

**APP #12013
CASE #CUP16-499**



HOMEFIELD, LLC

APN: 216-301-018

SUPPLEMENTAL SUBMISSION

****Water Resources Protection Plan****

Submitted by:
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Water Resource Protection Plan

WDID#: 1B16324CHUM

TRCID#:180101050406TRC291

Submitted to:

Andrew Smyth & Marcus Fung

Prepared by:

Timberland Resource Consultants

165 South Fortuna Blvd

Fortuna, CA 95540

02/08/2018

Purpose

This WRPP has been prepared on behalf of the property owner, Andrew Smyth & Marcus Fung, for APN 216-301-018 by agreement and in response to the California Water Code Section 13260(a), which requires that any person discharging waste or proposing to discharge waste within any region that could affect the quality of the waters of the state, other than into a community sewer system, shall file with the appropriate regional water board a Report of Waste Discharge (ROWD) containing such information and data as may be required by the Regional Water Board. The Regional Water Board may waive the requirements of Water Code section 13260 for specific types of discharges if the waiver is consistent with the Basin Plan and in the public interest. Any waiver is conditional and may be terminated at any time. A waiver should include monitoring requirements to verify the adequacy and effectiveness of the waiver's conditions. Order R1-2015-0023 conditionally waives the requirement to file a ROWD for discharges and associated activities described in finding 4.

Scope of Report

Order No. R1-2015-0023 states that "Tier 2 Dischargers and Tier 3 Dischargers who intend to cultivate cannabis before, during, or following site cleanup activities shall develop and implement a water resource protection plan that contains the elements listed and addressed below. Dischargers must keep this plan on site, and produce it upon request by Regional Water Board staff. Management practices shall be properly designed and installed, and assessed periodically for effectiveness. If a management measure is found to be ineffective, the plan must be adapted and implemented to incorporate new or additional management practices to meet standard conditions. Dischargers shall certify annually to the Regional Water Board individually or through an approved third party program that the plan is being implemented and is effectively protecting water quality, and report on progress in implementing site improvements intended to bring the site into compliance with all conditions of this Order."

Methods

The methods used to develop this WRPP include both field and office components. The office component consisted of aerial photography review and interpretation, existing USGS quad map review, GIS mapping of field data, review of on-site photography points, streamflow calculations, and general planning. The field component included identifying and accurately mapping all watercourses, wet areas, and wetlands located downstream of the cultivation areas, associated facilities, and all appurtenant roads accessing such areas. An accurate location of the Waters of the State is necessary to make an assessment of whether potential and existing erosion sites/pollution sites have the potential to discharge waste to an area that could affect waters of the State (including groundwater). Next, all cultivation areas, associated facilities, and all appurtenant roads accessing such areas were assessed for discharges and related controllable water quality factors from the activities listed in Order R1-2015-0023, Finding 4a-j. The field assessment also included an evaluation and determination of compliance with the Standard Conditions per Provision I.B of Order No. R1-2015-0023. The water resource protection plans required under Tier 2 are meant to describe the specific measures a discharger implements to achieve compliance with standard conditions. Therefore, all required components of the water resource protection plan per Provision I.B of Order No. R1-2015-0023 were physically inspected and evaluated. A comprehensive summary of each Standard Condition as it relates to the subject property is appended.

Monitoring Plan

Tier 2 Dischargers shall include a monitoring element in the water resource protection plan that at a minimum provides for periodic inspection of the site, checklist to confirm placement and efficacy of management measures, and document progress on any plan elements subject to a time schedule. Tier 2 Dischargers shall submit an annual report (Appendix C) by March 31 of each year that documents implementation and effectiveness of management measures during the previous year. Tier 2 annual reporting is a function that may be provided through an approved third party program.

Monitoring of the site includes visual inspection and photographic documentation of each feature of interest listed on the site map, with new photographic documentation recorded with any notable changes to the feature of interest. At a minimum, all site features must be monitored annually, to provide the basis for completion of the annual re-certification process. Additionally, sites shall be monitored at the following times to ensure timely identification of changed site conditions and to determine whether implementation of additional management measures is necessary to iteratively prevent, minimize, and mitigate discharges of waste to surface water: 1) just prior to October 15 to evaluate site preparedness for storm events and storm water runoff, 2) following the accumulation of 3" total precipitation or by November 15, whichever is sooner, and 3) following any rainfall event with an intensity of 3" precipitation in 24 hours. Precipitation data can be obtained from the National Weather Service Forecast Office (e.g. by entering the zip code of the parcel location at <http://www.srh.noaa.gov/forecast>).

Monitoring Plan Reporting Requirements

Order No. R1-2015-0023, Appendix C must be submitted to the Regional Water Board or approved third party program upon initial enrollment in the Order (NOI) and annually thereafter by March 31. Forms submitted to the Regional Water Board shall be submitted electronically to northcoast@waterboards.ca.gov. If electronic submission is infeasible, hard copies can be submitted to: North Coast Regional Water Quality Control Board, 5550 Skylane Boulevard, Suite A, Santa Rosa, CA 95403.

Property Description

The site consists of a 36 acre parcel located on a riparian terrace adjacent to the Eel River. The vegetation on the parcel is dominated by riparian hardwood species with some conifer species intermixed. The slope of the property varies from 3% to 10% with elevations ranging from 300 to 380 ft. The property is located within the SE ¼ of Section 05, Township 2S, Range 5E, Humboldt County.

This project currently consists of a single cannabis cultivation site (CS). CS #1 is located within an approximately 80,000 square feet clearing. The slope of the cultivation site is 3% with approximately 20% side slopes leading to the eel river. A review of historic aerial imagery shows this clearing has been developed since 1972 when this property and the peripheral area was the active logging town of Fort Seward. The layout of the cultivation site has varied over the past but the Dischargers have stated they plan to layout 22,000 square feet of cannabis cultivation in 2018. This new layout will remain for the foreseeable future. At the time of the assessment on 02/05/2018, all cultivation materials were neatly piled along the edge of the clearing.

