential long-term erosion impacts of the project would be reduced to a **less than significant with mitigation.**

Cumulative Impacts: The proposed project would result in the use of approximately ~~eight (8)~~ 26 acre feet of water that is subject to adopted water use thresholds. The project's water use would contribute to overdraft conditions in the Cuyama Valley and the general lowering of groundwater levels that have been documented. However, the adopted significance threshold of 31 AFY is also the point at which a project's use of water is determined to be a cumulatively considerable impact. Therefore, the project's use of groundwater would not be cumulatively considerable and the proposed project would result in an adverse but **less than significant** cumulative impact.

Mitigation and Residual Impact

The following mitigation measures would reduce the project's water resource impacts to a less than significant level:

8. **WatConv-04 Equipment Storage-Construction**. The Owner/Applicant shall designate a construction equipment filling and storage area(s) to contain spills, facilitate clean-up and proper disposal and prevent contamination from discharging to the storm drains, street, drainage ditches, creeks, or wetlands. The areas shall be no larger than 50 x 50 foot unless otherwise approved by P&D and shall be located at least 100 feet from any storm drain, water body or sensitive biological resources. **PLAN REQUIREMENTS:** The Owner/Applicant shall designate the P&D approved location on all plans for zoning clearance, grading and building permits. **TIMING:** The Owner/Applicant shall install the area prior to commencement of construction.

   MONITORING: P&D compliance monitoring staff shall ensure compliance prior to and throughout construction.

9. **WatConv-05 Equipment Washout-Construction.** The Owner/Applicant shall designate a washout area(s) for the washing of concrete trucks, paint, equipment, or similar activities to prevent wash water from discharging to the storm drains, street, drainage ditches, creeks, or wetlands. Note that polluted water and materials shall be contained in this area and removed from the site daily. The area shall be located at least 100 feet from any storm drain, water body or sensitive biological resources. **PLAN REQUIREMENTS**: The Owner/Applicant shall designate the P&D approved location on all zoning clearance, grading and building permits. **TIMING:** The Owner/Applicant shall install the area prior to commencement of construction.

   MONITORING: P&D compliance monitoring staff shall ensure compliance prior to and throughout construction.

5.0 INFORMATION SOURCES

5.1 County Departments Consulted

Police, Fire, Public Works, Flood Control, Parks, Environmental Health, Air Pollution Control District, LAFCO, Special Districts, Regional Programs, Other :

5.2 Comprehensive Plan:

X	Seismic Safety/Safety Element		Conservation Element
	Open Space Element		Noise Element
	Coastal Plan and Maps		Circulation Element
	ERME		

5.3 Other Sources

X	Field work		Ag Preserve maps
X	Calculations	X	Flood Control maps

X	Project plans	X	Other technical references (reports, survey, etc.)
	Traffic studies	X	Planning files, maps, reports
	Records		Zoning maps
X	Grading plans	X	Soils maps/reports
	Elevation, architectural renderings	X	Plant maps
X	Published geological map/reports	X	Archaeological maps and reports
	Topographical maps		Other

6.0 PROJECT SPECIFIC *(short- and long-term)* AND CUMULATIVE IMPACT SUMMARY

The proposed project does not have potential impacts that cannot be feasibly mitigated to less than significant levels.

I. Project-Specific Impacts which are of unavoidable significance levels (Class I): None

II. Project-Specific Impacts which are potentially significant but can be mitigated to less than significant levels (Class II): Biological Resources (short-term), Cultural Resources (short-term), Geologic Processes, Water Resources/Flooding (short-term).

III. No potentially significant adverse cumulative impacts have been identified.

7.0 MANDATORY FINDINGS OF SIGNIFICANCE

Will the proposal result in:	**Poten. Signif.**	**Less than Signif. with Mitigation**	**Less Than Signif.**	**No Impact**	**Reviewed Under Previous Document**
1. 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, contribute significantly to greenhouse gas emissions or significantly increase energy consumption, or eliminate important examples of the major periods of California history or prehistory?		X			
2. Does the project have the potential to achieve short-term to the disadvantage of long-term environmental goals?			X		

Will the proposal result in:	Poten. Signif.	Less than Signif. with Mitigation	Less Than Signif.	No Impact	Reviewed Under Previous Document
3. 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		
4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X		
5. Is there disagreement supported by facts, reasonable assumptions predicated upon facts and/or expert opinion supported by facts over the significance of an effect which would warrant investigation in an EIR ?			X		

Compliance with required mitigation measures would reduce potentially significant short-term, construction-related impacts to San Joaquin kit fox and American badger to a less than significant level. Compliance with required mitigation would avoid significant impacts to cultural resources that may be encountered during construction activities. The project's effects on air quality, traffic, water demand, and public services would be below adopted thresholds of significance.

8.0 PROJECT ALTERNATIVES

Not applicable.

9.0 INITIAL REVIEW OF PROJECT CONSISTENCY WITH APPLICABLE SUBDIVISION, ZONING AND COMPREHENSIVE PLAN REQUIREMENTS

Zoning

The proposed project is consistent with the requirements of the Santa Barbara County Land Use and Development Code (Inland Zoning Ordinance). The proposed AG-II-100 zoning of the site allows for the development of reservoirs more than 50,000 square feet in area with the approval of a Minor Conditional Use Permit.

Comprehensive Plan

The project will be subject to all applicable requirements and policies under the Santa Barbara County Land Use and Development Code, and the County's Comprehensive Plan. This analysis will be provided in the forthcoming Staff Report. The following policies will be addressed, among others:

1. Land Use Development Policy #4
2. Hillside & Watershed Protection policy # 1, 2, 3, 5, 6, 7
3. Historical and Archaeological Policy # 2, 3, 5
4. Visual Resources Policy # 2~~, 5~~
5. Agricultural Element Goal 1.

10.0 RECOMMENDATION BY P&D STAFF

On the basis of the Initial Study, the staff of Planning and Development:

___ Finds that the proposed project WILL NOT have a significant effect on the environment and, therefore, recommends that a Negative Declaration (ND) be prepared.

__X__ Finds that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures incorporated into the REVISED PROJECT DESCRIPTION would successfully mitigate the potentially significant impacts. Staff recommends the preparation of an ND. The ND finding is based on the assumption that mitigation measures will be acceptable to the applicant; if not acceptable a revised Initial Study finding for the preparation of an EIR may result.

____ Finds that the proposed project MAY have a significant effect on the environment, and recommends that an EIR be prepared.

____ Finds that from existing documents (previous EIRs, etc.) that a subsequent document (containing updated and site-specific information, etc.) pursuant to CEQA Sections 15162/15163/15164 should be prepared.

Potentially significant unavoidable adverse impact areas:

__X__ With Public Hearing ____ Without Public Hearing

PREVIOUS DOCUMENT:

PROJECT EVALUATOR: Steve Rodriguez DATE: May 26, 2017

11.0 DETERMINATION BY ENVIRONMENTAL HEARING OFFICER

__X__ I agree with staff conclusions. Preparation of the appropriate document may proceed.
____ I DO NOT agree with staff conclusions. The following actions will be taken:
____ I require consultation and further information prior to making my determination.

SIGNATURE:_____ **INITIAL STUDY DATE**: April 10, 2017_____

SIGNATURE:_____ **NEGATIVE DECLARATION DATE**: May 26, 2017_

SIGNATURE:_____ **REVISION DATE:** ____8/9/2017_____

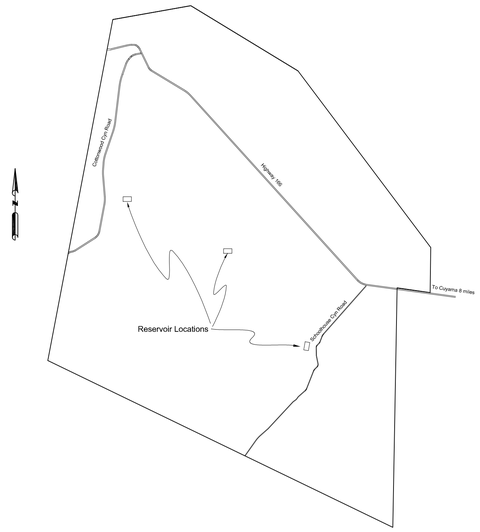
SIGNATURE:_____**FINAL NEGATIVE DECLARATION DATE:** August 1, 2018

12.0 ATTACHMENTS

1. Project Plans
2a. Biological Resources Assessment, February 24, 2016
2b. Peer Review of the Biological Resources Assessment, March 1, 2016
2c. Supplemental Biological Resources Information, June 24, 2016
3. San Joaquin Kit Fox Avoidance Measures
4. Analysis of Reservoir Evaporative Losses, ~~January~~ August 10, 2017
5. Draft MND Comment Letters
   State Clearinghouse
   Native American Heritage Commissions
   California Department of Transportation
   California Department of Fish and Wildlife
   Roberta Jaffee and Stephen Gliessman
   Joe Haslett
   Robert Ryan

ATTACHMENT 1

North Fork Reservoirs #1-3
APN 147-020-045
Vicinity Map



Santa Barbara County Building & Safety Division Grading Notes

1. All grading shall conform to Santa Barbara County Code Chapter 14 and standards and requirements pertaining thereto, these construction drawings and the recommendations of the soils engineer and engineering geologist.
2. Contractor to notify the county grading inspector and soils laboratory at least 48 hours before start of gradi work or any pre-construction meeting.
3. Contractor shall employ all labor, equipment and methods required to prevent his operations from producing dust in amounts damaging to adjacent property, cultivated vegetation and domestic animals or causing a nuisance to persons occupying buildings in the vicinity of the job site. Contractor shall be responsible for damage caused by dust from his grading operation.
4. Before beginning work requiring exporting or importing of materials, the contractor shall obtain approval from Public Works Road Division for haul routes used and methods provided to minimize the deposit of soils on county roads. Grading/road inspectors shall monitor this requirement with the contractor.
5. The Geotechnical Engineer shall provide observation and testing during grading operations in the field and shall submit a final report stating that all earth work was properly completed and is in substantial conformance with the requirements of the grading ordinance.
6. Areas to be graded shall be cleared of all vegetation including roots and other unsuitable materials for a structural fill, then scarified to a depth of 6" prior to placing any fill. Call grading inspector for initial inspection.
7. A thorough search shall be made for all abandoned man-made facilities such as septic tank systems, fuel or water storage tanks, and pipelines or conduits. Any such facilities encountered shall be removed and the depression properly filled and compacted under observation of the geotechnical engineer.
8. Areas with existing slopes which are to receive fill materials shall be keyed and benched. The design and installation of the keyway shall be per the geotechnical engineer's recommendation or per County Standard Detail No. G-13.
9. Fill materials shall be spread in lifts not exceeding 6" in compacted thickness, moistened or dried as necessary to near optimum moisture content and compacted by an approved method. Fill materials shall be compacted to a minimum of 90% maximum density as determined by 1957 ASTM D-1557-91 modified proctor (AASHO) test or similar approved methods. Some fill areas may require compaction to a greater density if called for in the construction documents. Soil tests shall be conducted at not less than one test for each 18" of fill and/or for each 500 cubic yards of fill placed.
10. Cut slopes shall not exceed a grade of 1 1/2 horizontal to 1 vertical. Fill and combination fill and cut slopes shall not exceed 2 horizontal to 1 vertical. Slopes over three feet in vertical height shall be planted with approved perenial or treated with equally approved erosion control measures prior to final inspection.
11. Surface drainage shall be provided a minimum of 2% for 5 feet away from the foundation line of any structure.
12. All trees that are to remain on site shall be temporarily fenced and protected around the drip line during grading.
13. An erosion and sediment control plan shall be required as part of the grading plan and permit requirements.
14. "Best Management Practices for Construction Activities: Eroded sediments and other pollutants must be retained onsite and must not be transported from the site via sheet flow,swales, area drains, natural drainage courses, or wind. Stockpiles of earth and other construction related materials must be protected from being transported from the site by forces of wind or water. Fuels, oils, solvents, and other toxic materials must be stored in accordance with their listing and are not to contaminate the soil and surface waters. All approved storage containers are to be protected from the weater. Spills may not be washed into the drainage system. Excess or waste concrete may not be washed into public way or any other drainage system. Provisions must be made to retain concrete wastes on site until they can be disposed as solid waste. Trash and construction related solid waste must be deposited into a covered waste receptacle to prevent contamination of rainwater and dispersal by wind. Sediments and other material may not be tracked from the site by vehicular traffic. The construction entrance roadways must be stabilized so as to inhibit sediments from being deposited into the public way. Accidental deposition must be swept up immediately and may not be washed down by rain or other means. Any slopes with disturbed soils or denuded of vegetation must be stabilized so as to minimize erosion by wind and water."
15. If grading occurs during Nov 1 through Apr 15, no grading shall occur unless approved erosion and sediment control measures are in place. Discharges of sediment from the project site may result in a Stop Work Order.
16. All earthwork on hillsides, sloping or mountainous terrain shall be stabilized to protect and prevent loss of soils, as necessary, year-round.

Earthwork Estimates

Cut: 130,280 C.Y. Fill: 127,900 C.Y. Import: 0 C.Y. Export: 0 C.Y. Quantities based on 30% shrinkage

Erosion Control Notes

1. Erosion control measures shall be implemented on all projects and shall include source control, including protection of stockpiles, protection of slopes, protection of all disturbed areas, and protection of accesses. In addition, perimeter containment measures shall be placed prior to the commencement of grading and site disturbance activities unless the Public Works Department determines temporary measures to be unnecessary based upon location, site characteristics or time of year. The intent of erosion control measures shall be to keep all sediment from entering a swale, drainage way, watercourse or onto adjacent properties.
2. Site inspections and appropriate maintenance of erosion control devices shall be conducted and documented prior to, during, and after rain events.
3. The developer shall be responsible for the placement and maintenance of all erosion control devices as specified by the approved plan until such time that the project is accepted as complete by the Public Works Department. Erosion control devices may be relocated, deleted or additional items may be required depending on the actual soil conditions encountered. Additional erosion control devices shall be placed at the discretion of the Engineer of Work, County Inspector, SWPPP Monitor, or RWQCB Inspector. Guidelines for determining appropriate erosion control devices are included in the appendix of the Public Improvement Standards.
4. All erosion control devices shall be the first order of work and shall be in place between Oct 15 and April 15 or anytime when the rain probability exceeds 30%. This work shall be installed or applied after each area is graded and no later than five (5) working days after the completion of each area.
5. The Engineer of Work and the Public Works Department shall be notified before October 15 for inspection of installed erosion control devices.
6. A standby crew for emergency work shall be available at all times during the rainy season (October 15 through April 15). Necessary materials shall be available and stock piled at convenient locations to facilitate rapid construction or maintenance of temporary devices when rain is imminent.
7. Permanent erosion control shall be placed and established with 90% coverage on all disturbed surfaces other than paved or gravel surfaces, prior to final inspection. Permanent erosion control shall be fully established prior to final acceptance. Temporary erosion control measures shall remain in place until permanent measures are established.
8. In the event of a failure, the developer and/or his representative shall be responsible for cleanup and all associated costs or damages.
9. All projects involving site disturbance of one acre or greater shall comply with the requirements of the National Pollutant Discharge Elimination System (NPDES). The developer shall submit a Notice of Intent (NOI) to comply with the General Permit for Construction Activity with the Regional Water Quality Control Board (RWQCB). The developer shall provide the County with the Waste Discharge Identification Number (WDID #) or with verification that an exemption has been granted by RWQCB.

   WDID# _____
10. Person to contact 24 hours a day in the event there is an erosion control/sedimentation problem (Storm Water Compliance Officer):

    Name Kevin Merrill
    Local Phone Number 310-3989

Project Air Quality Control Notes:

During Construction the contractor shall designate a person or persons to monitor the Dust Control Program and to order increases measures as necessary to prevent the transport of dust off-site. Their duties shall include holiday and weekend periods when work may or may not be in progress. The name and telephone number for such persons shall be provided to the APCD prior to the commencement of construction.
The measures for dust control are as follows but not limited to:

Reduce the amount of disturbed area where possible,

1. Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15mph. Reclaimed (non-potable) water should be used whenever possible,
2. All dirt stockpile areas shall be sprayed daily as needed.
3. Exposed ground areas that are planned to be reworked at dates later than one month after initial grading should be seeded with a fast germinating native grass seed and watered until vegetation is established.
4. All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the ACCD.
5. All external slopes shall be hydroseeded as soon as possible upon completion.
6. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
7. All trucks hauling dirt, sand, soil, or other loose material are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114.
8. Install wheel washers where vehicles enter and exit paved roads and streets, or wash off trucks and equipment leaving the site.
9. Prior to final inspection all disturbed areas shall be vegetated with a fast-growing, native seed mix.

General Notes

1. No construction shall be started without plans approved by the County Planning Department. The Planning Department shall be notified at least 24 hrors prior to the start of construction and the time and location for the preconstruction conference.
2. All construction work and installations shall conform to the County Standards and Specifications.
3. Soils tests shall be done in accordance with the County Standards. The test results shall clearly indicate the location and source of materials.
4. Compaction tests shall be made on all embankment materials, subgrades and ditch backfill.
5. There will be no need for special concrete inspection. Concrete for the anchor pad shall be 2000 psi. The rebar shall be inspected prior to the placement of the concrete. All concrete and the two sack slurry for the anti-seep collars and ditch backfill where shown shall be properly vibrated.
6. The Design Engineer shall inspect the installation of the HDPE Liner. The liner shall be installed by a contractor specializing in lining ponds.
7. The Engineer of Record shall certify that the improvements when completed are in accordance to the plans prior to the request for Final Inspection. As-built plans are to be prepared after construction is completed. The Engineer certifying the improvements shall be present at the Final Inspection.
8. Final Reports for grading and earthwork shall be prepared in accordance with the requirements of the UBC, Chapter 33.
9. Upon completion of the work, the Geotechnical Engineer shall submit to the Engineer of Record a complete summary of all testing done during the project.
10. The Construction Contractor shall maintain a current, complete and accurate record of all changes which deviate from the approved plans. No changes shall be made without the prior approval of the Engineer of Record and the County.

GSI Soills, Inc shall perform all special inspections for the earthwork for this project.
GSI Geotechnical Investigation dated January 4, 2016 Project 15-7274 shall be a part of these documents.
Call 48 hours prior to inspection to set up an appointment.

Table 1705.6
Required Verification and Inspection of Soils

Verification and Inspection Task	Continuos During Task Listed	Periodically During Task Listed
1. Verify materials below embankments are adequate to achieve the design capacity	____	X
2. Verify excavations are extended to proper depth and have reached proper material.	____	X
3. Perform classification and testing of controlled filled materials.	____	X
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of controlled fill.	X	____
5. Prior to placement of controlled fill, observe subgrade	____	X

Scope of Work

The work consists of constructing three new lined reservoirs for irrigation purposes. All areas to receive fill shall be excavated a minimum of three feet, the exposed surface scarified and moisture conditioned, then recompacted to 90% relative compaction. The intent is to balance the earthwork with no import or export. The completed interior slopes shall be fine graded and all rocks removed, then rolled with a smooth drum roller. A 40 mil HDPE geomembrane liner will then be installed on the slopes and bottom. The liner will be installed per manufacturer's recommendations by a company specializing in liner installation. A five foot by twenty three foot by eight inch reinforced concrete pad for anchoring the liner shall be constructed around the pump inlet pipes. No special inspection for the concrete work shall be required. A 6 foot non-climb fence will be built around the exterior perimeter. Coast Guard Approved buoys with a minimum of 90 feet of line shall be placed at no more than 200 foot intervals around the top interior slope of the reservoirs. The sources of water are pvc waterlines from existing wells and no surface water shall enter the reservoir. Valving, filters and pumps will be installed after the reservoirs are constructed by the Irrigation Contractor and are not part of this permit. This contract is for stubbing inlet pipes through the exterior slope for future connection to the fill and transfer lines by an Irrigation Contractor. These pipes shall have 2 sack concrete slurry anti-seep collars. A 15" PVC Drop Pipe Outlet Structure will serve as an emergency overflow in the event the high water limit switch fails and is sized to prevent the reservoir from overtopping. Access to the reservoir is by existing dirt farm roads . No driveways will be constructed. The existing farm fields sheet flow gently across the locations and earthen swales will be constructed around the perimeters where necessary to keep any surface flow away from the toe of the fill slopes. No electrical work is included in this permit.

Benchmark and Basis of Bearing

Benchmark is a 2 1/2" aluminum disc, stamped h-2,
Cal-Trans Monument sb166 pm-55.01
elevation = 1824.55 NAVD88

Basis of Bearing is GPS established true north from NAD 83(92) from Cal-Trans Monuments sb166 pm-55.01 and sb166 pm-55.43

Project Information

Address: Hwy 166, Cuyama Valley
APN 147-020-045
Zoning AG
Project Description: Construct three 49 ac-ft Reservoirs for irrigation and frost protection purposes

Pre-Construction Meeting

Prior to construction a pre-construction meeting is required with the inspector to go over the special inspection reporting requirements, final and progress reports, & erosion control. E-mail inspection-North@countyofsb.org

Contacts:

Owner: Grapevine Land Management

Matt Turrentine
444 Higuera St Suite 202
San Luis Obispo, CA 93401
805 312-1828

Engineer: Tom A Howell

1812 N Vine
Santa Maria, CA 93454
805 925-5311

Geotechnical Engineer: GSI Soils, Inc

Rick Amero
524 East Chapel
Santa Maria, CA 93454
805 349-0140

Sheet Index

Engineer's Certificate

I, Tom A Howell, RCE 27037, Engineer of Record, hereby certify that these plans are in accordance with the following codes: _____Date:_____

2013 California Bldg Code (0112 IBC), Appdx Chp 33, 1997 UBC
2013 California Electric Code (2011 NEC)
2013 California Mechanical Code (2012 IAMPO UMC)
2013 California Plumbing Code (2012 IAMPO UPC)
California Title 24: 2011 California Energy Code and Accesibility Standards
County Ordinance(s) Title 19 (Building), (Inland)

Geotechnical Engineer's Certificate

I have reviewed the plans and specifications and have found them to be in substantial conformance with the recommendations as found in my Soil Investigation.

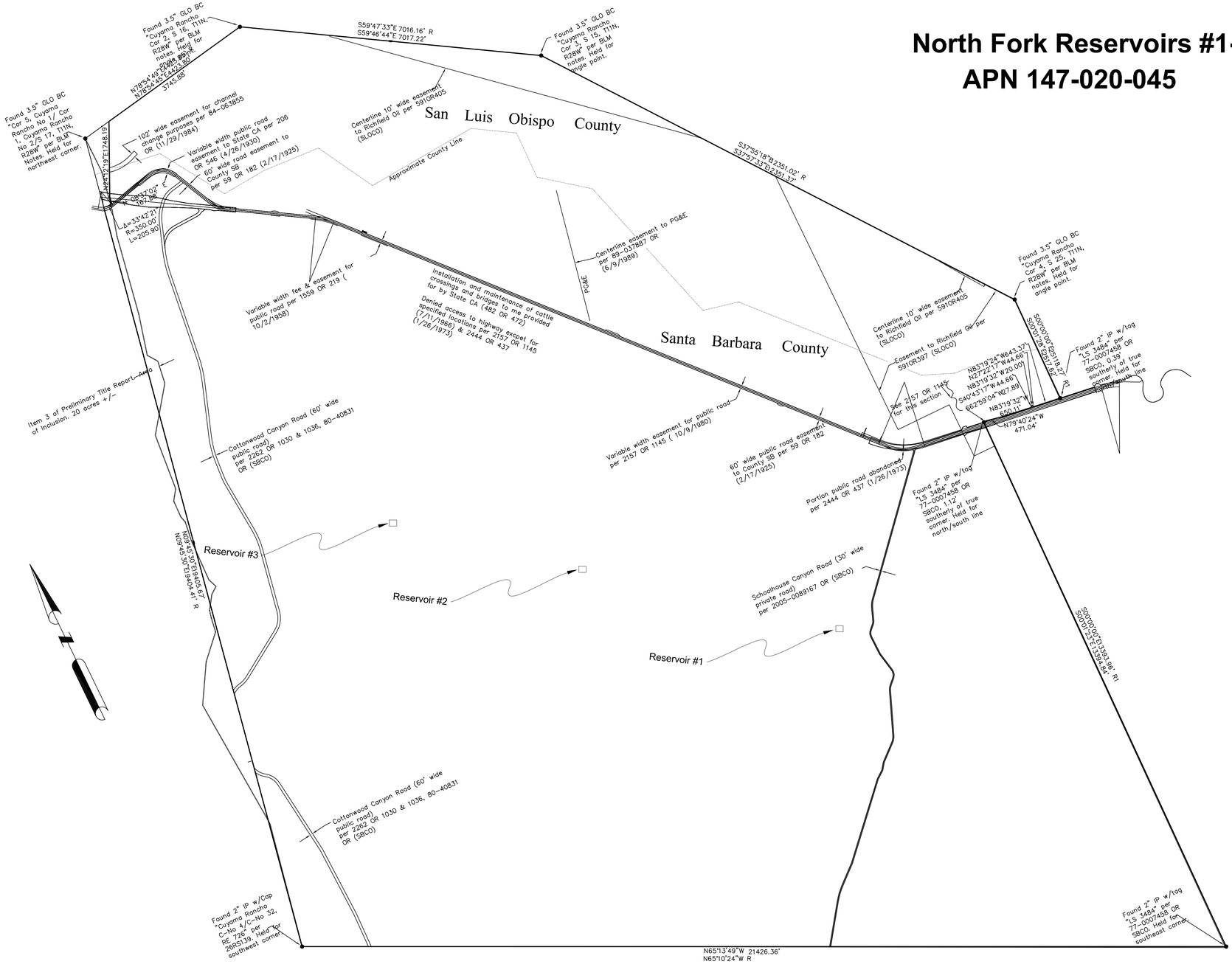
_____ Date: _____

REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

North Fork Vineyards

DRAWN TH	DATE 1/09/17	49 Ac-ft Reservoirs Hwy 166 Cuyama, CA Cover Sheet
APPROVED	DATE	
SCALE Varies	SHEET 1 of 12	PROJECT NO. 101715-6233

North Fork Reservoirs #1-3
APN 147-020-045



REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

North Fork Vineyards		
DRAWN TH	DATE 1/09/17	49 Ac-ft Reservoirs Hwy 166 Cuyama, CA Overall Property
APPROVED	DATE	
SCALE 1"=1200'	SHEET 2 of 12	PROJECT NO. 101715-6233

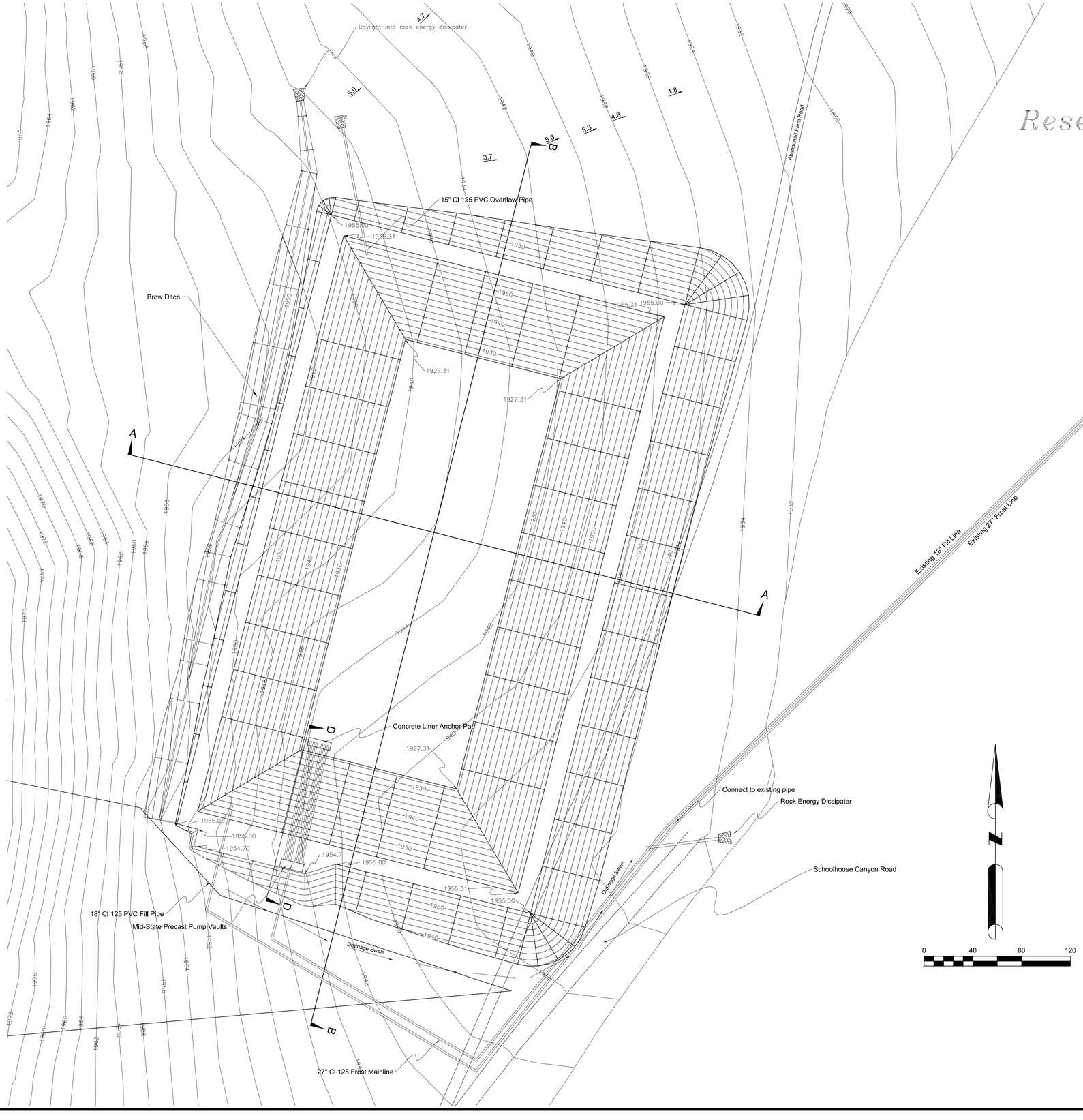
North Fork Vineyard Frost Protection Overall Site Plan

REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

North Fork Vineyards

DRAWN *TH*	DATE *1/09/17*	*Reservoirs #1-3 Overall Piping Plan Existing Piping*
APPROVED	DATE	
SCALE *1"=600'*	SHEET *3 of 12*	PROJECT NO. *101715-6233*

Reservoir # 1 Grading Plan



Pond #1 Report

Top of dam elevation: 1955.3
Bottom of pond elevation: 1927.3
Top of dam width: 14.0
Cut Slope: 2.00:1
Fill Slope: 2.50:1
Interior Slope: 2.50:1

Pond Earthwork Volumes

Fill Factor: 1.30
Total cut : 44,062 C.Y.
Total fill: 44,589 C.Y.
Total Disturbed Area: 4.85 Acres

Pond Storage Volumes

Water Elev	Storage(AcreFt)	Area(Acre)
1927.31	0.00	1.046
1929.31	2.20	1.158
1931.31	4.63	1.274
1933.31	7.30	1.395
1935.31	10.21	1.520
1937.31	13.38	1.650
1939.31	16.81	1.784
1941.31	20.52	1.923
1943.31	24.51	2.066
1945.31	28.79	2.214
1947.31	33.37	2.366
1949.31	38.26	2.523
1951.31	43.46	2.684
1953.31	49.00	2.850
1955.31	54.87	3.020

REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

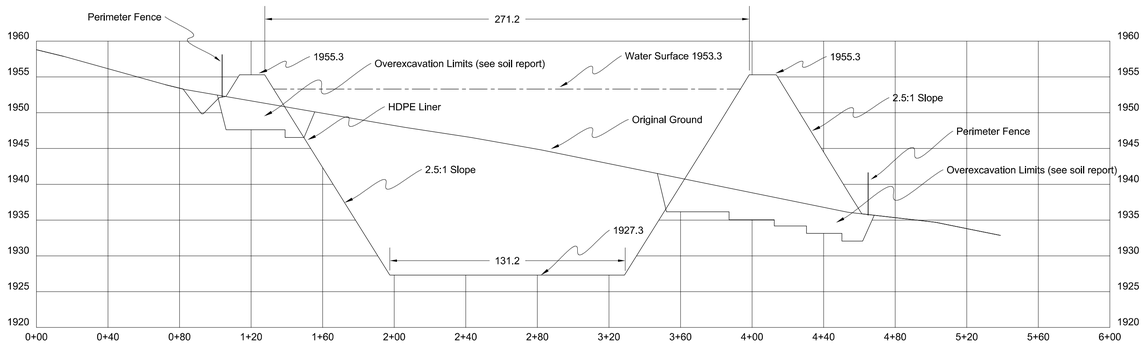
Revisions:
1/03/2017 Added 15" CMP Culvert
Moved Outlet Pipe
Lengthened Drainage Swales

North Fork Vineyards

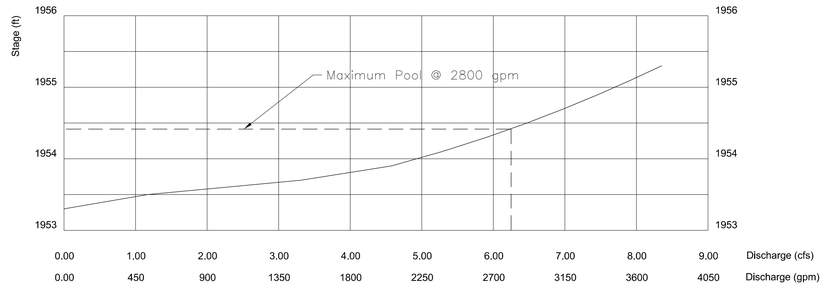
DRAWN TH	DATE 1/09/17	Reservoir #1 Grading Plan
APPROVED	DATE	
SCALE 1"=40'	SHEET 4 of 12	PROJECT NO. 101715-6233

Reservoir #1 Details

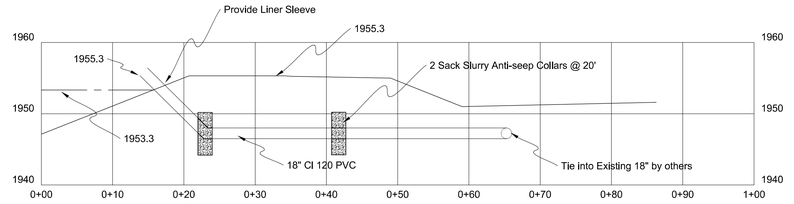
Reservoir #2 Section A-A



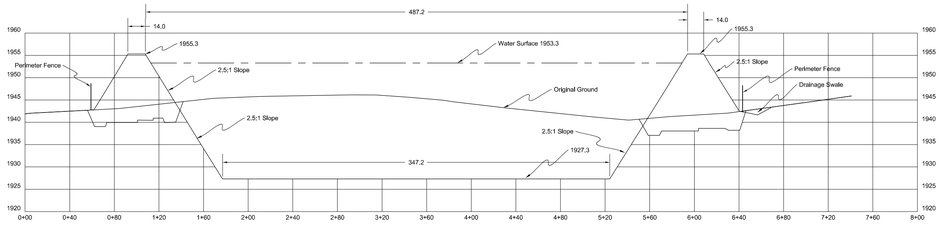
Pond #1 Stage-Storage



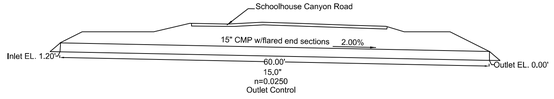
Reservoir #1 Filler Pipe



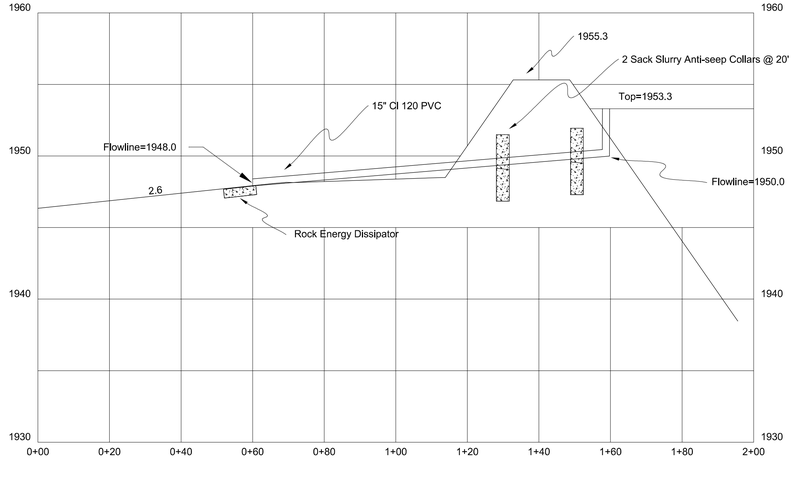
Reservoir #1 Section B-B



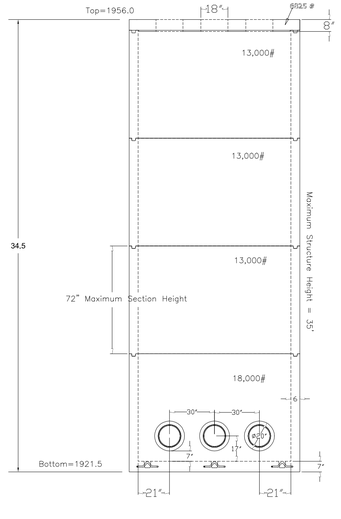
15" CMP Under Schoolhouse Road



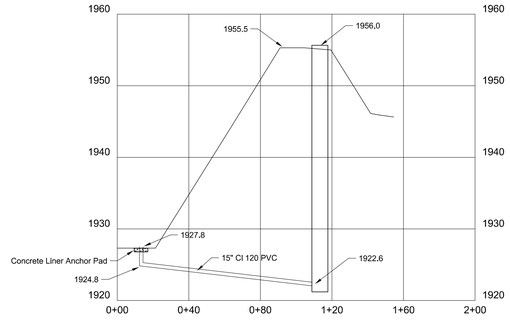
Reservoir #1 Overflow Detail



Mid–State Concrete Products
Pump Housing Vault Reservoir #1



Reservoir #1 Pump Inlet

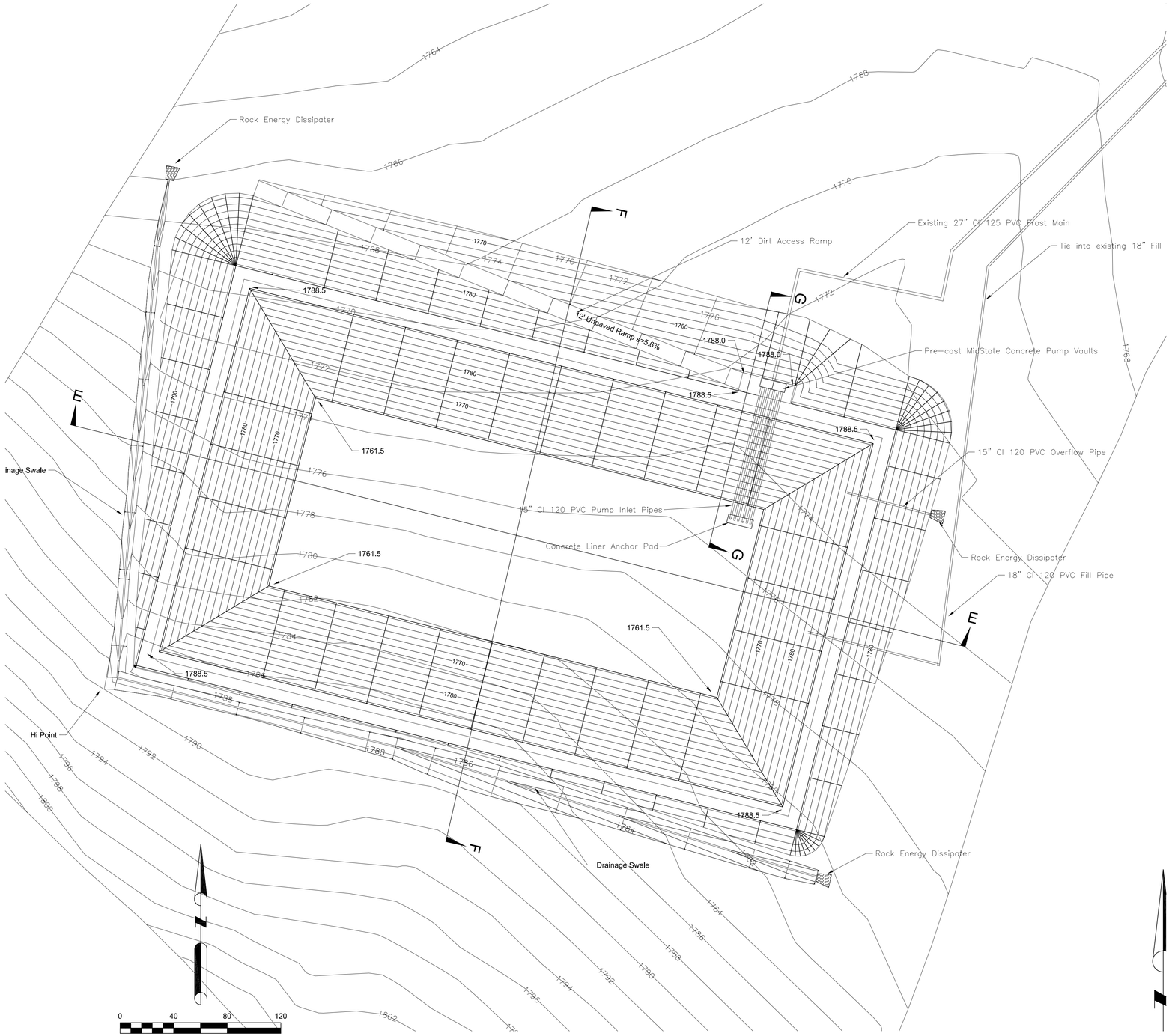


REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

Revisions:
1/03/2017 Added 15" CMP Culvert Detail
Revised Stage-Storage Diagram
Revised Outlet Pipe Detail

North Fork Vineyards		
DRAWN *TH*	DATE *1/09/17*	*Reservoir #1 Details*
APPROVED	DATE	
SCALE *Varies*	SHEET *5 of 12*	PROJECT NO. *101715–6233*

Reservoir #2 Grading Plan



Pond Report

Tue Oct 20 14:36:54 2015

Top of dam elevation: 1788.50
Bottom of pond elevation: 1761.50
Top of dam width: 14.00
Cut Slope: 2.00:1
Fill Slope: 2.50:1
Interior Slope: 2.50:1
Existing Surface: C:\Carlson Projects\North Fork\Reservoir 2B OG.tin

Pond Earthwork Volumes

Fill Factor: 1.30
Total cut : 44,064.35 C.Y.
Total fill: 1 42,205.16 C.Y.

Pond Storage Volumes

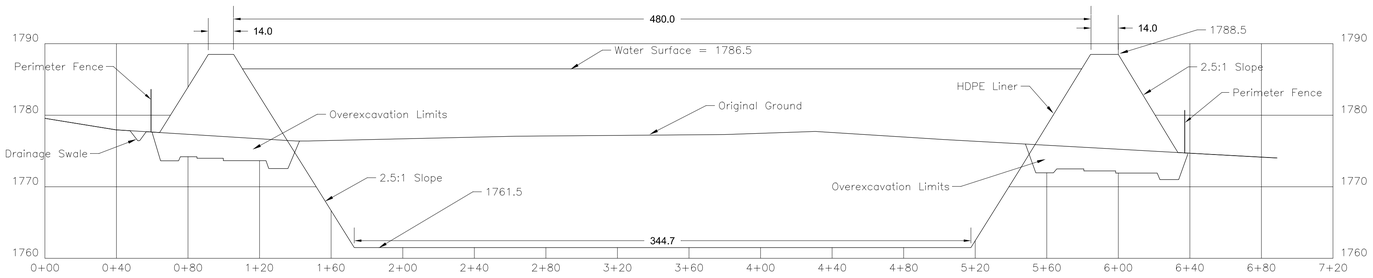
Water Elev	Storage(AcreFt)	Area(Acre)
1761.50	0.00	1.146
1763.50	2.40	1.259
1765.50	5.04	1.378
1767.50	7.91	1.502
1769.50	11.05	1.630
1771.50	14.44	1.762
1773.50	18.10	1.899
1775.50	22.03	2.040
1777.50	26.26	2.186
1779.50	30.73	2.336
1781.50	35.60	2.490
1783.50	40.74	2.649
1785.50	46.20	2.813
1787.50	52.00	2.981
1788.50	55.02	3.067

Area in Cut : 148,297.1 S.F.
Area in Fill: 186,122.7 S.F.

