GREEN ROAD CONSULTING

Site Management Plan

WDID: 1B16616CHUM

Prepared for:
State Water Resources Control Board (SWRCB)
North Coast Regional Water Quality Control Board (NCRWQCB)

Prepared by:
Green Road Consulting
1650 Central Ave., Suite C, McKinleyville CA, 95519
(707) 630-5041

Date of completion:

7/8/2019

General Site Information

Discharger: Adam Owens

Landowner: Smith, Tonya

Site Address: 28306 Alderpoint Rd Blocksburg, CA 95514

Mailing Address: 366 DEER PATH RD GEYSERVILLE CA 95441

Parcel Number: 217-271-005

General Plan Designation: AG, RCC; T

Zone: U

Parcel Size: 47-acres

HUC12 Watershed: Upper Larabee Creek – Lower Eel River

Disturbed Area: 62,501-SQ FT

Cultivation Area: 14,971-SQ FT

Tier Level: 2

Risk Level: High

Abbreviations

CA	Cultivation Area
CPP	Corrugated Plastic Pipe
CMP	Corrugated Metal Pipe
CDFW	California Department of Fish and Wildlife
DRC	Ditch Relief Culvert
GRC	Green Road Consulting
IBD	In-board Ditch
NCRWQCB	North Coast Regional Water Quality Control Board
PWA	Pacific Watershed Associates
SWRCB	State Water Resources Control Board
STX	Stream Crossing

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1. Introduction

This document was prepared by Green Road Consulting (GRC) for Blocksburg Meadows; parcel number 217-271-005, as required by the SWRCB Order WQ 2017-0023-DWQ[1]. The purpose of the order is to provide a regulatory structure for cannabis cultivation that reduces contributions to existing water quality issues and prevents additional adverse impacts to water resources throughout California. The purpose of the Site Management Plan is to identify conditions present on a parcel that may pose a threat to water quality and resources and establish a plan to meet or surpass requirements set forth in the order. Green Road Consulting (GRC) has made an initial assessment of this parcel through field work as well as through a variety of county, state, and private websites (e.g. USDA web soil survey, USGS stream stats program, Google Earth, Humboldt County Web GIS). The parcel boundaries are approximate and obtained from Humboldt County. Property lines on maps created by GRC may be shifted to match property line and corners located in the field. The site was surveyed with a GPS unit (2 to 4-meter accuracy) to document roads, buildings, cultivation sites, watercourses, and areas requiring remediation. Maps were created using the software ESRI ArcMap.

2. Site Characteristics

2.1. General

The site is in Blocksburg, Southeastern Humboldt County, approximately 20-miles from Bridgeville and can be accessed from Alderpoint Road, just off CA SR-36. The elevation of the site is approximately 1,600 - 1,800 feet above sea level. The parcel is located on a hillslope with unnamed drainages that flow from east to west into Upper Larabee Creek and then to the Eel River. The Eel River is on the USEPA's Section 303(d) list for impairment or threat of impairment to water quality associated with elevated sediment and temperature levels. The Eel River Watershed is known to have Coho and Chinook Salmon as well as Steelhead trout which are designated as a Federally and State threatened species. Slopes on the site range from 0% to 50%. The hillslopes in the region are known to have high instability. The site geology is part of the Franciscan Complex which is primarily composed of Late Cretaceous to Pliocene sandstone, shale and minor conglomerate.

2.2. Site Overview

Structures on the approximately 47-acre property include a residence, a garage, eight (8) sheds, four (4) greenhouse, two (2) hoop houses, a seasonal use trailer, and two small solar arrays. Other developments include a permitted groundwater well, a disused well, chemical toilets, seven (7) HDPE tanks, and three (3) soil piles. Water for cultivation and for domestic uses is drawn from the permitted well. The parcel grid tied at the residence but currently uses small generators and small solar array to power the cultivation site. There are no large fuel storage tanks on the site but there is a fuel storage/generator shed. Seasonal roads on the parcel are in good condition and require basic maintenance and drainage features to be installed for stabilization. For location of disturbed areas requiring work see the Site Map and the corresponding Remediation Table.