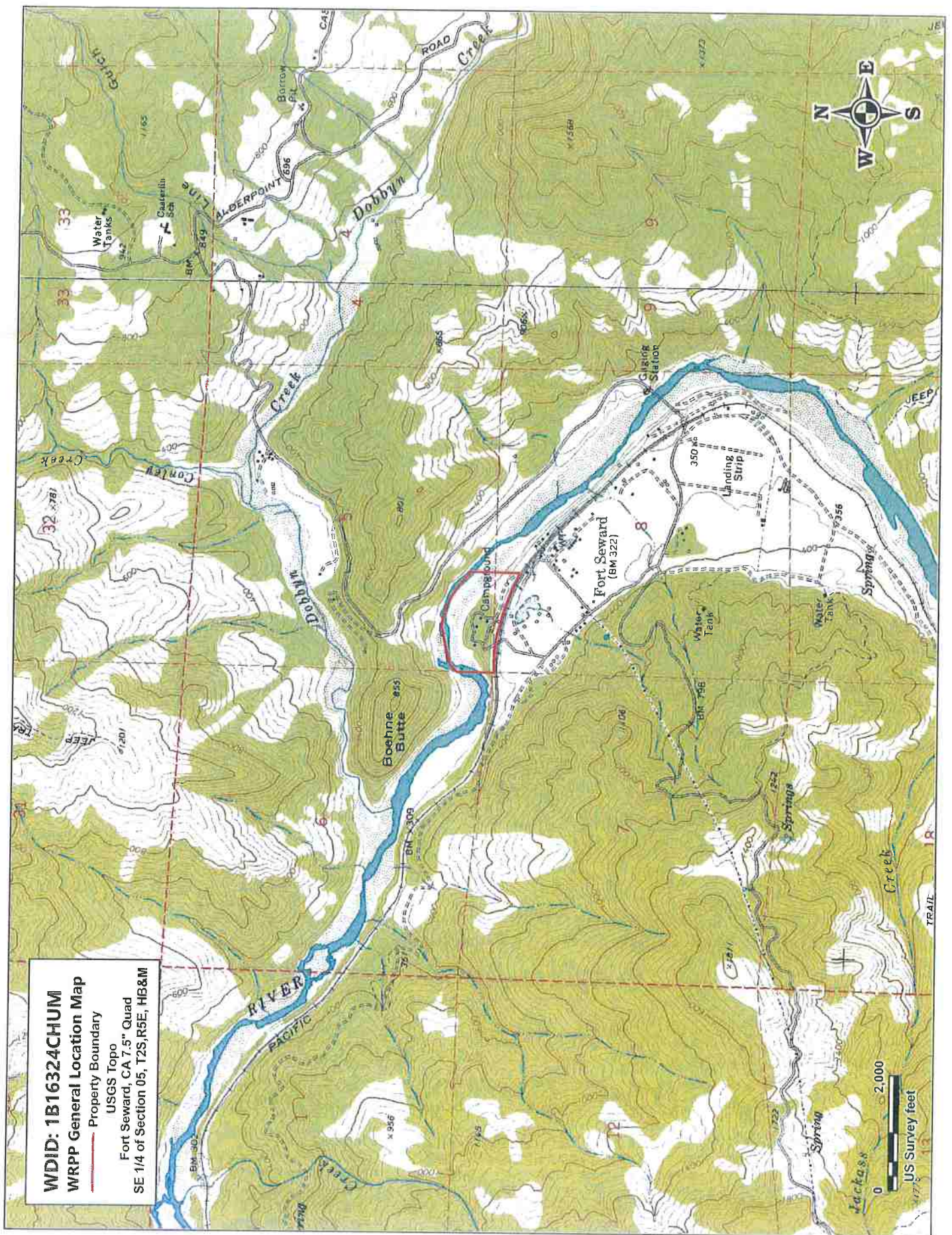
Agricultural water for this project is currently sourced from a permitted well installed by Bushnell Enterprises. The well is 120' deep and is set in solid blue sandstone and grey shale. CDFW has conditioned this well to forbear from diversion from August 1 to September 30. During this time the Dischargers divert from four 10,000 gallon storage bladders located on the property.

Assessment of Standard Conditions

Assessment of Standard Conditions consisted of field examinations on 01/17/2018. Data was also sourced from a Lake and Streambed Alteration Agreement submitted by Chris Carroll of Timberland Resource Consultants. The examination evaluated areas near, and areas with the potential to directly impact, watercourses for sensitive conditions. This includes but is not limited to, existing and proposed roads, skid trails and landings, unstable and erodible watercourse banks, unstable upslope areas, debris, jam potential, inadequate flow capacity, changeable channels, overflow channels, flood prone areas, and riparian zones. Field examinations also evaluated all roads and trails on the property, developed areas, cultivation sites, and any structures and facilities appurtenant to cultivation on the property. Anywhere the Standard Conditions are not met on the property, descriptions of the assessments and the prescribed treatments are outlined following each associated section below.

Summary of Standard Conditions Compliance

1. Site maintenance, erosion control, and drainage features Y☒/N☐
2. Stream crossing maintenance Y☐/N☒
3. Riparian and wetland protection and management Y☒/N☐
4. Spoils management Y☒/N☐
5. Water storage and use Y☒/N☐
6. Irrigation runoff Y☒/N☐
7. Fertilizers and soil amendments Y☒/N☐
8. Pesticides and herbicides? Y☒/N☐
9. Petroleum products and other chemicals Y☒/N☐
10. Cultivation-related wastes Y☒/N☐
11. Refuse and human waste Y☐/N☒