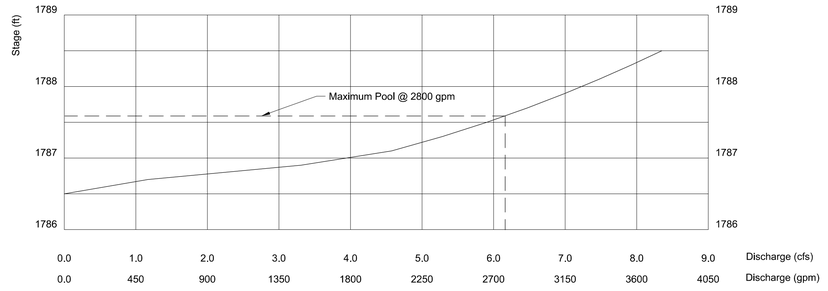
REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

North Fork Vineyards		
DRAWN: TH	DATE: 1/09/17	Reservoir #2 Grading Plan
APPROVED	DATE	
SCALE: 1"=40'	SHEET: 6 of 12	PROJECT NO.: 101715-6233

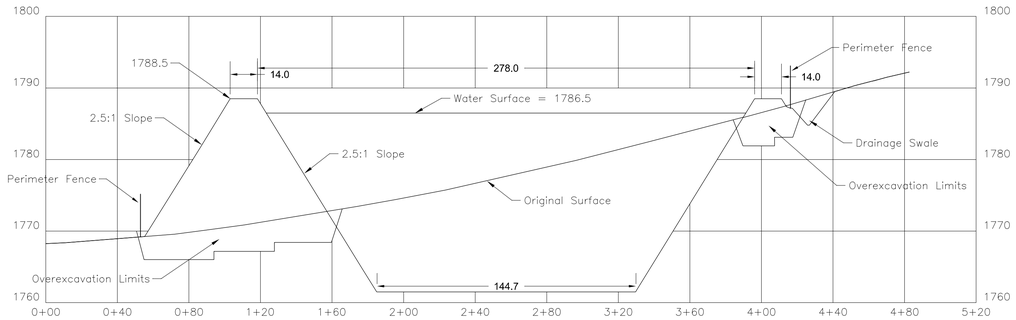
Reservoir #2 Section E–E



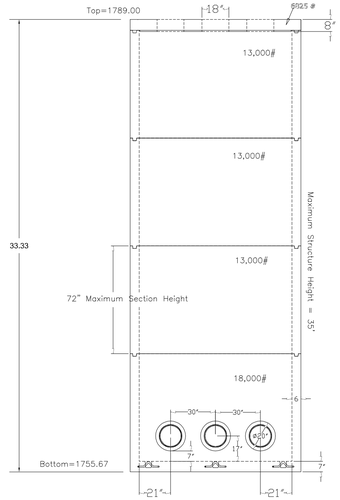
Reservoir #2 Stage Storage



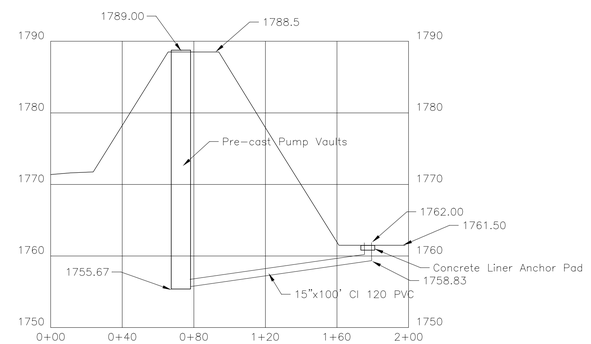
Reservoir #2 Section F–F



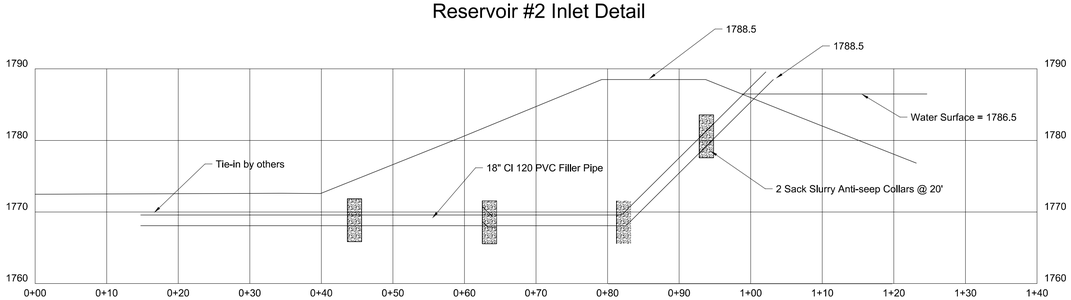
Reservoir #2 Pump Vaults



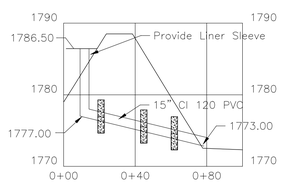
Reservoir #2 Pump Vaults Section G–G



Reservoir #2 Inlet Detail



Reservoir #2 Overflow

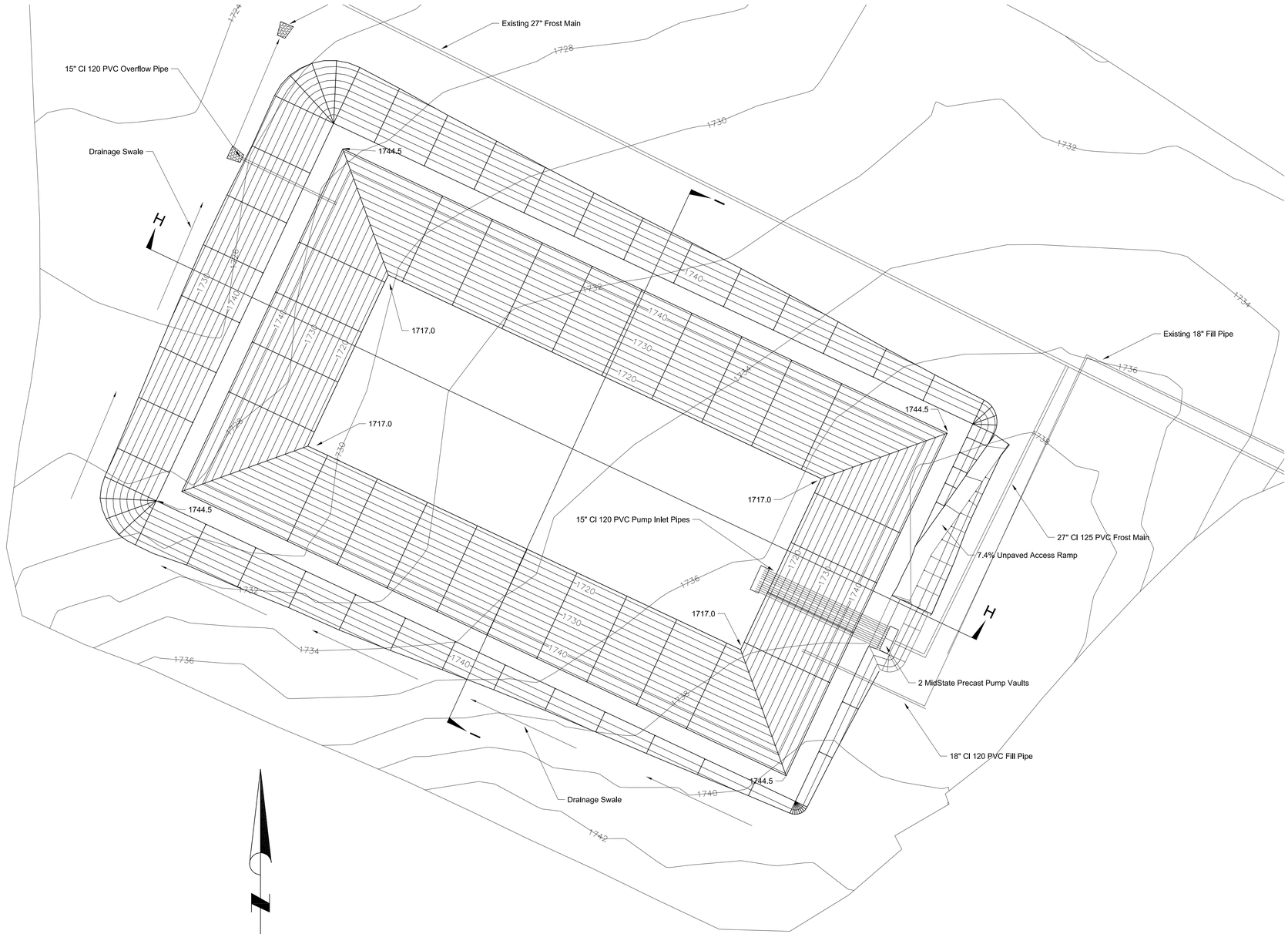


REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

North Fork Vineyards

DRAWN *TH*	DATE *1/09/17*	*Reservoir #2 Details*
APPROVED	DATE	
SCALE *Varies*	SHEET *7 of 12*	PROJECT NO. *101715-6233*

Reservoir #3 Grading Plan



Pond Report

Top of dam elevation: 1744.50
Bottom of pond elevation: 1717.00
Top of dam width: 14.00
Cut Slope: 2.00:1
Fill Slope: 2.50:1
Interior Slope: 2.50

Pond Earthwork Volumes

Fill Factor: 1.30
Total cut : 42,770.71 C.Y.
Total fill: 40,253.87 C.Y.

Pond Storage Volumes

Water Elev	Storage(AcreFt)	Area(Acre)
1717.00	0.00	1.093
1719.00	2.29	1.206
1721.00	4.82	1.323
1723.00	7.59	1.445
1725.00	10.60	1.571
1727.00	13.87	1.701
1729.00	17.41	1.835
1731.00	21.22	1.973
1733.00	25.30	2.116
1735.00	29.68	2.263
1737.00	34.36	2.414
1739.00	39.34	2.570
1741.00	44.64	2.729
1743.00	50.26	2.893
1744.50	54.70	3.019

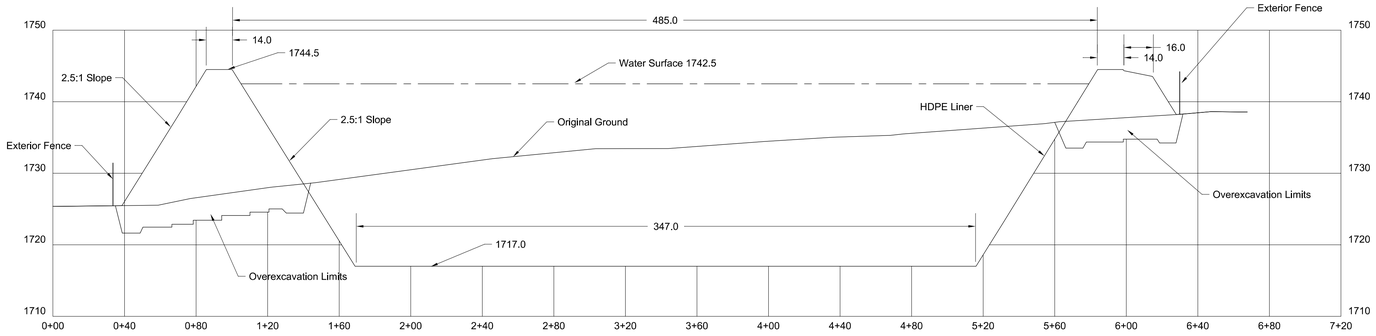
REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

North Fork Vineyards

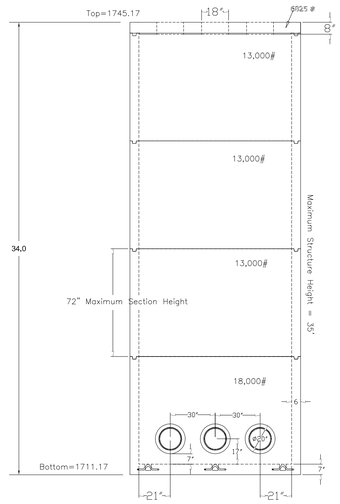
DRAWN *TH*	DATE *1/09/17*	*Reservoir #3 Grading Plan*
APPROVED	DATE	
SCALE *1"=40'*	SHEET *8 of 12*	PROJECT NO. *101715-6233*

Reservoir #3 Details

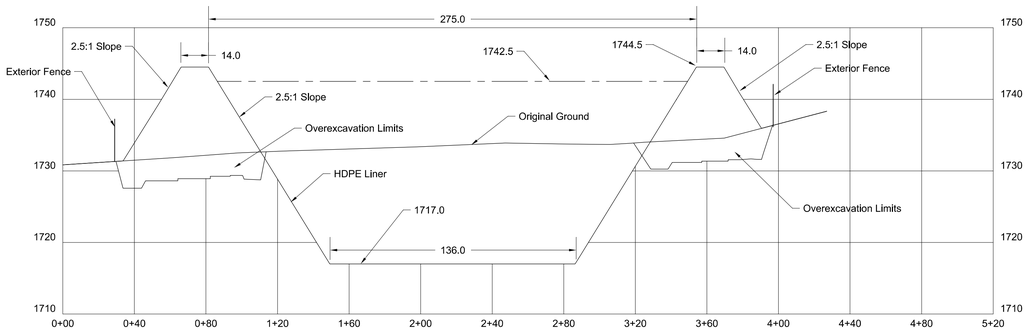
Reservoir #3 Section H-H



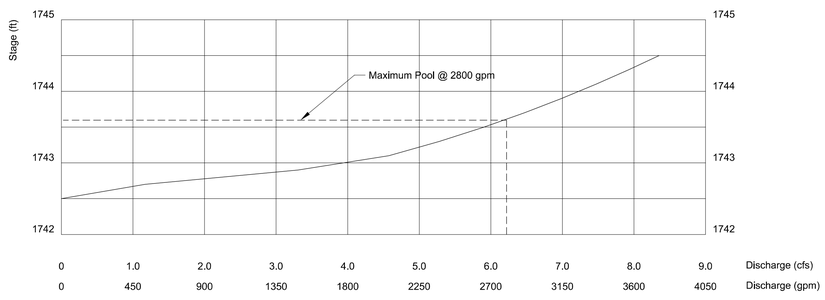
Mid-State Concrete Products
Pump Housing Vault Reservoir #3



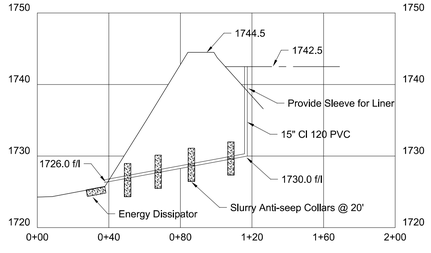
Reservoir #3 Section I-I



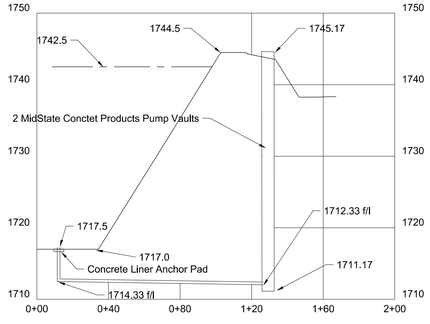
Reservoir #3 Stage Storage



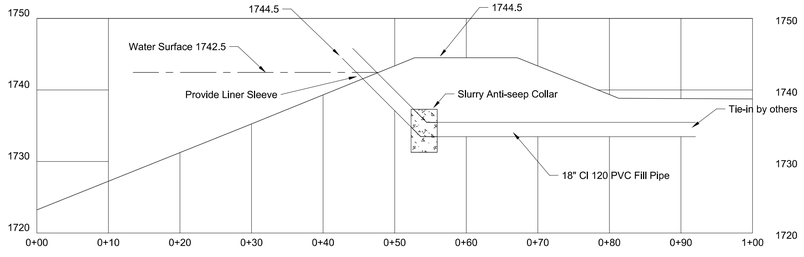
Reservoir #3 Overflow



Reservoir #3 Pump Vaults



Reservoir #3 18" Fill Pipe

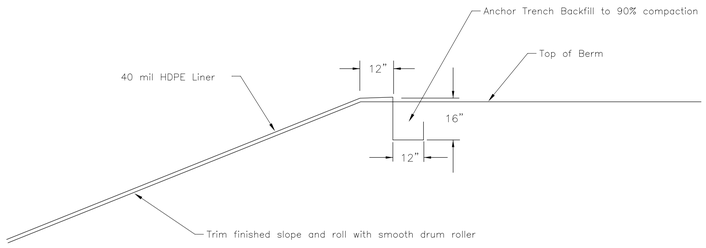


REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

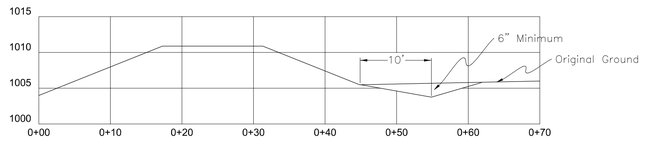
North Fork Vineyards		
DRAWN: TH	DATE: 1/09/17	Reservoir #3 Details
APPROVED	DATE	
SCALE: Varies	SHEET: 9 of 12	PROJECT NO.: 101715-6233

Details Common to All Reservoirs

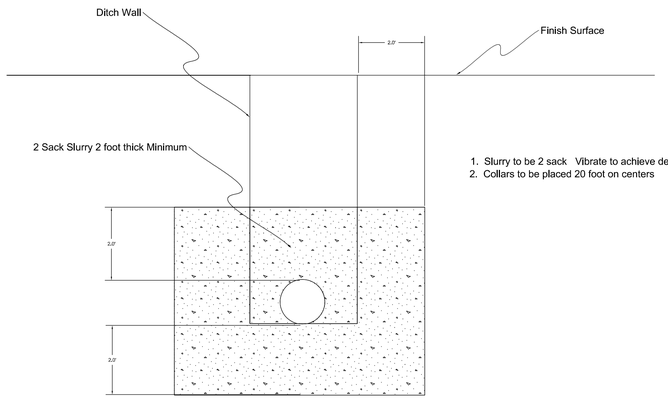
HDPE Liner Anchor Trench



Drainage Swale Detail

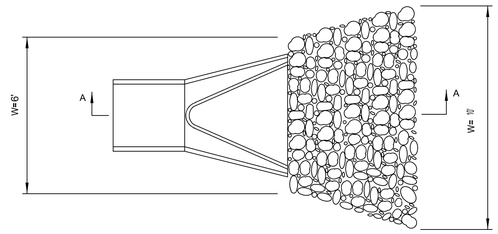


Anti-seep Collar Detail

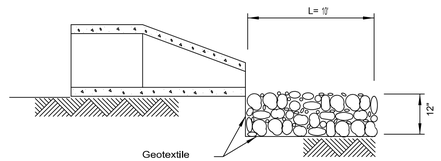


1. Slurry to be 2 sack Vibrate to achieve density.
2. Collars to be placed 20 foot on centers

Rock Energy Dissipater



PLAN

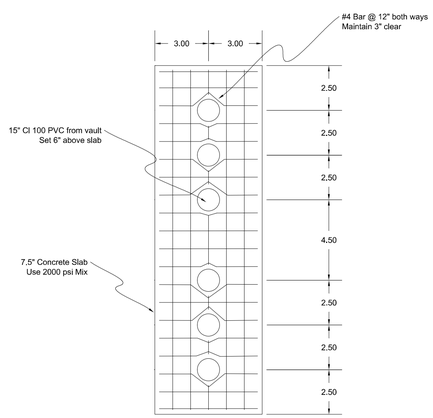


SECTION A-A

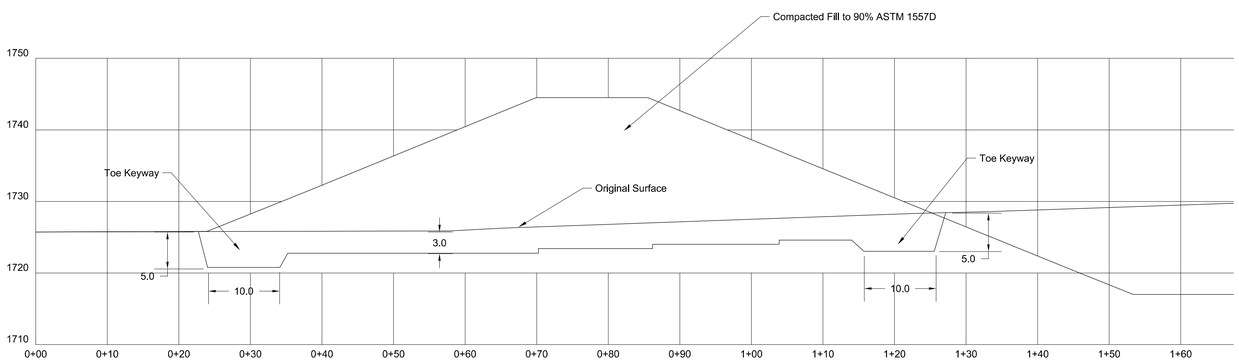
Notes:
1. Rock shall be 6" to 12" diameter
2. Minimum diminsion shall be 6' x 10' x 12"

General Notes:

1. All grading shall conform to the Soil Report prepared by GSI Soils for this project dated January 4, 2016.
2. All slopes shall be overfilled than trimmed to finish grade to provide firm surfaces.
3. Finished slopes and the bottom surface shall be rolled with a smooth drum roller prior to placing fabric. The Engineer of Record shall inspect the surfaces to assure they are rock free and to the proper lines and grades before fabric shall be installed.
4. The liner shall be placed by a contractor specializing in pond liners and all pipes extending through the liner shall have sleeves and stainless bands to prevent leakage.
5. A 6 foot high non-climb fence shall be installed around the exterior perimeter of the reservoir. The fabric shall have 10 guage top and bottom wires with 12 1/2 guage 2x4 mesh filler fabric. Tee Posts shall be at 8 feet spacings and shall be heavy weight a minimum of 8 feet long.
6. The finished pond shall be surveyed by the Engineer of Record and the storage volume calculated. The 15" PVC Overflow Pipe shall be adjusted as necessary to ensure that the retained volume below the outflow inlet is no more than 49 acre feet and that there is a minimum of two feet of freeboard to the top of berm at the lowest point.



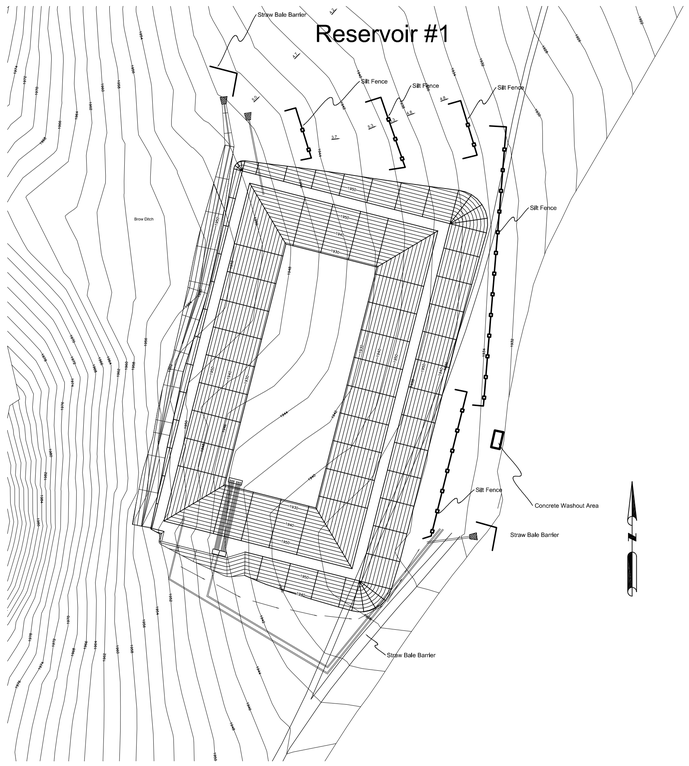
Overexcavation and Keyway Details per Figure 3 of Soil Report

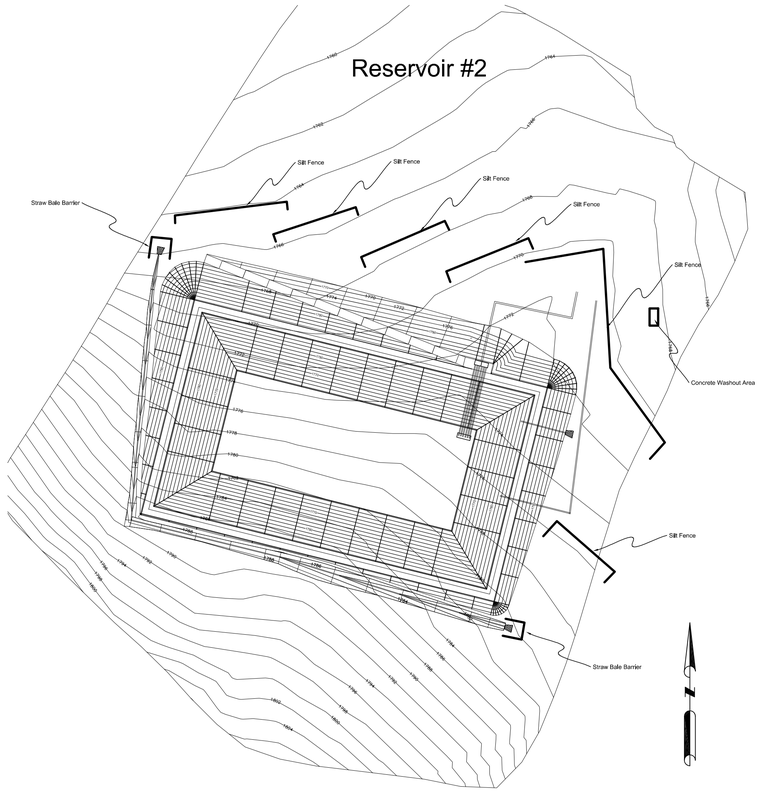


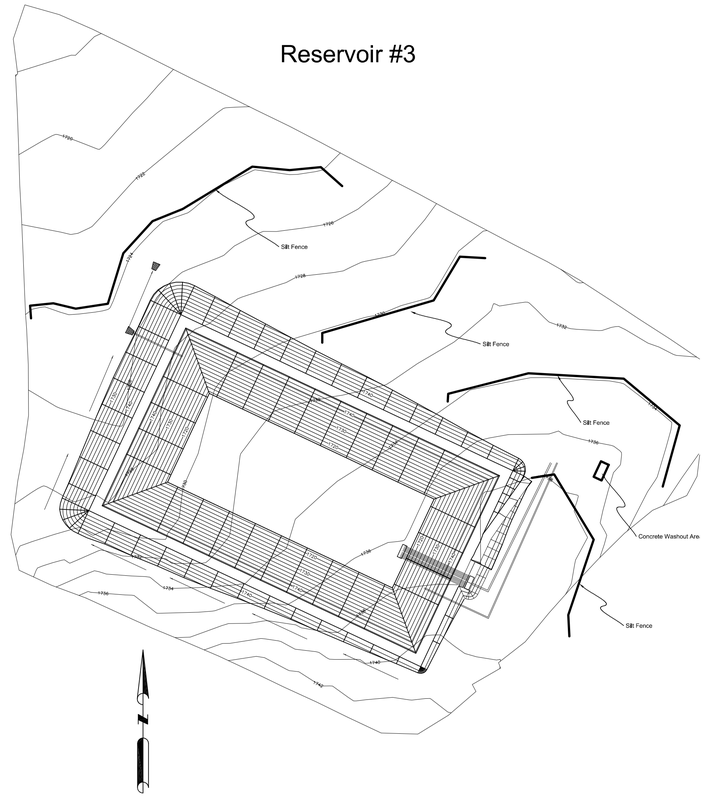
REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

North Fork Vineyards		
DRAWN TH	DATE 1/09/17	Reservoirs #1-3 Common Details
APPROVED	DATE	
SCALE Varies	SHEET 10 of 12	PROJECT NO. 101715-6233

Erosion and Sedimentation Control Plan







Erosion Control Notes:

1. Erosion control measures shall be implemented on all projects and shall include source control, including protection of stockpiles, protection of slopes, protection of all disturbed areas, and protection of accesses. In addition, perimeter containment measures shall be placed prior to the commencement of grading and site disturbance activities unless the Engineer determines temporary measures to be unnecessary based upon location, site characteristics or time of year. The intent of the erosion control measures shall be to keep all sediment from entering a swale, drainage way, watercourse or onto adjacent properties. An approved Erosion Control and Sedimentation Control Plan will require County approval
2. Site inspections and appropriate maintenance of erosion control devices shall be conducted and documented prior to, during, and after rain events.
3. The developer shall be responsible for the placement and maintenance of all erosion control devices as specified by the approved plan until such time that the project is accepted as complete by the Engineer. Erosion control devices may be relocated, deleted or additional items may be required depending on the actual soil conditions encountered. Additional erosion control shall be placed at the discretion of the Engineer of Work, Engineer, SWPPP Monitor or RWQCB Inspector. Guidelines for determining appropriate erosion control devices are included in the appendix of the Public Improvement Standards.
4. All erosion control devices shall be the first order of work and shall be in place between October 15 and April 15 or anytime when the rain probability exceeds 30%. This work shall be installed or applied after each area is graded and no longer than five (5) working days after the completion of each area.
5. The Engineer of Work and the Engineer shall be notified before October 15 for inspection of installed erosion control devices.
6. A standby crew for emergency work shall be available at all times during the rainy season (October 15 through April 15). Necessary materials shall be available and stockpiled at convenient locations to facilitate rapid construction or maintenance of temporary devices when rain is imminent.
7. Permanent erosion control shall be placed and established with 70% coverage on all disturbed surfaces other than paved or gravel surfaces prior to final inspection. Permanent erosion control shall be fully established prior to final inspection. Temporary erosion control measures shall remain in place until permanent measures are established. A water truck shall be used to water areas hydroseeded until the planting is established.
8. In the event of a failure, the developer and/or his representative shall be responsible for cleanup and all associated costs or damages.
9. Slurry Mix: The slurry mix shall be composed of the following materials:

Bromus mollis - Blando Brome (95%, 85%)	20 pounds per acre
Festuca megalura - Zorro Fescue (85%, 80%)	8
Trifolium hirtum "Hykon" - Rose Clover (95%, 90%) inoculated with appropriate bacteria	30 3
Eschscholzia californica - California Poppy (95%, 75%)	3
Lupinus nanus - Sky Lupine (95%, 75%)	4

(Seed avaialbale at S&S Seeds (805) 684-0436

Other Materials:

100% Wood fiber mulch (green)	1600 pounds per acre
Commercial Fertilizer (16-20-0)	400
"M-Binder" (stabilizing emulsion) or equal	120
Water (as needed for application and as specified by manufacturer)	

10. Application: The slurry preparation shall take place at the site and in the presence of the Engineer. Spraying of the slurry shall be done by an experienced hydroseeding company and commence within five minutes after all the materials have been mixed thoroughly.

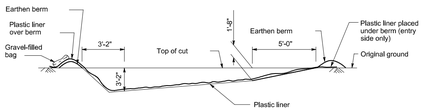
11. The hydroseeded areas shall be watered with a fine mist periodically until the seed begins to germinate then every other day until the roots are established and 70% of the area is covered. Do not use the side spray of a watertruck but instead use a nozzle adjusted to spray a fine mist attached to a hose.
12. BMP's to be constructed include but are not limited to:
    a: Silt Fence
    b: Straw bale barrier
    c: Concrete washout area

REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

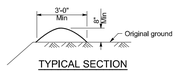
North Fork Vineyards

DRAWN *TH*	DATE *1/09/17*	*Reservoirs #1-3 Erosion & Sedimentation Control*
APPROVED	DATE	
SCALE *1"=100'*	SHEET *11 of 12*	PROJECT NO. *101715-6233*

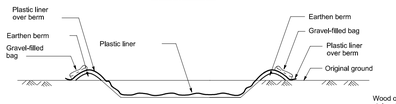
Erosion Control BMP Detai;ls



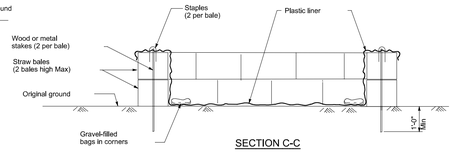
SECTION B-B



TYPICAL SECTION
EARTHEN BERM



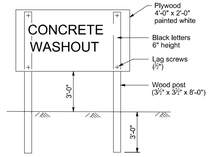
SECTION A-A



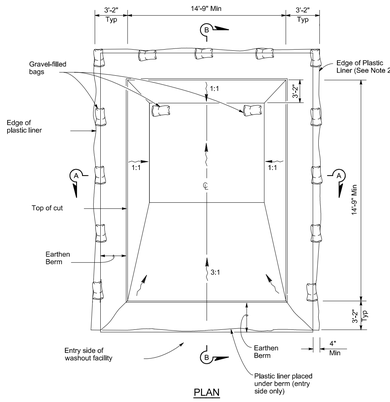
SECTION C-C

NOTES:

1. The concrete washout sign shall be installed within 32'-10" of the temporary concrete washout facility.
2. Plastic liner shall be anchored with gravel-filled bags for bellow grade concrete washout facility.

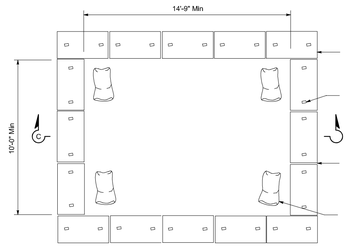


CONCRETE WASHOUT SIGN DETAIL



PLAN

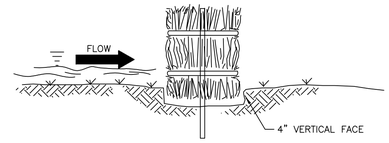
TEMPORARY CONCRETE WASHOUT FACILITY



PLAN

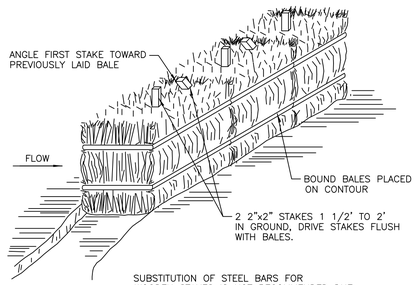
TEMPORARY CONCRETE WASHOUT FACILITY

NO SCALE



* PROMOTES ON SITE SEDIMENTATION BY CREATING A TEMPORARY POND.

BEDDING DETAIL

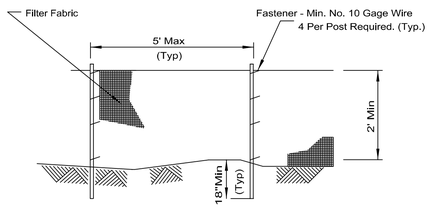


SUBSTITUTION OF STEEL BARS FOR WOODEN STAKES IS NOT RECOMMENDED DUE TO POTENTIAL FOR DAMAGING CONSTRUCTION EQUIPMENT

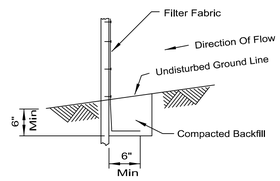
ANCHORING DETAIL

STRAW BALE BARRIERS

SILT FENCE PLAN



ELEVATION



FABRIC ANCHOR DETAIL

NOTES:

1. Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
2. Filter fabric shall meet the requirements of material specification 592 Geotextile Table 1 or 2, Class with equivalent opening size of at least 30 for nonwoven and 50 for woven.
3. Fence posts shall be either standard steel post or wood post with a minimum cross-sectional area of 3.0 sq. in.

REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

North Fork Vineyards		
DRAWN *TH*	DATE *1/09/17*	*Reservoirs #1-3* *BMP Details*
APPROVED	DATE	
SCALE *Varies*	SHEET *12 of 12*	PROJECT NO. *101715-6233*

Attachment 2a

Kevin Merk Associates, LLC P.O. Box 318, San Luis Obispo, CA 93406 805-748-5837(o)/439-1616(f)

February 24, 2016

Mr. Kevin Merrill
Mesa Vineyard Management
P.O. Box 789
Templeton, California 93465

Subject: Biological Resources Assessment for the Reservoir and Operations Yard Project, North Fork Ranch, Santa Barbara County, California

Dear Mr. Merrill:

Kevin Merk Associates, LLC (KMA), at your request, conducted an assessment of the biological resources at three reservoir sites and an operations yard proposed on a portion of the North Fork Ranch in Santa Barbara County, California. The North Fork Ranch is located approximately 10 miles west of New Cuyama, along the Highway 166 corridor. While the entire North Fork Ranch is roughly 8,400 acres, and is situated in both San Luis Obispo and Santa Barbara Counties, the four sites included in this assessment are located on the gentle to flat slopes on the south side of Highway 166 in Santa Barbara County.

Based on the review of site plans provided by your engineer, Mr. Thomas Howell (2015), the project consists of creating three agricultural reservoirs covering approximately five acres each. An operations yard area of approximately five acres is also included. The biological assessment examined existing conditions at and adjacent to the four proposed project areas, and evaluated the potential for rare or special status species and habitats to be present or affected by reservoir and operations yard construction. As such, the project study area covered by this report consists of a total of approximately 20 acres of land disturbance. Access to the sites would use existing ranch roads that originate from Highway 166. Please refer to attached Figures 1 and 2 for site location and an aerial overview of the study area. The following discussion provides the methods and results of our investigation.

METHODS

Prior to conducting field work, KMA biologists reviewed pertinent background information from the general area, including historic aerial photographs from Google Earth, the U.S. Geological Survey (USGS, 2015), and the Environmental Site Assessment prepared by the RCC Group (2014). Other environmental documents obtained online from the County of Santa Barbara (i.e.: August 2009 E&B Natural Resources Management Production Plan and September 2014 Cuyama Solar Facility Final EIR) were also reviewed to identify special status resources in the region.

The California Natural Diversity Database (updated December 2015; CNDDB) maintained by the California Department of Fish and Wildlife (CDFW), was searched for special status biological resources documented within the following eight USGS 7.5-minute topographic quadrangles: Manzanita Mountain, Miranda Pine Mountain, Taylor Canyon, Bates Canyon, Caliente Mountain,

Peak Mountain, Wells Ranch, and New Cuyama. A search of this size was conducted to ensure that any new information regarding special-status species and plant community occurrences was included in the assessment. The Central Coast Center for Plant Conservation's Rare Plants of Santa Barbara County List (V2, November 1, 2012) was also reviewed to ensure full coverage of local plant species.

KMA Principal Biologist Kevin Merk conducted numerous site investigations on the North Fork Ranch in the spring and summer of 2015 prior to agricultural activities. General botanical and biological surveys were conducted in April, May, June, July, September and October of 2015 in addition to CDFW protocol level surveys for the blunt nose leopard lizard (*Gambelia sila*). KMA Senior Biologist Bob Sloan and Environmental Scientist, Jaryd Block, also assisted with surveys conducted in September and October 2015 to delineate top of bank buffers along onsite drainages to ensure agricultural activities onsite were setback from natural drainage features.

A detailed survey of the reservoir sites and operations was conducted by Bob Sloan on January 4, 2016. Using the project plans prepared by project engineer, Mr. Thomas Howell, the sites and surrounding areas were surveyed on foot to characterize existing conditions, habitats, and species presence. Existing plant communities and other observations were mapped on an aerial photograph obtained from Google Earth dated 2015. Vegetation classification generally followed Holland's *Preliminary Descriptions of the Terrestrial Natural Communities of California* (1986) and was cross-referenced with *A Manual of California Vegetation, Second Edition* (Sawyer et al., 2009) for consistency. Plant taxonomy followed the *Jepson Manual, Second Edition* (Baldwin et al., 2012).

The Web Soil Survey (websoilsurvey.nrcs.usda.gov/ app/WebSoilSurvey.aspx) was reviewed to determine the soil mapping units present within the sites (U.S. Department of Agriculture 2015). The U. S. Fish and Wildlife Service's online Critical Habitat Mapper (http://criticalhabitat.fws.gov/crithab/) was reviewed to evaluate the extent of designated critical habitat defined in the region. The National Wetland Inventory was also queried to identify drainage features and potential wetlands documented onsite and in the region.

For the purpose of this report, special status species are those plants and animals listed, proposed for listing, or candidates for listing as Threatened or Endangered by the U.S. Fish and Wildlife Service (USFWS) under the federal Endangered Species Act (ESA); those listed or proposed for listing as Rare, Threatened, or Endangered by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA); animals designated as "Species of Special Concern," "Fully Protected," or "Watch List" by the CDFW; and plants occurring on California Rare Plant Rank lists 1, 2, 3 and 4 developed by the CDFW working in concert with the California Native Plant Society. The specific Rare Plant Rank code definitions are as follows:

- *List 1A = Plants presumed extinct in California;*
- *List 1B.1 = Rare or endangered in California and elsewhere; seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat);*
- *List 1B.2 = Rare or endangered in California and elsewhere; fairly endangered in California (20-80% occurrences threatened);*

- *List 1B.3 = Rare or endangered in California and elsewhere, not very endangered in California (<20% of occurrences threatened or no current threats known);*
- *List 2 = Rare, threatened or endangered in California, but more common elsewhere;*
- *List 3 = Plants needing more information (most are species that are taxonomically unresolved; some species on this list meet the definitions of rarity under CNPS and CESA);*
- *List 4.2 = Plants of limited distribution (watch list), fairly endangered in California (20-80% occurrences threatened); and*
- *List 4.3= Plants of limited distribution (watch list), not very endangered in California.*

The evaluation of special status plant and animal species and identification of habitat that could support these species was based on field observations to aid in the development of a habitat suitability analysis. KMA staff spent many hours surveying the lower elevation portions of the ranch along the Highway 166 corridor over the last year, and became very familiar with site conditions and species present. Definitive surveys for the presence or absence of the species such as the San Joaquin kit fox (*Vulpes macrotis mutica*) that may be present in the greater region were not conducted on the sites. Definitive or protocol-level surveys for special status wildlife species generally require specific survey methods with extensive field survey time to be conducted at specific times of the year. Therefore, we relied on existing information and known occurrence records in the region coupled with site-specific observations to make presence/absence determinations for special status species potentially occurring within the four project areas.

RESULTS

The North Fork Ranch is a large property with varied topography and habitats located west of New Cuyama along the northern flank of the Sierra Madre Mountains. The northern property is bisected in an east to west direction by Highway 166, and also includes the Cuyama River and its associated flat terraces. Please refer to the attached Figures 1 and 2 for site location and aerial overview maps. The three proposed reservoir sites and operations yard are located in the gentle slopes and flat areas of the North Fork Ranch, on the south side of Highway 166. All four sites are similar in size and shape, and were accessed by existing ranch roads. Elevations in the project areas range from approximately 1,700 to 1,900 feet above mean sea level.

Numerous drainage features that are tributaries to the Cuyama River bisect the property in a primarily south to north direction. The largest features, Cottonwood Canyon Creek in the west and Schoolhouse Canyon Creek in the east are large washes that are dry for most of the year. They contain periodic ("flashy") flow during the summer monsoon season as well as the winter rain season. The ranch was used to graze cattle for many years, and as a result, the gently-sloped terraces and hills were dominated by non-native weeds. Review of aerial imagery dating back to 1950's showed little change in the distribution/location of drainage features and vegetation formations (i.e.: herbaceous, shrub, tree habitats) onsite. Soils on the ranch in the study area are generally sandy in nature.

The attached Figures 3, 4, and 5 provide close-up views of existing conditions at each project site.

Figure 6 is a CNDDB Map illustrating the recorded special status species occurrences within a five-mile radius of the study area. Also included as an attachment, Table 1 provides a list of all special status species and plant communities identified in the CNDDB search area, and a determination of whether or not they are expected to occur in or adjacent to the four sites. Additional attachments include a photo plate to help document conditions at the four project sites, and the USFWS's *Standardized Recommendations for San Joaquin Kit Fox* to avoid impacts to this species during development of the reservoirs and operations yard. Existing conditions observed within the four sites are discussed further below.

Reservoir Site #1

Reservoir Site #1 is located in the eastern portion of the ranch, immediately adjacent to Schoolhouse Canyon Road, west of Schoolhouse Canyon Creek. The site slopes gently to the northeast, and supported a mix of non-native weeds growing on sandy loam soils. Plants observed during the spring and summer of 2015 included red-stemmed filaree (*Erodium cicutarium*) and Russian thistle (*Salsola tragus*). Further upslope on steeper hills were occurrences of California juniper (*Juniperus californicus*) and other scrub species. A small ephemeral drainage channel was present to the north of the proposed reservoir site, and the reservoir construction footprint has been set back over 100 feet from this feature to ensure it will not be disturbed during construction. The recent 2016 survey occurred when site preparation activities such as disking and deep ripping were taking place. The site was nearly devoid of vegetation when the site visit was conducted. Numerous coyote (*Canis latrans*) tracks were noted in the disked area. A large flock of American crows (*Corvus brachyrhynchos*) were present in disked areas south of the reservoir site. Nearby areas outside the disking footprint were dominated by red-stemmed filaree with sparse occurrences of annual grasses beginning to sprout in response to recent rains, which is consistent with observations made in the spring and summer 2015.

Reservoir Site #2

Reservoir Site #2 is located in the middle portion of the study area. The site slopes gently to the northeast, and consisted of non-native weeds growing on sandy soils, which was nearly identical to the conditions observed at Reservoir Site #1. Spring and summer 2015 surveys identified red-stemmed filaree growing as a monoculture with patches of bare soils at this site. The 2016 survey occurred during preparation for vineyard planting, and the site was disked with little to no vegetation present. The reservoir (and nearby operations yard) was sited in the upland area to avoid impacts to the unnamed drainage feature to the east. The proposed operations yard is located further east on the other side of the unnamed drainage feature.

Reservoir Site #3

Reservoir Site #3 is located in the western portion of the study area, approximately 0.75 mile east of Cottonwood Canyon Road. The proposed reservoir is located between two ephemeral drainage features, and was sited in upland areas with a minimum 50 foot setback from the drainages top of banks. Similar to observations made during the spring and summer 2015 at the other reservoir sites, the proposed disturbance area was dominated by red-stemmed filaree with patches of Russian thistle. During the 2016 survey, the area was being disked, and the southwestern half

consisted of a dense cover of red-stemmed filaree. Numerous Russian thistle seedlings were also observed, and a barbed wire fence present in the upper southern portion of the site had trapped numerous dry tumbleweeds (Russian thistle plants) from last year's crop.

Operations Yard

The proposed operations yard is located east of Reservoir Site #2 on the other side of the unnamed drainage feature. The site consists of an area previously used as a staging area for the former cattle grazing operation. During the 2016 survey, it consisted of a large flat area covered with gravel/road base. An existing dirt road connects the operations yard to Highway 166. During the 2015 surveys, the site contained a predominance of bare soils as a result of equipment storage along with patchy occurrences of red-stemmed filaree and Russian thistle. In addition, two small windrows visible in the aerial imagery were no longer present at the time the 2016 survey was conducted.