[1] Order entitled "STATE WATER RESOURCES CONTROL BOARD ORDER WQ 2017-0023-DWQ GENERAL WASTE DISCHARGE REQUIREMENTS AND WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES OF WASTE ASSOCIATED WITH CANNABIS CULTIVATION ACTIVITIES"

The site currently has one location where cultivation takes place. During the site visit there was evidence of another cultivation area which has since become disused (**MP4**). In the active cultivation area, there are four (4) greenhouses, two (2) hoop houses, and two (2) outdoor cultivation areas. The total garden area across these sites totals to 14,971-sq.ft. The site had approximately 62,501-sq.ft. of disturbed area. There was ~35,960-sq.ft. of disturbed area that was located within riparian setbacks. There are two (2) Class II watercourses adjacent to the cultivation area. A Class II watercourse has water flowing for three to nine months during a typical year in the absence of diversions; provides aquatic habitat for non-fish aquatic species; fish are always or seasonally present 1,000 feet downstream, and/or; water is flowing for less than three months during a typical year and the stream supports riparian vegetation. The riparian setback for Class II watercourses is 100-feet under the new SWRCB; it was 100-feet under the NCRWQCB too. Therefore, GRC determines this site to be of a high risk to watershed impairment. Stabilization of existing roads and will be addressed in the Disturbed Area Stabilization Plan. Proper adherence to the erosion and sediment control measures specified in the "Erosion Prevention and Sediment Capture" section of this report will be necessary to ensure that these areas are sufficiently stabilized.

Table 1. Cultivation area overview.

Green House (GH) & Cultivation Area (CA)	Disturbed Area (ft^2)	Natural Slope (%)	Distance to Water Body (ft)	Water Body Classification
GH1	2,880	15	85	Class II
GH2	2,080	15	80	Class II
GH3	2,080	15	55	Class II
GH4	2,880	15	40	Class II
CA1	80	15	65	Class II
CA2	4,971	15	60	Class II
Total:	14,971			

2.3. Access Roads

The site has 2,134-ft. of permanent roads, 5,215-ft. of seasonal access roads, and no skid roads. The seasonal roads are generally out sloped and stable according to the Pacific Watershed Associates (PWA) *Handbook for Forest, Ranch, and Rural Roads (The Roads Handbook)*. The seasonal access roads are drained via rolling dips and out-sloping. The seasonal access roads on the site are maintained on an as-need basis. The roads will only be used during dry season to maintain the integrity of the roads. The roads are used minimally by workers navigating the site and bringing in supplies. Workers are on the site daily and most supplies are brought in the beginning of the season. Vehicles are mainly parked near the cultivation area. Vehicles shall be parked outside to the riparian setbacks. Roads will be designed, constructed, and maintained, or reconstructed consistent with *The Handbook*, and implement the interim and long-term erosion control prevention and soil stabilization measures contained in "Attachment A". The existing road will be reinforced to meet the standards set forth by *The Handbook* by revamping some rolling dips (indicated by blue triangles), a waterbar (**MP8**), and by rock armoring a steep section at **MP1** (see Site Map). The grade at **MP1** approaches 20%. The road at **MP8** may become hydrologically connected to a Class II watercourse at **STX1** during the rainy season and GRC recommends placing a rocked waterbar here to cross water into the grassy meadow between the shed and the vegetated edge of the creek (**MP8**). Wash rock or smooth rock is adequate for proper drainage in this feature. Red Alder - *Alnus rubra*, is a native pioneer species that may be planted down slope of drainage features for erosion prevention. The tree's roots can quickly penetrate compacted soil. The runoff from impermeable road

surfaces will then more readily to slow, sink, and spread into the ground. It is a low maintenance tree to establish because of its relationship with soil bacterium *Frankia spp.* which fixes nitrogen. The decomposition of alder increases the fertility of the topsoil. Once the tree is a desired height or has provided the improved drainage with its root structure, the tree may be easily gridled and it won't reiterate. Another efficient way to establish vegetation at drainage features is to construct bio-fascines. Essentially, bundles of twigs are recessed into the ground and then sediment which deposits against these bundles during rain events will lend habitat to plants such as *Juncus spp.* which offer robust sediment filtering structures. *Juncus spp.* can be easily grown from harvested seeds or planting by root cuttings.