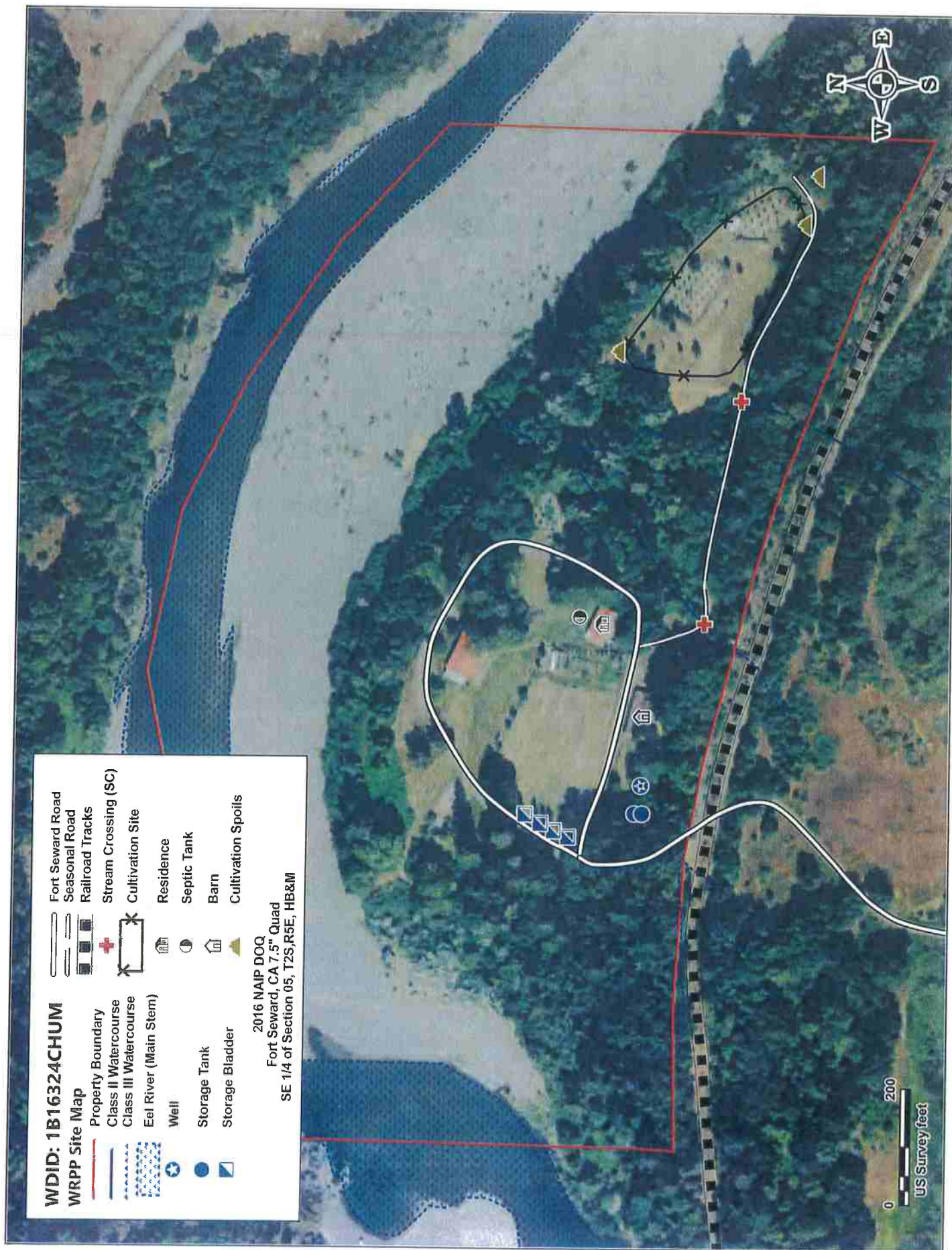


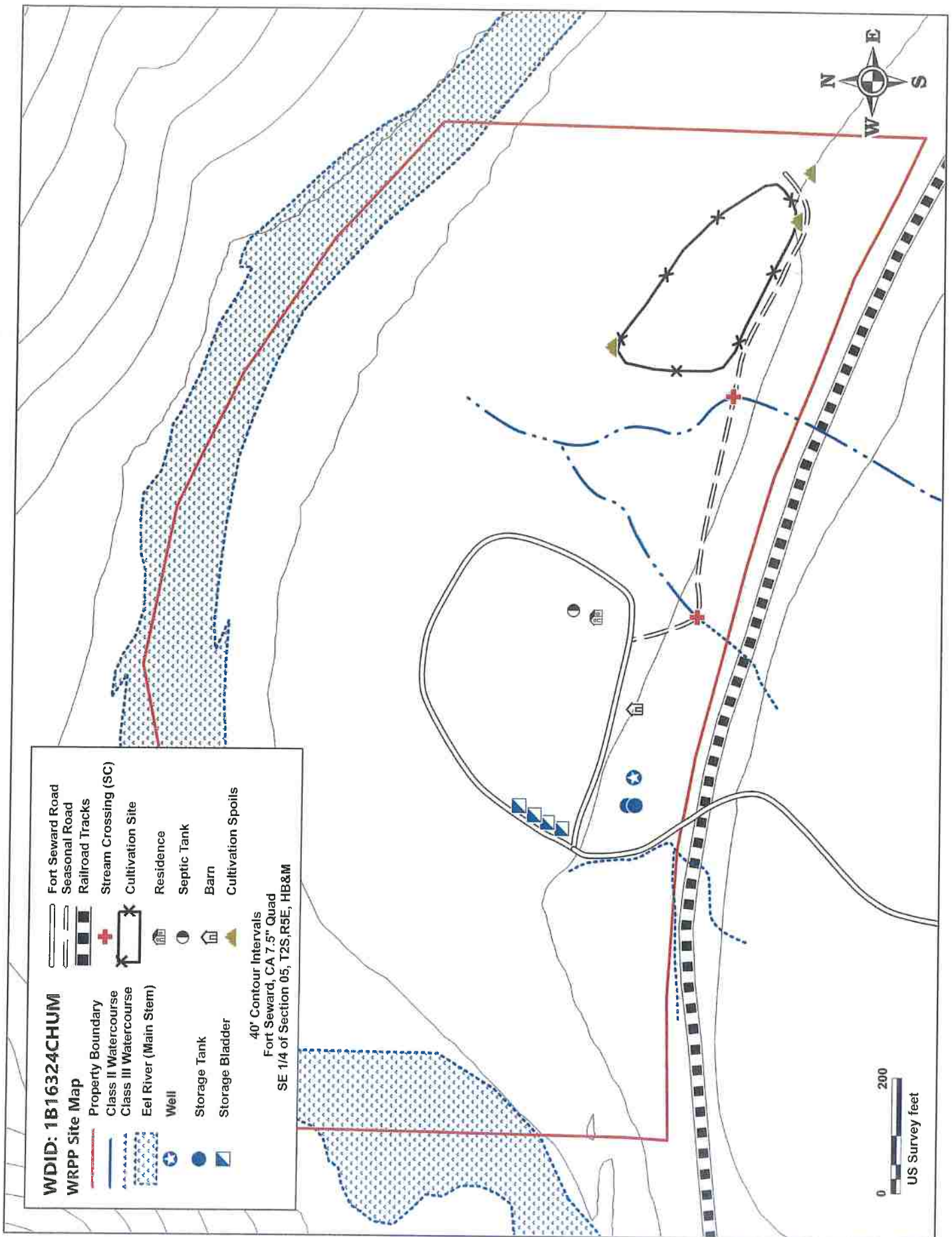
Mitigation Report (Identified Sites Requiring Remediation)

*Time schedule for treatment accounts for appropriate permit approvals and allowed seasons of operation.

| Unique Map Point(s) | Map Point Description | Associated Standard Condition | Temporary BMP | Permanent BMP | Priority for Action | Time Schedule for completion of Permanent BMP | Completion Date |
|---------------------------|--|-------------------------------|---------------|--|---------------------|---|-----------------|
| SC #1 | Existing 18" diameter CMP is damaged and undersized for 100-year peak flow | A.2. | N/A | Upgrade crossing with minimum 24" diameter culvert per attached specifications | 2 | 10/15/2018 | |
| SC #2 | Existing 24" diameter CMP is undersized for 100-year peak flow | A.2. | N/A | Upgrade crossing with minimum 48" diameter culvert per attached specifications | 2 | 10/15/2018 | |
| Cultivation Spoils | Uncovered spoils stored at the cultivation site | A.4. A.10. | N/A | Cover spoils with either mulch, cover crop, or weed matting | 1 | 10/15/2018 | |
| No Unique Map Point Given | Storage capacity | A.5. | N/A | Meter water use | N/A | Annually | |
| No Unique Map Point Given | Scrap metal located in watercourse below outlet of SC #1 | A.11.b. | N/A | Remove trash from watercourse | 2 | 10/15/2018 | |
| No Unique Map Point Given | Scrap metal located in watercourse below outlet of SC #2 | A.11.b. | N/A | Remove trash from watercourse | 2 | 10/15/2018 | |

Treat Priority: Treatment Priority (1) indicates a very high priority with treatment being planned to occur immediately, (2) indicates a high priority site with treatment to occur prior to the start of the winter period (Oct. 15), (3) indicates a moderate priority with treatment being planned to occur within one year, or prior to the winter period (Oct. 15) of the 2nd season of operations, and (4) indicates a low priority with treatment being planned to occur in the shortest time possible, but no later than the expiration of this Order (five years).





A. Standard Conditions, Applicable to All Dischargers**1. Site maintenance, erosion control and drainage features (Compliance: Y ☒ / N ☐)**

- a. Roads shall be maintained as appropriate (with adequate surfacing and drainage features) to avoid developing surface ruts, gullies, or surface erosion that results in sediment delivery to surface waters.

Roads on the property are adequately drained so that no surfaces are discharging sediment to surface waters.

- b. Roads, driveways, trails, and other defined corridors for foot or vehicle traffic of any kind shall have adequate ditch relief drains or rolling dips and/or other measures to prevent or minimize erosion along the flow paths and at their respective outlets.

No roads, driveways, trails, or other defined corridors display evidence of surface erosion occurring along their respective flow paths.

- c. Roads and other features shall be maintained so that surface runoff drains away from potentially unstable slopes or earthen fills. Where road runoff cannot be drained away from an unstable feature, an engineered structure or system shall be installed to ensure that surface flows will not cause slope failure.

Physical reconnaissance of the property revealed no unstable areas per 14CCR 895.1.

- d. Roads, clearings, fill prisms, and terraced areas (cleared/developed areas with the potential for sediment erosion and transport) shall be maintained so that they are not hydrologically connected¹, as feasible, from surface waters, including wetlands, ephemeral, intermittent and perennial streams.