Habitat Types

During surveys conducted on the property in 2015, the gently sloping areas along the south side of Highway 166 were dominated by non-native weeds characteristic of the non-native grassland habitat described by Holland (1986). Due to the many years of grazing cattle coupled with the ongoing drought, vegetation was patchy and consisted almost entirely of red-stemmed filaree with patches of Russian thistle. Herbaceous alliances dominated by red-stemmed filaree with occurrences of Russian thistle are not described by Sawyer et al (2009). Areas of juniper shrubs were present at higher elevations on slopes outside the proposed disturbance footprints. The sparsely vegetated areas within the four proposed project sites lacked species diversity and did not support any native plants. Patches of native habitat were observed in the unnamed ephemeral drainage features that bisect the ranch in a primarily south to north direction connecting with the Cuyama River to the north of Highway 166. The highest quality native habitat areas were observed in the Schoolhouse Canyon and Cottonwood Canyon corridors and along the Cuyama River, which are outside the proposed project footprints.

Soils

Prior to field investigation, the Web Soil Survey was queried to determine soil composition and the related potential for the site to support special status species. The Soil Survey identified the project areas as composed of primarily sandy loam soils. Reservoir sites 1 and 3 are located on Pleasanton sandy loam (2-9 % slopes), while the operations yard and Reservoir 2 sites are located on Panoche sandy loam (2-9 % slopes).

Drainage Features

A series of ephemeral drainage features that are tributaries to the Cuyama River bisect the ranch in a primarily south to north direction. The largest features, Cottonwood Canyon Creek to the west and Schoolhouse Canyon Creek to the east, are large washes that are dry for most of the year, and contain periodic/flashy flow only during monsoonal rain events and the winter rain season. No areas of in channel ponds were observed in the study area. As we understand, the natural drainage

features will not be impacted or altered by construction at the proposed reservoir and operations yard sites. All work is proposed to occur outside a minimum 50-foot setback established from the top of bank of all drainages on the site.

Special Status Biological Resources

As part of our investigation, a search of the CNDDB was performed within a five-mile radius of the North Fork Ranch property limits (refer to the attached Figure 6). The CNDDB records coupled with our knowledge of the area identified thirteen (13) special status plant species and twelve (12) special status animal species known to occur within the general region. No special status plant communities were identified in the CNDDB within the five-mile radius. Most of these special status species have highly specific habitat requirements that are not present onsite, and therefore are not expected to occur within the proposed project sites. Please refer to Table 1 for more information on these species. The CNDDB contained special status species observations from the subject property, many of which are over 25 years old. Please refer to the attached Figure 6 and Table 1, Special Status Species Potentially Occurring on the Site, for specific information pertaining to each species listing status, habitat requirements and the potential to occur within the four sites.

The CNDDB records included sightings of special status plants such as round-leaved filaree (*California macrophylla*), Blakely's spineflower (*Chorizanthe blakelyi*), Kern mallow (*Eremalche kernensis*), pale yellow layia (*Layia heterotricha*), and San Joaquin woolly threads (*Monolopia congdonii*) from the general project area, including within the greater ranch property boundaries. Other species identified are known to occur in higher elevations in the Caliente and Sierra Madre Mountains to the north and south of the project areas. No suitable habitat was observed in the project footprints for rare plants, and seasonally timed surveys conducted in 2015 did not locate these species in the proposed disturbance footprints. As stated above, the proposed reservoirs and operations yard will be constructed in disturbed areas away from the natural drainage features, and therefore, would be unlikely to adversely affect any special status plants.

Special status wildlife identified in the CNDDB and through our background information review included a range of species, many of which could still occur in the region. Species such as the giant kangaroo rat (*Dipodomys ingens*), however, may no longer be present in the general area (CNDDB, 2015). The giant kangaroo rat occurrence documented in the northwest corner of the ranch along the Cuyama River was dated 1979, and is currently listed as "possibly extirpated" in the CNDDB occurrence report. This general area was visited on several instances in the spring and summer 2015 and no burrow complexes typical of the giant kangaroo rate were evident. Surveys of the four project sites did not locate any burrow complexes characteristic of the giant kangaroo rate, and therefore this species is unlikely to occur in the project areas.

Although no potential SJKF den sites or small mammal prey base were observed on the four project sites, highly mobile species such as the SJKF and American badger (*Taxidea taxus*) could potentially move through the ranch and four project areas in search of food or suitable denning habitat. No recent observations of SJKF or badger were identified on or adjacent to the proposed project sites, but both species are known to occur in the larger Cuyama Valley region. It is uncertain if SJKFs are currently present in the general project area. The CNDDB recorded occurrences of this species on the eastern part of the ranch in the Cottonwood Canyon vicinity are from 1975. Suitable SJKF

denning and foraging habitat are present on the larger ranch, but the four project sites are located in disturbed areas with regular human presence and little to no small mammal prey base. It is possible that a SJKF, if present in the area, could move through the sites during foraging or migration activities, but the lack of a well-developed prey base and no suitable denning habitat within the four sites indicate a very low potential for this species to occur. Moreover, no evidence (i.e.: direct observation of an individual, scat or tracks) of SJKF or American badger presence was observed during surveys conducted by KMA in 2015 and 2016.

Although not included in the five-mile radius search results, the federal and state endangered blunt-nosed leopard lizard (BNLL) has a known occurrence located just over five miles to the east of the eastern property border. Numerous other occurrences are documented in the Carrizo Plain area and in the Cuyama Valley to the east. The closest known occurrence (#414 in the CNDDB) was documented by Caltrans biologists conducting surveys for Highway 166 improvements. Two BNLLs were located on the south side of Highway 166 close to New Cuyama in a large wash with sparse annual grassland habitat. Other biological studies conducted in the general region were completed for oil and gas exploration and solar farms further to the east of the site closer to known and historic occurrences of the species. These studies did not locate BNLL in their respective study areas. The reservoir and operations yard project sites are in the outer limits of the known range for the species.

Prior to disking and agricultural site preparation, KMA conducted a series of 18 protocol-level surveys for BNLL in areas of the highest quality habitat in the eastern part of the ranch. Surveys occurred within the onsite portion of Schoolhouse Canyon and adjacent Cuyama River terraces in the spring, summer and fall 2015. No BNLL were observed in these portions of the site (KMA, 2015). Additional portions of the ranch, including Reservoirs 2 and 3 and the operations yard were also visited during the surveys, but not under protocol conditions (i.e.: either the temperatures were too hot, the wind too strong, or it was too late in the afternoon to meet protocol requirements). A reference site in the Carrizo Plain area was also located and visited on separate occasions (on June 24, July 3 and September 7, 2015) during the protocol surveys to confirm BNLLs were above ground, active and in identifiable condition. The area of the recorded occurrence #414 east of the property was also visited on these occasions to characterize habitat in this area for comparison with habitats on the study area, as well as search for BNLL using binoculars from property margins. Therefore, it was determined that BNLL were unlikely to occur on or in the vicinity of the four project sites. In addition, species of special concern such as the coast horned lizard (*Phrynosoma blainvilli*) is unlikely to occur in the four project sites due to a lack of suitable habitat.

Designated Critical Habitat for the federally threatened California red-legged frog (*Rana draytonii*) is located outside the five-mile radius, to the west of the project, and CRLF have been observed in the Cuyama River further west of the ranch study area. The ephemeral drainages on the site do not provide suitable habitat for this highly aquatic species, and its presence onsite is considered highly unlikely. Similarly, other highly aquatic species such as the western pond turtle (*Emys marmorata*) would not be expected to occur in the project area due to lack of suitable habitat.

A number of birds including species of special concern would be expected to forage over or around the four sites, but no suitable prey base or nesting habitat was present for special status birds

including raptors. Of interest, the four sites are covered by a CNDDB overlay indicating presence of the prairie falcon (*Falco mexicanus*) within the USGS Caliente Mountain quadrangle. Suitable nesting habitat for the prairie falcon is located in the mountains to the north and south of the project sites, and as such, this species and other birds protected under the Migratory Bird Treaty Act and California Fish and Game Code would not be expected to occur within the project footprints and be adversely affected by the proposed project.

Please note that this evaluation included multiple site visits over the course of numerous months. Although drought conditions prevailed, enough rain fell in the spring to initiate germination and growth of herbaceous vegetation allowing the determination that special status plants are unlikely to occur in the four project footprints. The biological investigation included direct observation and evaluation of onsite and adjacent habitat conditions, and review of CNDDB records documenting occurrence data from the area. Special status plants would have been observed if they were present within the four project sites. Although the sandy soil types present on-site are suitable for several of the special status plant species known to occur in the area, the disturbed conditions of the four sites dominated by non-native weedy plants would not be suitable to support these species. Higher elevation areas of the North Fork Ranch, and areas not subject to the historic intense grazing pressure would provide more opportunity for these species to be present. For special status wildlife, the habitat suitability analysis was used to determine whether a particular species had potential to be present in the project area. The investigation determined that it is highly unlikely that the four project sites support any special status plant or wildlife.

CONCLUSION AND RECOMMENDATIONS

The four project sites are located in areas disturbed by historic ranching operations within or adjacent to proposed vineyard plantings. Field surveys in 2015 and 2016 of the project sites observed disturbed areas dominated by non-native weeds such as red-stemmed filaree and Russian thistle. The sites are currently disked with an annual cover crop as part of agricultural improvements on the property. No special status biological resources (i.e., plant communities, plants, or animals) were observed on the four sites, and given the disturbed site conditions, it is unlikely that any are present.

Based on this evaluation, performance of additional biological investigation such as floristic or focused wildlife surveys on the sites is not recommended. The proposed projects are not expected to adversely affect any special status biological resources since they would occur in disturbed annual grasslands or previously disturbed areas of the ranch. However, due to historic sightings of San Joaquin kit fox in the area and potential that this species along with the American badger could still occur in the greater region and be a rare transient through the site at some point in time, we recommend that the SJKF avoidance measures included as an attachment to this report be implemented prior to and during construction. Implementation of the recommended avoidance measures would be sufficient to ensure the SJKF and American badger, as well as other common wildlife that may be present, are not adversely affected by construction of the three reservoirs and operations yard.

REFERENCES

Baldwin et al. 2012. The Jepson Manual: Vascular Plants of California, Second Edition. University of California Press, Berkeley.

California Department of Fish and Game. 1985. Blunt-nosed leopard lizard essential habitat update. California Department of Fish and Game, Sacramento, Job EF84 11-1.

California Department of Fish and Game. 2004. Blunt-nosed leopard lizard survey protocol. Revised May 2004. California Department of Fish and Game. Fresno, California.

California Department of Fish and Game. 2001. Fish and Game Code of California, Section 3503.5. Gould Publications, Altamonte Springs, FL.

California Department of Fish and Wildlife. 2003. California Natural Diversity Database, Rarefind. Queried April and December 2015.

County of Santa Barbara. 2014. Final Environmental Impact Report for the Cuyama Solar Facility and Comprehensive Plan/Land Use. Accessed online.

County of Santa Barbara. 2009. Final Mitigated Negative Declaration for E&B Natural Resources Management and Production Plan. Accessed online.

Germano, D.J., and J. Brown. 2003. *Gambelia sila* (blunt-nosed leopard lizard). Predation. Herpetological Review 34:143-144.

Germano, D.J., and C.R. Carter. 1995. *Gambelia sila* (blunt-nosed leopard lizard). Predation. Herpetological Review 26:100.

Germano, D.J., and D.F. Williams. 1992a. *Gambelia sila* (blunt-nosed leopard lizard). Reproduction. Herpetological Review 23:117-118.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Wildlife, Sacramento.

Jennings, M. R., and M. P. Hayes. 1994. Amphibian and reptile species of special concern in California, 1 November 1994. California Department of Fish and Wildlife, Inland Fisheries Division, Rancho Cordova, California. 255 pp.

Kevin Merk Associates LLC. 2015. North Fork Ranch Blunt Nosed Leopard Lizard Protocol Survey Report. Unpublished report prepared for Brodiaea, Inc.

Montanucci, R.R. 1965. Observations on the San Joaquin leopard lizard, *Crotaphytus wislizenii silus* Stejneger. Herpetologica 21:270-283.

Sawyer, J. O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento, CA.

Stebbins, R.C. 2003. A field guide to western reptiles and amphibians. Second edition. Houghton Mifflin Company, Boston, Massachusetts, 336 pp.

U.S. Fish and Wildlife Service. 1985. Blunt-nosed leopard lizard revised recovery plan. U.S. Fish and Wildlife Service, Portland, Oregon, 85 pp.

U.S. Fish and Wildlife Service. 1998. Recovery Plan for Upland Species of the San Joaquin Valley, California. Region 1, Portland, Oregon. 319 pp.

❖❖❖❖❖❖❖❖❖❖❖❖❖❖

Thank you for the opportunity to provide environmental consulting services for this project. We trust that the above information will assist with your reporting requirements at this time. If you have any questions regarding the above findings, please contact Kevin Merk directly by phone at 805-748-5837 or via email at kmerk@kevinmerkassociates.com.

Sincerely,
KEVIN MERK ASSOCIATES, LLC

Kevin B. Merk
Principal Biologist

Robert Sloan
Senior Biologist

Attachments *Figure 1 - Site Location Map*
Figure 2 – Aerial Overview Map
Figure 3 – Reservoir Site 1
Figure 4 - Reservoir Site 2 and Operations Yard
Figure 5 – Reservoir Site 3
Figure 6 – CNDDB Occurrence Map
Table 1 – Special Status Species Potentially Occurring on the Site
Photo Plate
SJKF Avoidance Measures

KMA
KEVIN MERK ASSOCIATES

N W E S 1 in = 18,000 ft

North Fork Ranch

Mesa Vineyard Management

Figure 1

Site Location

Property Boundary
Operations Yard (~5 acres)
Proposed Irrigation Reservoir (~15 acres)
Drainage Centerline

Source(s) : ESRI and it's data providers ; Tom A. Howell, PE

Cuyama River

CA-166

Reservoir 3
(~4.7 acres)

Operations Yard
(~5 acres)

Reservoir 2
(~5.4 acres)

Reservoir 1
(~4.9 acres)

Cottonwood Canyon Rd

Schoolhouse Canyon Rd

KEVIN MERK ASSOCIATES

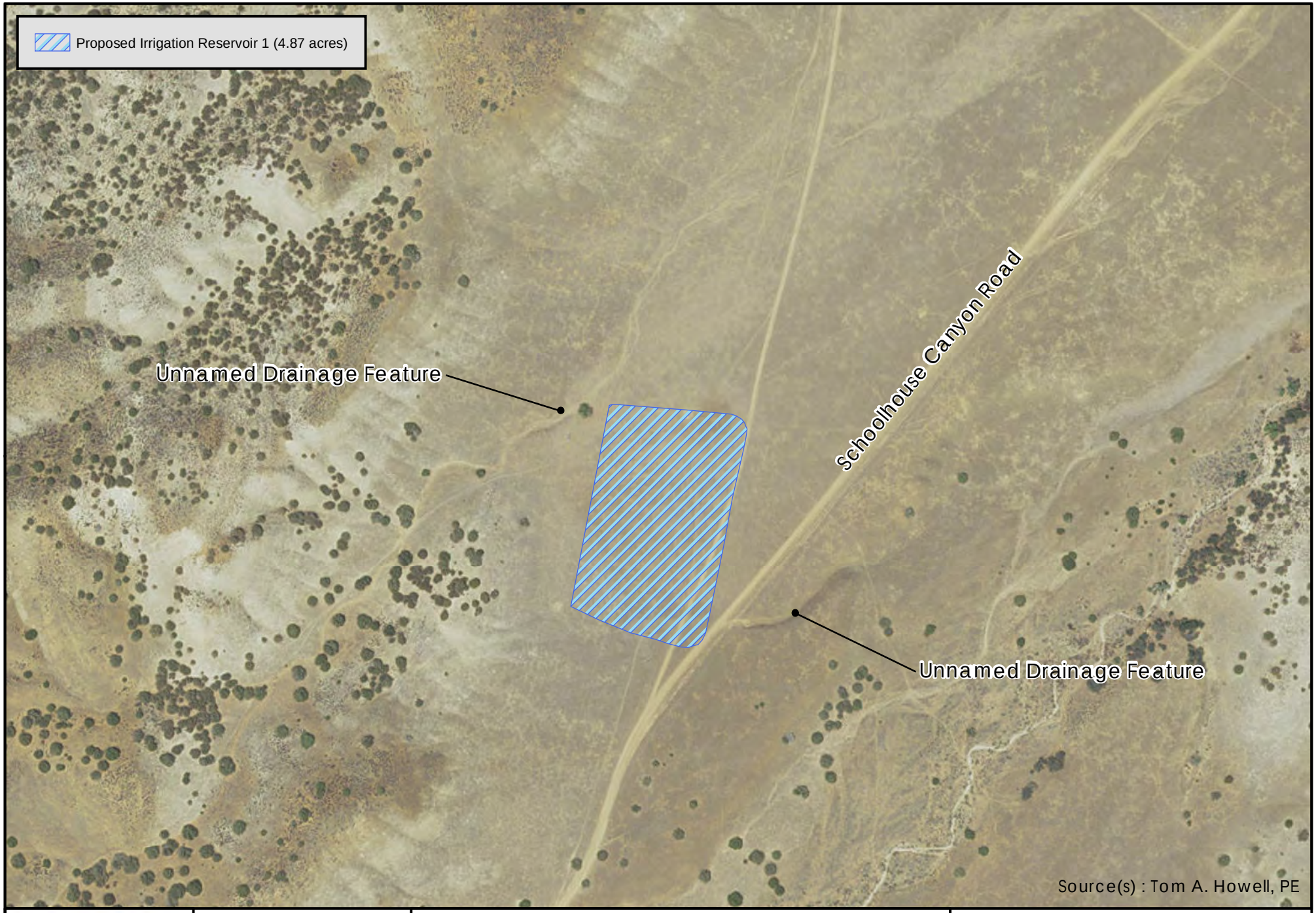
1 in = 2,000 ft
0 0.25 0.5 1 Miles

North Fork Ranch

Mesa Vineyard Management

Figure 2

Aerial Overview



KEVIN MERK ASSOCIATES

N W E S

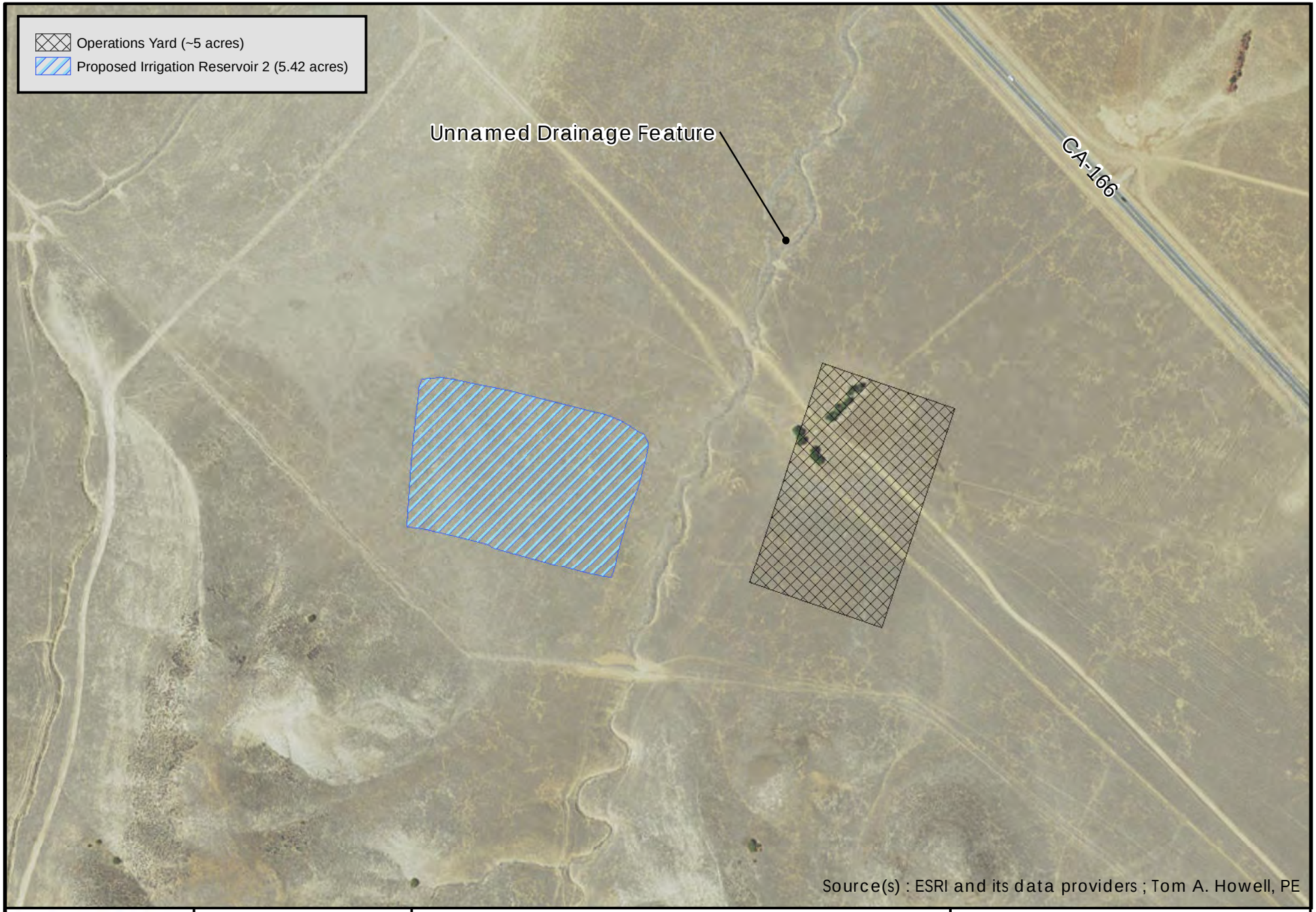
1 in = 400 ft

North Fork Ranch

Mesa Vineyard Management

Figure 3

Reservoir 1



KEVIN MERK ASSOCIATES

N W E S

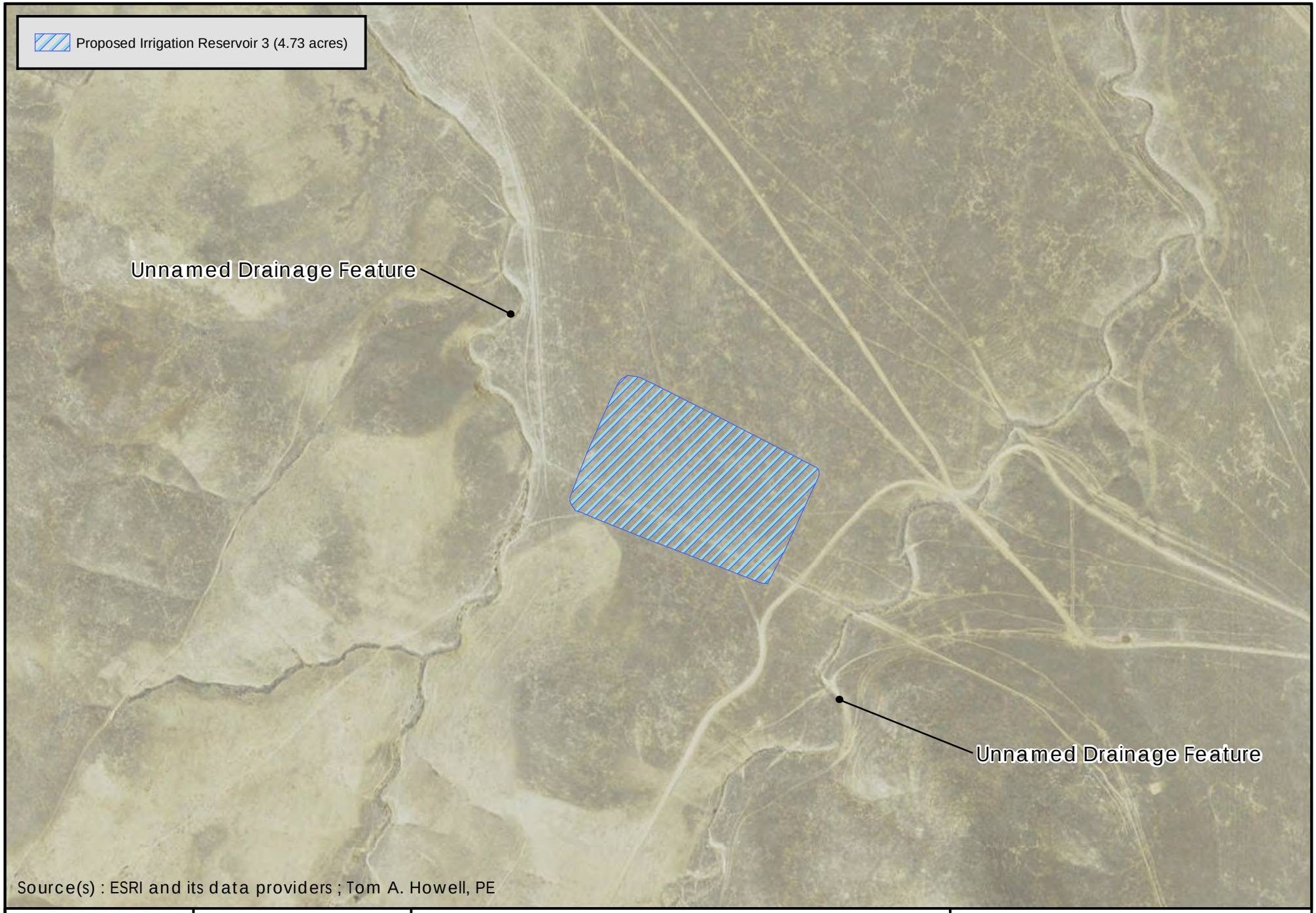
1 in = 400 ft

North Fork Ranch

Mesa Vineyard Management

Figure 4

Reservoir 2 & Operations Yard



KEVIN MERK ASSOCIATES

N W E S

1 in = 400 ft

North Fork Ranch

Mesa Vineyard Management

Figure 5

Reservoir 3

Property Boundary
5 Mile Site Buffer
USGS 7.5' Quad

CNDDB by Common Name (CDFW; November 2015)

- Blakley's spineflower
- Crotch bumble bee
- Kern mallow
- Kern primrose sphinx moth
- La Panza mariposa-lily
- Lemmon's jewelflower
- Parish's checkerbloom
- San Gabriel manzanita
- San Joaquin kit fox
- San Joaquin woollythreads
- Tulare grasshopper mouse
- giant kangaroo rat
- long-eared owl
- oval-leaved snapdragon
- pale-yellow layia
- prairie falcon
- round-leaved filaree
- showy golden madia
- stinkbells
- umbrella larkspur
- western pond turtle
- CA Red-legged Frog Critical Habitat (USFWS)

Source(s) : ESRI and its data providers

USGS Quad Miranda Pine Mtn
USGS Quad Taylor Canyon
USGS Quad Caliente Mtn
USGS Quad Wells Ranch
USGS Quad Manzanita Mtn
USGS Quad Bates Canyon
USGS Quad Peak Mtn
USGS Quad New Cuyama

KEVIN MERK ASSOCIATES

N W E S

1 in = 12,000 ft

0 1.25 2.5 5 Miles

North Fork Ranch

Mesa Vineyard Management

Figure 6

CNDDB Occurrence Map

Table 1. Special Status Species Potentially Occurring On-Site

Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
PLANTS						
1) Antirrhinum ovatum	oval-leaved snapdragon	--	--	4.2	Annual herb; chaparral, cismontane woodland, pinyon & juniper woodlands, valley & foothill grassland; 200-1000 meters; blooms May to November.	**Unlikely.** Suitable chaparral, woodland or grassland habitats are not present in the project areas. Not observed during surveys conducted in spring and summer 2015.
2) Arctostaphylos glandulosa ssp. *gabrielensis*	San Gabriel manzanita	--	--	1B.2	Perennial shrub found in chaparral on granitic soils, 950-2000 meters in elevation. Blooms January through April.	**Not expected.** Suitable chaparral habitat on granitic soils is not present in the project areas. Perennial shrub would have been identifiable during surveys.
3) California macrophylla	round-leaved filaree	--	--	1B.1	Annual herb commonly found on clay soils in cismontane woodland and valley and foothill grassland at elevations ranging from 15 to 1200 meters. Blooms March to May.	**Unlikely.** Suitable clay soils and woodland or grassland habitats are not present in the project areas. Species is known to occur in the region and was documented in the Cottonwood Canyon corridor. It was not observed during surveys conducted of the project sites in spring 2015. The four sites were dominated by the non-native red-stemmed filaree.
4) Calochortus simulans	La Panza mariposa-lily	--	--	1.B.3	Perennial bulbiferous herb; chaparral, cismontane woodland, and grasslands in decomposed granite; 395-1100 meters in elevation; blooms April to June.	**Unlikely.** Suitable chaparral, woodland or grassland habitats with granitic soils are not present in the project areas. Not observed during surveys conducted in spring 2015. Known occurrences in the area are in steeper terrain.
5) Caulanthus lemmonii	Lemmon's jewel-flower	--	--	1B.2	Annual herb; pinyon and juniper woodland, valley and foothill grassland; 80 to 1,220 meters elevation; blooms March to May.	**Unlikely.** Suitable woodland or grassland habitats are not present in the project areas. Grasslands onsite are impacted from overgrazing and were dominated by weeds. Not observed during surveys conducted in spring 2015. Known occurrences are located in the hills to the north.

Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
6) Chorizanthe blakleyi	*Blakley's spineflower*	--	--	1.B.3	Annual spineflower known to occur in pinyon and juniper woodland areas with a typical elevation of 600 to 1,600 meters. Blooms April to June.	**Unlikely.** Suitable woodland habitats are not present in the project areas. Not observed during surveys conducted in spring 2015. Known to occur in upper elevation areas south of the property.
7) Delphinium umbraculorum	umbrella larkspur	--	--	1B.3	Perennial herb; found in granite of cismontane woodlands, chaparral, and coastal scrub; 85-1,035 meters in elevation; blooms May to July.	**Unlikely.** Suitable granite soils and woodland, chaparral, or coastal scrub habitats are not present in the project areas. Not observed during surveys conducted in spring 2015.
8) Eremalche kernensis	Kern mallow	E	--	1.B1	Chenopod scrub, valley and foothill grassland. On dry, open sandy to clayey soils; usually within valley saltbush scrub; often at edge of balds. 70-1290 meters.	**Unlikely.** Suitable sandy soils are present on the property, but valley saltbush scrub habitats are not present in the specific project areas. Not observed during surveys conducted in spring 2015. Common *E. parryi* ssp. *parryi* observed in Schoolhouse Canyon outside disturbance footprints.
9) Fritillaria agrestis	stinkbells	--	--	4.2	Chaparral, valley grassland, foothill woodland, and wetland riparian areas with an elevation of 10 to 1,555 meters. Blooms March to June.	**Unlikely.** Suitable wetland, riparian, woodland, or grassland habitats are not present in the project areas. Not observed during surveys conducted in spring and summer 2015.
10) Layia heterotricha	pale-yellow layia	--	--	1B.1	Annual herb; alkaline, clay and sandy soils in scrub, cismontane woodland, pinyon-juniper woodland, and valley and foothill grassland; 270-1,365 meters; blooms March to June.	**Unlikely.** Suitable chaparral, woodland or grassland habitats are not present in the project sites. Project areas impacted from overgrazing and were dominated by weeds. Not observed during surveys conducted in spring 2015.
11) Madia radiata	showy golden madia	--	--	1B.1	Chenopod scrub, valley and foothill grassland, and cismontane woodland areas. Found mostly on adobe clay in grassland or among shrubs with an elevation of 25-1125 meters. Blooms March to May.	**Unlikely.** Suitable clay soils and woodland or grassland habitats are not present in the project areas. Not observed during surveys conducted in spring 2015.

Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
12) Monolopia congdonii	San Joaquin woolly-threads	E	--	1B.2	Chenopod scrub, valley and foothill grassland. Alkaline or loamy plains; sandy soils, often with grasses and within chenopod scrub. 60-800 meters.	**Unlikely**. Disturbed grassland habitat and sandy soils are present, but chenopod scrub habitat is not present in the project areas. Only common *Monolopia lanceolata* observed on the larger study area outside project disturbance footprints.
13) Sidalcea hickmanii ssp. *parishii*	Parish's checker-bloom	--	R	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest. Disturbed burned or cleared areas on dry, rocky slopes, in fuel breaks & fire roads along the mtn. summits. 1000-2500 meters.	**Unlikely.** Chaparral, cismontane woodland, and coniferous forest habitats are not present, and the sites are located on deep alluvial soils, not dry rocky slopes. Not observed during surveys conducted in spring and summer 2015.
ANIMALS						
1) Asio otus	Long-eared owl	--	--	SSC	Winters throughout the Central Valley and southeastern California. Nests in abandoned nests (crow, hawk, or magpie), usually in dense stands of willows, cottonwoods, live oaks, or conifers.	**Unlikely**. Disturbed grassland habitat suitable for foraging is present, but no nesting habitat is present in the project areas.
2) Bombus crotchii	*Crotch bumble bee*	--	--	--	Open grassland and scrub habitats from central California to Baja California del Norte, Mexico, including the western edges of the deserts and the Central Valley. Not found in the mountains or cool north coastal areas of California	**Unlikely**. Sites appear to lack sufficient pollen sources and the general vegetative diversity to attract or support the species.
3) Dipodomys ingens	giant kangaroo rat	E	E	--	Annual grasslands on the western side of the San Joaquin Valley, extending into Carizzo Plain and Cuyama Valley areas. Typically occurs in grasslands but can use alkali scrub. Needs level terrain & sandy loam soils for burrowing.	**Not expected**. Disturbed grassland habitat on sandy soils is present in the general area, but no typical burrow complexes observed in the project areas. CNDDB record from Cuyama River is from surveys conducted in 1979 and 1982 and states "possibly extirpated" from this site. General location with alkali scrub/grassland mix visited in the spring and summer 2015 and no burrow complexes typical of this species were observed.

Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
4) Emys marmorata	western pond turtle	--	--	SSC	Permanent or nearly permanent water bodies in many habitats.	**Not expected**. Project sites consist of disturbed upland areas. Ephemeral drainages on the site lack perennial water sources needed for this species to occur in the general area.
5) Euproserpinus euterpe	Kern primrose sphinx moth	T	--	--	Highly localized species found in the Walker Basin, Kern County, and several other scattered locations (Carrizo Plain, Pinnacles National Monument). Host plant is *Camissonia contorta epilobioides* (evening primrose) that typically grows in washes with loose alluvial soils.	**Unlikely**. Project sites are located in upland areas away from onsite drainage features. Host plant not observed on the study area during surveys conducted in spring and summer 2015. Prior to farming activities, non-native filaree was the dominant plant growing throughout the project sites, which is known to adversely affect this species.
6) Falco mexicanus	prairie falcon	--	--	WL	Catches prey in air and in open ground in grasslands, Nests in cliffs overlooking large areas; resident, breeding migrant.	**Unlikely**. Disturbed grassland habitat suitable for foraging is present in the vicinity, but no nesting habitat is present in or near the project areas. CNDDB records cover the entire USGS quadrangle map and are not specific to this site.
7) Gambelia sila	blunt-nosed leopard lizard	E	E	--	Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures such as fence posts; they do not excavate their own burrows.	**Unlikely**. Disturbed grassland habitat does not provide sufficient cover and food resources in the project areas to support the species. Very few small mammal burrows (mostly gopher) observed prior to farming activities. Protocol BNLL surveys conducted in 2015 in higher quality habitat areas along Schoolhouse Canyon and Cuyama River did not find the species.
8) Masticophis flagellum ruddocki	San Joaquin whipsnake	--	--	SSC	Occurs in open, dry valley grasslands and saltbush scrub habitats with little or no tree cover. While known from the San Joaquin Valley, species also occurs in western Kern County and eastern San Luis Obispo County. Requires mammal burrows for refuge and egg laying.	**Unlikely**. Very few small mammal burrows were observed during surveys of the reservoir and operation yard sites. Suitable habitat present in the larger drainage corridors such as Cottonwood Canyon and Schoolhouse Canyon and along the Cuyama River terraces, but no suitable habitat present in the project sites.

Scientific Name	Common Name	Listing Status*			Habitat Requirements	Probability of Occurrence / Site Suitability / Observations
		Fed	CA	DFW		
9) Onychomys torridus tularensis	*Tulare grasshopper mouse*	--	--	SSC	Inhabits shrubland communities in hot, arid grassland and shrubland associations, including blue oak woodlands, upper Sonoran subshrub scrub, alkali sink and mesquite associations, and grasslands on the sloping margins of the San Joaquin Valley and Carrizo Plain regions.	**Unlikely**. Disturbed grassland habitat composed of red-stemmed filaree and bare soils is present, but vegetative density and diversity in the project areas is not sufficient to support populations of this species.
10) Phrynosoma blainvilli	Coast horned lizard	--	--	SSC	Frequents a wide variety of habitat including sandy washes with scattered shrubs and open areas for sunning. Loose soils for burial.	**Unlikely.** Larger property contains drainages including Cuyama River and associated terraces that could support this species. While soils onsite are predominantly sandy, species is unlikely to occur in project footprints due to lack of shrub cover and a prey base.
11) Taxidea taxus	American badger			SSC	Open grasslands and the edge of scrub and woodland habitats; requires dry loose soils for burrowing and shelter and feeds on a variety of small mammals such as California ground squirrel and pocket gopher.	**Potential.** Suitable habitat present throughout the ranch. Known to occur in the general area. No potential den sites observed during surveys, and no sufficient small mammal prey base in project footprints. Could occur as a transient moving through the area, especially along the larger drainage corridors. Sites are now disked with no suitable habitat present.
12) Vulpes macrotis mutica	San Joaquin kit fox	E	T	--	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	**Potential**. Suitable foraging habitat and migration corridors are present throughout the site, especially along drainage corridors. No dens or sign (scat tracks, etc.) were observed in project footprint. CNDDB records are from 1970's. Could occur as a rare transient moving through the area.

**FE – listed as Endangered under federal Endangered Species Act; SE – listed as Endangered under California Endangered Species Act; SR – listed as Rare under California Endangered Species Act; ST - listed as Threatened under California Endangered Species Act; SSC – DFW Species of Special Concern; WL – List of Birds of Conservation Concern; 1A = Plants presumed extinct in California; 1B.1 = Rare or endangered in California and elsewhere; seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat); 1B.2 = Rare or endangered in California and elsewhere; fairly endangered in California (20-80% occurrences threatened); 1B.3 = Rare or endangered in California and elsewhere, not very endangered in California (<20% of occurrences threatened or no current threats known); 2 = Rare, threatened or endangered in California, but more common elsewhere; 3 = Plants needing more information (most are species that are taxonomically unresolved; some species on this list meet the definitions of rarity under CNPS and CESA); 4.2 = Plants of limited distribution (watch list), fairly endangered in California (20-80% occurrences threatened); and 4.3= Plants of limited distribution (watch list), not very endangered in California.*

Photo Plate

Photo 1. View of Reservoir 1 site looking northwest. Stake marks southeast corner of the reservoir. Surveys occurred prior to and after disking and site preparation activities.

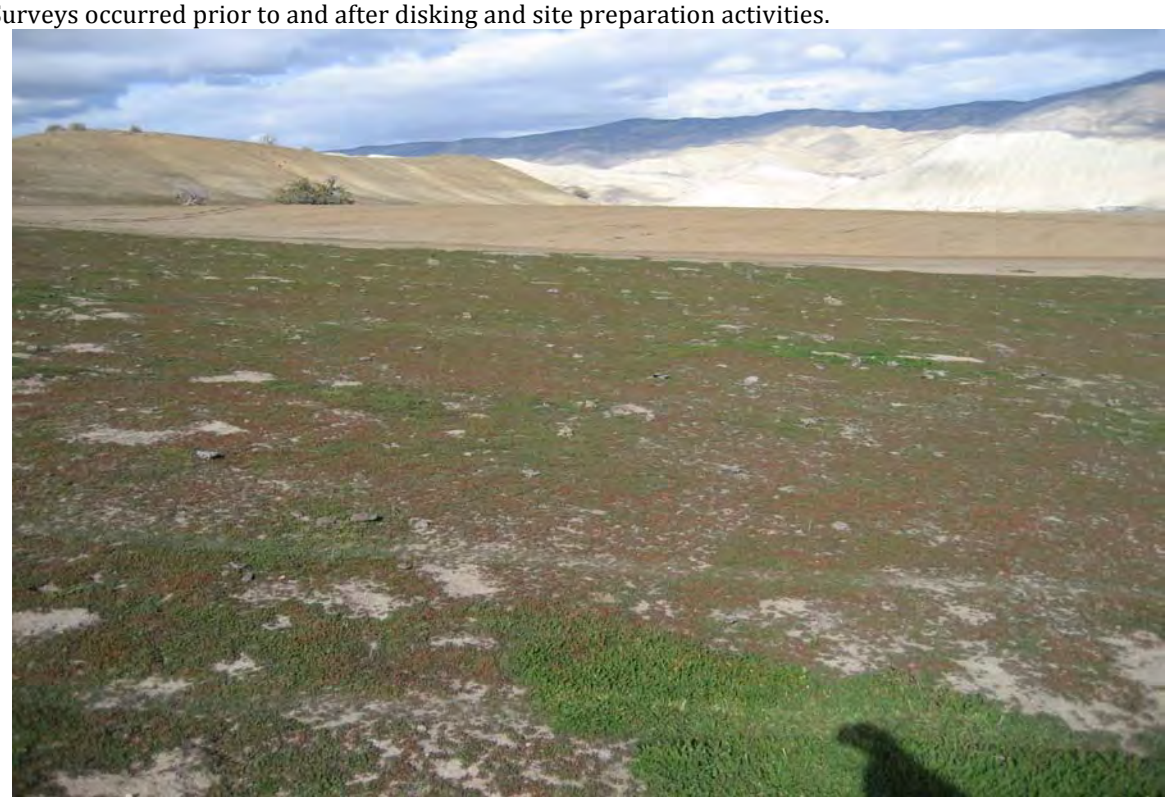


Photo 2. Overview of Reservoir 1 site, looking north toward Highway 166. Schoolhouse Canyon Road is located to the right of the picture. Area was composed of non-native weeds and bare soil that was being disked.

Photo 3. View of Operations Yard site looking northeast toward Highway 166.

Photo 4. Easterly view of Operations Yard.

Photo 5. View of Reservoir #2 looking east. Stake marks western corner of the grading limits.

Photo 6. View of Reservoir #2 looking north. Stake marks eastern corner of the grading limits.

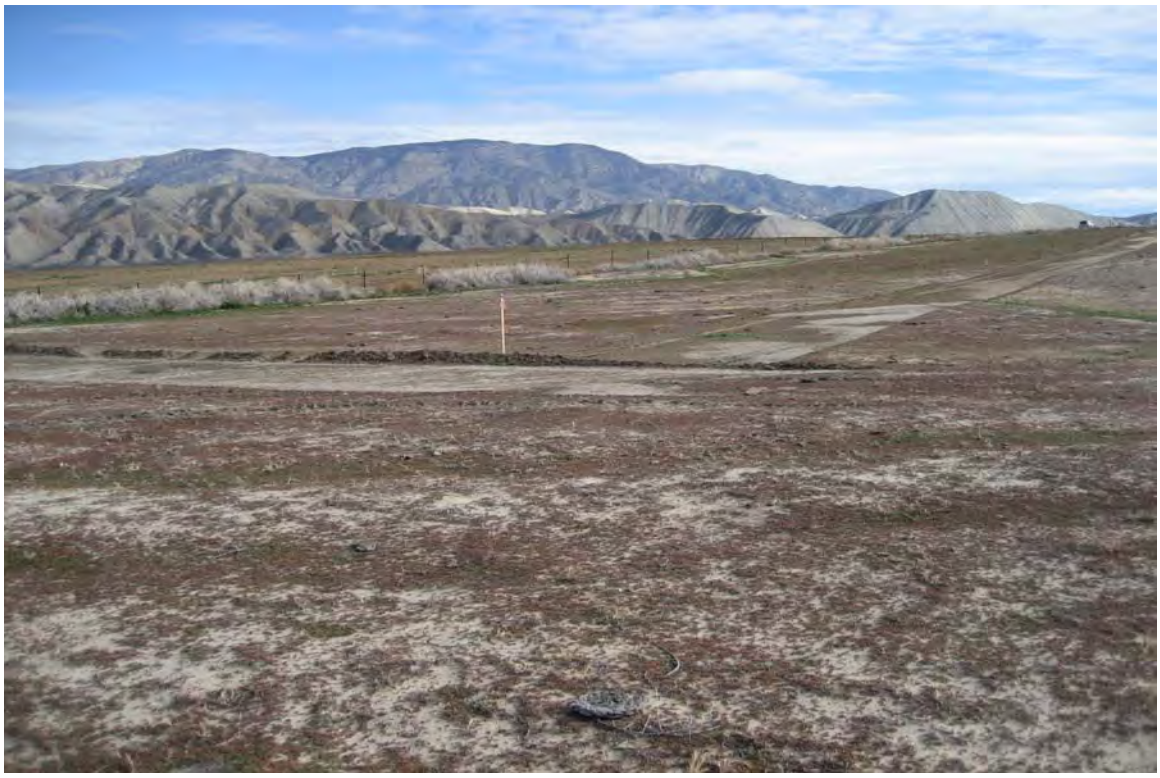


Photo 7. View of Reservoir #3 looking east. The site consisted of non-native weeds and bare soils prior to disking and site preparation. Russian thistle was also present and tumbleweeds can be seen along fenceline.

Photo 8. Closeup view of Reservoir #3 looking east. Photo taken prior to disking and site preparation activities showing dominant cover of non-native plants (primarily red-stemmed filaree) and bare soils.