There are no locations where hydrologic connections between roads, clearings, fill prisms or terraced areas have been identified.

- e. Ditch relief drains, rolling dip outlets, and road pad or terrace surfaces shall be maintained to promote infiltration/dispersal of outflows and have no apparent erosion or evidence of soil transport to receiving waters.

The majority of the road network on the property lacks any grade and does not require drainage structures. The shape of the existing road is adequate to dissipate storm runoff without causing surface erosion.

- f. Stockpiled construction materials are stored in a location and manner so as to prevent their transport to receiving waters.

Construction materials are stored within the clearing that contains CS #1. This location does not risk delivery to surface waters.

2. Stream Crossing Maintenance (Compliance: Y ☐ / N ☒)

- a. Culverts and stream crossings shall be sized to pass the expected 100-year peak streamflow.

¹ Connected roads are road segments that deliver road surface runoff, via the ditch or road surface, to a stream crossing or to a connected drain that occurs within the high delivery potential portion of the active road network. A connected drain is defined as any cross-drain culvert, water bar, rolling dip, or ditch-out that appears to deliver runoff to a defined channel. A drain is considered connected if there is evidence of surface flow connection from the road to a defined channel or if the outlet has eroded a channel that extends from the road to a defined channel. (http://www.forestsandfish.com/documents/Road_Mgmt_Survey.pdf)

- b. Culverts and stream crossings shall be designed and maintained to address debris associated with the expected 100-year peak streamflow.
- c. Culverts and stream crossings shall allow passage of all life stages of fish on fish-bearing or restorable streams, and allow passage of aquatic organisms on perennial or intermittent streams.
- d. Stream crossings shall be maintained so as to prevent or minimize erosion from exposed surfaces adjacent to, and in the channel and on the banks.
- e. Culverts shall align with the stream grade and natural stream channel at the inlet and outlet where feasible.²
- f. Stream crossings shall be maintained so as to prevent stream diversion in the event that the culvert/crossing is plugged, and critical dips shall be employed with all crossing installations where feasible.³

There are two stream crossings on the property.

- **SC #1 consists of an existing 18" diameter CMP located on a Class III watercourse. This culvert is rusted and undersized for the expected 100-year peak streamflow. The Dischargers shall upgrade this crossing with a minimum 24" diameter culvert per attached specifications.**
- **SC #2 consists of an existing 24" diameter CMP located on a Class II watercourse. This culvert is undersized for the expected 100-year peak streamflow. The Discharger shall upgrade this crossing with a minimum 48" diameter culvert per attached specifications.**

All crossings will be monitored and maintained to assure they function and comply with standard conditions.

3. Riparian and Wetland Protection and Management (Compliance: Y ☒ / N ☐)

- a. For Tier 1 Dischargers, cultivation areas or associated facilities shall not be located within 200 feet of surface waters. While 200 foot buffers are preferred for Tier 2 sites, at a minimum, cultivation areas and associated facilities shall not be located or occur within 100 feet of any Class I or II watercourse or within 50 feet of any Class III watercourse or wetlands. The Regional Water Board or its or its Executive Officer may apply additional or alternative⁴ conditions on enrollment, including site-specific riparian buffers and other BMPs beyond those identified in water resource protection plans to ensure water quality protection.

CS #1 is approximately 385' away from the active channel of the Eel River. The clearing that contains CS #1 does encroach within 100' of the adjacent unnamed Class II watercourse however at the time of the assessment there was no active cultivation or cultivation materials within this setback. The 100' setback was delineated by TRC staff and the Discharger shall stay out of this buffer when the cultivation site is laid out in 2018.

² At a minimum, the culvert shall be aligned at the inlet. If infeasible to align the culvert outlet with the stream grade or channel, outlet armoring or equivalently effective means may be applied.

³ If infeasible to install a critical dip, an alternative solution may be chosen.

⁴ Alternative site-specific riparian buffers that are equally protective of water quality may be necessary to accommodate existing permanent structures or other types of structures that cannot be relocated.

- b. Buffers shall be maintained at natural slope with native vegetation.

All riparian buffers are maintained at natural slope and native vegetation.

- c. Buffers shall be of sufficient width to filter wastes from runoff discharging from production lands and associated facilities to all wetlands, streams, drainage ditches, or other conveyances. Riparian and wetland areas shall be protected in a manner that maintains their essential functions, including temperature and microclimate control, filtration of sediment and other pollutants, nutrient cycling, woody debris recruitment, groundwater recharge, streambank stabilization, and flood peak attenuation and flood water storage.

All riparian buffers have been maintained in their natural state to adequately provide essential functions.

4. Spoils Management (Compliance: Y ☒ / N ☐)

- a. Spoils⁵ shall not be stored or placed in or where they can enter any surface water.

There are no locations where construction spoils are stored on the property. Cultivation spoils are stored at three locations around CS #1. All three of these spoils piles are outside of the minimum setback from nearby surface waters.

- b. Spoils shall be adequately contained or stabilized to prevent sediment delivery to surface waters.

Cultivation spoils are contained in large piles placed on top of weed matting. Although these piles appear stable they have no overhead cover. Due to the mild winter there have been no sediment or perlite discharges from the piles. The Discharger shall cover these soil piles over winter.

- c. Spoils generated through development or maintenance of roads, driveways, earthen fill pads, or other cleared or filled areas shall not be sidecast in any location where they can enter or be transported to surface waters.

There are no locations where construction or maintenance has generated spoils.

5. Water Storage and Use (Compliance: Y ☒ / N ☐)

- a. Size and scope of an operation shall be such that the amount of water used shall not adversely impact water quality and/or beneficial uses, including and in consideration with other water use by operations, instream flow requirements and/or needs in the watershed, defined at the scale of a HUC-12⁶ watershed or at a smaller hydrologic watershed as determined necessary by the Regional Water Board Executive Officer.

The Discharger is working to minimize and mitigate their impacts across the watershed that they operate in. This includes increasing water conservation strategies, recently installing a well, and improving the irrigation system. These strategies will reduce this project's potential threats to water quality and beneficial uses. The Discharger shall meter water use and participate in winter monitoring.

⁵ Spoils are waste earthen or organic materials generated through grading or excavation, or waste plant growth media or soil amendments. Spoils include but are not limited to soils, slash, bark, sawdust, potting soils, rock, and fertilizers.

⁶ See definition and link to maps at: <http://water.usgs.gov/GIS/huc.html>

- b. Water conservation measures shall be implemented. Examples include use of rainwater catchment systems or watering plants with a drip irrigation system rather than with a hose or sprinkler system.

The Dischargers are currently switching to a drip irrigation system to help conserve water.

- c. For Tier 2 Dischargers, if possible, develop off-stream storage facilities to minimize surface water diversion during low flow periods.

The project contains 50,000 gallons of water storage in the form of four 10,000 gallon storage bladders and two 5,000 gallon polyethylene storage tanks. The Dischargers plan to directly divert groundwater from the well for irrigation except from August 1 – September 30 when water will be sourced from storage.

- d. Water is applied using no more than agronomic rates.⁷

There is no evidence to conclude that the Discharger irrigates at a greater rate than the growth medium can facilitate. There are no signs of over watering present on-site. It is recommended that the Discharger meter their water use.

- e. Diversion and/or storage of water from a stream should be conducted pursuant to a valid water right and in compliance with reporting requirements under Water Code section 5101.

The Discharger has filed a California Depart. of Fish and Wildlife Lake and Streambed Alteration Agreement (LSAA). The Discharger plans to file for a Small Irrigation Use Registration (SIUR) by April 30, 2018.

- f. Water storage features, such as ponds, tanks, and other vessels shall be selected, sited, designed, and maintained so as to insure integrity and to prevent release into waters of the state in the event of a containment failure.

The bladders are located on a flat grassy meadow with a less than 3% slope. This location is ideal for bladder storage because it lacks slope and possible threats to the integrity of the bladder. The storage tanks are located on small (20 square feet) dirt pad.

6. Irrigation Runoff (Compliance: Y ☒ / N ☐)

- a. Implementing water conservation measures, irrigating at agronomic rates, applying fertilizers at agronomic rates and applying chemicals according to the label specifications, and maintaining stable soil and growth media should serve to minimize the amount of runoff and the concentration of chemicals in that water. In the event that irrigation runoff occurs, measures shall be in place to treat/control/contain the runoff to minimize the pollutant loads in the discharge. Irrigation runoff shall be managed so that any entrained constituents, such as fertilizers, fine sediment and suspended organic particles, and other oxygen consuming materials are not discharged to nearby watercourses. Management practices include, but are not limited to, modifications to irrigation systems that reuse tailwater by constructing off-stream retention basins, and active (pumping) and or passive (gravity) tailwater recapture/redistribution systems. Care shall be taken to ensure that irrigation tailwater is not discharged towards or impounded over unstable features or landslides.

⁷ "Agronomic rates" is defined as the rates of fertilizer and irrigation water that a plant needs to enhance soil productivity and provide the crop or forage growth with needed nutrients for optimum health and growth, without having any excess water or nutrient percolate beyond the root zone.

There are no signs of irrigation run-off within the cultivation site. The Dischargers irrigate at an agronomic rate to minimize waste and the risk of entrained constituents leaving the site.

7. Fertilizers and Soil Amendments (Compliance: Y ☒ / N ☐)

- a. Fertilizers, potting soils, compost, and other soils and soil amendments shall be stored in locations and in a manner in which they cannot enter or be transported into surface waters and such that nutrients or other pollutants cannot be leached into groundwater.

Fertilizers, soils and other amendments are stored within the barn, shown on map. This structure has wooden floors on a post and pier foundation. This location is approximately 150' away from a nearby Class II watercourse. This structure adequately contains fertilizers and amendments.

- b. Fertilizers and soil amendments shall be applied and used per packaging instructions and/or at proper agronomic rates.

All fertilizers and soil amendments are applied by the Discharger at agronomic rates per specifications included in the labeling. There are no visible signs of nutrient loading in the surrounding soils such as algal growths and/or vegetation blooms.

- c. Cultivation areas shall be maintained so as to prevent nutrients from leaving the site during the growing season and post-harvest.

Cultivation sites are well maintained with no improperly stored nutrients or fertilizers found throughout the property. The Discharger halts nutrient use during the final weeks of cultivation, promoting plant biomass to uptake the remaining nutrients.

8. Pesticides/Herbicides (Compliance: Y ☒ / N ☐)

At the present time, there are no pesticides or herbicides registered specifically for use directly on cannabis and the use of pesticides on cannabis plants has not been reviewed for safety, human health effects, or environmental impacts. Under California law, the only pesticide products not illegal to use on cannabis are those that contain an active ingredient that is exempt from residue tolerance requirements and either registered and labeled for a broad enough use to include use on cannabis or exempt from registration requirements as a minimum risk pesticide under FIFRA section 25(b) and California Code of Regulations, title 3, section 6147. For the purpose of compliance with conditions of this Order, any uses of pesticide products shall be consistent with product labeling and any products on the site shall be placed, used, and stored in a manner that ensures that they will not enter or be released into surface or ground waters.

The Dischargers do not utilize any form of pesticide, herbicide or fungicide during cannabis cultivation. These materials are not stored on property.

9. Petroleum products and Other Chemicals (Compliance: Y ☒ / N ☐)

- a. Petroleum products and other liquid chemicals, including but not limited to diesel, biodiesel, gasoline, and oils shall be stored so as to prevent their spillage, discharge, or seepage into receiving waters. Storage tanks and containers must be of suitable material and construction to be compatible with the substance(s) stored and conditions of storage such as pressure and temperature.

There are no fuel products stored within property boundaries. This project utilizes electricity sourced from the municipal grid to power equipment.

- b. Above ground storage tanks and containers shall be provided with a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation.

Not Applicable

- c. Dischargers shall ensure that diked areas are sufficiently impervious to contain discharged chemicals.

Not Applicable

- d. Discharger(s) shall implement spill prevention, control, and countermeasures (SPCC) and have appropriate cleanup materials available onsite.

Not Applicable

- e. Underground storage tanks 110 gallons and larger shall be registered with the appropriate County Health Department and comply with State and local requirements for leak detection, spill overflow, corrosion protection, and insurance coverage.

Not Applicable

10. Cultivation-related Wastes (Compliance: Y ☒ / N ☐)

Cultivation-related wastes including, but not limited to, empty soil/soil amendment/fertilizer/pesticide bags and containers, empty plant pots or containers, dead or harvested plant waste, and spent growth medium shall, for as long as they remain on the site, be stored⁸ at locations where they will not enter or be blown into surface waters, and in a manner that ensures that residues and pollutants within those materials do not migrate or leach into surface water or groundwater.

There are no locations where cultivation waste is stored in a manner where it poses a threat to nearby surface waters.

11. Refuse and Human Waste (Compliance: Y ☐ / N ☒)

- a. Disposal of domestic sewage shall meet applicable County health standards, local agency management plans and ordinances, and/or the Regional Water Board's Onsite Wastewater Treatment System (OWTS) policy, and shall not represent a threat to surface water or groundwater.

According to the Discharger there is a permitted septic system associated with the residence on this property. The septic system is over 160' from the nearest watercourse.

- b. Refuse and garbage shall be stored in a location and manner that prevents its discharge to receiving waters and prevents any leachate or contact water from entering or percolating to receiving waters.

Refuse and garbage are contained in garbage cans stored adjacent to the house. These containers adequately prevent trash and refuse from delivering to surface waters. There are pieces of scrap metal below the inlet of each crossing. The Dischargers shall remove this trash from the watercourse when replacing both stream crossings.

⁸ Plant waste may also be composted, subject to the same restrictions cited above for cultivation-related waste storage.

c. Garbage and refuse shall be disposed of at an appropriate waste disposal location.

All waste and refuse is transported to a solid waste disposal site every other week.

12. Remediation/Cleanup/Restoration

Remediation/cleanup/restoration activities may include, but are not limited to, removal of fill from watercourses, stream restoration, riparian vegetation planting and maintenance, soil stabilization, erosion control, upgrading stream crossings, road outcropping and rolling dip installation where safe and suitable, installing ditch relief culverts and overside drains, removing berms, stabilizing unstable areas, reshaping cutbanks, and rocking native-surfaced roads. Restoration and cleanup conditions and provisions generally apply to Tier 3 sites, however owners/operators of Tier 1 or 2 sites may identify or propose water resource improvement or enhancement projects such as stream restoration or riparian planting with native vegetation and, for such projects, these conditions apply similarly. Appendix B accompanying this Order includes environmental protection and mitigation measures that apply to cleanup activities such as: temporal limitations on construction; limitations on earthmoving and construction equipment; guidelines for removal of plants and revegetation; conditions for erosion control, limitations on work in streams, riparian and wetland areas; and other measures.