San Joaquin Kit Fox Avoidance Measures

1. Prior to issuance of grading and/or construction permits, the applicant should have a qualified biologist perform the following monitoring activities:

a. Prior to issuance of grading and/or construction permits and within 30 days prior to initiation of site disturbance and/or construction, the biologist shall conduct a pre-activity (i.e. pre-construction) survey for known or potential kit fox dens and document in a report the date the survey was conducted, the survey protocol, survey results, and what measures were necessary (and completed), as applicable, to address any kit fox activity within the project limits.

b. The qualified biologist shall conduct weekly site visits during site-disturbance activities (i.e. grading, excavation, stock piling of dirt, etc.) that proceed longer than 14 days, for the purpose of monitoring compliance with the below avoidance measures. Site disturbance activities lasting up to 14 days do not require weekly monitoring by the biologist unless observations of kit fox or their dens are made on-site or the qualified biologist recommends monitoring for some other reason (see BR-1-d3). When weekly monitoring is required, the biologist shall document the methods and results of site visits in weekly monitoring reports.

c. Prior to or during project activities, if any observations are made of San Joaquin Kit fox, or any known or potential San Joaquin kit fox dens are discovered within the project limits, the qualified biologist shall re-assess the probability of incidental take (e.g. harm or death) to kit fox. If an active den is discovered within 150 feet of construction activities, the qualified biologist shall contact the USFWS and the CDFW for guidance on possible additional kit fox avoidance measures to implement and whether or not a federal and/or state incidental take permit is needed. If a potential den is encountered within 150 feet during construction, work shall stop in that specific area until such time the USFWS and/or CDFW determines it is appropriate to resume work.

If incidental take of kit fox during project activities is possible, before project activities commence, the applicant must consult with the USFWS and the CDFW. The results of this consultation may require the applicant to obtain a federal and/or state permit for incidental take during project activities.

d. In addition, the qualified biologist shall implement the following measures:

1. Within 30 days prior to initiation of site disturbance and/or construction, fenced exclusion zones shall be established around all known and potential kit fox dens. Exclusion zone fencing shall consist of either large flagged stakes connected by rope or cord, or survey laths or wooden stakes prominently flagged with survey ribbon. Each exclusion zone shall be roughly circular in configuration with a radius of the following distance measured outward from the den or burrow entrances:

a) Potential kit fox den: 50 feet
b) Known or active kit fox den: 100 feet
c) Kit fox pupping den: 150 feet

2. All foot and vehicle traffic, as well as all construction activities, including storage of supplies and equipment, shall remain outside of exclusion zones. Exclusion zones shall

be maintained until all project-related disturbances have been terminated, and then shall be removed.

3. If kit foxes or known or potential kit fox dens are found on site, daily monitoring during ground disturbing activities shall be required by a qualified biologist.

2. Prior to issuance of grading and/or construction permits, the applicant shall clearly delineate in the field and note on the project plans, that: "Speed limit of 25 mph (or lower) shall be required for all construction traffic to minimize the probability of road mortality of the San Joaquin kit fox". Speed limit signs shall be installed on the project site within 30 days prior to initiation of site disturbance and/or construction. In addition, prior to initiation of any ground disturbing activities, conditions BRc 3 through BRc 9 shall be reviewed with all construction personnel and delineated on project plans.

3. During the site disturbance phase, grading and construction activities after dusk shall be prohibited unless coordinated through the County, during which additional kit fox measures may be required.

4. Prior to issuance of grading and/or construction permit and within 30 days prior to initiation of site disturbance and/or construction, all personnel associated with the project shall attend a worker education training program, conducted by a qualified biologist, to avoid impacts on sensitive biological resources such as the San Joaquin kit fox. At a minimum, as the program relates to the kit fox, the training shall include the kit fox's life history, all avoidance measures contained herein, as well as any related biological information prepared for the project. A kit fox fact sheet shall also be prepared prior to the training program, and distributed at the training program to all contractors, employers and other personnel involved with the construction of the project.

5. During the sitec disturbance and/or construction phase, to prevent entrapment of the San Joaquin kit fox and other wildlife, all excavation, steepc walled holes or trenches in excess of two feet in depth shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Trenches shall also be inspected for entrapped kit fox and wildlife each morning prior to onset of field activities and immediately prior to covering with plywood at the end of each working day. Before such holes or trenches are filled, they shall be thoroughly inspected for entrapped animals. Any kit fox discovered shall be allowed to escape before field activities resume, or removed from the trench or hole by a qualified biologist and allowed to escape unimpeded.

6. During the site disturbance and/or construction phase, any pipes, culverts, or similar structures with a diameter of four (4) inches or greater, stored overnight at the project site shall be thoroughly inspected for trapped San Joaquin kit foxes before the subject pipe is subsequently buried, capped, or otherwise used or moved in any way. If during the construction phase a kit fox is discovered inside a pipe, that section of pipe will not be moved, or if necessary, be moved only once to remove it from the path of activity, until the kit fox has escaped.

7. During the sitec disturbance and/or construction phase, all foodc related trash items such as wrappers, cans, bottles, and food scraps generated shall be disposed of in closed containers only and regularly removed from the site. Food items may attract San Joaquin kit foxes and

other wildlife onto the project site, consequently exposing such animals to increased risk of injury or mortality. No deliberate feeding of wildlife shall be allowed.

8. Prior to, during and after the site-disturbance and/or construction phase, use of pesticides or herbicides shall be in compliance with all local, State and Federal regulations. This is necessary to minimize the probability of primary or secondary poisoning of wildlife utilizing adjacent habitats, and the depletion of prey upon which San Joaquin kit foxes depend.

9. During the site-disturbance and/or construction phase, any contractor or employee that inadvertently kills or injures a San Joaquin kit fox or who finds any such animal either dead, injured, or entrapped shall be required to report the incident immediately to the applicant. In the event that any observations are made of injured or dead kit fox, the applicant shall immediately notify the USFWS and CDFW by telephone. In addition, formal notification shall be provided in writing within three working days of the finding of any such animal(s). Notification shall include the date, time, location and circumstances of the incident. Any threatened or endangered species found dead or injured shall be turned over immediately to CDFW for care, analysis, or disposition.

DUDEK

Attachment 2b

MEMORANDUM

To:	Steve Rodriquez, Rodriquez Consulting, Inc.
From:	John H. Davis IV, Dudek, Senior Ecologist
Subject:	Peer Review of the Biological Resources Assessment for the Reservoir and Operations Yard Project, Santa Barbara County, California
Date:	March 21, 2016
Cc:	John Zoro, County of Santa Barbara
Attachments:	Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities (CDFG 2000) Approved Survey Methodology for the Blunt-Nosed Leopard Lizard (CDFG 2004) Standard Recommendations for the Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011)

This peer review was prepared at the request of the County of Santa Barbara (County) (Case No. 16CUP-00000-00005) for the Biological Resources Assessment for the Reservoir and Operations Yard Project, North Fork Ranch, Santa Barbara County, California (report; Kevin Merk Associates, LLC 2016) in unincorporated Santa Barbara County, California. The report consists of basic methods, results, and conclusion and recommendation, and references sections. Attachments include six figures (site, vicinity, three project figures, and a CNDDB result), a potential to occur table, photo plate, and San Joaquin kit fox avoidance measures. All report sections and attachments were reviewed per County of Santa Barbara standards for preparation of technical biological reports for proposed projects (County 1994a, revised 2015, including Appendix A (County 1994b)) and other agency survey requirements.

It is my understanding from page 1 of the report, that the proposed project includes the following:

- Three agricultural reservoirs (approximately 5 acres each)
- An operations yard (approximately 5 acres)

These proposed project features are displayed together in the report on the attached Figure 2 (vicinity map) and separately on Figures 3, 4, and 5 (reservoirs 1, 2, and 3, respectively). No details of the proposed project are described beyond Kevin Merk Associates, LLC (KMA) identification of a project study area where biological surveys covered, which included the

approximately "20 acres of land disturbance" (page 1, paragraph 2). The project study area apparently also covered segments of the "on-site drainages" near the proposed reservoirs to delineate top of bank (page 2, paragraph 1). Again, no project specific information is provided it the report, however, KMA disclosed in the report (page 5, paragraph 4) that the Applicant confirmed that the ephemeral streams will not be impacted by development of the proposed project and that a 50-foot no impact buffer would be respected. Dudek did not receive civil plan set or similar or, as mentioned, a formal project description as part of the report for review.

KMA conducted the following biological surveys within the project survey area (report, pages 1 and 2):

- General botanical and biological surveys
- Blunt-Nosed Leopard Lizard Surveys (CDFG 2004)
- Stream Delineation (top of bank)

In general, the report contains the basic level of information to initiate a review; however, the report itself deviates from the *County of Santa Barbara Environmental Thresholds and Guidelines Manual* (County 1994a, revised 2015) for guidance on reporting details, impact discussion, and mitigation and Appendix A. *Santa Barbara County Planning and Development Department Biological Resources Guidelines Technical Background Document* (County 1994b). Surveys conducted and documented in the report also appear to deviate from protocol and/or guidelines established by state and federal resource agencies. Therefore, additional information is requested to complete the review of the report.

The following are a list of specific comments on the biological report that require further action(s). Comments may include several related items in which one or more actions may be required to rectify the perceived discrepancy:

Comment 1. Project Description. The proposed project, in its entirety, does not appear to be displayed fully and accurately on Figure 2, 3, 4, and 5. Generally, all areas of temporary and permanent project impacts shall be described and displayed.

> ***Action 1.1.*** Please include in a revised report the complete project description and representation of the proposed project, including all areas of temporary and permanent impacts, including access routes, staging area(s), soil stockpile(s) location(s), and water delivery systems.

Comment 2. Survey Documentation. On page 2, paragraph 2, KMA indicated that numerous site investigations occurred in the spring and summer of 2015, yet the report is without proper documentation of the surveys. Additionally, protocol blunt-nosed leopard lizard surveys (CDFG 2004) were conducted, which have strict survey requirements and again, no documentation was presented in the report. Furthermore, KMA disclosed that surveys proceeded outside of protocol conditions for reservoir 2 and 3 and the operations yard. Lastly, KMA conducted reference or voucher inspections on June 24, July 3, and September 7, 2015 to confirm that the blunt-nosed leopard lizard is active, but is unclear if voucher visits preceded the initiation of protocol surveys for both adult and juvenile blunt-nosed leopard lizard survey periods as required by the approved survey methodology (CDFG 2004).

Action 2.1. Revise the report to include a table summarizing the dates/times, weather conditions, focus of the surveys, specific location of surveys, and observations.

Action 2.2. Provide data sheets or summarize in a table the 18 blunt-nosed leopard lizard surveys in the revised report, including which areas were surveyed on specific days in protocol conditions, survey observations (lizards and prey observed), and confirm the area(s) of the project study area in which protocol surveys for the blunt-nosed leopard lizard were completed. In additional to the information requested in *Action 2.1*, please indicate the Level II and Level I surveyors and provide blunt-nosed leopard lizard specific resumes. Note, per the BNLL protocol (CDFG 2004), "*[BNLL] surveys will be accepted [by CDFW] for one year from the date of completion*."

Action 2.3. Confirm that a BNLL reference or voucher survey was conducted at the Elkhorn Plain Ecological Reserve to confirm BNLL activity prior to the onset of surveys for the proposed project.

Comment 3. Vegetation Community Mapping. On page 2, paragraph 3, KMA stated that existing plant communities and observations were mapped on an aerial photograph from Google Earth dated 2015, however, a vegetation community map singularly or combined with a biological survey map with observations were not included in the report.

Action 3.1. Revise the report to include a vegetation community/habitat map with biological observations of sensitive biological resources, special-status species, or any protected biological resource present on-site, including the top-of-bank of ephemeral streams and their buffers.

Comment 4. Floristic Surveys. KMA conducted general botanical and biology surveys of the project study area. However, it is unclear if focused floristic surveys were performed per standard accepted guidelines (CDFG 2000). On page 5, paragraph 2 (Habitat Types), KMA noted that cattle grazing coupled with drought conditions created patchy area of non-native or naturalized forbs and that no native plant species were observed within the project study area. The photographs appear to substantiate this claim. However, the environmental conditions during the survey year (i.e., fourth year of drought) and the lack of reference population visit to ensure target special-status plant species were in bloom at the time of the surveys or even germinated during drought conditions, questions the validity of the results. Additionally, the CNDDB has occurrences of special-status plant species, albeit 25 years old, on the property as acknowledged by KMA. It is uncertain if an attempt to confirm their existence prior to or during botanical surveys was made in an effort to support the reports results and conclusions.

Action 4.1. Conduct full coverage seasonally-appropriate floristic surveys over the entire project site addressing all proposed project components (refer to Comment 1.). Two to three surveys may be necessary. Please revisit and ensure the floristic surveys conform to CNPS *Botanical Survey Guidelines* (CNPS 2001); *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG 2000); and *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 1996). Reference populations need to be visited and documented. A list of all plants observed on-site is required for floristic surveys. Include the observed plant list within the revised report or as an attachment.

Comment 5. Stream Delineation. KMA delineated top of bank of ephemeral stream channels to determine buffers from reservoirs. This was a good approach for KMA and the Applicant in siting the reservoirs. Unfortunately, the delineation and buffers were not displayed on any of the figures for review. Additionally, beyond the extent of the reservoirs, it is unclear if any proposed project components encroached within the buffer or sensitive biological resources that could be jurisdictional by the California Department of Fish and Wildlife (CDFW) and possibly other agencies. It is KMA understanding is that the ephemeral streams will not be impacted or altered by the proposed project.

Action 5.1. Include the delineated top of bank and buffer for the ephemeral streams on to Figures 2, 3, 4, and 5, as appropriate, in the revised report.

Action 5.2. If any proposed project component occurs within, above, or adjacent to the ephemeral stream (i.e., potential impacts may occur), an approved jurisdictional

determination shall be prepared per U.S. Army Corps of Engineer standards and guidelines, including jurisdictional boundaries of the CDFW and Regional Water Quality Control Board.

Comment 6. Giant Kangaroo Rat. In the report (page 6, paragraph 3), KMA noted that the CNDDB documented occurrence of the giant kangaroo rat (*Dipodomys ingens*) in the northwest portion of the ranch was possibly extirpated and confirmed the absence of burrow complexes typical of giant kangaroo rats over several visits. While I don't dispute KMA findings or assessment, the drought has had a severe effect on giant kangaroo rat populations, which exhibit a boom or bust population trend (Dr. Dave Germano, personal communication). The potential of giant kangaroo rats to occur on-site might be unlikely, however, since a historic record occurs on-site and the surveys were conducted during the fourth year of drought, a pre-construction measure is warranted to ensure the absence of giant kangaroo rats within the project study area.

Action 6.1. Include a mitigation measure in the revised report that states a pre-construction survey for the giant kangaroo rat will occur in late spring to search for sign (appropriate sized horizontal and vertical burrows, haystacks, seed caches, scat, tracks, etc.). If sign is observed, the U.S. Fish and Wildlife Service (USFWS) and CDFW shall be contacted to determine if trapping surveys are required for the giant kangaroo rat.

Comment 7. San Joaquin kit fox. In the report, KMA indicated that while protocol surveys for the San Joaquin kit fox (*Vulpes macrotis mutica*) were not conducted (page 3, paragraph 1), no potential kit fox den sites were observed in the project study area. KMA also notes that the absence of a small mammal prey base and the disturbed conditions of the study area reduces the quality of habitat for the kit foxes (i.e., low potential to occur), thereby, only providing movement possibilities by transient foxes. Although this assessment, as it stated in the report, appears valid to me, it is uncertain if any informal CDFW or USFWS coordination occurred on the subject to confirm that no San Joaquin kit fox habitat occurs on the project study area or surrounding area.

Additionally, KMA includes, as an attachment, their San Joaquin kit fox avoidance measures, based on the Standard Recommendations for the Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011). One noticeable discrepancy between the attachment and the USFWS (2011) recommendations is KMA measure for a 150 foot buffer around a kit fox pupping den. The USFWS (2011) requires that they are to be contacted in this situation.

Action 7.1. An early evaluation for the San Joaquin kit fox required per the 1994 USFWS protocol for the fox. Once completed, it is recommended that the USFWS and CDFW be

contacted and concur with KMA evaluation findings. Please include the evaluation and any agency coordination in the revised report.

Action 7.2. Please revise the attached avoidance measures to identically reflect the USFWS (2011) standard recommendations or attach the standard recommendations in its entirety to the revised report.

Lastly, in revising the report, please refer to the County of Santa Barbara Environmental Thresholds and Guidelines Manual (County 1995, updated 2008) for guidance on reporting details, impact discussion, and mitigation. See also Appendix A *Santa Barbara County Planning and Development Department Biological Resources Guidelines Technical Background Document*. Please reference the "Thresholds" in the Biological Assessment.

REFERENCES

California Department of Fish and Game (CDFG). 2000. Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities.

CDFG. 2004. Approved Survey Methodology for the Blunt-Nosed Leopard Lizard.

County of Santa Barbara. 1994a (revised 2015). Environmental Thresholds and Guideline Manual.

County of Santa Barbara. 1994b. Biological Resources Guidelines Technical Background Document September 1994. Appendix A. to the Environmental Thresholds and Guidelines Manual.

United States Fish and Wildlife Service (USFWS). 1999. San Joaquin Kit Fox Survey Protocol for the Norther Range.

USFWS. 2011. Standard Recommendations for the Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance.

Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities

State of California
THE RESOURCES AGENCY
Department of Fish and Game
December 9, 1983
Revised May 8, 2000

The following recommendations are intended to help those who prepare and review environmental documents determine **when** a botanical survey is needed, **who** should be considered qualified to conduct such surveys, **how** field surveys should be conducted, and **what** information should be contained in the survey report. The Department may recommend that lead agencies not accept the results of surveys that are not conducted according to these guidelines.

1. Botanical surveys are conducted in order to determine the environmental effects of proposed projects on all rare, threatened, and endangered plants and plant communities. Rare, threatened, and endangered plants are not necessarily limited to those species which have been "listed" by state and federal agencies but should include any species that, based on all available data, can be shown to be rare, threatened, and/or endangered under the following definitions:

A species, subspecies, or variety of plant is "endangered" when the prospects of its survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, or disease. A plant is "threatened" when it is likely to become endangered in the foreseeable future in the absence of protection measures. A plant is "rare" when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens.

Rare natural communities are those communities that are of highly limited distribution. These communities may or may not contain rare, threatened, or endangered species. The most current version of the California Natural Diversity Database's List of California Terrestrial Natural Communities may be used as a guide to the names and status of communities.

2. It is appropriate to conduct a botanical field survey to determine if, or to the extent that, rare, threatened, or endangered plants will be affected by a proposed project when:

a. Natural vegetation occurs on the site, it is unknown if rare, threatened, or endangered plants or habitats occur on the site, and the project has the potential for direct or indirect effects on vegetation; or
b. Rare plants have historically been identified on the project site, but adequate information for impact assessment is lacking.

3. Botanical consultants should possess the following qualifications:

a. Experience conducting floristic field surveys;
b. Knowledge of plant taxonomy and plant community ecology;
c. Familiarity with the plants of the area, including rare, threatened, and endangered species;
d. Familiarity with the appropriate state and federal statutes related to plants and plant collecting; and,
e. Experience with analyzing impacts of development on native plant species and communities.

4. Field surveys should be conducted in a manner that will locate any rare, threatened, or endangered species that may be present. Specifically, rare, threatened, or endangered plant surveys should be:

a. Conducted in the field at the proper time of year when rare, threatened, or endangered species are both evident and identifiable. Usually, this is when the plants are flowering.

When rare, threatened, or endangered plants are known to occur in the type(s) of habitat present in the project area, nearby accessible occurrences of the plants (reference sites) should be observed to determine that the species are identifiable at the time of the survey.

b. Floristic in nature. A floristic survey requires that every plant observed be identified to the extent necessary to determine its rarity and listing status. In addition, a sufficient number of visits spaced throughout the growing season are necessary to accurately determine what plants exist on the site. In order to properly characterize the site and document the completeness of the survey, a complete list of plants observed on the site should be included in every botanical survey report.

c. Conducted in a manner that is consistent with conservation ethics. Collections (voucher specimens) of rare, threatened, or endangered species, or suspected rare, threatened, or endangered species should be made only when such actions would not jeopardize the continued existence of the population and in accordance with applicable state and federal permit requirements. A collecting permit from the Habitat Conservation Planning Branch of DFG is required for collection of state-listed plant species. Voucher specimens should be deposited at recognized public herbaria for future reference. Photography should be used to document plant identification and habitat whenever possible, but especially when the population cannot withstand collection of voucher specimens.

d. Conducted using systematic field techniques in all habitats of the site to ensure a thorough coverage of potential impact areas.

e. Well documented. When a rare, threatened, or endangered plant (or rare plant community) is located, a California Native Species (or Community) Field Survey Form or equivalent written form, accompanied by a copy of the appropriate portion of a 7.5 minute topographic map with the occurrence mapped, should be completed and submitted to the Natural Diversity Database. Locations may be best documented using global positioning systems (GPS) and presented in map and digital forms as these tools become more accessible.

5. Reports of botanical field surveys should be included in or with environmental assessments, negative declarations and mitigated negative declarations, Timber Harvesting Plans (THPs), EIR's, and EIS's, and should contain the following information:

a. Project description, including a detailed map of the project location and study area.
b. A written description of biological setting referencing the community nomenclature used and a vegetation map.
c. Detailed description of survey methodology.
d. Dates of field surveys and total person-hours spent on field surveys.
e. Results of field survey including detailed maps and specific location data for each plant population found. Investigators are encouraged to provide GPS data and maps documenting population boundaries.
f. An assessment of potential impacts. This should include a map showing the distribution of plants in relation to proposed activities.
g. Discussion of the significance of rare, threatened, or endangered plant populations in the project area considering nearby populations and total species distribution.
h. Recommended measures to avoid impacts.
i. A list of all plants observed on the project area. Plants should be identified to the taxonomic level necessary to determine whether or not they are rare, threatened or endangered.
j. Description of reference site(s) visited and phenological development of rare, threatened, or endangered plant(s).
k. Copies of all California Native Species Field Survey Forms or Natural Community Field Survey Forms.
l. Name of field investigator(s).
m. References cited, persons contacted, herbaria visited, and the location of voucher specimens.

May 2004

Dear Blunt-nosed Leopard Lizard Surveyor,

Attached is the revised survey methodology for the blunt-nosed leopard lizard (*Gambelia sila*). The protocol was developed by the San Joaquin Valley Southern Sierra Region (SJVSSR) of the California Department of Fish and Game (DFG) with input from the United States Fish and Wildlife Service, the Bureau of Land Management and various species experts. This protocol supercedes previous versions of DFG survey protocols for the blunt-nosed leopard lizard. The range-wide decline of population numbers in the past decade has provided the impetus for development of a more rigorous methodology to detect species presence. Additionally, since DFG is not able to issue any form of "take" permit for the blunt-nosed leopard lizard due to its status as a fully-protected animal under the California Fish and Game Code **§5050**, detection of species presence on a project site is crucial.

This standard methodology has been developed to provide consultants, local, state and federal agencies with minimum acceptable standards for surveys conducted to determine the status of this State and federally endangered species. The survey methods described within this protocol were designed to optimize the likelihood of detecting the presence of blunt-nosed leopard lizards should they occur on a project site.

When the presence of blunt-nosed leopard lizards is detected, we request that you notify the Department's local Permitting and Project Review staff for further instructions of what additional information will be needed to assess the project's potential impact on the species. This will assist in expediting the review of the project and help control the project sponsor's biological survey costs. Additionally, the USFWS should be contacted for further advice since this is also a federally-listed species. Use of this protocol and notification of the Department does not exempt you from consultation with the USFWS.

The Department is willing to cooperate with surveyors who have circumstances or needs not addressed by this protocol and who may wish to propose alternative methods to comply with State law prohibiting take of BNLL. If you have any questions or comments regarding this methodology or if you want to propose the use of a different methodology, please the SJVSSR Habitat Conservation Planning staff at (559) 243-4014 (Fresno, Merced, Madera, Kings, Tulare, and Kern Counties) or (805) 528-8670 (San Benito and San Luis Obispo Counties).

CALIFORNIA DEPARTMENT OF FISH AND GAME

APPROVED SURVEY METHODOLOGY FOR THE
BLUNT-NOSED LEOPARD LIZARD
MAY 2004

Blunt-nosed leopard lizard, *Gambelia sila* = (*Gambelia silus*)
STATUS: SE, FE, DFG fully protected

This protocol has been developed to provide a minimum level of protection for blunt-nosed leopard lizards (BNLL) when projects or maintenance activities are scheduled to occur within potential BNLL habitat. Disturbing activities should not proceed until appropriate surveys are conducted to determine if the species is present on the site. Surveys conducted according to the following protocol by qualified researchers provide a reasonable, although not conclusive, indication of BNLL presence at a particular site and yield critical information needed to prevent mortality and minimize impacts to the species. Researchers conducting the surveys are expected to understand the basic biological requirements of the species and have the ability to recognize potential BNLL habitat. This protocol satisfies the Department of Fish and Game requirements when it is determined that formal BNLL surveys are needed. [Note: This protocol is appropriate for pre-project BNLL surveys, however, population monitoring over time on a site is best conducted using a permanent survey grid, such as described in Tollestrup (1976).]

METHODS:
A minimum of two researchers, walking in parallel on adjacent transects, should conduct a BNLL survey. Optimum BNLL activity periods occur when air temperature is between 25C-35C (77F-95F) (Tollestrup 1976; USFWS 1985, 1998). Surveys must be conducted when the air temperature falls within the optimal range. Surveys may begin after sunrise as soon as the minimum air temperature criterion is met, and must end by 1400 hours or when the maximum temperature is reached, whichever occurs first (Tollestrup 1976). Time of day and air temperature should be recorded at the start and end of each survey. Air temperature should be periodically checked to ensure that the maximum has not been exceeded. Air temperature should be measured at 1-2 cm above the ground over a surface most representative of the area being surveyed. The researcher must shade the thermometer from direct sunlight while taking the reading. Other factors that affect BNLL activity such as soil temperature (measured at 1cm below soil surface with a shaded thermometer) and weather conditions must be recorded at the start and end of each survey. Surveys should not be conducted on overcast days (cloud cover > 90%) or when sustained wind velocity exceeds 10 mph (force > 3 on Beaufort wind scale) (Montanucci 1965; Tollestrup 1976; J. Vance, pers. comm.).

Surveys must be conducted on foot, and researchers must survey all areas with potential BNLL habitat. BNLL are often difficult to detect, particularly in areas where shrubs are fairly numerous (>30% cover) and/or the herbaceous vegetation is tall (>30 cm). In such conditions, 10 meter wide transects should be walked at a slow pace. In areas with few shrubs and shorter herbaceous vegetation (<15 cm), transects as wide as 30 meters are acceptable. When feasible, transects should be walked in a north-south orientation to minimize glare from the sun. The surveyor should stop periodically and scan the transect for BNLL using close-focusing binoculars (minimum 7X35 magnification). In addition to recording the location of all BNLL observed (must provide UTM coordinates), the presence of habitat features important for BNLL (washes, playas, relative abundance of small mammal burrows) should also be recorded for each transect. Streambeds, washes, roads, etc., should be walked in addition to transect lines since BNLL are often seen in these areas.

TIMING AND LENGTH OF SURVEY:
Survey intensity should be commensurate with the anticipated level of disturbance to the BNLL habitat. The primary concern for BNLL when disturbance occurs during maintenance activities is direct mortality from equipment or personnel. Removal of intact BNLL habitat has a much greater potential for "take" due to direct impact on animals aboveground as well as any hibernating animals or eggs underground. A longer survey effort including both spring adult surveys and fall hatchling surveys is therefore required for activities that cause impacts to undisturbed BNLL habitat. The more intensive survey effort increases the chances of observing the species, even if the population is small. Once a BNLL has been observed, surveys may cease and consultation with the Department must begin regarding avoidance measures. If BNLL are observed incidentally while conducting surveys for other species, specific surveys for BNLL are not required. Surveys will be accepted for one year from the date of completion.

Disturbances for Maintenance Activities
Examples of maintenance activities include grading existing roads, grass mowing on roadsides, and maintaining existing structures. BNLL are active and above ground from April through September, but optimum activity periods for adults occur between April 15 and July 15 (Montanucci 1965; Tollestrup 1979; USFWS 1985, 1998). BNLL surveys should be conducted for a total of 8 days over the course of the 90-day time span. A minimum of 3 survey days should be conducted consecutively, with a maximum of 6 days completed within any 30-day time period. Fall hatchling surveys are not required for activities in this category.

Disturbances Leading to Habitat Removal
Examples of disturbances that impact intact habitat include establishment of new roads or structures, housing subdivisions, and changes in historic land use. BNLL surveys should be conducted for 12 days over the course of the 90-day

adult optimal survey period (April 15 to July 15), with a maximum of 4 survey days per week and 8 days within any 30-day time period. At least one survey session should be conducted for 4 consecutive days, weather permitting. BNLL hatchlings and subadults are most commonly observed from August 1 to September 15, along with a few adults that are still active above ground (Montanucci 1965; Tollestrup 1979; USFWS 1985, 1998). In addition to the 12 days of adult BNLL surveys required for activities in this category, 5 more survey days are required during the hatchling optimal survey period for a total of 17 survey days overall.

QUALIFICATIONS OF RESEARCHERS:
An acceptable BNLL survey crew should consist of no more than 3 Level I researchers for every Level II researcher. This restriction should reduce the number of incorrect/missed identifications. The names and affiliations of all researchers must be recorded for each survey day.

Level I: Researcher has demonstrated the ability to distinguish BNLL from other common lizard species that may inhabit the area;

Level II: Researcher has demonstrated the ability to distinguish BNLL from other common lizard species that may inhabit the area and has participated in at least 50 survey days for BNLL (or 25 survey days and a BNLL identification course recognized by/acceptable to the Department of Fish and Game). Researcher has made at least one confirmed* field sighting of a BNLL.

REPORTING
All BNLL observations should be reported to the California Natural Diversity Database within 30 days. A sample form is attached. Additional forms can be obtained at http://www.dfg.ca.gov/whdab/html/animals.html .

SPECIAL REQUIREMENT FOR SURVEYS IN DFG CENTRAL COAST REGION (San Luis Obispo County)
Lands with potential BNLL habitat in the Department's Central Coast Region (CCR) have different conditions compared to the San Joaquin Valley Southern Sierra Region (SJVSSR). The sites with habitat in the CCR tend to be at higher elevations, where nighttime temperatures can remain low even though daytime temperatures meet minimum survey criteria. In such conditions, BNLL activity is likely to be low and surveys conducted at this time could result in non-detection of the species even though they are present. As such, an additional requirement of a visit to a known voucher site to check for BNLL activity applies to surveys conducted in this region. Once the species has been observed at the voucher site, formal surveys can begin. The Elkhorn Plain ER has been selected as the voucher site for the CCR.

LITERATURE CITED

Montanucci, R.R., 1965. Observations of the San Joaquin leopard lizard, *Crotaphytus wislizenii silus* Stejneger. Herpetologica 21(4): 270-283.

Tollestrup, K. 1976. A standardized method of obtaining an index of densities of blunt-nosed leopard lizards, *Crotaphytus silus.* Unpub. Rpt. U. S. Fish and Wildlife Service, Sacramento, CA. 11pp + Appendices.

Tollestrup, K. 1979. The ecology, social structure, and foraging behavior of two closely-related leopard lizards, *Gambelia silus* and *Gambelia wislizenii*. PhD Dissertation, University of California Berkeley.

United States Fish and Wildlife Service. 1985. Revised blunt-nosed leopard lizard recovery plan. United States Fish and Wildlife Service. Region 1, Portland, OR. 85 pp.

United States Fish and Wildlife Service. 1998. Recovery plan for upland species of the San Joaquin Valley, California. United States Fish and Wildlife Service. Region 1, Portland, OR. 319 pp.

PERSONAL COMMUNICATIONS

Julie Vance, California Department of Water Resources, San Joaquin District, 3374 E. Shields Ave, Fresno, California, 93726.

*A minimum of one confirmed field sighting must be documented for each Level II researcher and be available to the Department upon request. As with all BNLL sightings, it should also be submitted to the California Natural Diversity Database. Information to be included in documentation of BNLL sighting: Name of researcher, date of survey, location of survey, names of accompanying researchers who can confirm the sighting, and details of sighting (distance, BNLL activity, etc).

CONTACT INFORMATION

California Department of Fish and Game

San Joaquin Valley Southern Sierra Region
Habitat Conservation Planning
1234 Shaw Ave
Fresno, CA 93710
559/243-4005

Central Coast Region
Habitat Conservation Planning
P.O. Box 47
Yountville, CA 94599
805/528-8670

The Department is willing to cooperate with researchers who have circumstances or needs not addressed by this protocol and who may wish to propose alternative methods to comply with State law prohibiting take of BNLL.

U.S. FISH AND WILDLIFE SERVICE STANDARDIZED RECOMMENDATIONS FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE

Prepared by the Sacramento Fish and Wildlife Office
January 2011

INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

IS A PERMIT NECESSARY?

Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens. Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process. All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to an6y survey or monitoring work occurring.

SMALL PROJECTS

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied and unoccupied)	Service must be contacted

*Known den: To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

**Potential and Atypical dens: Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

DESTRUCTION OF DENS

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection. **Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service**.

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

Natal/pupping dens: Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

Known Dens: Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities.

The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.

2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.

3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is

discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.

5. No firearms shall be allowed on the project site.

6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.

7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.

8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.

9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.

10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be

re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.

12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.

13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.

14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620 or (916) 414-6600

EXHIBIT "A" - DEFINITIONS

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

Kevin Merk Associates, LLC P.O. Box 318, San Luis Obispo, CA 93406 805-748-5837(o)/439-1616(f)

June 24, 2016

Mr. Kevin Merrill
Mesa Vineyard Management
P.O. Box 789
Templeton, California 93465

Subject: Supplemental Biological Resources Information for the Reservoir and Operations Yard Project (Case No. 16CUP-00000-00005), North Fork Ranch, Santa Barbara County, California

Dear Mr. Merrill:

At your request, Kevin Merk Associates, LLC (KMA) prepared a biological resources assessment for three reservoir sites and an operations yard proposed on a portion of the North Fork Ranch in Santa Barbara County, California. Our analysis utilized project plans prepared by Thomas Howell (2015) showing only the extent of the reservoirs. The County of Santa Barbara during their review of the project application materials requested additional biological information such as the locations of water supply pipelines and details as to how they would cross onsite drainage features. Please refer to the Determination of Application Incompleteness (March 16, 2016) from the County of Santa Barbara and the Peer Review Memorandum (March 21, 2016) from Dudek.

The following information addresses each Comment and the associated Action Items outlined in the Peer Review. In order to supply this information, the Vineyard Irrigation Reservoir Fill Lines prepared by Ag-Ideas LLC (April, 2016) was provided to us showing the pipeline routes from onsite wells to the proposed reservoirs. The project team also provided additional project description information to help in the impact analysis. This included additional site plans showing the location of pressure mainlines that will run from the reservoirs to vineyard blocks. Subsequent site visits were conducted by KMA biologists to assess the proposed pipeline routes and the potential impacts to onsite drainage features and areas outside the farming footprint. The pipeline routes originating from wells on the north side of Highway 166 and all proposed drainage crossings were inspected for special status biological resources including species of rare plants and animals.

The plans provided by Ag Ideas LLC identified reservoir fill lines and pressure mainlines crossing onsite drainage features. The proposed installation methodology, as we understand, is to have the underground pipe "daylight" outside the drainage feature's top of bank of bank and a removable flexible pipe would then be attached to the main pipe and laid across the channel connecting to a similar structure on the opposite side. It is our understanding that the flexible pipe would span the active stream channel using a stand or support structure to avoid U.S. Army Corps of Engineers (USACE) Clean Water Act jurisdictional areas. The flexible pipe would be removed from the channel prior to rain events that have the potential to create flows through the site. Since the pipelines are proposed to cross the drainage features, early consultation with the California Department of Fish and Wildlife (CDFW) and USACE occurred to review the extent of each agency's jurisdiction over the proposed project. A site visit was conducted by CDFW representative, Ms.

Sarah Rains, on April 15, 2016 to inspect the proposed crossings, and consultation with USACE Project Manager, Ian Bordenave, occurred to evaluate the extent of Clean Water Act requirements for the project. The following provides the supplemental biological resources information requested from the County of Santa Barbara.

Peer Review Comments, Actions, and Responses

Comment 1. Project Description.

Action 1.1. Please include in a revised report the complete project description and representation of the proposed project, including all areas of temporary and permanent impacts, including access routes, staging area(s), soil stockpile(s) location(s), and water delivery systems.

Action 1.1 Response: The revised project description is presented below.

The project consists of constructing three agricultural reservoirs covering approximately five acres each, on existing agricultural lands south of Highway 166. The reservoirs will be connected to agricultural wells on the north side of Highway 166 by water lines. Additional pressure main lines will extend from the reservoirs to feed the vineyard drip irrigation system. An operations yard area of approximately five acres will also be constructed on agricultural land, and will be used for materials and equipment storage, and staging during reservoir and water line construction. Temporary soil stockpiles will occur in agricultural areas at each reservoir location, and along pipeline routes. Access to the reservoirs, well sites, and operations yard will use existing ranch roads that originate from Highway 166. Pipeline routes estimated at approximately 10 feet wide will primarily follow existing dirt ranch roads, and will cross agricultural lands to reach the reservoirs. Where the pipelines cross the onsite drainages, flexible High Density Polyethylene (HDPE) flexible pipes will be laid overland to avoid impacts to non-native annual grassland habitat. Six small ephemeral drainage channels on the south side of Highway 166 will be crossed by water lines suspended above the active channel.

The project will result in approximately 20 acres permanently disturbed by reservoir and operations yard construction, and roughly 11 acres temporarily disturbed by reservoir fill and pressure main waterline installation. Of this total impact area, the majority of the impacted area is within existing agricultural areas and ranch roads. Small areas of annual grassland within the drainage setback areas and along road edges will be temporarily disturbed during pipeline installation. Please refer to the attached Figure 7 illustrating onsite habitat conditions, proposed water pipeline routes and drainage crossing locations, and reservoir/operations yard sites. Figure 7 also shows the drainage corridors and minimum 50-foot setback established from the top of banks where vineyard planting blocks will be sited. For detailed information regarding the extent of regulatory agency jurisdiction and associated vineyard setbacks from the top of banks, please refer to Figures 8, 9 and 10 attached to this report. Photographs of the six drainage crossing locations and proposed pipeline configuration crossing the drainages are also provided as an attachment.

As shown on project maps, Reservoir 1 is located in the eastern portion of the ranch, immediately adjacent to Schoolhouse Canyon Road. Reservoir 2 is located in the middle portion, and Reservoir 3 is located in the western portion, approximately 0.75 mile east of Cottonwood Canyon Road. The

operations yard is located east of Reservoir 2, on a site previously used as a staging area for the former cattle grazing operation. Although Reservoirs 1 and 2 appear to extend into annual grassland habitat, their footprints are within currently disked and dry farmed wheat fields. Please refer to the attached photo plate.

Reservoir fill lines from agricultural wells will cross under Highway 166 in two locations: at Schoolhouse Canyon Road, and directly northeast of Reservoir 2 in the center of the site. The highway crossings will be accomplished by horizontal boring, and installation of casing pipes under the roadway. The reservoir fill lines will primarily follow existing ranch roads and agricultural areas. Where drainage crossings are proposed, the underground waterline will "daylight" and flexible High Density Polyethylene (HDPE) pipe will be attached and run overland to span the active stream channel. Small areas of annual grassland within the drainage corridors may be temporarily affected. The pressure main lines will also be located within existing agricultural lands except where annual grassland habitat is present at drainage crossing locations. The reservoir fill lines will cross three ephemeral drainages on the south side of Highway 166. Pressure main lines will extend from the reservoirs to vineyard blocks, and will cross a total of six drainage features. Three of these pressure line crossings are located in conjunction with the three fill line crossings to minimize impact areas. Of the six proposed waterline drainage crossings, four are located within or immediately adjacent to existing road crossings. Please refer to the attached photo plate for additional information.

The crossing pipelines will consist of flexible temporary HDPE piping laid on the ground from outside the top of banks down into the channel. The lower active channel areas will be spanned by an approximate 20-foot long section of steel pipe (roughly two to five feet wide depending on pipe width), supported at each end by a metal stand keyed into the slope within the top of bank but outside the Ordinary High Water Mark (OHWM). The steel pipe sections will be elevated above the OHWM, with no dredge or fill placement or effect on water flow within Clean Water Act Section 404 jurisdictional areas. Each support stand will consist of a 24x48-inch flat metal foot placed on the ground surface, with a central metal riser extending to cradle each end of the pipe. Please refer to Photo 12 included in the photo plate for additional detail. Minor excavation using hand tools may be required in some locations to create a level surface for the support stands, and all excavated soil will be recontoured around the span supports or removed from the channel. No large mechanized equipment such as a bulldozer or excavator will be required to enter the channel, and no concrete or other materials will be used.

Following the regulatory agency early consultation process, it was determined that a Streambed Alteration Agreement from the CDFW will be required for the six drainages to be crossed by waterlines on the south side of Highway 166. All supports, pipe materials, soil disturbance, and associated impacts proposed within the top of bank of each drainage will be quantified in the Streambed Alteration Agreement currently being prepared for the project. During a meeting between Dave Swenk of Urban Planning Concepts and USACE Project Manager Ian Bordenave on June 2, 2016, Mr. Bordenave stated that a Clean Water Act Section 404 permit would not be required based on the proposed crossing method that avoids placement of dredge or fill material within the OHWM. A formal letter from USACE documenting this decision is pending, and upon receipt will be submitted to the County for placement in the project file.

Comment 2. Survey Documentation.

Action 2.1. Revise the report to include a table summarizing the dates/times, weather conditions, focus of the surveys, specific location of surveys, and observations.

Action 2.1 Response: As stated in the Biological Resources Assessment prepared in February 2016, general and focused biological surveys occurred during the spring, summer and fall 2015 to help agricultural development of the property avoid impacts to special status resources such as the onsite drainages. In April 2016 following receipt of the Ag-Ideas LLC reservoir pipeline map, additional field work was conducted to search for special status plants and wildlife focused along the pipeline route and reservoir sites. Stream delineation also occurred to make sure pipeline installation avoided impacts to the active channel. A table summarizing biological survey efforts covering the Phase I farming activities including the proposed reservoir and operations yard project is presented below. Included as an attachment is a table summarizing the survey data from the blunt-nosed leopard lizard (*Gambelia sila*) protocol surveys conducted in the spring, summer and fall 2015.

General Biological Survey Data Summary Table*

Survey Date, Time, and Location	Survey Focus	Weather Conditions and Species Observations	Survey Personnel
February 29, 2015 8:00AM to 12:00PM Proposed agricultural areas on terraces between Schoolhouse and Cottonwood Canyons.	General Botany and Wildlife	Dense ground fog clearing through the morning; light winds, spring bloom period underway	Merk
April 26, 2016 9:30AM to 1:30PM Carrizo/Elkhorn Plain, agricultural areas and Schoolhouse Canyon Road in the east of the site	General Botany and Wildlife; BNLL reference site visit	Clear, 70-79 degrees F, BNLL on Elkhorn Plain	Merk
April 29, 2015 8:30AM to 4PM Proposed agricultural areas on terraces, Cuyama River, Schoolhouse and Cottonwood Canyons	General Botany and Wildlife, BNLL during suitable conditions	Sunny, 80-95 degrees F (warm), light winds. Horned lizard observed in Schoolhouse Canyon.	Merk, Kirschenstein
May 28, 2015 8:30AM to 4PM Proposed agricultural areas on terraces, Cuyama River, Schoolhouse and Cottonwood Canyons	General Botany and Wildlife, BNLL during suitable conditions	Sunny and warm, light winds. Heerman's K-rat sign observed on river terraces.	Merk, Kirschenstein

Survey Date, Time, and Location	Survey Focus	Weather Conditions and Species Observations	Survey Personnel
June 8, 2015 8:45AM to 4PM Proposed agricultural areas on terraces, Cuyama River, Schoolhouse and Cottonwood Canyons	General Botany and Wildlife, BNLL during suitable conditions	Mostly sunny and warm, light wind.	Merk, Kirschenstein
June 24, 2015 8:45AM to 4PM Proposed agricultural areas on terraces, Cuyama River, Schoolhouse and Cottonwood Canyons	General Botany and Wildlife, BNLL during suitable conditions	Sunny and warm, light wind. Horned lizards and Heerman's K-rat sign observed on Cuyama river terrace	Merk, Kirschenstein
September 29, 2015 9AM to 2:30PM Agricultural areas south of 166	General Botany, Wildlife, Vegetation Mapping, Stream Delineation	Sunny and warm, light wind. No sensitive species observed.	Merk, Sloan
September 30, 2015 8AM-4:30PM Stream corridors south of 166	Stream Delineation and Setback Mapping, General Botany and Wildlife	Sunny and warm, light wind, cloudy, light rain Oct 1. No sensitive species observed.	Sloan, Block
October 1, 2015 8AM-4:30PM Stream corridors south of 166	Stream Delineation and Setback Mapping, General Botany and Wildlife	Sunny and warm, light wind, cloudy, light rain Oct 1. No sensitive species observed.	Sloan, Block
January 4, 2016 8:30AM to 4:30PM Reservoir and Operations Yard Sites	General Botany and Wildlife	Sunny, cool (58 degrees F), no wind. No sensitive species observed.	Sloan
April 6, 2016 8:30AM to 4:30PM Reservoir Pipeline Routes	General Botany and Wildlife, Stream Crossing Locations, CNDDB Reference Locations	Sunny and warm, light wind. No sensitive species observed.	Merk, Sloan
April 15, 2016 8:30AM to 4:30PM Reservoir Pipeline Routes	General Botany and Wildlife, Stream Crossing Assessment with CDFW	Sunny and warm, light wind. No sensitive species observed.	Merk

Survey Date, Time, and Location	Survey Focus	Weather Conditions and Species Observations	Survey Personnel
June 7, 2016 9AM to 3:30PM Reservoir Pipeline Crossings	General Botany and Wildlife, Stream Crossings	Sunny and hot (95-100 degrees F), winds 10+mph in afternoon. No sensitive species observed.	Sloan

*refer to attached Table 1 for the blunt nose leopard lizard survey information.

Action 2.2 Provide data sheets or summarize in a table the 18 blunt-nosed leopard lizard surveys in the revised report, including which areas were surveyed on specific days in protocol conditions, survey observations (lizards and prey observed), and confirm the area(s) of the project study area in which protocol surveys for the blunt-nosed leopard lizard were completed. In additional to the information requested in Action 2.1, please indicate the Level II and Level I surveyors and provide blunt-nosed leopard lizard specific resumes.

Action 2.2 Response: The North Fork Ranch BNLL Phase I Survey Data Summary Table, and resumes for the two surveyors are attached. Protocol surveys were conducted by Mr. Jason Kirschenstein (Level II) and Kevin Merk (Level I), and covered approximately 390 acres of suitable BNLL habitat on the lower terraces and wash habitat in the portion of Schoolhouse Canyon on the property extending north into the Cuyama River. An additional roughly 130-acre area along the lower Cuyama River terraces north of Highway 166 near the Cottonwood Canyon confluence was also surveyed after 1400 hours or when the temperature was too hot to meet protocol requirements. Additional walking surveys and spot checks were conducted within onsite drainages and other areas of the ranch outside the agricultural footprint containing what was identified as low potential BNLL habitat based on steep slopes, dense grassland vegetation cover and lack of burrows. Please note that the surveys covered additional parts of the ranch outside the agricultural footprint and proposed reservoir/operations yard disturbance areas.

Action 2.3 Confirm that a BNLL reference or voucher survey was conducted at the Elkhorn Plain Ecological Reserve to confirm BNLL activity prior to the onset of surveys for the proposed project.

Action 2.3 Response: As documented in the 2015 Biological Resources Assessment (page 7, 3rd paragraph), a BNLL reference site in the Carrizo Plain area was visited on several occasions (June 24 and July 3, 2015) during the spring-summer surveys and again on September 7, 2015 during the fall hatchling surveys during the course of the study to confirm BNLLs were above ground, active and identifiable. Prior to the start of the surveys, the same reference site was visited on the Carrizo Plain on 4/26/16 to confirm BNLL were active and above ground. The area of the recorded BNLL occurrence #414 (from 2007) east of the property was also visited on two occasions to characterize habitat in this area for comparison with habitats on the study area, as well as search for BNLL using binoculars from property margins. A BNLL was observed at the Carrizo Plain reference site during each visit, but was not observed at the occurrence #414 site.

Comment 3. Vegetation Community Mapping.

Action 3.1. Revise the report to include a vegetation community/habitat map with biological observations of sensitive biological resources, special-status species, or any protected biological resource present on-site, including the top-of-bank of ephemeral streams and their buffers.

Action 3.1 Response: The attached Figure 7 contains vegetation community/habitat information and current project details as shown on the Ag-Ideas 2016 map, including the drainage setbacks in relation to the vineyard blocks shown as Agriculture. Figures 8, 9, and 10, also attached to this report, show the limits of CDFW jurisdiction (i.e.: top of bank to top of bank) and USACE jurisdiction (i.e.: the extent of active stream channel with an observable OHWM) at each crossing location. Please note the pipeline crossing location is identified as a solid blue line that is approximately five (5) feet wide, which represents the width of two 24-inch HDPE pipes and steel structure that will support the pipes to span the stream channel.

Comment 4. Floristic Surveys.

Action 4.1. Conduct full coverage seasonally-appropriate floristic surveys over the entire project site addressing all proposed project components (refer to Comment 1.). Two to three surveys may be necessary. Please revisit and ensure the floristic surveys conform to CNPS Botanical Survey Guidelines (CNPS 2001); Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities (CDFG 2000); and Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants (USFWS 1996). Reference populations need to be visited and documented. A list of all plants observed on-site is required for floristic surveys. Include the observed plant list within the revised report or as an attachment.

Action 4.1 Response: As documented in the Biological Resources Assessment Report prepared in February 2016, and summarized in the Survey Table presented in Action 2.1 above, botanical surveys were conducted in April, May, June, August, and September 2015 to search for special status plants and characterize the onsite habitat types. Additional surveys were conducted in the winter and spring 2016, over large areas of the property, including the reservoir and operations yard locations, ranch access roads, drainage setback areas, and agricultural and grassland areas. Subsequent botanical surveys conducted in April and June 2016 along the proposed water line routes and associated roadways on both sides of Highway 166 provided additional field observations confirming special status plants were not present within the agricultural footprint or the proposed pipeline disturbance area.

The surveys were floristic in nature, covered suitable habitat areas within the study area and were conducted by qualified biologists, consistent with the CNPS, CDFW and USFWS botanical survey guidelines. This two-year survey effort covered the blooming periods of the special status species potentially present in the project area and in adjacent areas. The April 6 and 15, 2016 surveys included visits to recorded occurrences of pale yellow layia (*Layia heterotricha*) and round-leaf filaree (*California macrophylla*) along Cottonwood Canyon Road outside the project area, and were unable to relocate these occurrences. Personal communication with Mr. Dave Hacker with CDFW also occurred to discuss past observations of special status species in this area. In addition, surveys

of historic occurrences of San Joaquin wooly threads (*Monolopia congdonii*) along the old Highway 166 right of way at the northwest corner of the Ranch near the confluence of Cottonwood Canyon Creek and the Cuyama River were conducted and the species was not observed. It is important to note that the study area was visited on multiple occasions and no special status plants were observed within the agricultural footprint or areas proposed for waterline, reservoir and operations yard construction. A list of plants observed on site in 2015 and 2016 is included as an attachment.

Comment 5. Stream Delineation.

Action 5.1 Include the delineated top of bank and buffer for the ephemeral streams on Figures 2, 3, 4, and 5, as appropriate, in the revised report.

Action 5.1 Response: The buffer zones for all drainages on the southern side of the Highway are shown on Figure 7 as Annual Grassland habitat separating the agricultural blocks from the stream channels. As stated in the Biological Resources Assessment Report, KMA delineated top of banks along the onsite drainages, and established a minimum 50-foot buffer or setback along the entire length of each of the drainages. The top of bank line identified by KMA followed the top of bank definition presented in Section 15B -2 of the *Santa Barbara County Public Works Water Course Setback Ordinance*, and was based on field observation of a defined hinge point where the dominant topographic relief changed from generally level to an uninterrupted slope leading to the active portion of the channel. Using a 50-foot tape, stakes were set and numbered at intervals along each drainage to delineate the outer edge of the 50-foot buffer. Stake locations were surveyed by professional land surveyor Steve Fleming, and the survey results were used by the vineyard development team to establish the limits of agricultural uses as shown on project plans.

Subsequent field work was conducted in the spring of 2016 to delineate the jurisdictional boundaries within each proposed drainage crossing location, and the results of those surveys were reviewed in the field with CDFW in April 2016 to confirm the identification of the top of banks was consistent with their Streambed Alteration Agreement notification requirements. KMA biologists used a Trimble Geo XH 6000 GPS unit capable of decimeter accuracy to delineate the top of bank and extent of OHWM associated with the active stream channel. Boundary mapping followed the general methods outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0; U.S. Army Corps of Engineers 2008), and the *Corps of Engineers 2008 Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States*. The top of bank line was identified and mapped as described above. The jurisdictional boundaries at the six crossing points are shown on Figures 8, 9, and 10 attached to this letter. Based on the early consultation process with CDFW and USACE, the proposed drainage crossings using HDPE flexible pipe laid over ground and supported by steel supports to span the active stream channel would not require a Clean Water Act permit, but will require notifying the CDFW through the preparation of a Streambed Alteration Agreement application.

Action 5.2 If any proposed project component occurs within, above, or adjacent to the ephemeral stream (i.e., potential impacts may occur), an approved jurisdictional determination shall be prepared per U.S. Army Corps of Engineer standards and guidelines, including jurisdictional boundaries of the CDFW and Regional Water Quality Control Board.

Action 5.2 Response: As shown on Figure 7, no jurisdictional impacts are proposed for the reservoir/operations yard portion of the project. The reservoir and operations yard locations are in upland areas outside the banks of the drainages. The top of bank and the OHWM were delineated at each of the six waterline crossing sites per the methodology described in response to Action 5.1 above. Based on a site visit with CDFW representative Sarah Rains in April 2016, CDFW requires notification of the pipe being laid across the channel, and as such, a Streambed Alteration Agreement application will be submitted for the six waterline crossings south of Highway 166. The applicant will use a steel support structure to span or elevate the HDPE flexible pipe over the active stream channel, and therefore, no impacts are proposed within the OHWM of the drainages. A U.S. Army Corps of Engineers formal jurisdictional delineation and permitting pursuant to Section 404 of the Clean Water Act are not required based on the early consultation process with USACE Project Manager Ian Bordenave (personal communication with Mr. Bordenave and David Swenk of UPC). Still, USACE delineation methodologies were used to collect field data and prepare the attached Figures 8, 9 and 10.

Comment 6. Giant Kangaroo Rat.

Action 6.1 Include a mitigation measure in the revised report that states a pre-construction survey for the giant kangaroo rat will occur in late spring to search for sign (appropriate sized horizontal and vertical burrows, haystacks, seed caches, scat, tracks, etc.). If sign is observed, the U.S. Fish and Wildlife Service (USFWS) and CDFW shall be contacted to determine if trapping surveys are required for the giant kangaroo rat.

Action 6.1 Response: Surveys conducted within the project area in 2015-2016 did not find evidence of giant kangaroo rat (GKR). The recent surveys of the irrigation line routes on the north and south sides of Highway 166 conducted in April 2016 did not observe haystack caches or burrow precincts typical of this species. Furthermore, historic occurrence records to the northwest of the study area from 1979 and 1986 were also visited, and no sign of GKR was observed. Surveys did observe sign of Heermann's kangaroo rat (*Dipodomys heermannii*) and common pocket gopher (*Thomomys bottae*) in select areas along the lower river terraces north of Highway 166. The pressure main line routes either follow the reservoir fill line routes, or are within disturbed agricultural lands. The three pressure line drainage crossings not associated with irrigation line crossings were surveyed in June 2016 during jurisdictional delineation efforts. No sign of GKR was observed in these three areas, two of which are immediately adjacent to existing road crossings.

The agricultural activities onsite have removed all potential habitat for GKR from the reservoir sites and operations yard, as well as the majority of the proposed waterline corridor. In addition, laying the HDPE pipes above ground and spanning the drainage features is not expected to adversely impact GKR if they were present since the lines will be installed by farm personnel on foot and no earth disturbance other than keying the span support into the slope with hand tools is proposed.

Still, a condition could be included that requires a preconstruction survey immediately prior to earth disturbing activities in annual grassland habitat associated with the waterlines spanning the drainage features on the south side of Highway 166. As stated above, based on the analysis to date, it appears highly unlikely that GKR are present within the proposed project area, and would not be expected to be impacted by the reservoir and operations yard project since the area is being actively farmed.

Comment 7. San Joaquin Kit Fox.

Action 7.1 An early evaluation for the San Joaquin kit fox is required per the 1994 USFWS protocol for the fox. Once completed, it is recommended that the USFWS and CDFW be contacted and concur with KMA evaluation findings. Please include the evaluation and any agency coordination in the revised report.

Action 7.1 Response: As discussed in the Biological Resources Assessment Report, repeated surveys did not observe evidence of SJKF presence or potential SJKF den sites in or near the project area. The project site is within the historic range of the species, and it is possible that a SJKF, if present in the region, could move through the project area during foraging or migration activities. The lack of a well-developed prey base and no suitable denning habitat within the project area (i.e.: the agricultural activities have removed all suitable habitat and the disking removes potential small mammal prey base and potential den sites), however, indicate a very low potential for this species to occur. The last recorded occurrences of this species in the immediate area are from 1975, and ongoing agricultural operations would have restricted any recent denning activities to either higher elevations of the property or riverbank/terrace areas outside the proposed disturbance footprint. Therefore, the early evaluation process was determined to not be necessary for implementation of this project. It is assumed that SJKF could potentially occur in the greater area, and implementation of the USFWS recommended avoidance measures is considered sufficient to ensure that SJKF is not adversely affected by project construction and long-term agricultural activities on the property.

Action 7.2 Please revise the attached avoidance measures to identically reflect the USFWS (2011) standard recommendations or attach the standard recommendations in its entirety to the revised report.

Action 7.2 Response: The USFWS 2011 Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance are included as an attachment to this report.

Thank you for the opportunity to provide environmental consulting services for this project. If you have any questions regarding the above findings, please contact Kevin Merk directly by phone at 805-748-5837 or via email at kmerk@kevinmerkassociates.com.

Sincerely,
KEVIN MERK ASSOCIATES, LLC

Kevin B. Merk
Principal Biologist

Robert Sloan
Senior Biologist

Attachments *Figure 7 – Project Details and Habitats*
Figures 8, 9, and 10 - Jurisdictional Boundaries at Crossing Locations
Photo Plate of Crossing Sites and Proposed Pipe Crossings
List of Plants Observed During Surveys of the Site
BNLL Survey Summary Table
BNLL Surveyor Resumes
USFWS *Standardized Recommendations for San Joaquin Kit Fox*

Source(s) : ESRI and it's data providers ; Tom A. Howell, PE

Property Boundary
Proposed Irrigation Reservoirs
Proposed Reservior Fill Lines
Proposed Pressure Mains
Drainage Centerline
Well Location

Habitat

Agriculture
Annual Grassland
Mixed Oak Woodland
Riparian Scrub
Ruderal/Disturbed

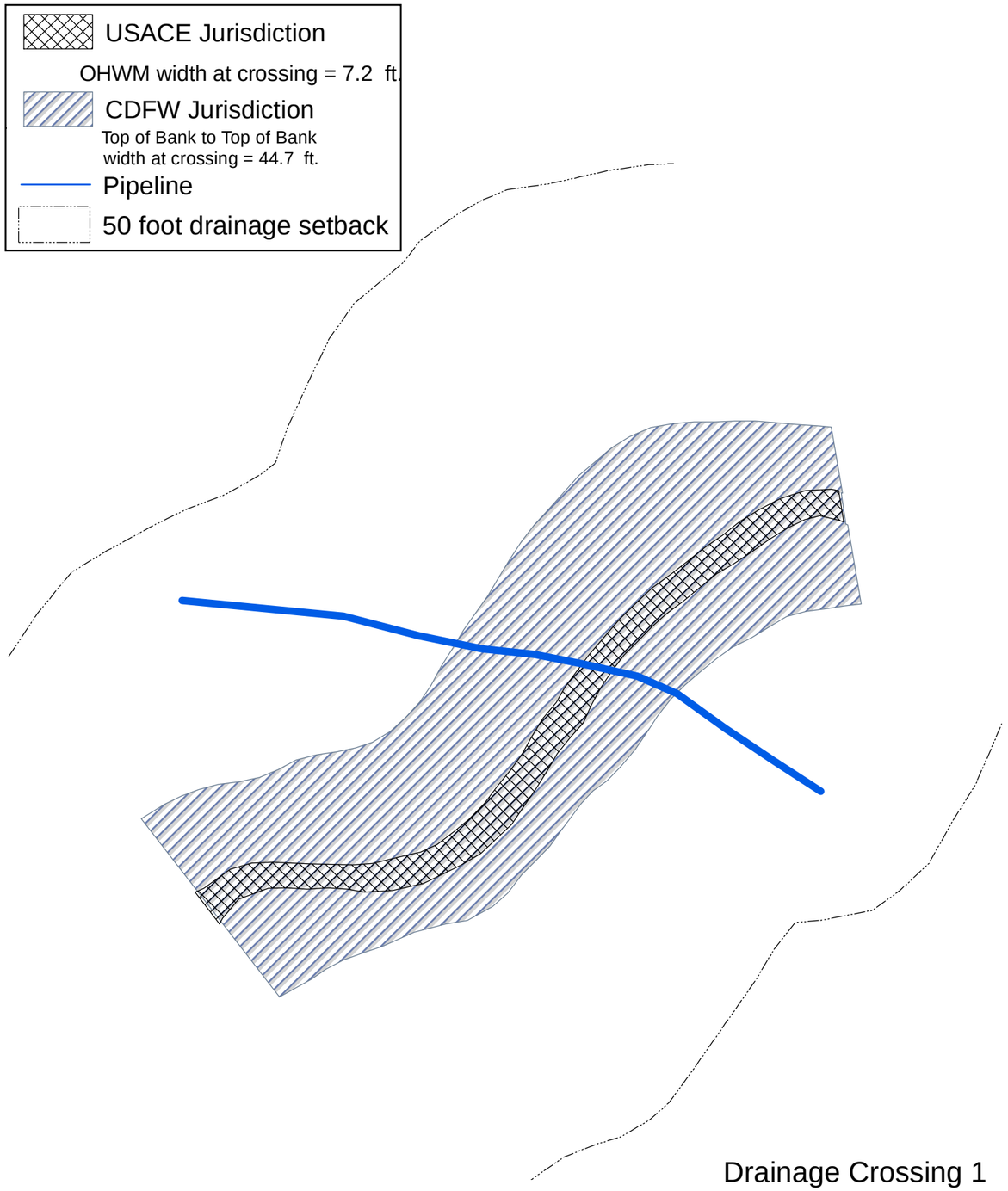
Cuyama River
CA-166
Crossing 6
Crossing 5
Crossing 4
Crossing 3
Operations Yard
(~ 5 acres)
Crossing 2
Crossing 1
Reservoir 3
(~4.7 acres)
Reservoir 2
(~5.4 acres)
Reservoir 1
(~4.9 acres)
Cottonwood Canyon Rd
Schoolhouse Canyon Rd

KMA
KEVIN MERK ASSOCIATES

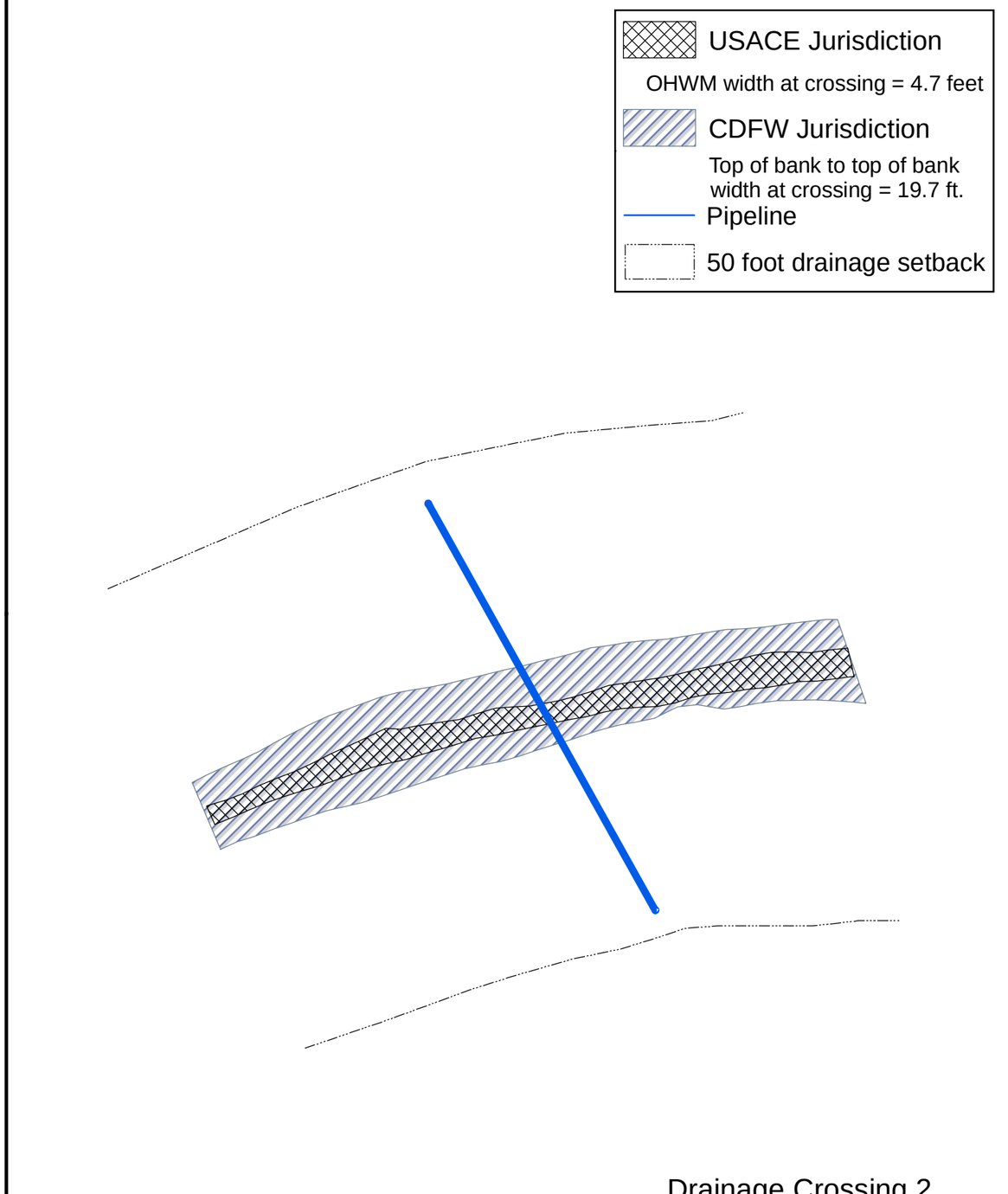
1 in = 2,000 ft
0 1,250 2,500 5,000
Feet

North Fork Ranch
Mesa Vineyard Management

Figure 7
Project Details and Habitats



Drainage Crossing 1



Drainage Crossing 2

KEVIN MERK ASSOCIATES

N
W E
S

1 in = 25 ft

0 0.00275 0.0055 0.011
Miles

North Fork Ranch

Mesa Vineyard Management

Figure 8

Drainage Crossings 1 and 2

USACE Jurisdiction

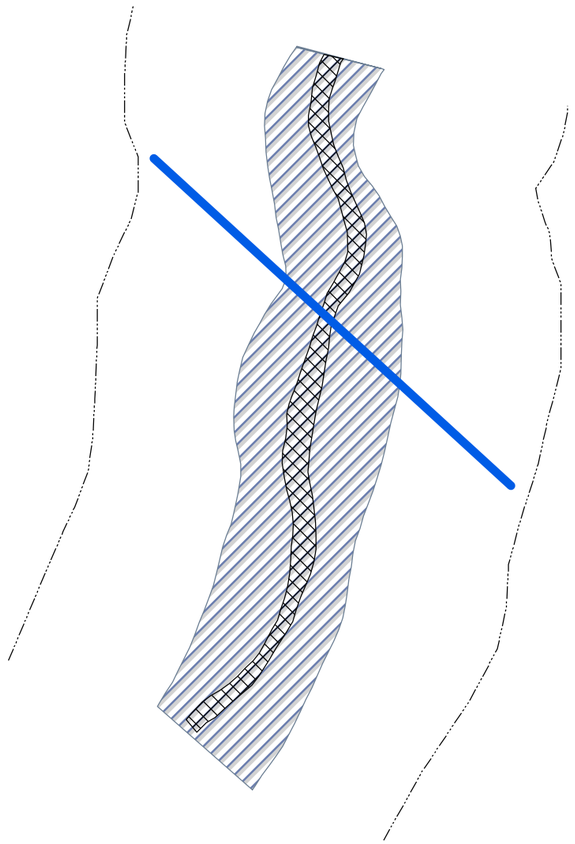
OHWM width at crossing = 7.5 ft.

CDFW Jurisdiction

Top of Bank to Top of Bank width at crossing = 53.6 ft.

Pipeline

50 foot drainage setback



Drainage Crossing 3

USACE Jurisdiction

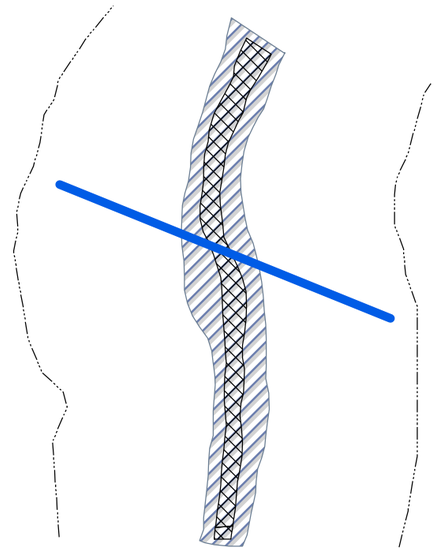
OHWM width at crossing = 6.9 ft.

CDFW Jurisdiction

Top of Bank to Top of Bank width at crossing = 27.3 ft.

Pipeline

50 foot drainage setback



Drainage Crossing 4

KEVIN MERK ASSOCIATES

N W E S

1 in = 50 ft

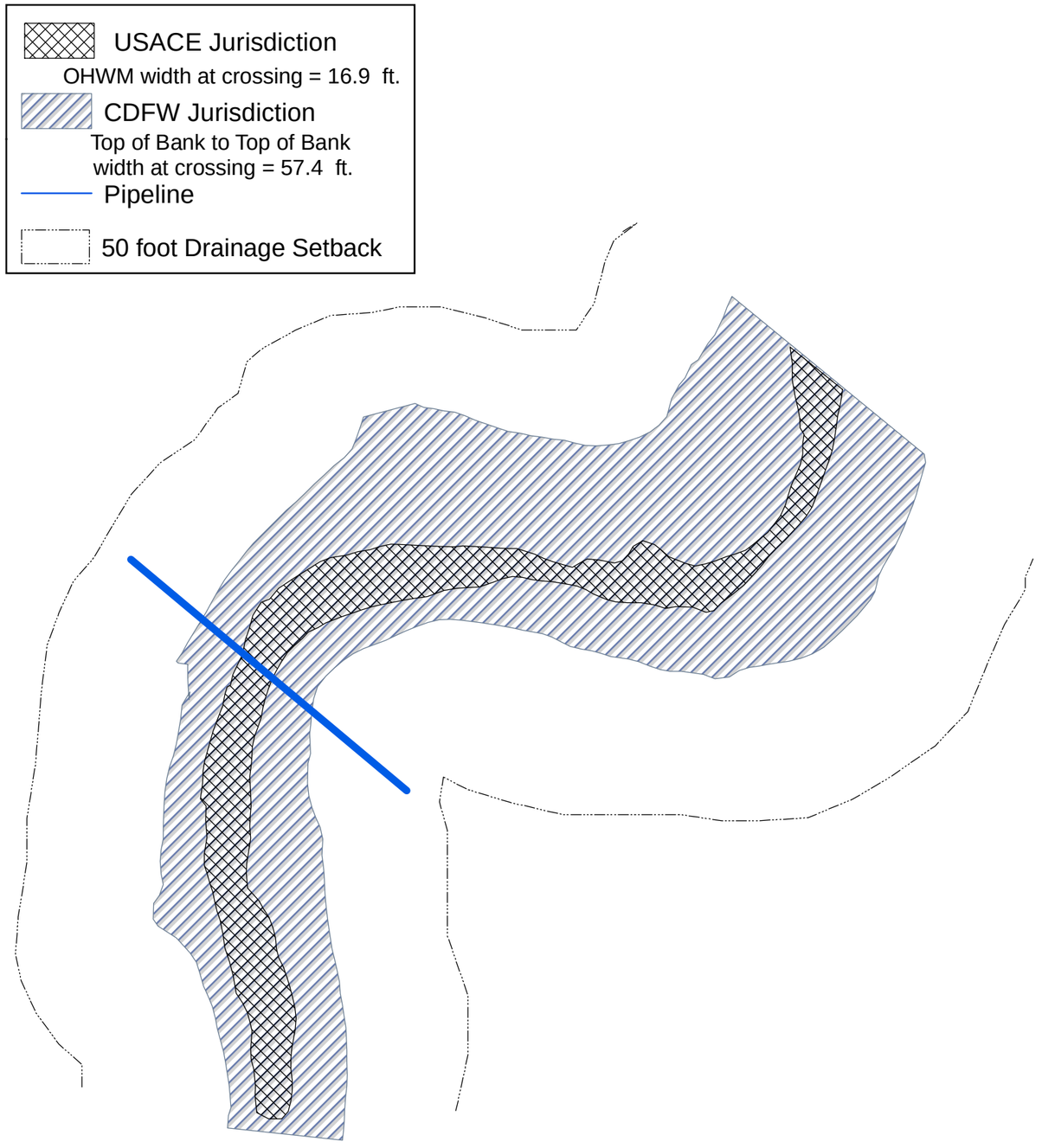
0 0.005 0.01 0.02 Miles

North Fork Ranch

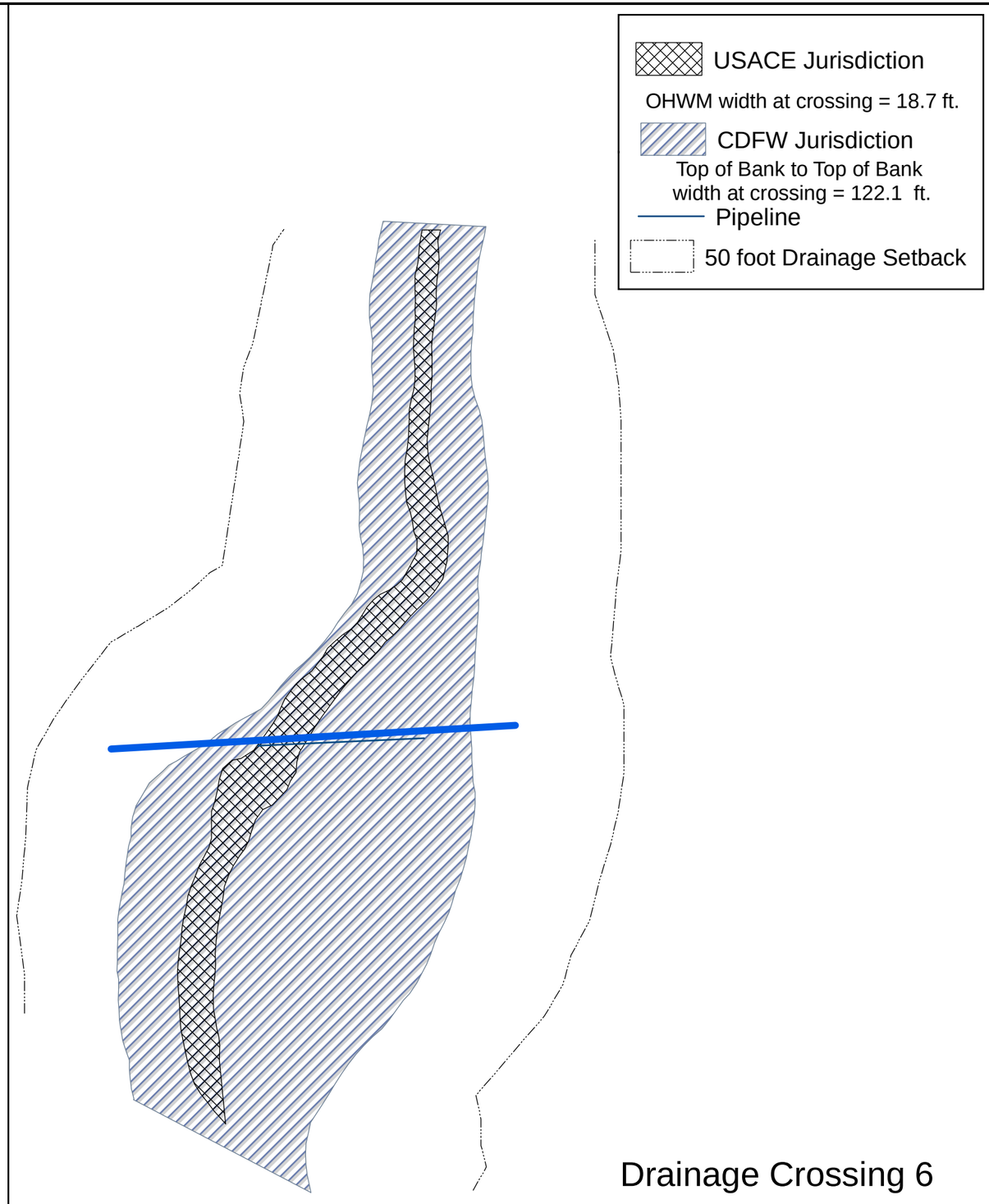
Mesa Vineyard Management

Figure 9

Crossings 3 and 4



Drainage Crossing 5



Drainage Crossing 6

KEVIN MERK ASSOCIATES

N W E S

1 in = 50 ft

0 0.005 0.01 0.02 Miles

North Fork Ranch

Mesa Vineyard Management

Figure 10

Crossings 5 and 6

Photo Plate

Photo 1. View of Crossing #1, looking upstream. Note narrow active channel section to be avoided by suspending waterlines above the banks.

Photo 2. View of Crossing #2, looking upstream. Crossing alignment will be at downstream edge of road. Note flat, shallow channel configuration at this location.

Photo 3. View of Crossing #3, looking upstream. Crossing alignment will be at downstream edge of road.

Photo 4. View of Crossing #4, looking upstream. Crossing alignment will be at downstream edge of road.

Photo 5. View of Crossing #5, looking upstream. Note flat, shallow active channel area and steep upper bank configuration.

Photo 6. View of Crossing #6, looking upstream. Crossing alignment will be at downstream edge of road.

Photo 7. Overview of planted cover crop surrounding proposed Reservoir 2 with operations yard in the distance.

Photo 8. Overview of proposed Reservoir 3 (visible as bare soil area) with planted cover crop in flats and annual grassland on the slope in the foreground. Schoolhouse Canyon Road is visible in the distance.

Photo 9. Representative photo from another site showing the flexible HDPE pipe to be laid above ground over the drainage features.

Photo 10. Representative photo of how waterline with valves will "daylight" outside top of bank of drainages. Flexible HDPE pipe will be attached and then run overland at drainage crossings.

Photo 11. Representative photo illustrating connection of HDPE pipe and underground pipe.

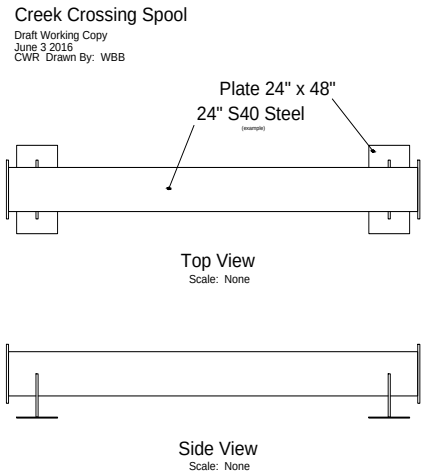


Photo 12. HDPE pipes will span active stream channels using the 20' long steel supports shown above.

List of Plants Observed During 2015 and 2016 Field Surveys.

Scientific Name	Common Name
Amsinckia intermedia	Common fiddleneck
Atriplex lentiformis	Brewer's saltbush
Atriplex spinifera	Spinescale saltbush
Astragalus douglasii	Douglas's milkvetch
*Avena barbata**	Slender wild oats
Baccharis pilularis	Coyote brush
*Bromus madritensis**	Red brome
*Carduus pycnocephalus**	Italian thistle
Castilleja exserta	Owl's clover
Chaenactis glabriuscula	Yellow pincushion
*Chenopodium album**	Goosefoot
Cucurbita palmata	Coyote melon
Delphinium parryi ssp. *parryi*	Parry's larkspur
Dichelostemma capitatum	Blue dicks
Encelia californica	Bush sunflower
Eriodictyon tomentosum	Wooly yerba santa
Eriogonum gracile	Slender buckwheat
Eriophyllum confertiflorum	Golden yarrow
*Erodium cicutarium **	Red-stemmed filaree
*Hirschfeldia incana**	Summer mustard
*Hordeum murinum**	Foxtail
Juniperus californicus	California juniper
Lasthenia gracilis	Needle goldfields
Layia platyglossa	Tidy tips
Lepidium nitidum	Pepper grass
Lepidospartum squamatum	California broomsage
*Malva parviflora**	Cheeseweed
Marrubium vulgare	White horehound
*Medicago polymorpha**	Bur clover
Monolopia lanceolata	Common monolopia
Phacelia distans	Common phacelia
Plagiobothrys canescens	Valley popcorn flower
Platanus racemosa	Western sycamore (planted as windrow)
Pluchea sericea	Arrow weed
Poa secunda	Bluegrass
Populus fremontii	Fremont cottonwood (Cottonwood Cyn and in windrow)
Quercus douglasii	Blue oak
Quercus john-tuckeri	Tucker oak
*Salsola tragus**	Russian thistle
Sambucus nigra ssp. *caerulea*	Blue elderberry
*Schismus arabicus**	Arabian schismus
*Silene gallica**	Common catchfly
*Sisymbrium altissimum**	Tumble mustard
*Sonchus asper**	Prickly sow thistle
Stanleya pinnata	Prince's plume
*Tamarix ramosissima**	Saltcedar
Thysanocarpus laciniatus	Narrow-leaved lacepod

*Asterisk identifies non-native species.

TABLE 1: North Fork Ranch BNLL Phase I Survey Data Summary Table

Survey Number and Date	Survey Time Start / End (2400 hrs)	Air Temp Start / End (°F)	Ground Temp Start / End (°F)	Wind Speed Start / End (mph)	Cloud Cover Start / End (%)	BNLL Observed	Other Reptile Observations	BNLL Surveyor / Level
Spring – Summer Surveys								
1) 04/29/15	1000/1320	80.0/95.2	82/101.8	5.0/5.0	0/0	None	6x *Uta stansburiana* 4x *Aspidoscelis tigris* *1x Thamnophis sirtalis* *1x Phrynosoma blainvillii*	K. Merk / I J. Kirschenstein / II
2) 05/28/15	0930/1400	77.0/89.0	74.0/94.6	6.0/3.0	0/0	None	14x *Uta stansburiana* 3x *Aspidoscelis tigris*	K. Merk / I J. Kirschenstein / II
3) 06/08/15	0845/1200	87.8/95.5	86.9/101.3	2.8/6.5	5/0	None	8x *Uta stansburiana*	K. Merk / I J. Kirschenstein / II
4) 06/12/15	0815/1215	79.0/95.0	78.6/99.6	3.0/4.5	0/0	None	7x *Uta stansburiana* 5x *Aspidoscelis tigris* *1x Thamnophis sirtalis*	K. Merk / I J. Kirschenstein / II
5) 06/24/15	0845/1245	77.9/92.5	80.0/96.0	3.0/2.0	0/0	None	10x *Uta stansburiana* *1x Phrynosoma blainvillii*	K. Merk / I J. Kirschenstein / II
6) 06/26/15	0815/1130	77.4/95.0	72.0/98.0	3.0/5.0	10/5	None	8x *Uta stansburiana* *7x Aspidoscelis tigris*	K. Merk / I J. Kirschenstein / II
7) 07/03/15	0800/1130	77.0/95.5	72.5/99.8	0/3.0	0/0	None	9x *Uta stansburiana* *3x Aspidoscelis tigris*	K. Merk / I J. Kirschenstein / II
8) 07/06/15	0900/1400	78.2/94.0	74.0/98.5	2.0/5.0	<5/0	None	8x *Uta stansburiana* *8x Aspidoscelis tigris*	K. Merk / I J. Kirschenstein / II
9) 07/08/15	0915/1345	77.3/86.0	72.0/90.5	3.0/4.5	<5/5	None	10x *Uta stansburiana* *5x Aspidoscelis tigris*	K. Merk / I J. Kirschenstein / II
10) 07/10/15	1000/1400	77.0/84.0	72.0/87.5	5.0/7.0	20/15	None	9x *Uta stansburiana* *2x Aspidoscelis tigris*	K. Merk / I J. Kirschenstein / II
11) 07/14/15	0900/1330	77.5/89.0	73.5/93.2	3.0/5.0	5/0	None	12x *Uta stansburiana* *3x Aspidoscelis tigris*	K. Merk / I J. Kirschenstein / II
12) 07/15/15	0950/1345	77.0/86.2	73.4/91.5	3.0/7.0	5/5	None	14x *Uta stansburiana* *1x Aspidoscelis tigris*	K. Merk / I J. Kirschenstein / II

Survey Number and Date	Survey Time Start / End (2400 hrs)	Air Temp Start / End (°F)	Ground Temp Start / End (°F)	Wind Speed Start / End (mph)	Cloud Cover Start / End (%)	BNLL Observed	Other Reptile Observations	BNLL Surveyor / Level
Fall Hatchling Surveys								
13) 09/01/15	0950/1330	77.0/86.0	68.0/89.5	3.0/6.5	0/<5	None	36x *Uta stansburiana* *1x Aspidoscelis tigris*	K. Merk / I J. Kirschenstein / II
14) 09/07/15	0900/1215	77.0/95.0	73.0/99.0	5.5/3.0	<5/5	None	32x *Uta stansburiana* *1x Aspidoscelis tigris*	K. Merk / I J. Kirschenstein / II
15) 09/11/15	0900/1230	80.0/95.3	76.0/101.3	3.5/5.0	30/20	None	31x *Uta stansburiana*	K. Merk / I J. Kirschenstein / II
16) 09/13/15	0845/1350	77.0/93.5	71.5/98.8	3.0/7.0	20/15	None	31x *Uta stansburiana* *1x Aspidoscelis tigris*	K. Merk / I J. Kirschenstein / II
17) 09/14/15	1215/1400	77.0/86.0	75.0/82.5	6.0/7.5	60/70	None	36x *Uta stansburiana* *2x Aspidoscelis tigris*	K. Merk / I J. Kirschenstein / II
18) 09/15/15	1130/1330	77.0/84.2	86.0/87.8	4.0/7.0	20/30	None	35x *Uta stansburiana*	K. Merk / I J. Kirschenstein / II
General Notes: Black-tailed jackrabbit, elk, coyote, bobcat, American badger, kangaroo rat, California ground squirrel, gopher, raccoon, lark sparrow, mourning dove, California quail, and common raven individuals and/or sign also observed within the survey area.								

Kevin Merk Associates, LLC

KEVIN B. MERK
Principal Biologist

Kevin Merk is the founding principal of Kevin Merk Associates, LLC. With over 20 years of environmental consulting experience, Kevin has directed, managed, and conducted hundreds of natural resource and environmental studies throughout California. Mr. Merk has a diverse background in the biological sciences with expertise in plant taxonomy, quantitative vegetation analysis, habitat classification/evaluation procedures, surveys for special status species, habitat restoration and biotechnical erosion control. His work experience includes general biological and species-specific surveys, U.S. Army Corps of Engineers and California Coastal Commission wetland delineations, as well as permit acquisition and regulatory compliance. He has prepared, implemented and monitored Habitat Conservation Plans and habitat mitigation/restoration projects throughout California. Mr. Merk is a well-versed regulatory specialist that provides a balance between rigorous scientific documentation, environmental regulatory requirements and project development goals and objectives.

TECHNICAL CAPABILITIES

- Mr. Merk has an in-depth knowledge of the California flora and protocols for surveying rare, threatened and endangered plant species.
- He has conducted floristic surveys and mapped vegetation communities for private, state and local government clients including California State Parks, California State University System, Fort Ord Reuse Authority, Cities and Counties of Monterey, San Luis Obispo, and Santa Barbara, and Cities of Arroyo Grande, Lompoc, Sand City, Santa Maria and Scotts Valley.
- Mr. Merk has also conducted rare wildlife surveys throughout California for species such as the California tiger salamander, California red-legged frog, western spadefoot toad, legless lizard, horned lizard, burrowing owl and other raptors and nesting birds.
- Mr. Merk has conducted multi-parameter wetland delineations throughout the state including within the Coastal Zone, and is an expert in environmental regulation compliance (e.g., Endangered Species Act, Clean Water Act, Coastal Development Act, California Department of Fish and Game Code, Porter-Cologne Act).

EDUCATION, CERTIFICATIONS, REGISTRATIONS

B.A. Biology (Plant Sciences), University of California, Santa Cruz
40 Hour OSHA HAZWOPER Training and 8 eight-hour annual refresher courses
Hydrogeomorphic Approach to Functional Assessment of Riverine Waters/Wetlands in the South Coast Region of Santa Barbara County
Biology and Handling Trainings for California red-legged frog, California tiger salamander, and Santa Cruz long-toed salamander
U.S. Army Corps of Engineers Wetland Delineation Training
California Native Plant Society
California Botanical Society
California Invasive Plant Council
Society for Ecological Restoration
American Public Works Association
International Erosion Control Association
Wildlife Society, Western Chapter

EMPLOYMENT HISTORY

Kevin Merk Associates, LLC, Founding Principal Biologist (2011 through present)
Rincon Consultants, Inc., Biological Program Manager (2000-2011)
Zander Associates, Senior Botanist/Restoration Ecologist (1995 through 2000)
University of California, Santa Cruz Natural Resource Assessment Group, Botanist (1993-1995)
Greening Associates, Restoration Ecologist (1991-1992)

REPRESENTATIVE PROJECT EXPERIENCE

Conservation Planning

- North of Playa Habitat Conservation Plan for the Smith's blue butterfly, Sand City.
- Mahoney Ranch Habitat Conservation Plan for the California tiger salamander (CTS) and California red-legged frog (CRLF), Santa Maria.
- Highway 46 Corridor Improvement Section 7 and 2081 Authorization for San Joaquin kit fox, San Luis Obispo County.
- Rancho Larios Subdivision Section 7 Consultation for CTS and CRLF, San Benito County.
- Union Valley Parkway Section 7 Consultation for CTS and CRLF on the Union Valley Parkway Project, Santa Maria.
- Salinas Road Interchange Section 7 Consultation for CTS and CRLF, Monterey County.
- Silver Creek Valley Country Club Section 7 Consultation for Bay checkerspot butterfly, San Jose.