Mitigation measures are listed in the Mitigation Report and also noted above in the document. All locations listed within the mitigation report will be monitored by the discharger.

Photographs



Picture 1: CS #1 is located within an approximately 80,000 square feet clearing. The slope of the cultivation site is 3%. At the time of the assessment cultivation materials had been neatly piled for over winter storage along the margins of the clearing. The Discharger stated approximately 22,000 square feet of greenhouses will likely be built here in 2018. This picture was taken from Stream Crossing #2 facing east. Photo date: 02/05/2018

Photographs



Picture 2: Photograph of CS #1 taken from the eastern edge facing west. Photo date: 02/05/2018

Photographs



Picture 3: Agricultural water for this project is currently sourced from a permitted well installed by Bushnell Enterprises. The well is 120' deep and is set in solid blue sandstone and grey shale. Photo date: 09/20/2016

Photographs



Picture 4: Water from the well is pumped directly through the pressure tank shown and into these two 5,000 gallon storage tanks. From here water is either directly divert to the cultivation site or pumped to storage for use during the forbearance period. Photo date: 02/05/2018

Photographs



Picture 5: The storage area contains four 10,000 gallon storage bladders. These bladders are located on a flat riparian terrace in a low risk area. Photo date: 02/05/2018

Photographs



Picture 6: Inlet of Stream Crossing #1. This 18" diameter CMP shall be upgrade to a minimum 24" diameter culvert per attached specifications. Photo date: 02/05/2018

Photographs



Picture 7: The outlet of Stream Crossing #1 is covered in overgrown Himalaya black berry and poison oak. There are pieces of scrap metal in the watercourse below this crossing. The discharger shall upgrade this culvert and remove the trash from the watercourse. Photo date: 02/05/2018

Photographs



Picture 8: Inlet of Stream Crossing #2. This 24" diameter CMP shall be upgrade to a minimum 48" diameter culvert per attached specifications. Photo date: 02/05/2018

Photographs



Picture 9: The outlet of Stream Crossing #2 is covered in overgrown Himalaya black berry and poison oak. There are pieces of scrap metal in the watercourse below this crossing. The discharger shall upgrade this culvert and remove the trash from the watercourse. Photo date: 02/05/2018

Photographs



Picture 10: Cultivation spoils and materials are neatly piled along the margins of the clearing that contains the cultivation site. Cultivation spoils shall be covered over winter. Due to the mild winter this pile has not discharged any sediment. This spoils pile is approximately 300' from the nearest surface water. Photo date: 02/05/2018

STATEMENT OF CONTINGENT AND LIMITING CONDITIONS CONCERNING THE PREPARATION AND USE OF WATER RESOURCE PROTECTION PLAN

Prepared by Timberland Resource Consultants

1. This Water Resource Protection Plan has been prepared for the property within APN 216-301-018 in Humboldt County, at the request of the Client.
2. Timberland Resource Consultants does not assume any liability for the use or misuse of the information in this Water Resource Protection Plan.
3. The information is based upon conditions apparent to Timberland Resource Consultants at the time the inspection was conducted, and as disclosed to Timberland Resource Consultants by the landowner and/or Discharger. Changes due to land use activities or environmental factors occurring after this inspection, have not been considered in this Water Resource Protection Plan.
4. Maps, photos, and any other graphical information presented in this report are for illustrative purposes. Their scales are approximate, and they are not to be used for locating and establishing boundary lines.
5. The conditions presented in this Water Resource Protection Plan may differ from those made by others or from changes on the property occurring after the inspection was conducted. Timberland Resource Consultants does not guarantee this work against such differences.
6. Timberland Resource Consultants did not conduct an investigation on a legal survey of the property.
7. Persons using this Water Resource Protection Plan are advised to contact Timberland Resource Consultants prior to such use.
8. Timberland Resource Consultants will not discuss this report or reproduce it for anyone other than the Client named in this report without authorization from the Client.

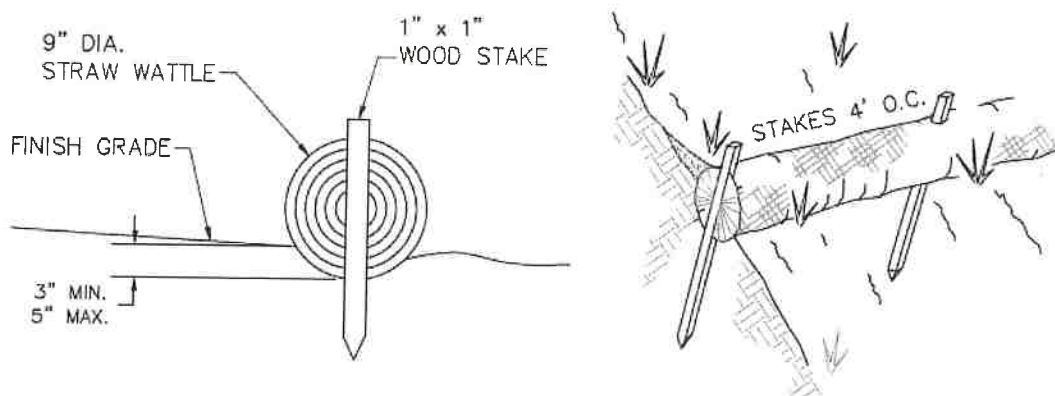
Jack A Henry
Timberland Resource Consultants

Attachments

Best Management Practices, Diagrams, Supplemental Information

BMP: Erosion Control

- Erosion control and sediment detention devices and materials shall be incorporated into the cleanup/restoration work design and installed prior to the end of project work and before the beginning of the rainy season. Any continuing, approved project work conducted after October 15 shall have erosion control works completed up-to-date and daily.
- Erosion control materials shall be, at minimum, stored on-site at all times during approved project work between May 1 and October 15.
- Approved project work within the 5-year flood plain shall not begin until all temporary erosion controls (straw bales or silt fences that are effectively keyed-in) are installed downslope of cleanup/restoration activities.
- Non-invasive, non-persistent grass species (e.g., barley grass) may be used for their temporary erosion control benefits to stabilize disturbed slopes and prevent exposure of disturbed soils to rainfall.
- Upon work completion, all exposed soil present in and around the cleanup/restoration sites shall be stabilized within 7 days.
- Soils exposed by cleanup/restoration operations shall be seeded and mulched to prevent sediment runoff and transport.
- Straw Wattles (if used) shall be installed with 18 or 24 inch wood stakes at four feet on center. The ends of adjacent straw wattles shall be abutted to each other snugly or overlapped by six inches. Wattles shall be installed so that the wattle is in firm contact with the ground surface.