Biological Resources Assessments

- Froom Ranch, mapped/classified vegetation, conducted rare plant and CRLF surveys, delineated USACE wetlands and CDFW jurisdictional areas, supporting design team during planning and CEQA review process, San Luis Obispo.
- More Mesa, conducted rare plant surveys, mapped vegetation communities and delineated USACE and Coastal Commission wetlands, Santa Barbara County.
- May Family Trust Property, mapped/classified vegetation, conducted rare plant surveys, delineated USACE wetlands, and assisted design team during planning and CEQA review process, San Luis Obispo County.
- Harmony Ranch, mapped/classified vegetation, conducted rare plant and California red-legged frog surveys, delineated USACE and Coastal Commission wetlands, and assisted design team during development planning process, San Luis Obispo County.
- Mormann Property, mapped/classified vegetation and conducted rare plant surveys, San Luis Obispo County.
- Laetitia Winery Improvement Project, rare plant surveys, CRLF surveys, and USACE wetland delineation, San Luis Obispo County.
- Santa Rosa Creek Trail, rare plant surveys and habitat assessments for California red-legged frog, pond turtle, steelhead and tidewater goby, Cambria.
- Pecho Valley Road Property vegetation classification, rare plant surveys and USFWS protocol Morro shoulderband snail surveys, Los Osos, San Luis Obispo County.

Focused Botanical Surveys

- Bradley Ranch Botanical Inventory and Wetland Delineation, Santa Maria.
- Entrada de Paso Robles Botanical Inventory, Paso Robles.
- Pismo Lake Ecological Reserve Botanical Inventory, San Luis Obispo County.
- Harmony Headlands Botanical Inventory, California State Parks.
- Sheridan Lane Botanical Inventory, San Luis Obispo County.

- Chevron Estero Marine Terminal Rare Plant Surveys and Wetland Delineation, San Luis Obispo County.
- Biddle Ranch Rare Plant Surveys and Wetland Delineation, San Luis Obispo County.
- Tract 1998 Rare Plant Surveys (Pismo Clarkia), Arroyo Grande.
- James Way Fuel Modification Project Rare Plant Surveys, Arroyo Grande.
- Highland Ranch Rare Plant Surveys, San Luis Obispo County.
- San Miguel Ranch Rare Plant Surveys and Wetland Delineation, San Luis Obispo County.
- Continental Vineyards Rare Plant Surveys and Wetland Delineation, San Luis Obispo County.
- Chandler Ranch Rare Plant Surveys, Paso Robles.
- Focused surveys for the rare Morro Manzanita in Los Osos.

Focused Animal Surveys

- SoCalGas Lines 300 and 90 Pipeline Removal Project Protocol Blunt-Nosed Leopard Lizard Surveys, Avenal, Kings County.
- SoCalGas Lincoln Street Pipeline Replacement Project Protocol Blunt-Nosed Leopard Lizard Surveys, Kern County.
- Tulare County Property Protocol Blunt-Nosed Leopard Lizard Surveys, Tulare County.
- North Fork Ranch Protocol Blunt-Nosed Leopard Lizard Surveys, San Luis Obispo and Santa Barbara Counties.
- Salinas Road Interchange Project, Caltrans Designated Biologist conducted California red-legged frog and California tiger salamander aquatic surveys. Captured and relocated over 10,000 life stages of California red-legged frog during construction, Monterey County.
- Santa Maria Integrated Waste Management Facility, USFWS protocol Vernal Pool Branchiopod and CTS Surveys (upland and aquatic) on 1,770-acre site, northern Santa Barbara County.
- Mahoney Ranch USFWS protocol California red-legged frog and California tiger salamander surveys, Santa Maria, Santa Barbara County.
- Biddle Ranch USFWS CRLF surveys and CTS habitat assessment, San Luis Obispo County
- Union Valley Parkway USFWS CRLF and CTS surveys (upland and aquatic), Santa Maria.
- Monarch butterfly annual population censusing surveys in Santa Cruz County, UCSC.
- Birch Street Project, USFWS CRLF surveys and Monarch butterfly habitat assessment, and riparian restoration plan in support of Coastal Development Permit, Cayucos.
- San Joaquin Kit Fox Habitat Evaluations and USFWS protocol surveys for numerous projects (winery expansion, residential subdivisions, linear utilities and transportation, telecommunication), northern San Luis Obispo County and southern Monterey County.

CEQA and NEPA Compliance Documents (primary author of Biological Resources Sections)

- Ahmanson Ranch General Plan Amendment and Specific Plan EIR, Ventura County.
- Rancho Maria Estates EIR Biological Resources Section, Santa Barbara County.
- Union Valley Parkway EIR/EA, City of Santa Maria.
- Santa Maria Integrated Waste Management Facility EIR, City of Santa Maria.
- Santa Maria Airport Specific Plan EIR, City of Santa Maria.
- Mahoney Ranch Environmental Assessment (EA), City of Santa Maria.
- Tract 1998 Rancho Grande EIR and supplements, City of Arroyo Grande.
- Biddle Ranch Agricultural Cluster Subdivision EIR, San Luis Obispo County.
- General Plan Land Use and Conservation Element Update EIR, City of San Luis Obispo.
- Chevron Estero Marine Terminal Source Removal Project EIR, San Luis Obispo County.
- Downtown Specific Plan EIR, City of Scotts Valley, Santa Cruz County.

Restoration Ecology and Regulatory Compliance Monitoring

- Los Angeles International Airport, prepared and implemented Ecological Landscape Plan for Coastal Development Permit to allow street removal and coastal dune habitat restoration in the northern El Segundo Dunes, Los Angeles World Airports.
- Surfer's Point Shoreline Retreat Project, prepared Coastal Dune Habitat Restoration Plan in support of Coastal Development Permit acquisition, City of Ventura.
- Cross Creek Bridge Replacement, prepared and implemented riparian habitat restoration plan, monitored construction and restoration activities in support of Coastal Development Permit, Malibu, Los Angeles County.
- Cherry Creek Residential Development, conducted USACE wetland delineation, prepared USACE, CDFG, and RWQCB permit applications including riparian and wetland habitat restoration plan, and provided biological monitoring during construction, Arroyo Grande
- California State University, Channel Islands, biological studies and wetland delineation, prepared riparian and wetland habitat mitigation program as part of USACE, CDFG and RWQCB permit applications, monitored construction, implemented habitat mitigation program and provided annual monitoring for five years, Ventura County.
- Damon Garcia Sports Complex Project, conducted focused studies including CRLF surveys and wetland delineation, prepared riparian/wetland habitat mitigation program as part of USACE, CDFG and RWQCB permit applications, monitored construction and implemented habitat mitigation program (i.e.: weed abatement and planting), City of San Luis Obispo.
- Bret Harte Unified High School District Sports Fields Complex, conducted wetland delineation, prepared riparian/wetland habitat mitigation plan as part of USACE, CDFG and RWQCB permit applications, Calaveras County.
- Salinas Regional Sports Authority Soccer Complex Project, conducted wetland delineation and prepared riparian and wetland habitat mitigation plan, City of Salinas.
- Highway 46 East Improvement Project, Senior Biologist overseeing environmental permit compliance during construction, Caltrans , San Luis Obispo County.
- Union Valley Parkway, prepared EIR/EA, BA, facilitated ESA Section 7 Consultation, and then was the Designated Biologist overseeing environmental permit compliance during construction, Caltrans/City of Santa Maria Local Assistance Project.
- Biddle Ranch Agricultural Cluster Subdivision Project, County of San Luis Obispo designated environmental monitor overseeing construction of roads and infrastructure improvements.
- Santa Maria River Mining, CDFW and Department of Conservation permit acquisition, riparian habitat restoration plan preparation and annual monitoring and permit compliance reporting, City of Santa Maria.

Teaching

- Workshop Instructor - California Native Plant Society Rare Plants and Habitats of San Luis Obispo County (separated into coastal and inland sections).
- Workshop Instructor/Field Coordinator - Elkhorn Slough Coastal Training Program's Management and Conservation of Coastal Grasslands.
- Guest lecturer – CalPoly San Luis Obispo Natural Resource Management and Landscape Architecture Departments.
- Lab Instructor - Ecology of California Flora, Plant Anatomy, Plant Taxonomy, Plant Physiology, Mycology, and Plants and Human Affairs, University of California, Santa Cruz.
- Presenter - Association of Environmental Professionals state and national conferences; Society of Ecological Restoration annual conferences, and International Erosion Control Association conferences.

Professional Resume

Jason Kirschenstein
Principal Biologist, Vice President

EMPLOYMENT HISTORY

2003 to present
Principal Biologist / Vice President
Sage Institute, Inc.

1998 to 2003
Biologist / Project Manager
Rincon Consultants, Inc.

2000 to 2002
Dendrology Instructor
California Polytechnic State University

1995 to 1998
Research Assistant
California Polytechnic State University

EDUCATION, AFFILIATIONS, PERMITS

B.S., Forestry and Natural Resource Management / Wildlife Biology, California Polytechnic State University, San Luis Obispo

Association of Environmental Professionals, Audubon Society, Wildlife Society

Southwestern Willow Flycatcher Workshop and Certification

CDFW Blunt-Nosed Leopard Lizard Identification Workshop and Certification (Level II surveyor)

Giant Kangaroo Rat Identification/Handling Workshop and Certification

USFWS-approved monitor for various San Joaquin Valley listed species, CA Red-Legged Frog, steelhead, Southwestern Willow Flycatcher, and Least Bell's Vireo

State Rare, Threatened, Endangered plant collection permit

Venomous and non-Venomous snake handling training and certification, 2015

FERC Environmental Review and Compliance Training Certification

Santa Barbara County and San Luis Obispo County pre-approved biological resources consultant.

Morro Shoulderband Snail Protocol Survey Training

Jason Kirschenstein serves is a Principal Biologist and Vice President for Sage Institute, Inc. (SII). Mr. Kirschenstein is highly experienced in general and special-status wildlife and vegetation surveys, mitigation planning, regulatory compliance, Geographic Information System (GIS) applications, and environmental impact analysis. Mr. Kirschenstein is well versed in the planning process, and has successfully performed as an integral member on planning and design teams. He has provided biological and regulatory compliance services for local agencies, utilities, and private development projects.

Mr. Kirschenstein has conducted numerous biological surveys and is experienced in preparing biological assessments related to flora, fauna, endangered species, and sensitive habitats. Mr. Kirschenstein is well versed in construction and mitigation monitoring and habitat restoration design / implementation.

Mr. Kirschenstein has extensive experience in the preparation of permit packages for Clean Water Act Section 404 U.S. Army Corps of Engineers permits, CWA Section 401 Certifications from the Regional Water Quality Control Board, and California Department of Fish and Wildlife Section 1602 Streamed Alteration Agreements. Mr. Kirschenstein has also managed the preparation of U.S. Fish and Wildlife Service Section 7 and Section 10 documentation per the Federal Endangered Species Act and CDFW Section 2081 take authorization documentation per the California Endangered Species Act. Mr. Kirschenstein has worked closely with local agencies on permitting and environmental compliance projects, and is proficient in CEQA and NEPA analysis.

With over sixteen years of experience working with various GIS applications, Mr. Kirschenstein's capabilities range from habitat suitability mapping to performing complex constraints analyses. He has worked closely with various public agencies and private interests to obtain and properly manage GIS data. Mr. Kirschenstein's proficiency with advanced GPS technology, AutoCAD applications, image processing software, database management, and other GIS-related equipment enhances his overall GIS production and management capabilities.

SELECTED PROJECT EXPERIENCE

- **Sempra Energy (Southern CA Gas Company / San Diego Gas and Electric)** – Clean Water Act, Endangered Species Act, SWPPP, and local agency environmental compliance for operation, maintenance, capital, and Pipeline Integrity projects (2003 – ongoing).
  - Programmatic Compliance Efforts**:** Programmatic permit compliance efforts in Southern California, San Joaquin Valley, California Desert, and Coastal California. Performed as key team member for regional Biological Opinion and HCP planning and implementation efforts.
  - Transmission, Distribution, PSEP, and PIP Services: Biological impact assessments, permit facilitation, agency negotiations, construction monitoring, site restoration, and compliance assistance for State and Federal Endangered Species Acts, Sections 401 and 404 of the Clean Water Act, and CDFW 1600.
  - Construction Monitoring: Lead construction monitor for various Capital Improvement and maintenance (Transmission, Distribution, and Pipeline Integrity) projects. Duties include permit compliance oversight and construction monitor coordination and reporting.
- **Southern California Gas Company, San Joaquin Valley Programmatic Compliance Efforts and Draft Habitat Conservation Plan (2003-ongoing).** Assisted SoCalGas for over 12 years in implementing, amending, and reporting for a San Joaquin Valley Biological Opinion covering operations and maintenance (O&M), and new construction activities on its natural gas pipeline system within Kern, Tulare, Fresno, Kings, San Luis Obispo, Santa Barbara, and Ventura counties. Services include project specific Biological Assessments, special-status plant and wildlife surveys, construction monitoring, and general regulatory compliance services. In 2014/2015 assisted in preparation of draft Habitat Conservation Plan for a 30-year FESA take permit covering 21 species in the San Joaquin Valley, including development of a comprehensive predictive species GIS model.
- **SoCalGas, Line 300 and Line 90 Pipeline Removal Project, Avenal and Kings Counties (March 2013 – December 2013).** Protocol blunt-nosed leopard lizard surveys for 1.5-mile pipeline abandonment and removal project in the Kettleman Hills. Surveys also included presence / absence for San Joaquin kit fox, San Joaquin antelope squirrel, burrowing owl, and special-status plants including California jewelflower and San Joaquin woollythreads. Serviced as lead construction monitor, conducted San Joaquin kit fox den closure along project alignment, and assisted with field effort and coordinated giant kangaroo rat trapping efforts.
- **Southern CA Gas Company, Line 85 Pipeline Replacement Project, Kern and Los Angeles Counties (2003-2004)** Lead biological construction monitor for 20+ mile pipeline replacement project extending from the southern San Joaquin Valley to Frazier Park. Duties included conducting focused surveys for blunt-nosed leopard lizard, San Joaquin kit fox, rare plants, and nesting birds.
- **Southern CA Gas Company, Line 119 PIP Pipeline Replacement Project, Angeles National Forest (June 2012 – October 2014).** Regulatory compliance and permitting, construction monitoring and post-construction permit compliance reporting. Included field GPS data collection along the 1.5 mile project alignment adjacent to Pyramid Lake.
- **Southern CA Gas Company, Lincoln Street Pipeline Replacement, Kern County (April 2013 – May 2014; SoCalGas Contact Johnny Grady).** Regulatory compliance and permitting, general biological surveys and protocol blunt-nosed leopard lizard and San Joaquin antelope squirrel surveys.
- **Southern CA Gas Company, Avenal Creek Exposure Repair, Kings County (February 2012 – February 2014; SoCalGas Contact Johnny Grady).** Regulatory compliance and permitting, protocol blunt-nosed leopard lizard, San Joaquin kit fox, giant kangaroo rat (assisted), rare plant surveys, construction monitoring.
- **Southern CA Gas Company, San Julian Ranch, Santa Barbara County (April 2009 – December 2012; SoCalGas Contact Johnny Grady).** Regulatory compliance and permitting, USFWS protocol surveys for Least Bell's vireo and southwestern willow flycatcher. Approved California red-legged frog, steelhead, least Bell's vireo, and southwestern willow flycatcher monitor. Lead construction monitor for multiple HDD's within occupied California red-legged frog and steelhead habitat.
- **Southern CA Gas Company, L3003/407 Sullivan Canyon ROW Maintenance, City of Los Angeles (2005 – ongoing; SoCalGas Contact Johnny Grady)**. Regulatory compliance and permitting lead for long-term maintenance Corps 404 Individual Permit, RWQCB 401 Certification, CDFW Streambed Alteration Agreement, City of L.A. Tree Permit. Includes restoration design, implementation, and monitoring along approximately 4-miles of ROW within riparian habitat.

U.S. FISH AND WILDLIFE SERVICE STANDARDIZED RECOMMENDATIONS FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE

Prepared by the Sacramento Fish and Wildlife Office
January 2011

INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

IS A PERMIT NECESSARY?

Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens. Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process. All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to an6y survey or monitoring work occurring.

SMALL PROJECTS

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied and unoccupied)	Service must be contacted

*Known den: To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

**Potential and Atypical dens: Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

DESTRUCTION OF DENS

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection. **Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service**.

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

Natal/pupping dens: Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

Known Dens: Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities.

The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.

2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.

3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is

discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.

5. No firearms shall be allowed on the project site.

6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.

7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.

8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.

9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.

10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be

re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.

12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.

13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.

14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620 or (916) 414-6600

EXHIBIT "A" - DEFINITIONS

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

Attachment 3

U.S. FISH AND WILDLIFE SERVICE
STANDARDIZED RECOMMENDATIONS
FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX
PRIOR TO OR DURING GROUND DISTURBANCE

Prepared by the Sacramento Fish and Wildlife Office
January 2011

INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

IS A PERMIT NECESSARY?

Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens. Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process. All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to an6y survey or monitoring work occurring.

SMALL PROJECTS

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied and unoccupied)	Service must be contacted

*Known den: To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

**Potential and Atypical dens: Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

DESTRUCTION OF DENS

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection. **Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service**.

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

Natal/pupping dens: Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

Known Dens: Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities.

The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.

2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.

3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is

discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.

5. No firearms shall be allowed on the project site.

6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.

7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.

8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.

9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.

10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be

re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.

12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.

13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.

14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620 or (916) 414-6600

EXHIBIT "A" - DEFINITIONS

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

Revised Attachment 4

MONSOON CONSULTANTS

P.O. Box 151 San Luis Obispo, California 93406 Tel 805-280-1051
breely@monsoonconsultants.com

August 10, 2017

Mr. Kevin Merrill
Mesa Vineyard Management, Inc.
P.O Box 789
Templeton, California 93465
Tel: 805-434-4100

Re: NORTH FORK VINEYARDS FROST PROTECTION RESERVOIRS #1, #2 & #3 – ANALYSIS OF RESERVOIR EVAPORATIVE LOSSES

Dear Mr. Merrill:

Per your request Monsoon Consultants (Monsoon) has been retained by Mesa Vineyard Management, Inc. (MESA) to provide hydrologic consulting services for the referenced project. Our specific scope of services is related to the estimation of net evaporative losses from the three (3) proposed agricultural reservoirs. The proposed reservoirs are planned to be constructed for frost protection at the North Fork Vineyards, which is located approximately 9-miles west of the community of New Cuyama in Santa Barbara County, California. The approximate coordinates of the subject property are Latitude: 35.014835 Longitude: -119.861751. The project includes APN 147-020-045 and 147-020-146. Monsoon has performed the requested evaporation analyses and the corresponding results are presented below.

HYDROLOGIC ANALYSIS

The owners of North Fork Vineyards are proposing to construct three (3) agricultural reservoirs which will be utilized for water storage for frost protection of the vines.

The vines are particularly vulnerable to damage from frost events during the months of February, March and April. When not needed for frost protection, frost pond water will be metered out for vineyard irrigation. In an effort to minimize the amount of evaporation that will occur from the subject agricultural reservoirs, MESA plans to maintain water levels in the reservoirs as follows:

- May 1st – January 31st - Reservoirs will be maintained with a water depth of 3-feet from well supplied water.
- February 1st – April 30th - Reservoirs will be maintained at a full condition for potential frost protection.

For the purposes of estimating the magnitude of monthly net evaporative losses from each of the subject frost protection reservoirs, Monsoon obtained and analyzed historic precipitation and evapotranspiration data from existing climatologic recording gage sites which are in close proximity to the North Fork Vineyards property. Specifically, we utilized average monthly precipitation data from the recording station located at the New Cuyama Fire Station. This data set is maintained by the Western Regional Climate Center and includes recorded data between 1974 and 2016. A copy of the summary data is included as an attachment to this report.

In addition to the precipitation analysis, Monsoon also developed an estimate of the average monthly evaporative losses which will occur within each of the subject reservoirs. For the purposes of this estimate, Monsoon reviewed monthly reference evapotranspiration ($ET_{o)}$ data from the California Irrigation Management Information System (CIMIS) for the period between January 1, 2000 and December 31, 2016 which was obtained from the CIMIS station in Cuyama (CIMIS Station #88). During the referenced time frame, the average monthly ET_o for the Cuyama CIMIS site ranged from a minimum of 3.13-inches in December to a maximum of 14.45 inches in July. Pan evaporation was estimated by applying the conversion: ET_o / 0.6 = Pan Evaporation. Pan evaporation was then converted to lake evaporation by applying a factor of 0.75. A copy of the summary evaporation calculations is included as an attachment to this report.

Based on the results of our analysis, the average monthly lake evaporation rate for each of the North Fork Vineyards Reservoirs ranges from approximately 2.35-inches in December to a maximum of 10.84-inches in July. Based on our review of the design drawings for the

subject reservoirs, which were prepared by Tom A. Howell (CA CE 27037), it was determined that the surface area, at full conditions, is approximately 2.8 acres for each of the sites. .This is the condition that will be maintained during the months of February, March and April for frost protection. During the remainder of the year, when there will be 3-feet of water in each of the reservoirs, the pond surface area is approximately 1.2 – 1.3 acres in the reservoirs.

Through the implementation of the reservoir management strategy described above, the total average annual net evaporative losses, from each of the subject reservoirs, is summarized below. The combined average annual estimated net evaporative losses from all three reservoirs, is approximately 26.28 AC-FT. A summary of the hydrologic analysis is attached.

ANNUAL NET EVAPORATIVE LOSSES (AC-FT)

RESERVOIR #1	8.50
RESERVOIR #2	9.04
RESERVOIR #3	8.74

If you have any questions or require additional information, please do not hesitate to call.

Sincerely,

Monsoon Consultants

Blaine T. Reely, PhD, PE
Principal Engineer

attachments

NORTH FORK VINEYARDS - RESERVOIR #1
FROST PROTECTION RESERVOIR
ANNUAL EVAPORATION PROFILE
POND MINIMUM: MAY - JAN
(AVERAGE CONDITIONS)

IRRIGATION RESERVOIR EVAPORATION ANALYSIS

MONTH	AVG. MONTHLY PAN EVAPORATION (IN)	AVG. MONTHLY LAKE EVAPORATION (IN)	AVG. MONTHLY PRECIPITATION (IN)	RESERVOIR #1 MONTHLY NET EVAPORATION LOSSES (AC-FT)	CONDITION OF THE IRRIGATION RESERVOIR #1
JAN	3.57	2.68	1.45	0.12	3' OF WATER IN POND
FEB	4.22	3.16	1.68	0.35	POND FULL
MAR	6.92	5.19	1.62	0.85	
APR	9.02	6.77	0.47	1.50	
MAY	12.07	9.05	0.24	0.89	3' OF WATER IN POND
JUN	13.89	10.41	0.04	1.05	
JUL	14.45	10.84	0.08	1.09	
AUG	13.30	9.98	0.10	1.00	
SEP	10.21	7.66	0.35	0.74	
OCT	7.02	5.27	0.30	0.50	
NOV	4.31	3.23	0.55	0.27	
DEC	3.13	2.35	1.03	0.13	
TOTAL ANNUAL EVAP. LOSSES (AC-FT)				8.50	

NOTE 1: CONVERSION: 1 AC-FT/AC/YR = 892.7 GAL/DAY
NOTE 2: WATER SURFACE AREA ESTIMATES FOR EVAPORATION LOSS ESTIMATES: Reservoir #1 = 2.85 AC (RESERVOIR FULL)
NOTE 2: WATER SURFACE AREA ESTIMATES FOR EVAPORATION LOSS ESTIMATES: Reservoir #1 = 1.216 AC (3' OF WATER IN RESERVOIR)
NOTE 4: RESERVOIR WATER STORAGE CAPACITY ESTIMATE (MAXIMUM): RESERVOIR #1 = 49.0 AC-FT
NOTE 5: AVERAGE MONTHLY PRECIPITATION DATA SOURCE = WESTERN REGIONAL CLIMATE CENTER WEBSITE / NEW CUYAMA STATION (1974-2016)
NOTE 6: AVERAGE MONTHLY EVAPORATION DATA SOURCE = CALIFORNIA IRRIGATION MANAGEMENT INFORMATION SYSTEM (CIMIS) WEBSITE / CUYAMA STATION (2000-2016)

NORTH FORK VINEYARDS - RESERVOIR #2
FROST PROTECTION RESERVOIR
ANNUAL EVAPORATION PROFILE
POND MINIMUM: MAY - JAN
(AVERAGE CONDITIONS)

IRRIGATION RESERVOIR EVAPORATION ANALYSIS

MONTH	AVG. MONTHLY PAN EVAPORATION (IN)	AVG. MONTHLY LAKE EVAPORATION (IN)	AVG. MONTHLY PRECIPITATION (IN)	RESERVOIR #1 MONTHLY NET EVAPORATION LOSSES (AC-FT)	CONDITION OF THE IRRIGATION RESERVOIR #2
JAN	3.57	2.68	1.45	0.13	3' OF WATER IN POND
FEB	4.22	3.16	1.68	0.36	POND FULL
MAR	6.92	5.19	1.62	0.86	
APR	9.02	6.77	0.47	1.52	
MAY	12.07	9.05	0.24	0.97	3' OF WATER IN POND
JUN	13.89	10.41	0.04	1.14	
JUL	14.45	10.84	0.08	1.18	
AUG	13.30	9.98	0.10	1.09	
SEP	10.21	7.66	0.35	0.80	
OCT	7.02	5.27	0.30	0.55	
NOV	4.31	3.23	0.55	0.29	
DEC	3.13	2.35	1.03	0.14	
TOTAL ANNUAL EVAP. LOSSES (AC-FT)				9.04	

NOTE 1: CONVERSION: 1 AC-FT/AC/YR = 892.7 GAL/DAY
NOTE 2: WATER SURFACE AREA ESTIMATES FOR EVAPORATION LOSS ESTIMATES: Reservoir #2 = 2.897 AC (RESERVOIR FULL)
NOTE 2: WATER SURFACE AREA ESTIMATES FOR EVAPORATION LOSS ESTIMATES: Reservoir #2 = 1.319 AC (3' OF WATER IN RESERVOIR)
NOTE 4: RESERVOIR WATER STORAGE CAPACITY ESTIMATE (MAXIMUM): RESERVOIR #2 = 49.1 AC-FT
NOTE 5: AVERAGE MONTHLY PRECIPITATION DATA SOURCE = WESTERN REGIONAL CLIMATE CENTER WEBSITE / NEW CUYAMA STATION (1974-2016)
NOTE 6: AVERAGE MONTHLY EVAPORATION DATA SOURCE = CALIFORNIA IRRIGATION MANAGEMENT INFORMATION SYSTEM (CIMIS) WEBSITE / CUYAMA STATION (2000-2016)

NORTH FORK VINEYARDS - RESERVOIR #3
FROST PROTECTION RESERVOIR
ANNUAL EVAPORATION PROFILE
POND MINIMUM: MAY - JAN
(AVERAGE CONDITIONS)

IRRIGATION RESERVOIR EVAPORATION ANALYSIS

MONTH	AVG. MONTHLY PAN EVAPORATION (IN)	AVG. MONTHLY LAKE EVAPORATION (IN)	AVG. MONTHLY PRECIPITATION (IN)	RESERVOIR #1 MONTHLY NET EVAPORATION LOSSES (AC-FT)	CONDITION OF THE IRRIGATION RESERVOIR #3
JAN	3.57	2.68	1.45	0.13	3' OF WATER IN POND
FEB	4.22	3.16	1.68	0.35	POND FULL
MAR	6.92	5.19	1.62	0.85	
APR	9.02	6.77	0.47	1.50	
MAY	12.07	9.05	0.24	0.93	3' OF WATER IN POND
JUN	13.89	10.41	0.04	1.09	
JUL	14.45	10.84	0.08	1.13	
AUG	13.30	9.98	0.10	1.04	
SEP	10.21	7.66	0.35	0.77	
OCT	7.02	5.27	0.30	0.52	
NOV	4.31	3.23	0.55	0.28	
DEC	3.13	2.35	1.03	0.14	
TOTAL ANNUAL EVAP. LOSSES (AC-FT)				8.74	

NOTE 1: CONVERSION: 1 AC-FT/AC/YR = 892.7 GAL/DAY
NOTE 2: WATER SURFACE AREA ESTIMATES FOR EVAPORATION LOSS ESTIMATES: Reservoir #3 = 2.852 AC (RESERVOIR FULL
NOTE 2: WATER SURFACE AREA ESTIMATES FOR EVAPORATION LOSS ESTIMATES: Reservoir #3 = 1.265 AC (3' OF WATER IN RESERVOIR
NOTE 4: RESERVOIR WATER STORAGE CAPACITY ESTIMATE (MAXIMUM): RESERVOIR #1 = 48.9 AC-FT
NOTE 5: AVERAGE MONTHLY PRECIPITATION DATA SOURCE = WESTERN REGIONAL CLIMATE CENTER WEBSITE / NEW CUYAMA STATION (1974-2016)
NOTE 6: AVERAGE MONTHLY EVAPORATION DATA SOURCE = CALIFORNIA IRRIGATION MANAGEMENT INFORMATION SYSTEM (CIMIS) WEBSITE / CUYAMA STATION (2000-2016)

Back to:
Western
U. S . man

NOTE:
To print data frame (right side), dick on right frame before printing.

1981- 2010

- Daily Temp. & Precip.
- Daily Tabular data (-23 **KB)**
- Monthly Tabular data (-1 KID
- NCDC 1981-2010 Normals HKB)

1971- 2000

- Daily Temp. & Precip.
- Daily Tabular data (-23 KB)
- Monthly Tabular data (-1 KID
- NCDC 1971-2000 Normals HKB)

1961-1990

- Daily Temp. & Precip.
- Daily Tabular data (-23 KB)
- Monthly Tabular data (-1 KR)

NEW CUYAMA FIRE STN, CALIFORNIA (046154)

Period of Record Monthly Climate Summary

Period of Record: 01/01/1974 to 06/09/2016

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	60.9	61.8	65.1	70.5	79.6	88.2	94.3	93.3	87.6	77.7	66.4	60.8	75.5
Average Min. Temperature (F)	32.4	34.2	36.5	38.6	44.3	50.8	55.8	54.7	50.9	43.0	35.3	31.5	42.3
Average Total Precipitation (in.)	1.44	1.68	1.59	0.46	0.24	0.04	0.08	0.10	0.35	0.30	0.55	1.03	7.84
Average Total Snowfall (in.)	0.1	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period ofr ecord.
Max. Temp.: 94.1% Min. Temp.: 94.3% Precipitation: 96.4% Snowfall: 95.8% Snow Depth: 95.9%
Check Station Metadata or Metadata graphics for more detail about data completeness.

Western Regional Climate Center, wrcc@dri edu

CUVAMA
CIMIS STATION#88
REFERENCE EVAPOTRANSPIRATION DATA
2000=2016

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average Eto (IN)	Average Pan Evaporation (IN)	Average Lake Evaporation (IN)
2.13	2.35	1.97	1.87	1.87	2.28	1.82	2.44	1.97	2.24	2.52	2.08	3.08	2.29	1.7	2.14	3.57	2.68
3.06	1.95	2.14	2.08	2.75	2.43	2.57	2.36	2.08	2.52	2.82	2.78	2.88	3.11	3.26	2.53	4.22	3.16
4.2	3.91	4.86	3.65	2.79	4.83	3.9	4.27	4.13	3.49	4.21	4.47	4.64	4.96	4.4	4.15	6.92	5.19
5.53	4.26	6.12	5.12	4.02	5.82	5.45	5.85	4.77	5.25	5.21	6.36	6.12	6.38	5.66	5.41	9.02	6.77
7.79	6.84	7.82	7	6.76	8.03	6.97	6.61	6.89	6.82	7.61	7.75	8.2	7.06	6.81	7.24	12.07	9.05
8.81	8.47	8.38	8.06	7.87	8.59	7.84	7.67	8.46	7.87	8.54	8.62	9.07	8.35	8.97	8.33	13.89	10.41
8.85	8.8	8.65	9.14	8.48	8.19	8.43	9.44	9.09	8.78	8.68	8.97	8.8	8.16	9.42	8.67	14.45	10.84
8.42	8.02	7.43	8.26	7.87	6.75	7.56	7.95	8.35	8.23	8.32	8.05	8.16	8.14	8.46	7.98	13.30	9.98
6.31	6.54	5.93	5.57	6.19	5.35	5.65	6.69	6.38	6.17	6.38	6.2	6.16	6.24	6.24	6.13	10.21	7.66
4.21	5.19	3.56	4.07	3.84	3.96	4.73	4.34	3.61	4.19	4.24	4.47	4.67	4.02	4.12	4.21	7.02	5.27
2.77	2.26	2.25	2.68	2.53	2.67	2.63	2.76	2.62	2.4	2.64	2.81	2.72	2.53	2.78	2.59	4.31	3.23
1.63	1.84	2.09	1.82	2.08	2.05	1.89	1.78	1.71	2.17	1.52	2.36	1.62	1.82	1.68	1.88	3.13	2.35
															61.26	102.11	76.58

Attachment 5

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

July 7, 2017

Steve Rodriguez
Santa Barbara County
624 W. Foster Rd
Santa Barbara, CA 93455

Subject: North Fork Ranch Frost Ponds
SCH#: 2017061009

Dear Steve Rodriguez:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on July 6, 2017, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2017061009
Project Title North Fork Ranch Frost Ponds
Lead Agency Santa Barbara County

Type MND Mitigated Negative Declaration

Description A request of Brian Tetley, agent for Brodiaea, Inc, owner, to consider Case No. 16CUP-00000-00005. The North Fork Ranch Frost Pond project is a request to construct and operate three frost ponds that would store water to be used for frost protection at the North Fork Ranch Vineyards. The project also includes the construction of new underground pipelines that would extend between each of the proposed reservoirs and the existing vineyard irrigation system.

Lead Agency Contact

Name Steve Rodriguez
Agency Santa Barbara County **Fax**
Phone 805-682-3413
email
Address 624 W. Foster Rd **State** CA **Zip** 93455
City Santa Barbara

Project Location

County Santa Barbara
City
Region
Lat / Long
Cross Streets HWY 166
Parcel No. 147-020-045
Township **Range** **Section** **Base**

Proximity to:

Highways SR 166
Airports
Railways
Waterways Cuyama River
Schools
Land Use LU: Rural area, ag commercial; Z:AG-II-100

Project Issues Archaeologic-Historic; Biological Resources; Geologic/Seismic; Soil Erosion/Compaction/Grading; Water Quality; Wildlife

Reviewing Agencies Resources Agency; Department of Conservation; Department of Fish and Wildlife, Region 5; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 5; Regional Water Quality Control Board, Region 3; State Water Resources Control Board, Division of Drinking Water, District 6; State Water Resources Control Board, Division of Drinking Water; Native American Heritage Commission; State Lands Commission

Date Received 06/07/2017 **Start of Review** 06/07/2017 **End of Review** 07/06/2017

...fficient information provided by lead agency.

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Fax (916) 373-5471

Edmund G. Brown Jr., Governor

July 3, 2017

Steve Rodriguez
Santa Barbara County Planning and Development
624 W. Foster Road
Santa Maria, CA 93455

Sent via e-mail: rodriguezaicp@aol.com

Re: SCH# 2017061009, North Fork Ranch Frost Ponds Project, Community of New Cuyama; Santa Barbara County, California

Dear Mr. Rodriguez:

The Native American Heritage Commission (NAHC) has reviewed the Mitigated Negative Declaration prepared for the project referenced above. The review included the Introduction and Project Description, and the Potentially Significant Effects Checklist prepared by Rincon for the Santa Barbara County Planning and Development. We have the following concerns:

1. There is no documentation of **government-to-government consultation by the lead agency** under AB-52 with Native American tribes traditionally and culturally affiliated to the project area as required by statute, or that mitigation measures were developed in consultation with the tribes. Discussions under AB-52 may include the type of document prepared; avoidance, minimization of damage to resources; and proposed mitigation. Contact by consultants during the Cultural Resources Assessments is not formal consultation.

2. While Archaeological Mitigation includes a Native American Monitor, there are no mitigation measures specifically addressing Tribal Cultural Resources separately. Mitigation measures must take Tribal Cultural Resources into consideration as required under AB-52, **with or without consultation** occurring. Mitigation language for archaeological resources is not always appropriate for or similar to measures specifically for handling Tribal Cultural Resources.

The California Environmental Quality Act (CEQA)[1], specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.[2] If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared.[3] In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended in 2014 by Assembly Bill 52. (AB 52).[4] **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** AB 52 created a separate category for "tribal cultural resources"[5], that now includes "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment.[6] Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.[7] Your project may also be subject to **Senate Bill 18 (SB 18)** (Burton, Chapter 905, Statutes of 2004), Government Code 65352.3, if it also involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space. **Both SB 18 and AB 52 have tribal consultation requirements.** Additionally, if your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966[8] may also apply.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

Agencies should be aware that AB 52 does not preclude agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52. For that reason, we urge you

[1] Pub. Resources Code § 21000 et seq.
[2] Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b); CEQA Guidelines Section 15064.5 (b)
[3] Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd.(a)(1); CEQA Guidelines § 15064 (a)(1)
[4] Government Code 65352.3
[5] Pub. Resources Code § 21074
[6] Pub. Resources Code § 21084.2
[7] Pub. Resources Code § 21084.3 (a)
[8] 154 U.S.C. 300101, 36 C.F.R. § 800 et seq.

to continue to request Native American Tribal Consultation Lists and Sacred Lands File searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/. Additional information regarding AB 52 can be found online at http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf, entitled "Tribal Consultation Under AB 52: Requirements and Best Practices".

The NAHC recommends lead agencies consult with all California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources.

A brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments is also attached.

Please contact me at gayle.totton@nahc.ca.gov or call (916) 373-3710 if you have any questions.

Sincerely,

Gayle Totton, B.S., M.A., Ph.D
Associate Governmental Project Analyst

Attachment

cc: State Clearinghouse

Pertinent Statutory Information:

Under AB 52:
AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:
Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a **lead agency** shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice.
A **lead agency** shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project.[9] and **prior to the release of a negative declaration, mitigated negative declaration or environmental impact report**. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18).[10]
The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

a. Alternatives to the project.
b. Recommended mitigation measures.
c. Significant effects.[11]

1. The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.

If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency.[12]
With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process **shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10.** Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.[13]
If a project may have a significant impact on a tribal cultural resource, **the lead agency's environmental document shall discuss** both of the following:

a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource.[14]

Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.[15]

Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 **shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program**, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable.[16]
If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, **the lead agency shall consider feasible mitigation** pursuant to Public Resources Code section 21084.3 (b).[17]
An environmental impact report **may not be certified**, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

---

[9] Pub. Resources Code § 21080.3.1, subds. (d) and (e)
[10] Pub. Resources Code § 21080.3.1 (b)
[11] Pub. Resources Code § 21080.3.2 (a)
[12] Pub. Resources Code § 21080.3.2 (a)
[13] Pub. Resources Code § 21082.3 (c)(1)
[14] Pub. Resources Code § 21082.3 (b)
[15] Pub. Resources Code § 21080.3.2 (b)
[16] Pub. Resources Code § 21082.3 (a)
[17] Pub. Resources Code § 21082.3 (e)

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days.[18]

This process should be documented in the Tribal Cultural Resources section of your environmental document.

Under SB 18:

Government Code § 65352.3 (a) (1) requires consultation with Native Americans on general plan proposals for the purposes of "preserving or mitigating impacts to places, features, and objects described § 5097.9 and § 5091.993 of the Public Resources Code that are located within the city or county's jurisdiction. Government Code § 65560 (a), (b), and (c) provides for consultation with Native American tribes on the open-space element of a county or city general plan for the purposes of protecting places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code.

- SB 18 applies to **local governments** and requires them to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf
- Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.**[19]
- There is no Statutory Time Limit on Tribal Consultation under the law.
- Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research,[20] the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction.[21]
- Conclusion Tribal Consultation: Consultation should be concluded at the point in which:
    - The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    - Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation.[22]

NAHC Recommendations for Cultural Resources Assessments:

- Contact the NAHC for:
    - A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    - A Native American Tribal Contact List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
        - The request form can be found at http://nahc.ca.gov/resources/forms/.
- Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    - If part or the entire APE has been previously surveyed for cultural resources.
    - If any known cultural resources have been already been recorded on or adjacent to the APE.
    - If the probability is low, moderate, or high that cultural resources are located in the APE.
    - If a survey is required to determine whether previously unrecorded cultural resources are present.
- If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    - The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

---

[18] Pub. Resources Code § 21082.3 (d)
[19] (Gov. Code § 65352.3 (a)(2)).
[20] pursuant to Gov. Code section 65040.2,
[21] (Gov. Code § 65352.3 (b)).
[22] (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Examples of Mitigation Measures That May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

- Avoidance and preservation of the resources in place, including, but not limited to:
  - Planning and construction to avoid the resources and protect the cultural and natural context.
  - Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
- Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - Protecting the cultural character and integrity of the resource.
  - Protecting the traditional use of the resource.
  - Protecting the confidentiality of the resource.
- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed.[23]
- Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.[24]

The lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

- Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources.[25] In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

[23] (Civ. Code § 815.3 (c)).
[24] (Pub. Resources Code § 5097.991).
[25] per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)).

DEPARTMENT OF TRANSPORTATION
50 HIGUERA STREET
SAN LUIS OBISPO, CA 93401-5415
PHONE (805) 549-3111

Serious drought.
Help save water!

July 7, 2017

SB 166 PM 53.72
SCH# 2017061009

Steve Rodriguez
Planning and Development
County of Santa Barbara
123 E. Anapamu Street
Santa Barbara, CA 93101

RE: DRAFT MITIGATED NEGATIVE DECLARATION – NORTH FORK RANCH FROST PONDS

Dear Mr. Rodriguez:

The California Department of Transportation (Caltrans) District 5, Local Development-Intergovernmental Review (LD-IGR) Branch, appreciates the opportunity to review the draft Mitigated Negative Declaration (MND) for a conditional use permit (16CUP-00000-00005) to construct and operate a 147-acre-foot reservoir for an existing vineyard along State Route (SR) 166. The project site is located approximately nine miles west of the unincorporated community of New Cuyama. Caltrans offers the following comments in response to the project's evaluation of potential impacts to the state highway system as discussed in the draft MND:

Water Resources/Flooding
The document states that the proposed project would be required to comply with County Grading Ordinance requirements to ensure that the proposed reservoir berms are structurally adequate to contain the water impounded by the reservoirs. The document concludes that the project would have **no impact** related to flood-related hazards. However, Caltrans notes that the potential exists for catastrophic failure of the berms and inundation of SR 166 resulting in potentially significant impacts to state facilities. Caltrans is concerned regarding the adequacy of the County Grading Ordinance requirements, and recommends the incorporation of a mitigation measures to require review and approval of the berms by the California Department of Water Resources in order to ensure structural integrity and adequacy and reduce potential impacts to **less than significant with mitigation**.

Encroachment Permits and Irrigation Lines
The project details state that water from wells conveyed to the reservoir will utilize existing vineyard irrigation pipelines extending beneath SR 166. Please provide more information regarding these irrigation lines so they can be positively located. Caltrans notes that there is a record of an encroachment permit (0589 NMC 0256) for a three-inch galvanized steel waterline crossing under SR 166 on the floor of a cattle pass structure located at Post Mile (PM) 53.7 (actual cattle pass is at PM 53.5). However, without positive location Caltrans is not able to verify that these are the same irrigation line being proposed for use by the project. Please be aware that any project-related activities

(e.g., construction, maintenance, general operations, etc.) that would occur within the Caltrans right-of-way will require an approved encroachment permit.

If you have any questions, or need further clarification on items discussed above, please don't hesitate to contact me directly at Michael.Hollier@dot.ca.gov or (805) 549-3131.

Sincerely,

MICHAEL D. HOLLIER
Transportation Planner
Development Review Coordinator
District 5, LD-IGR South Branch

cc: none

Subj: **North Fork Ranch Frost Ponds Project draft Mitigated Negative Declaration, Santa Barbara County SCH# 2017061009**
Date: 7/6/2017 3:45:28 P.M. Pacific Daylight Time
From: Martin.Potter@wildlife.ca.gov
To: Rodriguezaicp@aol.com
CC: Christine.Found-Jackson@wildlife.ca.gov, Christine.Thompson@wildlife.ca.gov, Bob.Stafford@wildlife.ca.gov, Sarah.Rains@wildlife.ca.gov

Dear Mr. Rodriquez,

The Department has reviewed the above Subject Mitigated Negative Declaration (MND) for impacts to biological resources. The proposed project includes the construction of 3 five-acre frost ponds, with associated pipelines between ponds, to facilitate the growing of grapes. The proposed project site is 6,565 acres located in the Cuyama Valley and is within the range of several special status plant and animal species, including the Federal Endangered San Joaquin woollythreads (*Monolopia congdonii*), the Federal and State Endangered and Fully Protected blunt-nosed leopard lizard (*Gambelia sila*), the Federal Endangered and State Threatened San Joaquin kit fox (*Vulpes macrotis mutica*), and the Federal and State Endangered giant kangaroo rat (*Dipodomys ingens*). Surveys were conducted for these listed species, using Department-recognized protocols. No listed species or their habitats were observed on the proposed project site. However, Department staff observed in November, 2015 approximately 1,000 acres of the project site (that portion in which the frost ponds would be constructed) had been recently deep-ripped and disked. According to the MND, the disking was done in preparation for the planting of grape vines. The disking would have had the potential to destroy the habitats of the above listed species. According to the MND, surveys for special status species were conducted prior to disking. There was some indication in the MND that disking was routinely performed on the project site, but this was not clear.