BMP: Permanent Culvert Crossing

- New culvert installations shall be sized to accommodate flows associated with a 100-year storm event.
- If the new culvert is replacing a poorly installed old culvert, the crossing may need to be abandoned to the following standard:
 - When fills are removed they shall be excavated to form a channel that is as close as feasible to natural watercourse grade and orientation, and that is wider than the natural channel.
 - Excavated banks shall be laid back to a 2:1 (50%) or natural slope.
- New culverts shall be placed at stream gradient, or have downspouts, or have energy dissipaters at outfall.
 - Align culverts with the natural stream channel orientation to ensure proper function, prevent bank erosion, and minimize debris plugging. See Figure 97 below.
 - Place culverts at the base of the fill and at the grade of the original streambed or install a downspout past the base of the fill. Downspouts should only be installed if there are no other options.
 - Culverts should be set slightly below the original stream grade so that the water drops several inches as it enters the pipe.
 - Culvert beds should be composed of rock-free soil or gravel, evenly distributed under the length of the pipe.
 - Compact the base and sidewall material before placing the pipe in its bed.
 - Lay the pipe on a well-compacted base. Poor basal compaction will cause settling or deflection in the pipe and can result in separation at a coupling or rupture in the pipe wall.
 - Backfill material should be free of rocks, limbs, or other debris that could dent or puncture the pipe or allow water to seep around the pipe.
 - Cover one end of the culvert pipe, then the other end. Once the ends are secure, cover the center.
 - Tamp and compact backfill material throughout the entire process, using water as necessary for compaction.
 - Backfill compacting will be done in 0.5 – 1.0 foot lifts until 1/3 of the diameter of the culvert has been covered.
 - Push layers of fill over the crossing to achieve the final design road grade, road fill above the culvert should be no less than one-third to one-half the culvert diameter at any point on the drivable surface.
- Critical dips shall be installed on culvert crossings to eliminate diversion potential. Refer to Figure 84 below.
- Road approaches to crossings shall be treated out to the first drainage structure (i.e. waterbar, rolling dip, or hydrologic divide) to prevent transport of sediment.
- Road surfaces and ditches shall be disconnected from streams and stream crossings to the greatest extent feasible. Ditches and road surfaces that cannot be feasibly disconnected from streams or stream crossings shall be treated to reduce sediment transport to streams.
- If downspouts are used, they shall be secured to the culvert outlet and shall be secure on fill slopes.
- Culverts shall be long enough so that road fill does not extend or slough past the culvert ends.
- Inlet of culverts, and associated fill, shall be protected with appropriate measures that extend at least as high as the top of the culvert.
- Outlet of culverts shall be armored with rock if road fill sloughing into channel can occur.
- Armor inlets and outlets with rock, or mulch and seed with grass as needed (not all stream crossings need to be armored).
- Where debris loads could endanger the crossing, a debris catchment structure shall be constructed upstream of the culvert inlet.
- Bank and channel armoring may occur, when appropriate, to provide channel and bank stabilization.

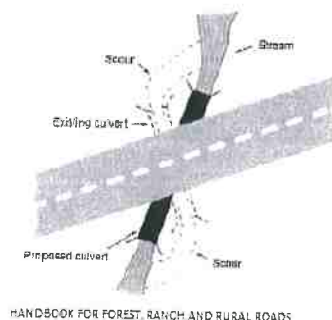


FIGURE 97. Culvert alignment should be in relation to the stream and not the road. It is important that the stream enters and leaves the culvert in a relatively straight horizontal alignment so streamflow does not have to turn to enter the inlet or discharge into a bank as it exits. This figure shows a redesigned culvert installation that replaces the bending alignment that previously existed. Channel turns at the inlet increase plugging potential because wood going through the turn will not align with the inlet. Similarly, channel turns at the inlet and outlet are often accompanied by scour against the channel banks (Wisconsin Transportation Information Center, 2004).

BMP: Permanent Culvert Crossing (Cont.)

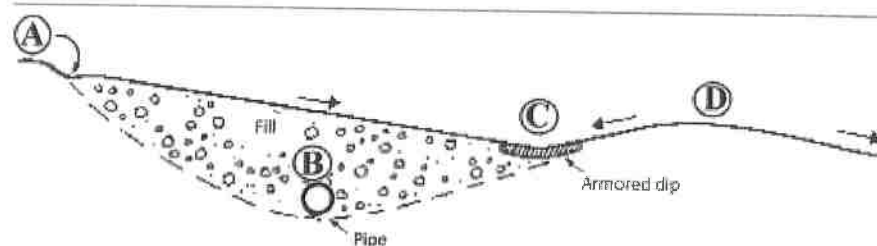
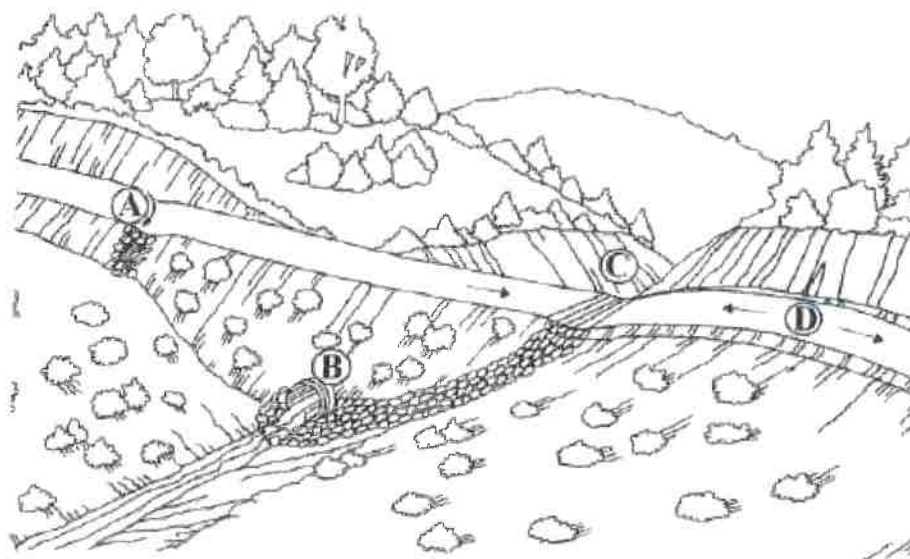
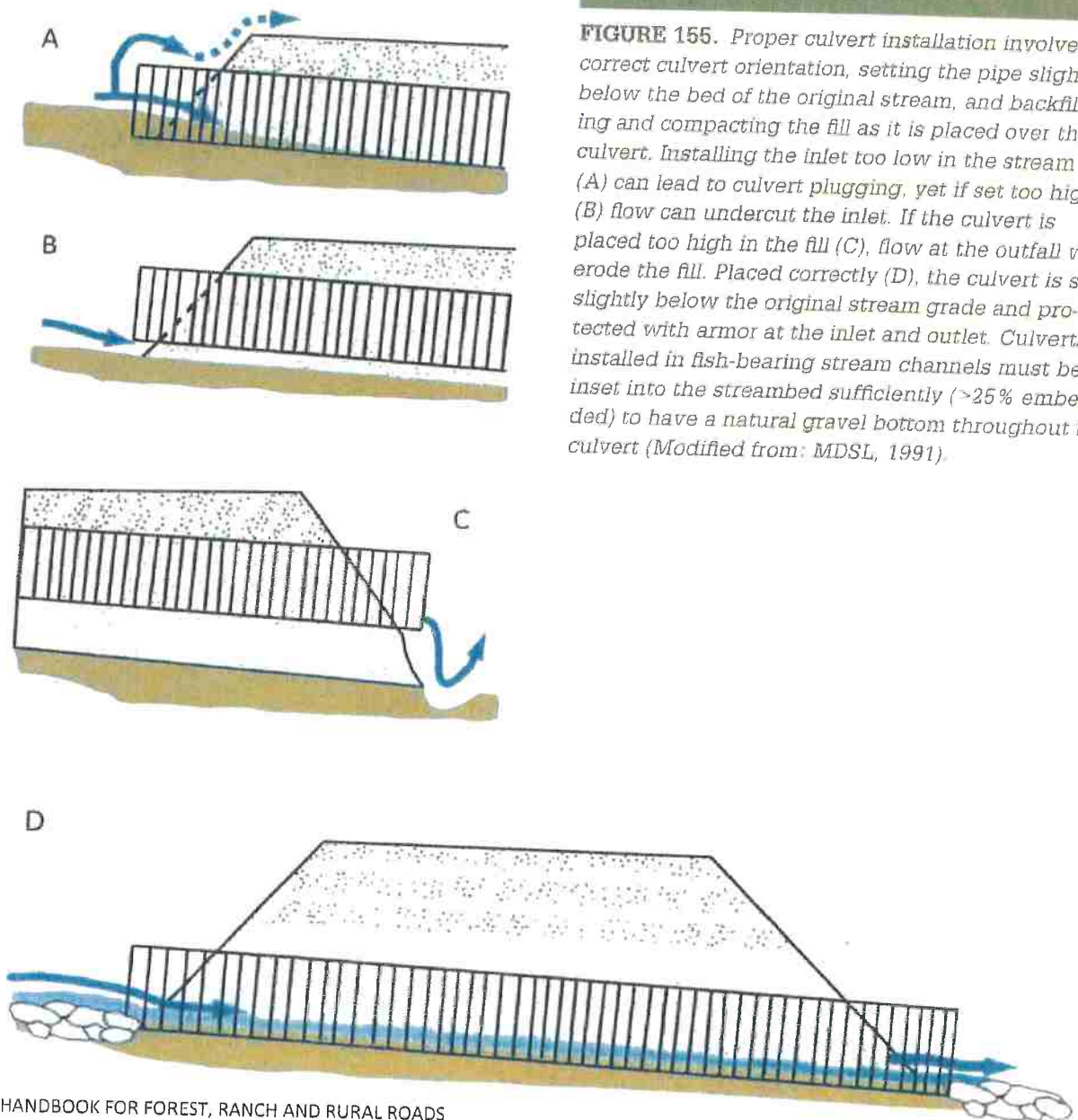


FIGURE 84. Critical dips or dipped crossing fills should be centered near a stream crossing's down-road hinge line, not over the centerline of the crossing where overtopping could cause washout or severe erosion of the fill. If the stream crossing culvert (B) plugs, water will pond behind the fill until reaching the critical dip or low point in the crossing (C) and flowing back down into the natural stream channel. The down-road ditch must be plugged to prevent streamflow from diverting down the ditch line. For extra protection in this sketch, riprap armor has been placed at the critical dip outfall and extending downslope to the stream channel. This is only required or suggested on stream crossings where the culvert is highly likely to plug and the crossing fill overtopped. The dip at the hinge line is usually sufficient to limit erosional damage during an overtopping event. Road surface and ditch runoff is disconnected from the stream crossing by installing a rolling dip and ditch relief culvert just up-road from the crossing (A) (Keller and Sherar, 2003).

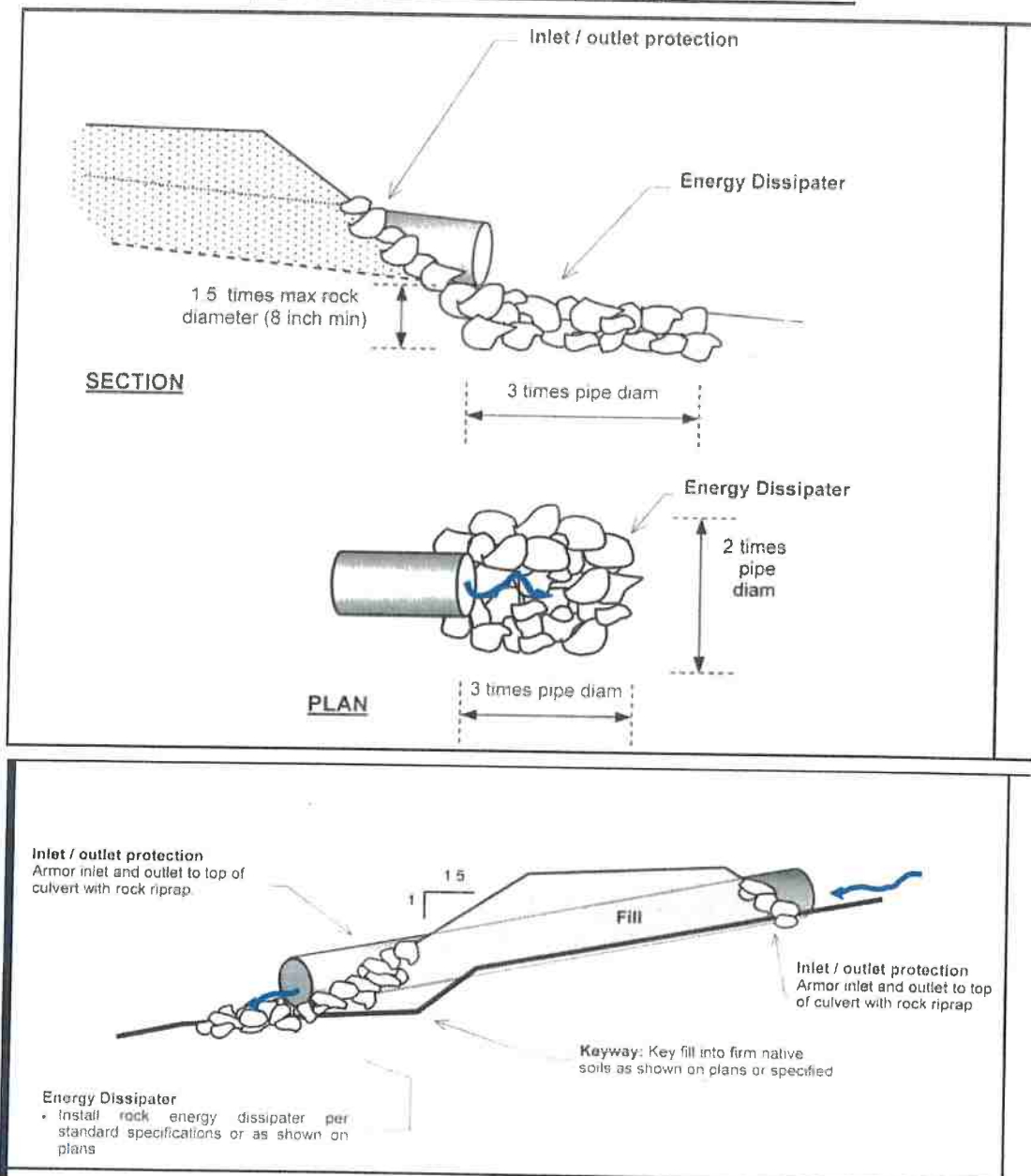
HANDBOOK FOR FOREST, RANCH AND RURAL ROADS

BMP: Permanent Culvert Crossing (Cont.)



HANDBOOK FOR FOREST, RANCH AND RURAL ROADS

BMP: Culvert Rock Armoring Specifications



Riprap installed to protect the inlet and outlet of a stream crossing culvert from erosion or for energy dissipation should be keyed into the natural channel bed and banks to an approximate depth of about 1.5x the maximum rock thickness. Riprap should be placed at least up to the top of the culvert at both the inlet and outlet to protect them from splash erosion and to trap any sediment eroded from the newly constructed fill slope above.