CEQA requires the whole of the action to be considered when assessing the significance of impacts from a project (CEQA Guidelines §15063(a)(1), §15378). The Department is concerned that the construction of frost ponds could be considered, along with the disking of the project site and planting of grapes, to be parts of one project which should have been analyzed for significant impacts under CEQA. The Department therefore recommends a more comprehensive analysis of impacts from the proposed project, together with measures proposed to mitigate significant impacts, be presented in a revised and re-circulated MND. Please contact me if you have questions or require clarification of these issues. Thank you.

Martin Potter
Senior Environmental Scientist (Specialist)
California Department of Fish and Wildlife
South Coast Region
P.O. Box 1797 Ojai, CA 93024
Phone/Fax (805) 640-3677
email: Martin.Potter@wildlife.ca.gov

Every Californian should conserve water. Find out how at:

Save Our Water

SaveOurWater.com · Drought.CA.gov

Dear Mr. Rodriguez,
Once again we would like to thank you for holding the June 26th meeting on the draft NMD in New Cuyama. As you witnessed there was an excellent community turnout expressing concern for the NMD and asking the Planning Department to take into consideration the whole project in this review. Furthermore since the Cuyama Valley is identified as one of the critically overdrafted water basins and subject to SGMA, we want to encourage the Planning Department to use this opportunity to bring the review of this project in compliance with SGMA regulations, since it appears that the Threshold data used for the Cuyama Valley is out of date.

Attached you will find our letter to the Zoning Administrator that we ask you to include with the North Fork Frost Pond application as part of the review.

Please do not hesitate to contact us with any questions.

Sincerely,

Roberta Jaffe & Stephen Gliessman
Condor's Hope Ranch
Cuyama Valley
Santa Barbara County
www.condorshope.com

To: Ms. Linda Liu, Santa Barbara County Zoning Administrator
From: Roberta Jaffe and Stephen Gliessman, residents and farmers
Cottonwood Canyon, Cuyama Valley
Contact: condor@condorshope.com

Re: North Fork Ranch Frost Ponds Project (17NGD-00000-00004)

Date: June 29, 2017

These are comments in regards to the application of Brodiaea, Inc. to install 3 – 49 acre foot reservoirs (total 147 acre-feet) in their newly planted vineyard in the Cuyama Valley, a designated critically overdrafted water basin by the California Department of Water Resources.

We along with approximately 25 other concerned citizens attended the June 26th meeting in New Cuyama on the Mitigated Negative Declaration draft for this project. As residents and farmers on the western end of the Cuyama Valley we want to express our strong concerns about the prepared NMD and opposition to this project.

(1) The MND is based on outdated data

The MND is based on the Santa Barbara County Environmental Thresholds and Guidelines Manual published October 2008 and last revised in July 2015. Specifically, the groundwater table section was last updated in 1992. (p.73)

The NMD also states that agriculture is not regulated in Santa Barbara County: from p. 36: County Environmental Thresholds: "A project is determined to have a significant effect on water resources if it would exceed established threshold values which have been set for each overdrafted groundwater basin. These values were determined based on an estimation of a basin's remaining life of available water storage. If the project's net new consumptive water use [total consumptive demand adjusted for recharge less discontinued historic use] exceeds the threshold adopted for the basin, the project's impacts on water resources are considered significant." The (outdated) water demand threshold for the Cuyama Valley Groundwater Basin is 31 AFY. The MND states: "The adopted threshold applies only to projects subject to discretionary review by the County, and do not apply to uses, such as agricultural operations, that do not require approval of a discretionary permit."

So, if this were not an agricultural project, groundwater pumpage to fill these reservoirs would exceed the established threshold. Because it is an agricultural project, the amount of groundwater that will be potentially pumped multiple times in a season to fill the reservoirs is not being considered.

Since the last update of the Threshold document:
• USGS completed a 5-year study of the Cuyama Valley in May 2015
While the Threshold document estimated the Groundwater Gross Pumpage for the Cuyama Valley at 48,000 AFY; the USGS study listed the gross pumpage at 68,300 AFY for the period of 2000-2010 for the Cuyama Valley study area.

• And CA passed the Sustainable Groundwater Management Act (SGMA) in September 2014. DWR identified the Cuyama Valley as defined by its current Bulletin 118

boundaries (which includes the vineyard parcel) as one of 21 water basins in the state in critical overdraft (July, 2015).

There is no mention of SGMA or the USGS study in the Environmental Thresholds document. The county document that determines what is significant does not comply with SGMA. Even so, the reservoir project will increase pumpage beyond the threshold amount identified as 31 AFY.

Both the USGS study and SGMA point clearly to the need to balance agricultural use of groundwater, and that the Cuyama Valley is already in overdraft from the direct impacts of water intensive agriculture.

Quote from USGS study 2014 Hansen et al:
"Simulated changes in storage over time showed that significant withdrawals from storage generally occurred not only during drought years (1976–77 and 1988–92) but also during the early stages of industrial agriculture, which was initially dominated by alfalfa production. Since the 1990s, agriculture has shifted to more water-intensive crops. Measured and simulated groundwater levels indicated substantial declines in selected subregions, mining of groundwater that is thousands to tens of thousands of years old, increased groundwater storage depletion, and land subsidence. Most of the recharge occurs in the upland regions of Ventucopa and Sierra Madre Foothills, and the largest fractions of pumpage and storage depletion occur in the Main subregion. The long-term imbalance between inflows and outflows resulted in simulated overdraft (groundwater withdrawals in excess of natural recharge) of the groundwater basin over the 61-year period of 1949–2010."

The Cuyama Valley Groundwater Sustainability Agency was just approved by the Board of Supervisors in accordance with SGMA. It is beginning its work to develop a Groundwater Sustainability Plan (GSP) for the Cuyama Valley that includes developing a balanced water budget for all uses of groundwater including agriculture. The NMD is outdated in not considering SGMA and the legal requirement to develop a Cuyama Valley GSP that takes into account agricultural use of groundwater. This project will further push the groundwater into over-pumpage and be detrimental to the sustainability of the Cuyama Valley. The proposed reservoirs will add significantly to the amount of groundwater being extracted from the Basin and will need to be accounted for in this budget.

(2) The NMD by reviewing only the 3 reservoirs is only considering a small part of the project and not taking into consideration what has occurred on this parcel since 2015 nor what future plans will be for this parcel.

This 6565 acre parcel started being converted from non-irrigated rangeland to intensively irrigated vineyards in 2015. After the passage of SGMA and Cuyama Valley being identified as a critically overdrafted basin, Santa Barbara County permitted the new owners, Brodiaea, Inc., to drill 11 new agricultural wells. The proposed 3x 49-acre foot reservoirs were most likely part of Brodiaea, Inc.'s vineyard initial development plan. Evidence of this is the way the vineyard infrastructure included underground lines and overhead sprinklers for frost protection, even though no permit for reservoirs had been obtained. Thus this MND is looking at part of the project, not the whole project. When a project gets piecemealed like this it slips through regulations. If we were to look at the amount of water the 11 agricultural wells North Fork/Brodiaea were

allowed to drill post-SGMA, it seems they would definitely be withdrawing more than 31 AFY to fill 3- 49 AF reservoirs in an area that is subject to multiple late spring frosts. The reservoirs are not a stand-alone project, but are part of the vineyard development. Therefore the impact of the whole project should be analyzed, not just a part of the project.

This vineyard is located in a cold pocket and is highly susceptible to late spring frosts. Farmers who use overhead sprinklers to protect from frost damage report needing to water 10 hours per event. Thus for a 1000 planted acres, Brodiaea will deplete all 3 reservoirs for one event. Mr. Rodriguez stated at the meeting that his research showed there can be between zero and twenty frost events in the months of March and April.

Furthermore, since less than a 1000 acres of the 6565 acre parcel are currently planted, shouldn't Planning and Development be asking what the overall plan for vineyard development on this parcel is and how many reservoirs are in the overall plan?

This is an opportunity for the Planning and Development Department to look at the whole project and not just a small piece of it. It is also an opportunity for Planning and Development to align itself with the new regulations of SGMA which are crucial to any land use development, whether agriculture or not, in the Cuyama Valley.

(3) Santa Barbara County has just begun the process of monitoring wells on the west end of the Valley including those of the North Fork Ranch vineyards, and the impact and groundwater flow is not clear. This study needs to be completed before any new impacts on groundwater are permitted for the western Cuyama Valley.

As of June 12th, a SB County hydrologist reported: "There's been a lot of variation in well recovery throughout the western basin and the different drainages. In Cottonwood Canyon, there appears to be a difference between the western wells and the eastern wells. Western wells have actually dropped since the fall 2016 measurements; while wells in the eastern Cottonwood Canyon drainage have increased."

---

(4) Concerns regarding draining reservoirs in May.

The application states that the frost ponds will only be filled January through April and used for frost events mainly in March and April. In May the water left in the reservoirs will be released to irrigate the vineyard. At the June 26th meeting on the NMD we were told that there will be no monitoring of this by the County and even if they did keep the ponds full, there are really no consequences. It seems there needs to be a monitoring system in place to make sure the reservoirs are depleted in May so that there is not excessive summer evaporation. In addition, at the meeting there was concern that if the reservoirs emptied over the summer months the polyethylene liner would both decay as well as be damaged by rodents; thus potentially creating an annual need to replace the liners at a great expense and be a significant addition to the landfill.

In conclusion, we do not think the NMD considers the full impact of the proposed reservoirs and request that the Zoning Administration require a more extensive environmental review that takes into account the impacts of the whole vineyard project.

Furthermore this project provides the Planning and Development Department an opportunity to include the new regulations of California's Sustainable Groundwater Management Act (SGMA) when reviewing projects that affect the groundwater in critically overdrafted water basins. We are not out of drought. Predictions for the southwestern US is that drought will continue. When Santa Barbara County reviews projects for critically overdrafted basins, whether agricultural projects or not, this long-term climatic situation should be considered. We appreciate your review of our concerns of the NMD which we consider to be an incomplete environmental review.

Thank you for your consideration.

Steve,

Hello,

Thank you for the opportunity to comment on the "Vineyard Frost Pond Project" in Cuyama Valley. I attended the meeting on Monday, June 26th for the discussion concerning the environmental impacts of the project, per you and your colleague, the description and the mitigations all seemed reasonable, for a project in a different climate and water supply situation and still may be appropriate for this situation if managed appropriately. What I took away from the meeting and discussion was that there is a glaring lack of over sight for a project that has the potential to be utilized for more than the purpose described in the request by the applicant. The explanation of mitigating a miss use of the "frost ponds" was weak at best, primarily because a violation would need to be reported and since water in the ponds will not be visible from a public view point, how would a violation be detected? There are questions that I would raise with the applicant, how will they reconcile water accumulation in the ponds for frost protection with early irrigation requirements during low rainfall years? Will the "Frost" water be used to overhead irrigate the vineyard in low rain fall years, as done in the Los Alamos area that the same vineyard management company practices, to wet the soil profile as rain would provide. What will be the cultural practices, such as the timing of pruning to mitigate the need for frost protection and mowing of cover crop early to assist cold air drainage. I believe the vineyard has installed standard impact sprinklers to use for frost protection, if so, these use more water than more efficient "micro mist" style fixtures that can provide the same protection with less water volume. What is the recharge rate of the wells supplying the water to the ponds, is it sustainable to pump enough water to keep the ponds full for a long term frost event and with a 1000 acre final planting will these ponds be sufficient to provide enough coverage or will more reservoirs be needed? The construction methods of the Ponds also comes into question, if the ponds are to be dry for nine months out of the year how are they going to be maintained during that time, especially to keep the integrity of the liner intact, an important environmental consideration is the altitude, light intensity and humidity of the climate, all detrimental to a pond liner holding up over time, frankly the best way to keep a liner in good shape is to keep water in the pond, what if the applicant decides to do so? Also, there can be a problem with the liner floating up when there is not enough water kept in place as the weight of the water holds the liner down. A concrete material covering may be required to line the ponds to avoid the potential hazards of a nine month dry period.

To conclude I want to recommend that the entire property be certified by the Sustainable In Practice program conducted by the Vineyard Team group, through this program I would suggest that the oversight of the "Frost Pond Water" utilization be incorporated into the required certification process, this would provide a 3rd party to be involved so that the Frost Ponds are only used for the intended purpose. The SIP program holds a very high degree of respect in the Agricultural community and will provide a credible program to insure that the whole property be managed on a sustainable basis. This area has a delicate ecosystem and is on the edge between regional influences, the rainfall patterns are dramatically different in a short distance, with the weather stations the applicant has in place they know what they have to work with and should be considered as part of a decision making process. I would also suggest a quarterly community access visit to view the ponds and be updated on the SIP program. The last thing will be to participate in the groundwater plans in the coming future, to be part of the solution so that the vineyard that is being developed now will be a continuing part of the agricultural community in the years ahead.

I want to finish by stating that I am a fan of the overall project and I am hopeful that it will be successful, this vineyard has the potential to bring credibility to the area as a quality wine grape growing region, as a grape grower in the area I believe it will be helpful to all growers, current and future, but it must be managed in a way that will last, we have altered our vineyard practices over time from the common beliefs of vineyard management to the conditions we are faced with, it works but you have to be engaged in what you are doing. If the project fails or creates problems then the opposite could happen, nobody wants that. I have a high degree of respect for the the vineyard management company, they are good farmers and I am sure they are learning what the conditions are and will respond appropriately and it will bode well for everyone. I strongly support the Agricultural Right to Farm philosophy of the county, it is important to encourage farming and give farmers the ability to be good stewards of the land.

These comments are my own, I do not represent anyone other than myself.

Thank you for your attention.

Joe Haslett
2875 Cottonwood Canyon Road
Cuyama Valley, CA
805-748-4033

Mr. Rodriguez,

Please include this letter at the hearing of the above subject.

Thank you.

Robert Ryan
(805) 441-0958

Picture a tall glass of water and next to it, a bottle of wine.

The water comes from my well. The wine hypothetically will come from Brodiaea Inc.

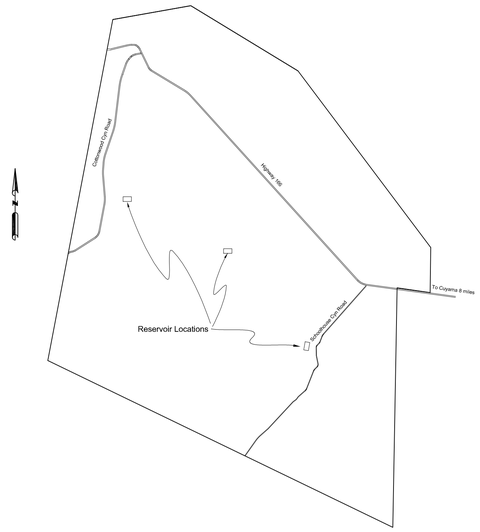
Geologically we share the same ground water.

My concern is that you, a governing/planning body will allow a project that could potentially cause over draught.

In May 2015 the USGS released its 5 year study of the Cuyama Valley, one of 21 California groundwater basins experiencing extreme over draught. Subsequent well testing for water levels has been underway in the Cottonwood Canyon area, just west of the Brodiaea Inc. project Together, this information can be helpful.

Attachment D

North Fork Reservoirs #1-3
APN 147-020-045
Vicinity Map



Santa Barbara County Building & Safety Division Grading Notes

1. All grading shall conform to Santa Barbara County Code Chapter 14 and standards and requirements pertaining thereto, these construction drawings and the recommendations of the soils engineer and engineering geologist.
2. Contractor to notify the county grading inspector and soils laboratory at least 48 hours before start of gradi work or any pre-construction meeting.
3. Contractor shall employ all labor, equipment and methods required to prevent his operations from producing dust in amounts damaging to adjacent property, cultivated vegetation and domestic animals or causing a nuisance to persons occupying buildings in the vicinity of the job site. Contractor shall be responsible for damage caused by dust from his grading operation.
4. Before beginning work requiring exporting or importing of materials, the contractor shall obtain approval from Public Works Road Division for haul routes used and methods provided to minimize the deposit of soils on county roads. Grading/road inspectors shall monitor this requirement with the contractor.
5. The Geotechnical Engineer shall provide observation and testing during grading operations in the field and shall submit a final report stating that all earth work was properly completed and is in substantial conformance with the requirements of the grading ordinance.
6. Areas to be graded shall be cleared of all vegetation including roots and other unsuitable materials for a structural fill, then scarified to a depth of 6" prior to placing any fill. Call grading inspector for initial inspection.
7. A thorough search shall be made for all abandoned man-made facilities such as septic tank systems, fuel or water storage tanks, and pipelines or conduits. Any such facilities encountered shall be removed and the depression properly filled and compacted under observation of the geotechnical engineer.
8. Areas with existing slopes which are to receive fill materials shall be keyed and benched. The design and installation of the keyway shall be per the geotechnical engineer's recommendation or per County Standard Detail No. G-13.
9. Fill materials shall be spread in lifts not exceeding 6" in compacted thickness, moistened or dried as necessary to near optimum moisture content and compacted by an approved method. Fill materials shall be compacted to a minimum of 90% maximum density as determined by 1957 ASTM D-1557-91 modified proctor (AASHO) test or similar approved methods. Some fill areas may require compaction to a greater density if called for in the construction documents. Soil tests shall be conducted at not less than one test for each 18" of fill and/or for each 500 cubic yards of fill placed.
10. Cut slopes shall not exceed a grade of 1 1/2 horizontal to 1 vertical. Fill and combination fill and cut slopes shall not exceed 2 horizontal to 1 vertical. Slopes over three feet in vertical height shall be planted with approved perenial or treated with equally approved erosion control measures prior to final inspection.
11. Surface drainage shall be provided a minimum of 2% for 5 feet away from the foundation line of any structure.
12. All trees that are to remain on site shall be temporarily fenced and protected around the drip line during grading.
13. An erosion and sediment control plan shall be required as part of the grading plan and permit requirements.
14. "Best Management Practices for Construction Activities: Eroded sediments and other pollutants must be retained onsite and must not be transported from the site via sheet flow,swales, area drains, natural drainage courses, or wind. Stockpiles of earth and other construction related materials must be protected from being transported from the site by forces of wind or water. Fuels, oils, solvents, and other toxic materials must be stored in accordance with their listing and are not to contaminate the soil and surface waters. All approved storage containers are to be protected from the weater. Spills may not be washed into the drainage system. Excess or waste concrete may not be washed into public way or any other drainage system. Provisions must be made to retain concrete wastes on site until they can be disposed as solid waste. Trash and construction related solid waste must be deposited into a covered waste receptacle to prevent contamination of rainwater and dispersal by wind. Sediments and other material may not be tracked from the site by vehicular traffic. The construction entrance roadways must be stabilized so as to inhibit sediments from being deposited into the public way. Accidental deposition must be swept up immediately and may not be washed down by rain or other means. Any slopes with disturbed soils or denuded of vegetation must be stabilized so as to minimize erosion by wind and water."
15. If grading occurs during Nov 1 through Apr 15, no grading shall occur unless approved erosion and sediment control measures are in place. Discharges of sediment from the project site may result in a Stop Work Order.
16. All earthwork on hillsides, sloping or mountainous terrain shall be stabilized to protect and prevent loss of soils, as necessary, year-round.

Earthwork Estimates

Cut: 130,280 C.Y. Fill: 127,900 C.Y. Import: 0 C.Y. Export: 0 C.Y. Quantities based on 30% shrinkage

Erosion Control Notes

1. Erosion control measures shall be implemented on all projects and shall include source control, including protection of stockpiles, protection of slopes, protection of all disturbed areas, and protection of accesses. In addition, perimeter containment measures shall be placed prior to the commencement of grading and site disturbance activities unless the Public Works Department determines temporary measures to be unnecessary based upon location, site characteristics or time of year. The intent of erosion control measures shall be to keep all sediment from entering a swale, drainage way, watercourse or onto adjacent properties.
2. Site inspections and appropriate maintenance of erosion control devices shall be conducted and documented prior to, during, and after rain events.
3. The developer shall be responsible for the placement and maintenance of all erosion control devices as specified by the approved plan until such time that the project is accepted as complete by the Public Works Department. Erosion control devices may be relocated, deleted or additional items may be required depending on the actual soil conditions encountered. Additional erosion control devices shall be placed at the discretion of the Engineer of Work, County Inspector, SWPPP Monitor, or RWQCB Inspector. Guidelines for determining appropriate erosion control devices are included in the appendix of the Public Improvement Standards.
4. All erosion control devices shall be the first order of work and shall be in place between Oct 15 and April 15 or anytime when the rain probability exceeds 30%. This work shall be installed or applied after each area is graded and no later than five (5) working days after the completion of each area.
5. The Engineer of Work and the Public Works Department shall be notified before October 15 for inspection of installed erosion control devices.
6. A standby crew for emergency work shall be available at all times during the rainy season (October 15 through April 15). Necessary materials shall be available and stock piled at convenient locations to facilitate rapid construction or maintenance of temporary devices when rain is imminent.
7. Permanent erosion control shall be placed and established with 90% coverage on all disturbed surfaces other than paved or gravel surfaces, prior to final inspection. Permanent erosion control shall be fully established prior to final acceptance. Temporary erosion control measures shall remain in place until permanent measures are established.
8. In the event of a failure, the developer and/or his representative shall be responsible for cleanup and all associated costs or damages.
9. All projects involving site disturbance of one acre or greater shall comply with the requirements of the National Pollutant Discharge Elimination System (NPDES). The developer shall submit a Notice of Intent (NOI) to comply with the General Permit for Construction Activity with the Regional Water Quality Control Board (RWQCB). The developer shall provide the County with the Waste Discharge Identification Number (WDID #) or with verification that an exemption has been granted by RWQCB.

   WDID# _____
10. Person to contact 24 hours a day in the event there is an erosion control/sedimentation problem (Storm Water Compliance Officer):

    Name Kevin Merrill
    Local Phone Number 310-3989

Project Air Quality Control Notes:

During Construction the contractor shall designate a person or persons to monitor the Dust Control Program and to order increases measures as necessary to prevent the transport of dust off-site. Their duties shall include holiday and weekend periods when work may or may not be in progress. The name and telephone number for such persons shall be provided to the APCD prior to the commencement of construction.
The measures for dust control are as follows but not limited to:

Reduce the amount of disturbed area where possible,

1. Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15mph. Reclaimed (non-potable) water should be used whenever possible,
2. All dirt stockpile areas shall be sprayed daily as needed.
3. Exposed ground areas that are planned to be reworked at dates later than one month after initial grading should be seeded with a fast germinating native grass seed and watered until vegetation is established.
4. All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the ACCD.
5. All external slopes shall be hydroseeded as soon as possible upon completion.
6. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
7. All trucks hauling dirt, sand, soil, or other loose material are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114.
8. Install wheel washers where vehicles enter and exit paved roads and streets, or wash off trucks and equipment leaving the site.
9. Prior to final inspection all disturbed areas shall be vegetated with a fast-growing, native seed mix.

General Notes

1. No construction shall be started without plans approved by the County Planning Department. The Planning Department shall be notified at least 24 hrors prior to the start of construction and the time and location for the preconstruction conference.
2. All construction work and installations shall conform to the County Standards and Specifications.
3. Soils tests shall be done in accordance with the County Standards. The test results shall clearly indicate the location and source of materials.
4. Compaction tests shall be made on all embankment materials, subgrades and ditch backfill.
5. There will be no need for special concrete inspection. Concrete for the anchor pad shall be 2000 psi. The rebar shall be inspected prior to the placement of the concrete. All concrete and the two sack slurry for the anti-seep collars and ditch backfill where shown shall be properly vibrated.
6. The Design Engineer shall inspect the installation of the HDPE Liner. The liner shall be installed by a contractor specializing in lining ponds.
7. The Engineer of Record shall certify that the improvements when completed are in accordance to the plans prior to the request for Final Inspection. As-built plans are to be prepared after construction is completed. The Engineer certifying the improvements shall be present at the Final Inspection.
8. Final Reports for grading and earthwork shall be prepared in accordance with the requirements of the UBC, Chapter 33.
9. Upon completion of the work, the Geotechnical Engineer shall submit to the Engineer of Record a complete summary of all testing done during the project.
10. The Construction Contractor shall maintain a current, complete and accurate record of all changes which deviate from the approved plans. No changes shall be made without the prior approval of the Engineer of Record and the County.

GSI Soills, Inc shall perform all special inspections for the earthwork for this project.
GSI Geotechnical Investigation dated January 4, 2016 Project 15-7274 shall be a part of these documents.
Call 48 hours prior to inspection to set up an appointment.

Table 1705.6
Required Verification and Inspection of Soils

Verification and Inspection Task	Continuos During Task Listed	Periodically During Task Listed
1. Verify materials below embankments are adequate to achieve the design capacity	____	X
2. Verify excavations are extended to proper depth and have reached proper material.	____	X
3. Perform classification and testing of controlled filled materials.	____	X
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of controlled fill.	X	____
5. Prior to placement of controlled fill, observe subgrade	____	X

Scope of Work

The work consists of constructing three new lined reservoirs for irrigation purposes. All areas to receive fill shall be excavated a minimum of three feet, the exposed surface scarified and moisture conditioned, then recompacted to 90% relative compaction. The intent is to balance the earthwork with no import or export. The completed interior slopes shall be fine graded and all rocks removed, then rolled with a smooth drum roller. A 40 mil HDPE geomembrane liner will then be installed on the slopes and bottom. The liner will be installed per manufacturer's recommendations by a company specializing in liner installation. A five foot by twenty three foot by eight inch reinforced concrete pad for anchoring the liner shall be constructed around the pump inlet pipes. No special inspection for the concrete work shall be required. A 6 foot non-climb fence will be built around the exterior perimeter. Coast Guard Approved buoys with a minimum of 90 feet of line shall be placed at no more than 200 foot intervals around the top interior slope of the reservoirs. The sources of water are pvc waterlines from existing wells and no surface water shall enter the reservoir. Valving, filters and pumps will be installed after the reservoirs are constructed by the Irrigation Contractor and are not part of this permit. This contract is for stubbing inlet pipes through the exterior slope for future connection to the fill and transfer lines by an Irrigation Contractor. These pipes shall have 2 sack concrete slurry anti-seep collars. A 15" PVC Drop Pipe Outlet Structure will serve as an emergency overflow in the event the high water limit switch fails and is sized to prevent the reservoir from overtopping. Access to the reservoir is by existing dirt farm roads . No driveways will be constructed. The existing farm fields sheet flow gently across the locations and earthen swales will be constructed around the perimeters where necessary to keep any surface flow away from the toe of the fill slopes. No electrical work is included in this permit.

Benchmark and Basis of Bearing

Benchmark is a 2 1/2" aluminum disc, stamped h-2,
Cal-Trans Monument sb166 pm-55.01
elevation = 1824.55 NAVD88

Basis of Bearing is GPS established true north from NAD 83(92) from Cal-Trans Monuments sb166 pm-55.01 and sb166 pm-55.43

Project Information

Address: Hwy 166, Cuyama Valley
APN 147-020-045
Zoning AG
Project Description: Construct three 49 ac-ft Reservoirs for irrigation and frost protection purposes

Pre-Construction Meeting

Prior to construction a pre-construction meeting is required with the inspector to go over the special inspection reporting requirements, final and progress reports, & erosion control. E-mail inspection-North@countyofsb.org

Contacts:

Owner: Grapevine Land Management

Matt Turrentine
444 Higuera St Suite 202
San Luis Obispo, CA 93401
805 312-1828

Engineer: Tom A Howell

1812 N Vine
Santa Maria, CA 93454
805 925-5311

Geotechnical Engineer: GSI Soils, Inc

Rick Amero
524 East Chapel
Santa Maria, CA 93454
805 349-0140

Engineer's Certificate

I, Tom A Howell, RCE 27037, Engineer of Record, hereby certify that these plans are in accordance with the following codes: _____Date:_____

2013 California Bldg Code (0112 IBC), Appdx Chp 33, 1997 UBC

2013 California Electric Code (2011 NEC)

2013 California Mechanical Code (2012 IAMPO UMC)

2013 California Plumbing Code (2012 IAMPO UPC)

California Title 24: 2011 California Energy Code and Accesibility Standards

County Ordinance(s) Title 19 (Building), (Inland)

Geotechnical Engineer's Certificate

I have reviewed the plans and specifications and have found them to be in substantial conformance with the recommendations as found in my Soil Investigation.

_____ Date: _____

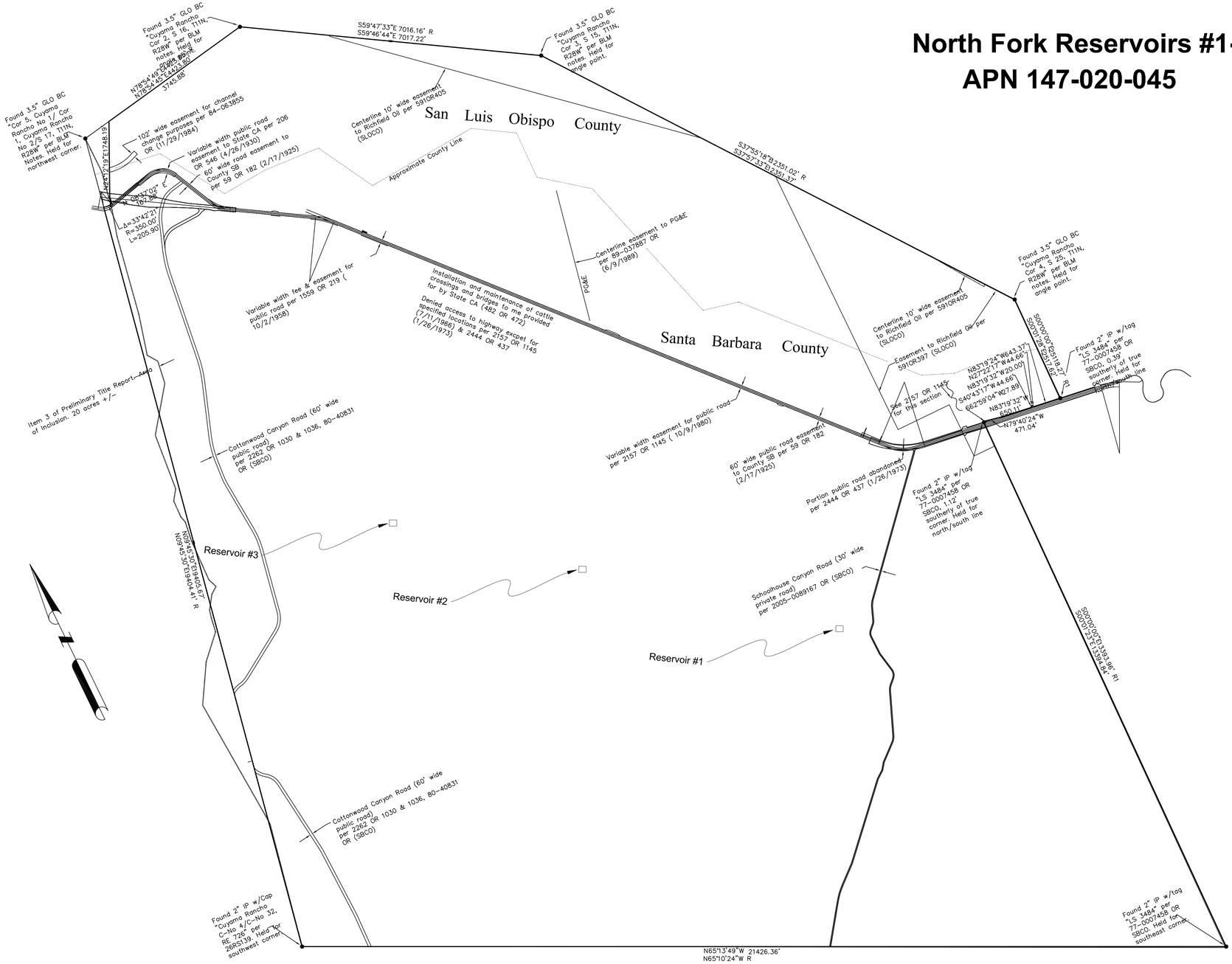
REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

Sheet Index

North Fork Vineyards

DRAWN *TH*	DATE *1/09/17*	*49 Ac-ft Reservoirs Hwy 166 Cuyama, CA Cover Sheet*
APPROVED	DATE	
SCALE *Varies*	SHEET *1 of 12*	PROJECT NO. *101715-6233*

North Fork Reservoirs #1-3
APN 147-020-045



REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

North Fork Vineyards		
DRAWN TH	DATE 1/09/17	49 Ac-ft Reservoirs Hwy 166 Cuyama, CA Overall Property
APPROVED	DATE	
SCALE 1"=1200'	SHEET 2 of 12	PROJECT NO. 101715-6233

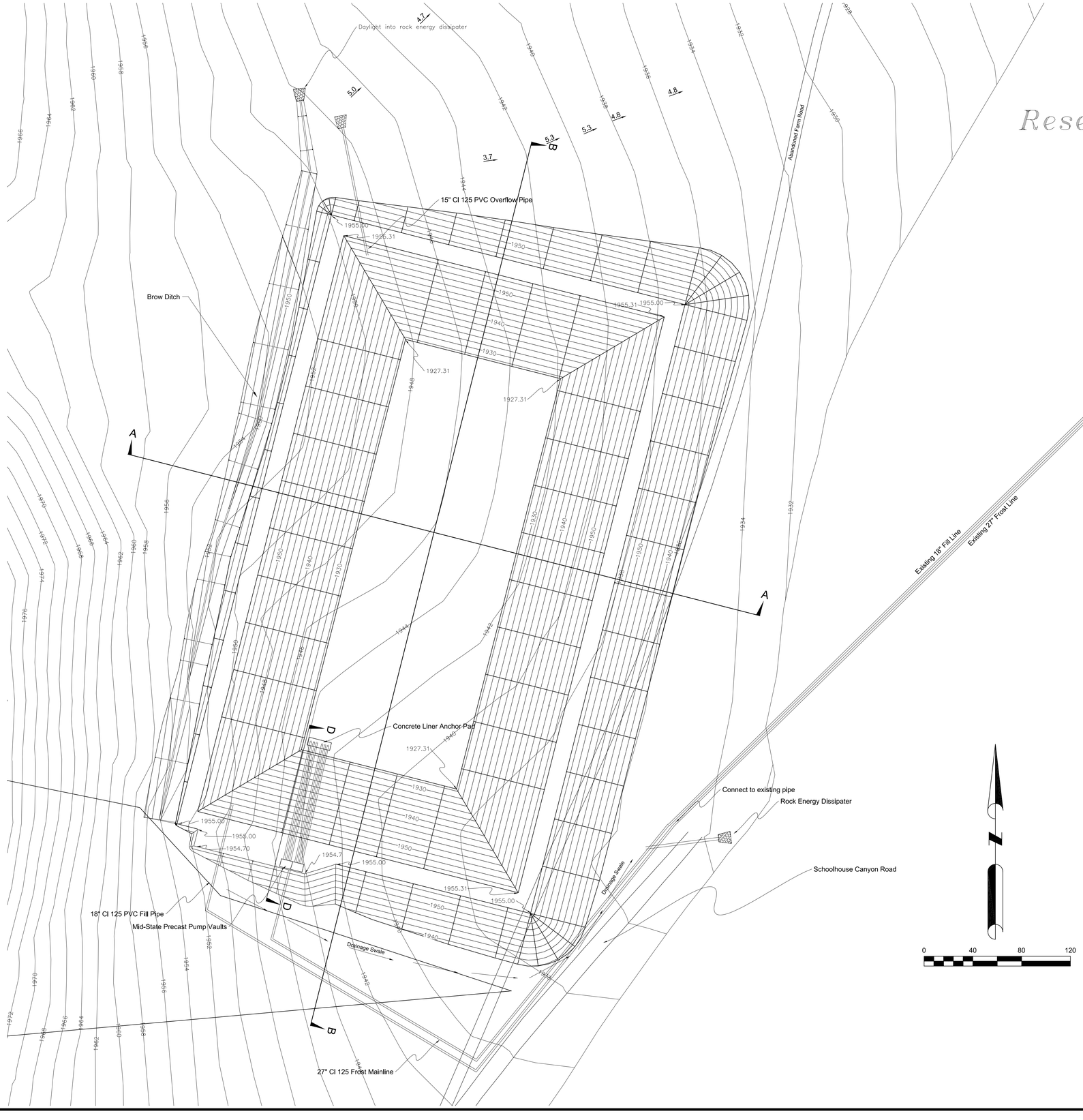
North Fork Vineyard Frost Protection Overall Site Plan

REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

North Fork Vineyards

DRAWN *TH*	DATE *1/09/17*	*Reservoirs #1-3 Overall Piping Plan Existing Piping*
APPROVED	DATE	
SCALE *1"=600'*	SHEET *3 of 12*	PROJECT NO. *101715-6233*

Reservoir # 1 Grading Plan



Pond #1 Report

Top of dam elevation: 1955.3
Bottom of pond elevation: 1927.3
Top of dam width: 14.0
Cut Slope: 2.00:1
Fill Slope: 2.50:1
Interior Slope: 2.50:1

Pond Earthwork Volumes

Fill Factor: 1.30
Total cut : 44,062 C.Y.
Total fill: 44,589 C.Y.
Total Disturbed Area: 4.85 Acres

Pond Storage Volumes

Water Elev	Storage(AcreFt)	Area(Acre)
1927.31	0.00	1.046
1929.31	2.20	1.158
1931.31	4.63	1.274
1933.31	7.30	1.395
1935.31	10.21	1.520
1937.31	13.38	1.650
1939.31	16.81	1.784
1941.31	20.52	1.923
1943.31	24.51	2.066
1945.31	28.79	2.214
1947.31	33.37	2.366
1949.31	38.26	2.523
1951.31	43.46	2.684
1953.31	49.00	2.850
1955.31	54.87	3.020

REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

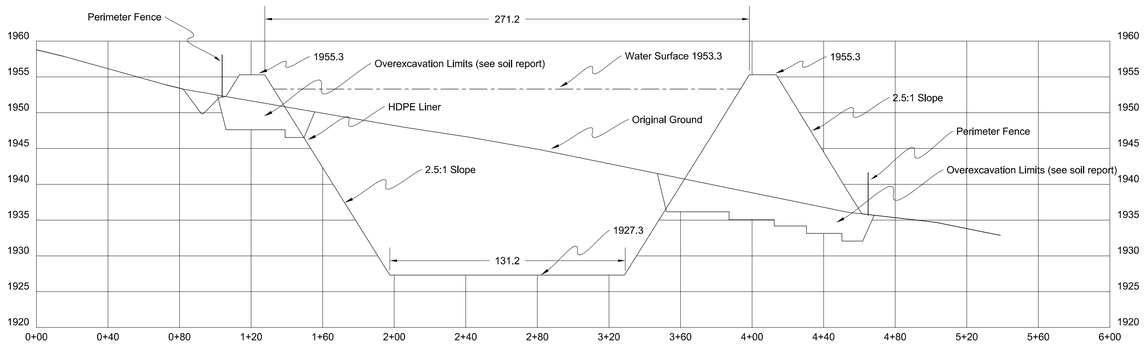
Revisions:
1/03/2017 Added 15" CMP Culvert
Moved Outlet Pipe
Lengthened Drainage Swales

North Fork Vineyards

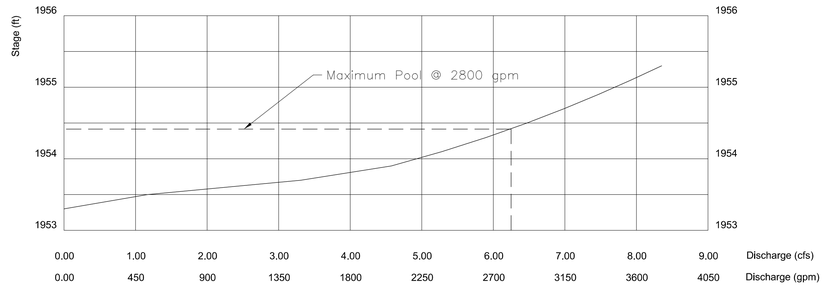
DRAWN TH	DATE 1/09/17	Reservoir #1 Grading Plan
APPROVED	DATE	
SCALE 1"=40'	SHEET 4 of 12	PROJECT NO. 101715-6233

Reservoir #1 Details

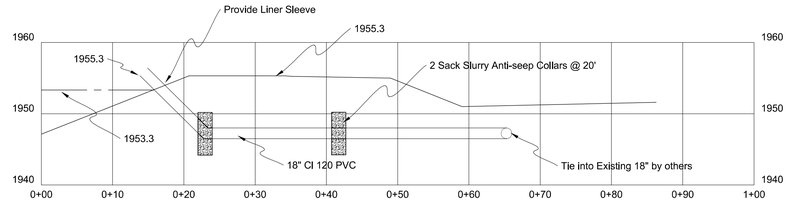
Reservoir #2 Section A-A



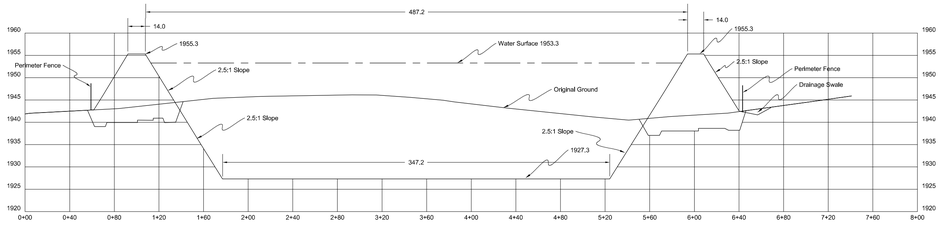
Pond #1 Stage-Storage



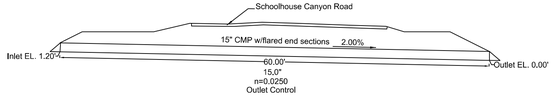
Reservoir #1 Filler Pipe



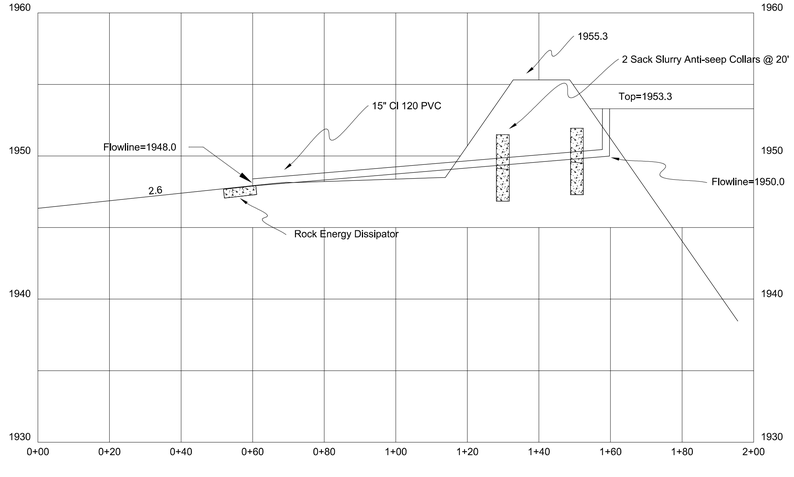
Reservoir #1 Section B-B



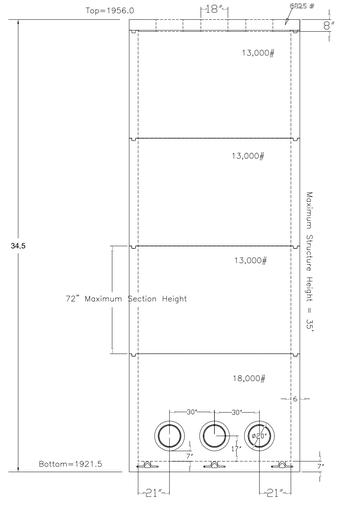
15" CMP Under Schoolhouse Road



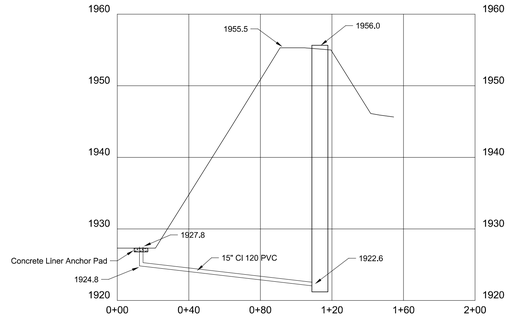
Reservoir #1 Overflow Detail



Mid–State Concrete Products
Pump Housing Vault Reservoir #1



Reservoir #1 Pump Inlet

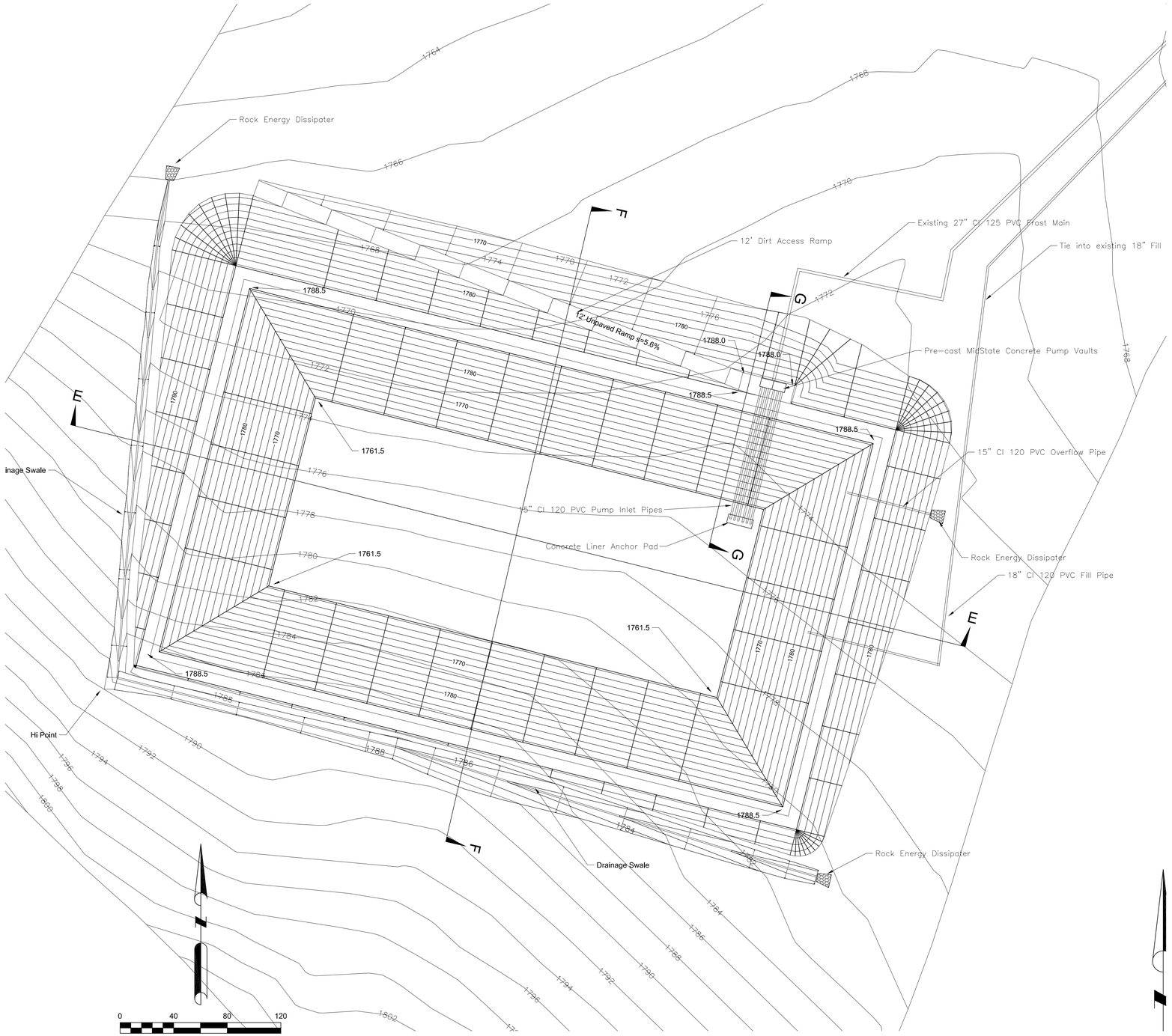


REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

Revisions:
1/03/2017 Added 15" CMP Culvert Detail
Revised Stage-Storage Diagram
Revised Outlet Pipe Detail

North Fork Vineyards		
DRAWN *TH*	DATE *1/09/17*	*Reservoir #1 Details*
APPROVED	DATE	
SCALE *Varies*	SHEET *5 of 12*	PROJECT NO. *101715–6233*

Reservoir #2 Grading Plan



Pond Report

Tue Oct 20 14:36:54 2015

Top of dam elevation: 1788.50
Bottom of pond elevation: 1761.50
Top of dam width: 14.00
Cut Slope: 2.00:1
Fill Slope: 2.50:1
Interior Slope: 2.50:1
Existing Surface: C:\Carlson Projects\North Fork\Reservoir 2B OG.tin

Pond Earthwork Volumes

Fill Factor: 1.30
Total cut : 44,064.35 C.Y.
Total fill: 1 42,205.16 C.Y.

Pond Storage Volumes

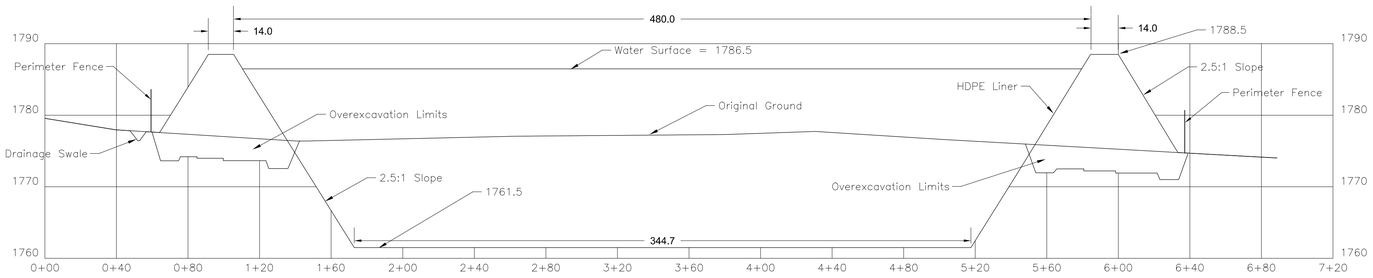
Water Elev	Storage(AcreFt)	Area(Acre)
1761.50	0.00	1.146
1763.50	2.40	1.259
1765.50	5.04	1.378
1767.50	7.91	1.502
1769.50	11.05	1.630
1771.50	14.44	1.762
1773.50	18.10	1.899
1775.50	22.03	2.040
1777.50	26.26	2.186
1779.50	30.73	2.336
1781.50	35.60	2.490
1783.50	40.74	2.649
1785.50	46.20	2.813
1787.50	52.00	2.981
1788.50	55.02	3.067

Area in Cut : 148,297.1 S.F.
Area in Fill: 186,122.7 S.F.

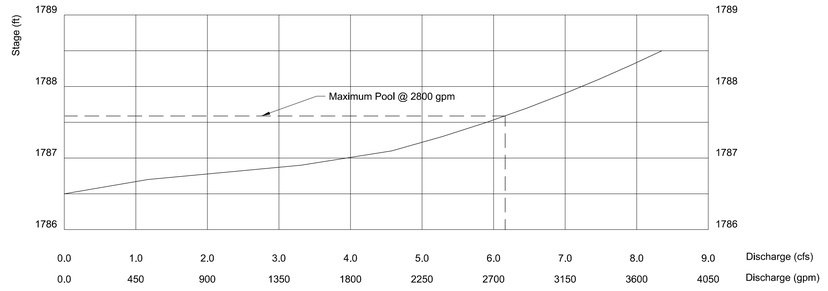
REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

North Fork Vineyards		
DRAWN: TH	DATE: 1/09/17	Reservoir #2 Grading Plan
APPROVED	DATE	
SCALE: 1"=40'	SHEET: 6 of 12	PROJECT NO.: 101715-6233

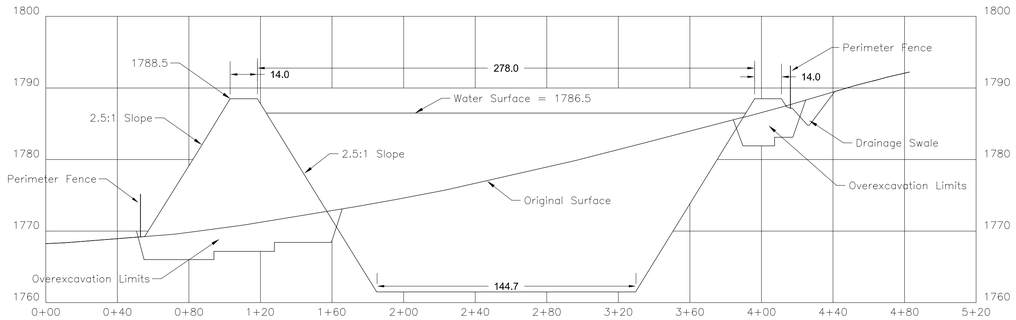
Reservoir #2 Section E–E



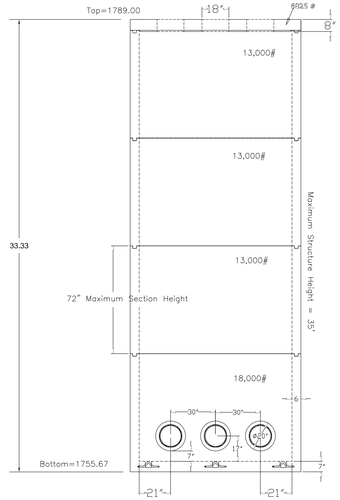
Reservoir #2 Stage Storage



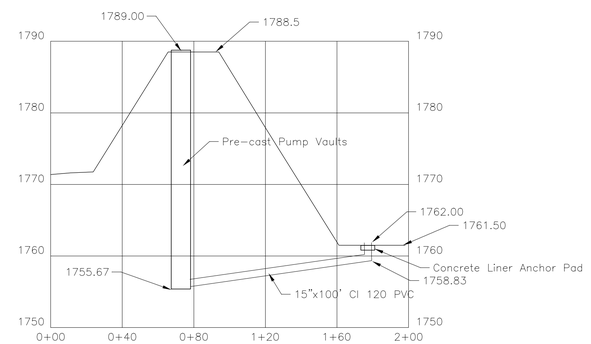
Reservoir #2 Section F–F



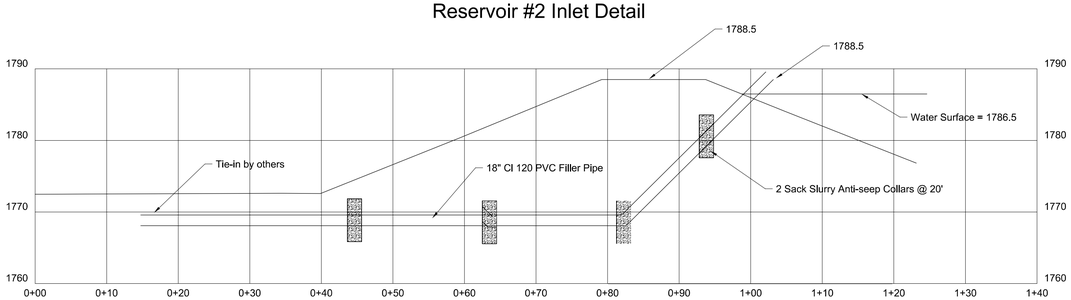
Reservoir #2 Pump Vaults



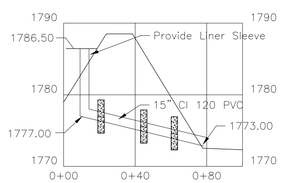
Reservoir #2 Pump Vaults Section G–G



Reservoir #2 Inlet Detail



Reservoir #2 Overflow

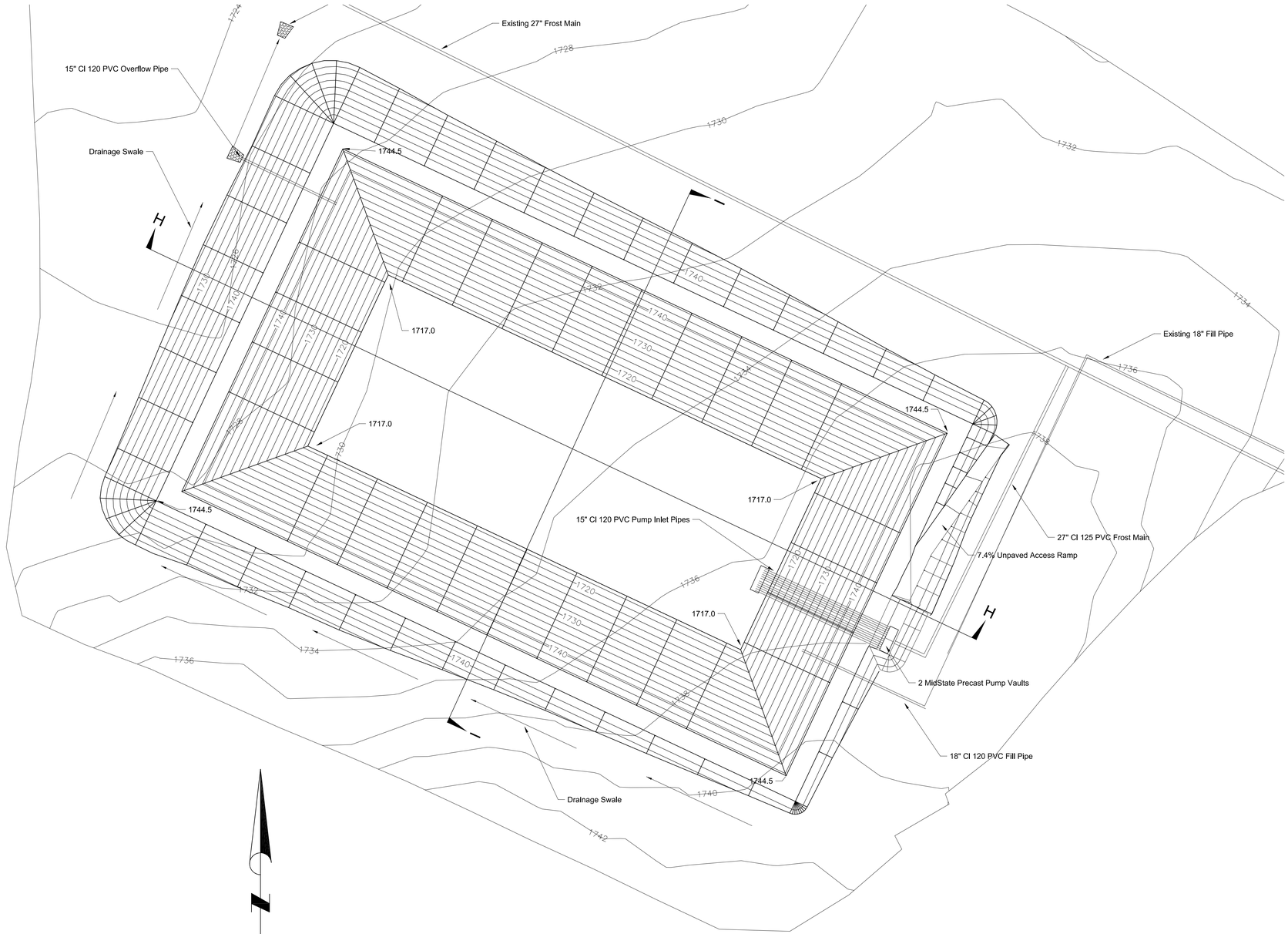


REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

North Fork Vineyards

DRAWN *TH*	DATE *1/09/17*	*Reservoir #2 Details*
APPROVED	DATE	
SCALE *Varies*	SHEET *7 of 12*	PROJECT NO. *101715-6233*

Reservoir #3 Grading Plan



Pond Report

Top of dam elevation: 1744.50
Bottom of pond elevation: 1717.00
Top of dam width: 14.00
Cut Slope: 2.00:1
Fill Slope: 2.50:1
Interior Slope: 2.50

Pond Earthwork Volumes

Fill Factor: 1.30
Total cut : 42,770.71 C.Y.
Total fill: 40,253.87 C.Y.

Pond Storage Volumes

Water Elev	Storage(AcreFt)	Area(Acre)
1717.00	0.00	1.093
1719.00	2.29	1.206
1721.00	4.82	1.323
1723.00	7.59	1.445
1725.00	10.60	1.571
1727.00	13.87	1.701
1729.00	17.41	1.835
1731.00	21.22	1.973
1733.00	25.30	2.116
1735.00	29.68	2.263
1737.00	34.36	2.414
1739.00	39.34	2.570
1741.00	44.64	2.729
1743.00	50.26	2.893
1744.50	54.70	3.019

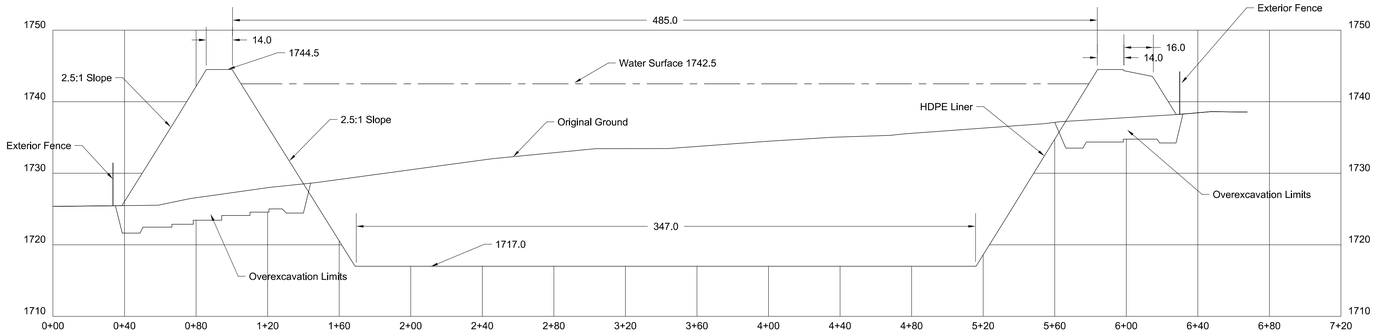
REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

North Fork Vineyards

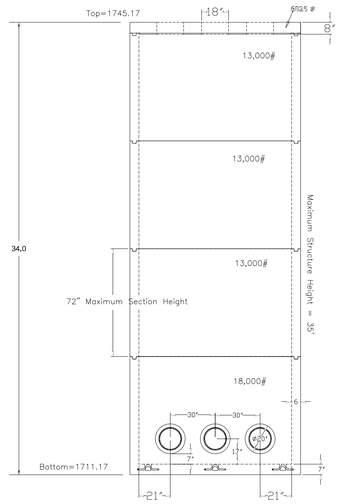
DRAWN *TH*	DATE *1/09/17*	*Reservoir #3 Grading Plan*
APPROVED	DATE	
SCALE *1"=40'*	SHEET *8 of 12*	PROJECT NO. *101715-6233*

Reservoir #3 Details

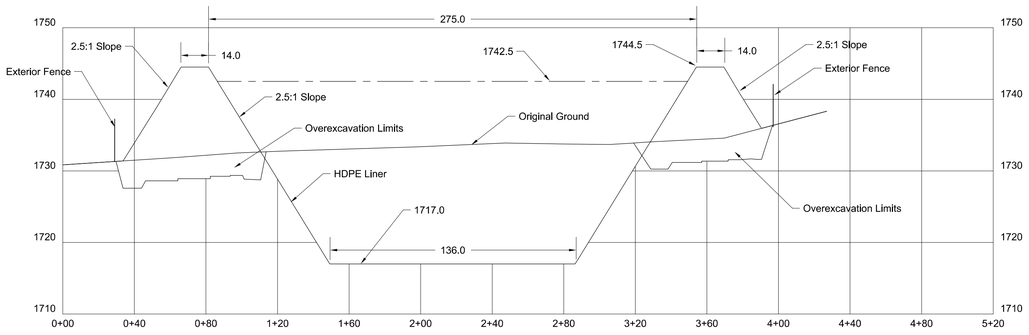
Reservoir #3 Section H-H



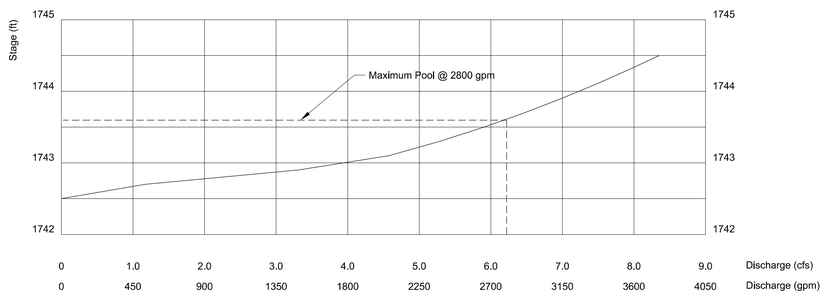
Mid-State Concrete Products
Pump Housing Vault Reservoir #3



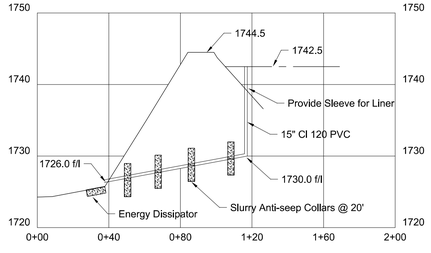
Reservoir #3 Section I-I



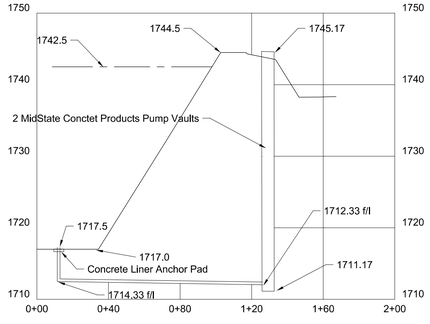
Reservoir #3 Stage Storage



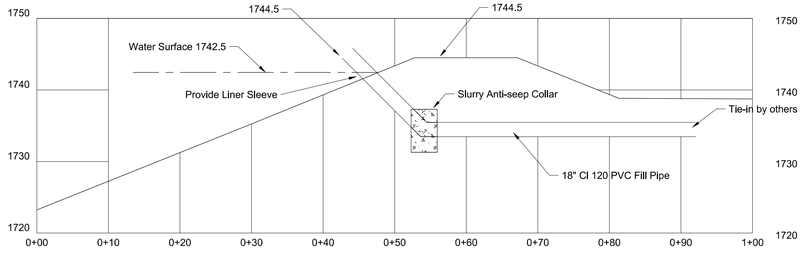
Reservoir #3 Overflow



Reservoir #3 Pump Vaults



Reservoir #3 18" Fill Pipe

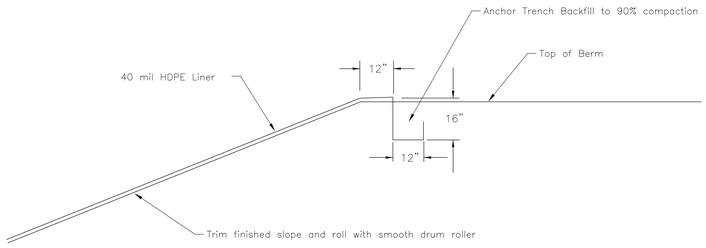


REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

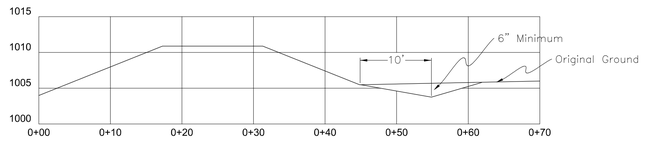
North Fork Vineyards		
DRAWN: TH	DATE: 1/09/17	Reservoir #3 Details
APPROVED	DATE	
SCALE: Varies	SHEET: 9 of 12	PROJECT NO.: 101715-6233

Details Common to All Reservoirs

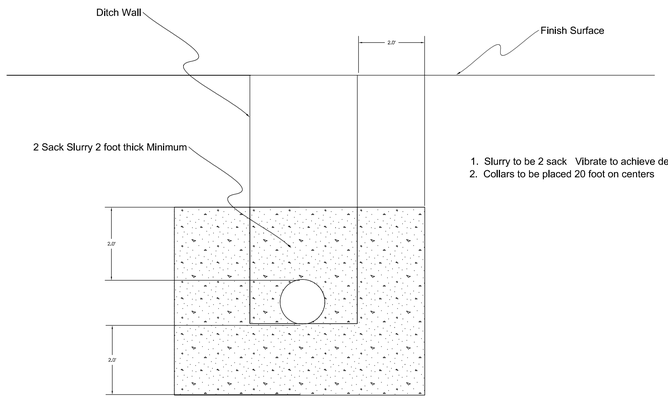
HDPE Liner Anchor Trench



Drainage Swale Detail

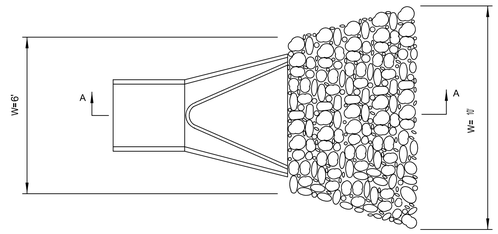


Anti-seep Collar Detail

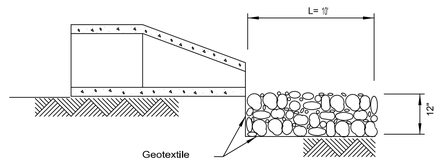


1. Slurry to be 2 sack Vibrate to achieve density.
2. Collars to be placed 20 foot on centers

Rock Energy Dissipater



PLAN

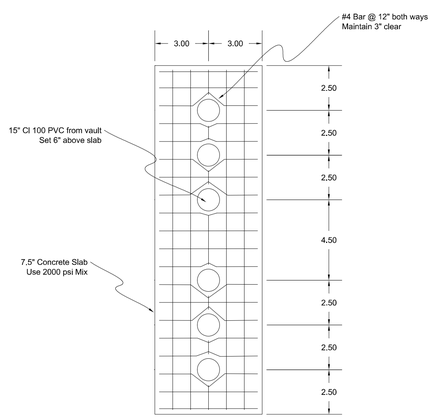


SECTION A-A

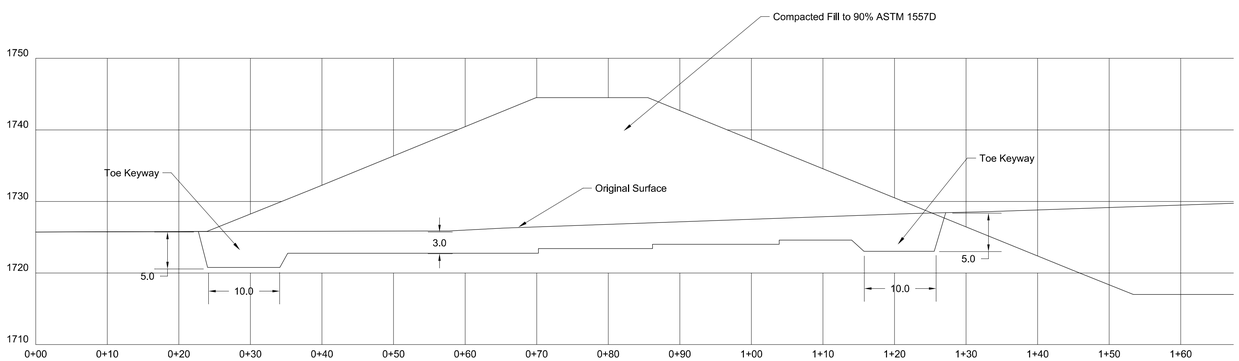
Notes:
1. Rock shall be 6" to 12" diameter
2. Minimum diminsion shall be 6' x 10' x 12"

General Notes:

1. All grading shall conform to the Soil Report prepared by GSI Soils for this project dated January 4, 2016.
2. All slopes shall be overfilled than trimmed to finish grade to provide firm surfaces.
3. Finished slopes and the bottom surface shall be rolled with a smooth drum roller prior to placing fabric. The Engineer of Record shall inspect the surfaces to assure they are rock free and to the proper lines and grades before fabric shall be installed.
4. The liner shall be placed by a contractor specializing in pond liners and all pipes extending through the liner shall have sleeves and stainless bands to prevent leakage.
5. A 6 foot high non-climb fence shall be installed around the exterior perimeter of the reservoir. The fabric shall have 10 guage top and bottom wires with 12 1/2 guage 2x4 mesh filler fabric. Tee Posts shall be at 8 feet spacings and shall be heavy weight a minimum of 8 feet long.
6. The finished pond shall be surveyed by the Engineer of Record and the storage volume calculated. The 15" PVC Overflow Pipe shall be adjusted as necessary to ensure that the retained volume below the outflow inlet is no more than 49 acre feet and that there is a minimum of two feet of freeboard to the top of berm at the lowest point.



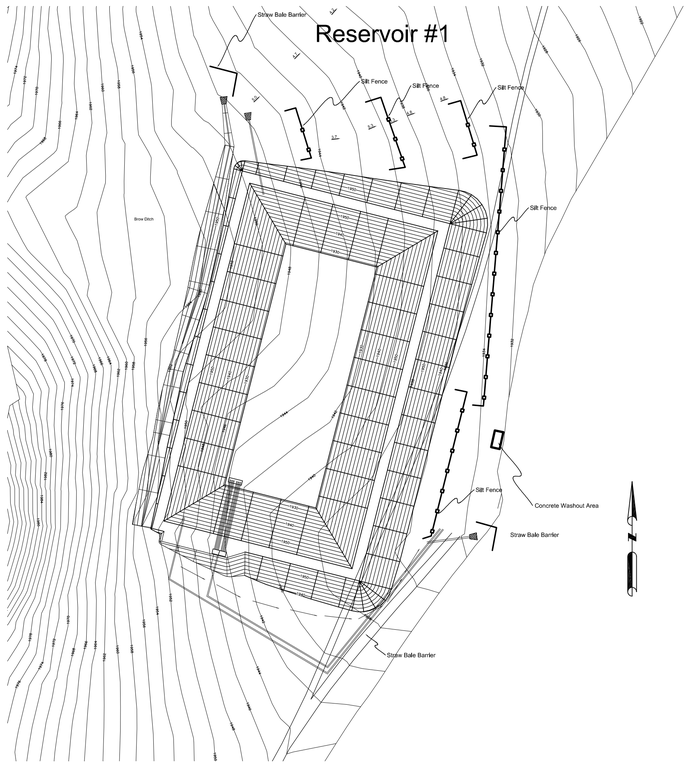
Overexcavation and Keyway Details per Figure 3 of Soil Report

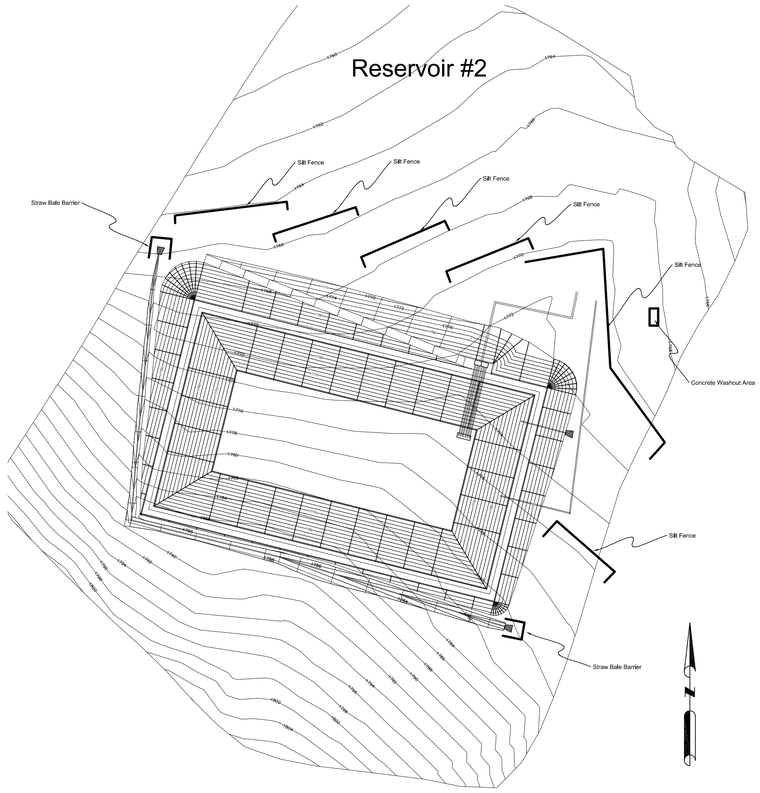


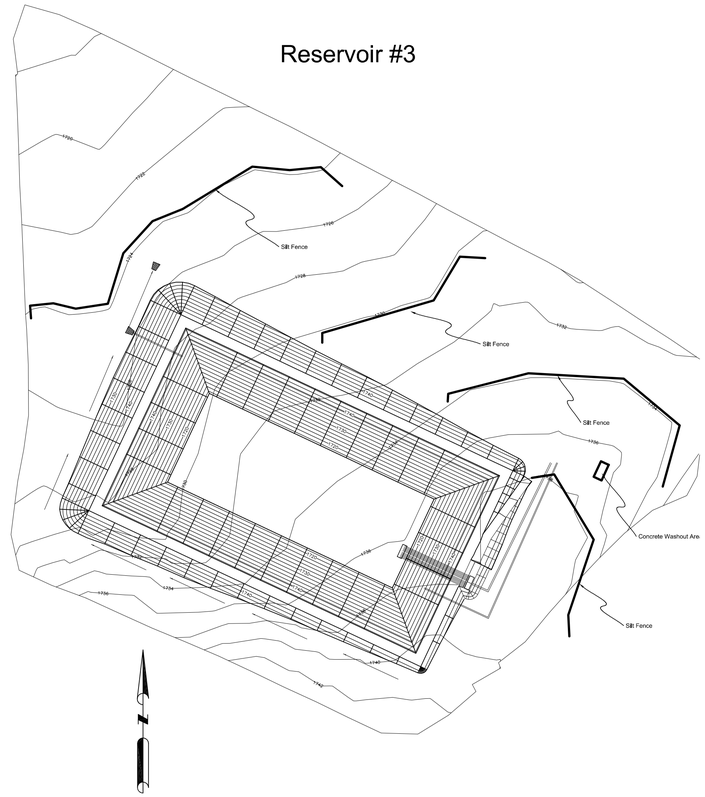
REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

North Fork Vineyards		
DRAWN TH	DATE 1/09/17	Reservoirs #1-3 Common Details
APPROVED	DATE	
SCALE Varies	SHEET 10 of 12	PROJECT NO. 101715-6233

Erosion and Sedimentation Control Plan







Erosion Control Notes:

1. Erosion control measures shall be implemented on all projects and shall include source control, including protection of stockpiles, protection of slopes, protection of all disturbed areas, and protection of accesses. In addition, perimeter containment measures shall be placed prior to the commencement of grading and site disturbance activities unless the Engineer determines temporary measures to be unnecessary based upon location, site characteristics or time of year. The intent of the erosion control measures shall be to keep all sediment from entering a swale, drainage way, watercourse or onto adjacent properties. An approved Erosion Control and Sedimentation Control Plan will require County approval
2. Site inspections and appropriate maintenance of erosion control devices shall be conducted and documented prior to, during, and after rain events.
3. The developer shall be responsible for the placement and maintenance of all erosion control devices as specified by the approved plan until such time that the project is accepted as complete by the Engineer. Erosion control devices may be relocated, deleted or additional items may be required depending on the actual soil conditions encountered. Additional erosion control shall be placed at the discretion of the Engineer of Work, Engineer, SWPPP Monitor or RWQCB Inspector. Guidelines for determining appropriate erosion control devices are included in the appendix of the Public Improvement Standards.
4. All erosion control devices shall be the first order of work and shall be in place between October 15 and April 15 or anytime when the rain probability exceeds 30%. This work shall be installed or applied after each area is graded and no longer than five (5) working days after the completion of each area.
5. The Engineer of Work and the Engineer shall be notified before October 15 for inspection of installed erosion control devices.
6. A standby crew for emergency work shall be available at all times during the rainy season (October 15 through April 15). Necessary materials shall be available and stockpiled at convenient locations to facilitate rapid construction or maintenance of temporary devices when rain is imminent.
7. Permanent erosion control shall be placed and established with 70% coverage on all disturbed surfaces other than paved or gravel surfaces prior to final inspection. Permanent erosion control shall be fully established prior to final inspection. Temporary erosion control measures shall remain in place until permanent measures are established. A water truck shall be used to water areas hydroseeded until the planting is established.
8. In the event of a failure, the developer and/or his representative shall be responsible for cleanup and all associated costs or damages.
9. Slurry Mix: The slurry mix shall be composed of the following materials:

Bromus mollis - Blando Brome (95%, 85%)	20 pounds per acre
Festuca megalura - Zorro Fescue (85%, 80%)	8
Trifolium hirtum "Hykon" - Rose Clover (95%, 90%) inoculated with appropriate bacteria	30 3
Eschscholzia californica - California Poppy (95%, 75%)	3
Lupinus nanus - Sky Lupine (95%, 75%)	4

(Seed avaialbale at S&S Seeds (805) 684-0436

Other Materials:

100% Wood fiber mulch (green)	1600 pounds per acre
Commercial Fertilizer (16-20-0)	400
"M-Binder" (stabilizing emulsion) or equal	120
Water (as needed for application and as specified by manufacturer)	

10. Application: The slurry preparation shall take place at the site and in the presence of the Engineer. Spraying of the slurry shall be done by an experienced hydroseeding company and commence within five minutes after all the materials have been mixed thoroughly.

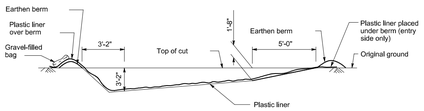
11. The hydroseeded areas shall be watered with a fine mist periodically until the seed begins to germinate then every other day until the roots are established and 70% of the area is covered. Do not use the side spray of a watertruck but instead use a nozzle adjusted to spray a fine mist attached to a hose.
12. BMP's to be constructed include but are not limited to:
    a: Silt Fence
    b: Straw bale barrier
    c: Concrete washout area

REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

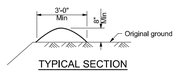
North Fork Vineyards

DRAWN *TH*	DATE *1/09/17*	*Reservoirs #1-3 Erosion & Sedimentation Control*
APPROVED	DATE	
SCALE *1"=100'*	SHEET *11 of 12*	PROJECT NO. *101715-6233*

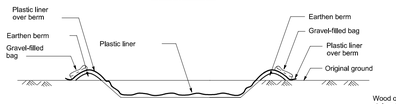
Erosion Control BMP Detai;ls



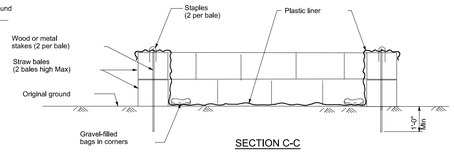
SECTION B-B



TYPICAL SECTION
EARTHEN BERM



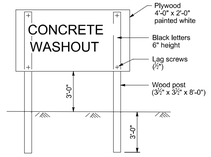
SECTION A-A



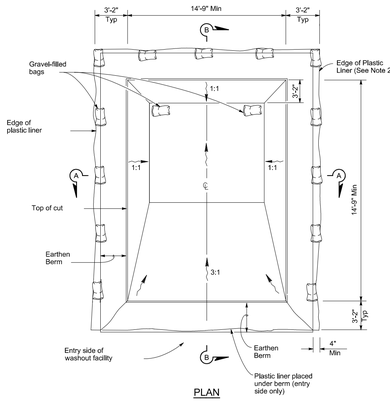
SECTION C-C

NOTES:

1. The concrete washout sign shall be installed within 32'-10" of the temporary concrete washout facility.
2. Plastic liner shall be anchored with gravel-filled bags for bellow grade concrete washout facility.

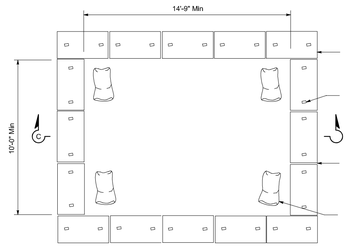


CONCRETE WASHOUT SIGN DETAIL



PLAN

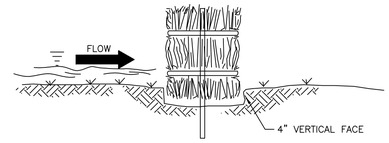
TEMPORARY CONCRETE WASHOUT FACILITY



PLAN

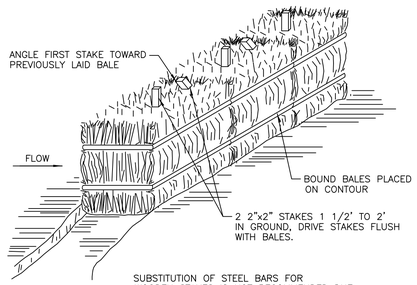
TEMPORARY CONCRETE WASHOUT FACILITY

NO SCALE



* PROMOTES ON SITE SEDIMENTATION BY CREATING A TEMPORARY POND.

BEDDING DETAIL

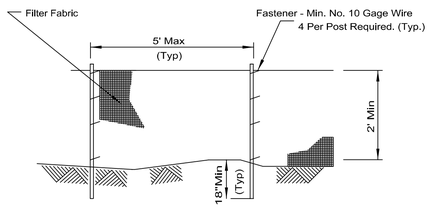


SUBSTITUTION OF STEEL BARS FOR WOODEN STAKES IS NOT RECOMMENDED DUE TO POTENTIAL FOR DAMAGING CONSTRUCTION EQUIPMENT

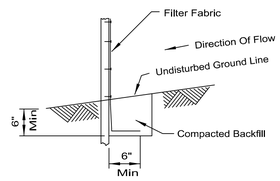
ANCHORING DETAIL

STRAW BALE BARRIERS

SILT FENCE PLAN



ELEVATION



FABRIC ANCHOR DETAIL

NOTES:

1. Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
2. Filter fabric shall meet the requirements of material specification 592 Geotextile Table 1 or 2, Class with equivalent opening size of at least 30 for nonwoven and 50 for woven.
3. Fence posts shall be either standard steel post or wood post with a minimum cross-sectional area of 3.0 sq. in.

REGISTERED PROFESSIONAL ENGINEER
TOM A. HOWELL
No. C 27037
Expires 3/31/17
CIVIL
STATE OF CALIFORNIA

North Fork Vineyards		
DRAWN *TH*	DATE *1/09/17*	*Reservoirs #1-3* *BMP Details*
APPROVED	DATE	
SCALE *Varies*	SHEET *12 of 12*	PROJECT NO. *101715-6233*

ERDENET COPPER DUMP LEACH PAD

ERDENET, MONGOLIA

[DURABILITY RUNS DEEP]

GSE Geomembrane Still Performing After 16 Years of Exposure to Harsh Weather

Owner:
Erdmin Company, Ltd.

Engineers:
BKS Consulting Engineers
EMC Design Department

Geosynthetics Installer:
Stroyinvest

Technical Description:

Product: **GSE Geomembrane**
Description: 2.0 mm Smooth HDPE
Quantity: 100,000 m²

Case Study

Background

Mongolia is a mineral-rich, landlocked country located in East-Central Asia, with large reserves of coal, copper, and gold. The mining city of Erdenet, located 371 kilometers Northwest of the capital, was built in 1974 to exploit Asia's largest deposit of copper ore, and it is the location of the fourth largest copper mine in the world. Erdenet Mining Corporation (EMC), a joint venture between the governments of Mongolia and Russia, and RMC of the United States agreed to build a pilot plant to manufacture pure copper cathode by using a weakened solution of sulfuric acid from low grade ore piles. Construction began in 1997, and 4 months later, the plant, registered under the name Erdmin Co., Ltd., started producing copper by dump leach process.

Challenge

Mongolia experiences extremely harsh weather conditions, with long cold winters and short summers, during which most precipitaion falls. The altitude of Erdenet is 1,400 m, and the city receives stronger sunlight radiation than the plain areas. Historical weather records show the average yearly temperatures can range from 21°C to -26°C, while some years have seen temperatures fluctuate up to 69 degrees between the highest and lowest recorded thermometer readings. These conditions create a challenge for the design engineers to find a geomembrane material that can perform when continually exposed to such extreme temperatures and UV radiation.

The Solution

BKS Consulting Engineers and the design department of EMC specified 2.0 mm thick GSE High Density Polyethylene Smooth geomembrane for the bottom lining of the dump leach pad and 8 attached solution ponds. It

continued...

GSE ENVIRONMENTAL™
GSEworld.com

was a single liner system, utilizing a geotextile layer under the geomembrane for added protection from any sharp rocks or protruding objects in the compacted tailings subgrade. In total, 100,000 m² of liner were installed by Stroyinvest, a joint venture between Russian and local construction firms. At the time of installation, it was the first job of this kind in Mongolia and included a 56 meter high dump leach pad, four pregnant solution ponds connecting with geomembrane lined ditches, two raffinate ponds, and a waste impoundment. The typical side slope angles for the ponds were 2:1 and the average depth was 4-6 meters. Due to different seasons, the water level of the ponds varied and a large portion of the geomembrane was exposed to weather conditions and UV radiation over long periods of time. Installation was completed within 4 months during the spring and summer of 1997.

The Result

On a visit to the site in 2013, GSE engineers removed exposed samples of the liner that had been in service for 16 years and performed evaluation testing as per current GRI-GM 13 specifications. The laboratory evaluation on the exhumed samples revealed no significant reduction in the physical and mechanical properties (density, tensile, tear, puncture, carbon black content and dispersion). The liner showed a reduction in OIT values due to depletion of the antioxidant over time, but the levels are still relatively high and well within the specification of GRI-GM 13. Based on calculations, this geomembrane is expected to continue working in its desired function for another 141 years. Erdmin monitors the underground water quality two times a month, and no contamination has been detected so far. In addition, the quality of cathode copper manufactured in this plant has been confirmed by independent evaluators Alex Steward Assayers to meet the "A" grade quality requirements of the London Metal Exchange.

"We are very satisfied with the performance of the geomembrane applied in our dump leach pad. It helps us maintain a normal and effective operation in the facility," acknowledged Mr. J. Baatar, General Director of Erdmin Co., Ltd.

GSE ENVIRONMENTAL™

North America 800.435.2008
Europe & Africa 49.40.767420
Asia Pacific 66.2.937.0091
South America 56.2.595.4200
Middle East 20.23828.8888

For more information on this product and others, please visit us at GSEworld.com, call 800.435.2008 or contact your local sales office.

GSEworld.com

GSE is a leading manufacturer and marketer of geosynthetic lining products and services. We've built a reputation of reliability through our dedication to providing consistency of product, price and protection to our global customers.

Our commitment to innovation, our focus on quality and our industry expertise allow us the flexibility to collaborate with our clients to develop a custom, purpose-fit solution.

GSE ENVIRONMENTAL™

[DURABILITY RUNS DEEP] For more information on this product and others, please visit us at GSEworld.com, call 800.435.2008 or contact your local sales office.