2.4. Stream Crossings

There are three (3) stream crossings on the property that are the responsibility of the property owner. The work for **STX1, STX2, & STX3** has been completed. Historic stream crossing **HSTX** has revegetated and is naturalizing. All new in-stream work will be permitted through the appropriate agencies (e.g. CDFW, SWRCB) before work commences.

Table 2. Overview of stream crossing on the property.

Stream Crossing (STX)	Existing Size (inch)	Type	Watercourse Class	Action
STX1	36	CMP	Class II	Monitor road drainage
STX2	18	CPP	Class II	Monitor for inlet clogging
STX3	36	CMP	Class II	Monitor for inlet clogging

2.5. Legacy Waste Discharges

There was an instream pond which has been decommissioned (see Site Map). There used to be a road below the pond which has been decommissioned, fully returned to contour, and passively revegetated.

3. Erosion Prevention and Sediment Capture

The disturbed areas consisted of the cultivation areas, soils/amendment piles, unstable road segments, and locations of water storage for irrigation as shown on the Site Map. Map points correspond to the Remediation Summary Table found in section 10 of this report. There is a flat (**MP2**) which has been graded and is partially on a natural slope greater than 30%. The fill is on top of the head of a Class II channel where water seeps out for more than 6 months out of the year. This flat and the adjacent flat have French drains which empty directly into the Class II stream. This stream immediately goes through a culvert (**STX2**). Below this crossing used to be an instream pond which since has been deconstructed, naturalized, and exhibited plants with wetland indicator status. There was once was a road and historic stream crossing below this pond which has also been deconstructed, naturalized, and revegetated (**HSTX**). At **MP5** there are pots full of soil and a pile of soil within the riparian setbacks. These soils and cultivation related wastes need to be removed from the riparian setbacks. These soils can be spread on a flat surface in a vegetated area and sown with native seed or placed in a stable location and covered and wrapped with a wattle. There is a windrow of soil at **MP6** which needs to remove from the riparian setbacks. This can be dealt with in the same manner as described for **MP5**. The soil pile at **MP7** is in a stable location that is not in a riparian setback. This pile needs to be covered with a tarp and surrounded with a straw wattle prior to the winter period.

Because nearly the entire cultivation area is within the riparian setbacks the applicant will need to work on a plan to relocate the cultivation area to a location out of the riparian setbacks. This plan will need to include restoring the currently location of the cultivation to a vegetated landscape. The plan will also require obtaining permits for the necessary grading work and relocation of structures through the appropriate agencies. Fortunately, there are acres of gently sloped hillside on this parcel with open pasture and adjacent access roads that are not near watercourses.

4. Water Uses

Water for cannabis irrigation is sourced from the sites permitted groundwater well. All irrigation infrastructure will be regularly inspected for leaks and immediately repaired if any are found. Woodchips or rice straw will be used as mulch in cultivation areas that do not have vegetative ground cover to reduce evaporation and conserve water. The cultivator will record irrigation water usage by daily checking water meters and maintaining records on site for a minimum of 5 years. There are no forbearance restrictions on water sourced from the confined aquifer well. The estimated annual water use is summarized below in Table 3. The site has a total of 38,000 gallons of water storage available which is summarized in Table 4. Irrigation methods will ensure water is applied at agronomic rates. Using drip irrigation and irrigating deeply during the early morning is recommended.

Table 3. Annual water uses on the parcel.

Source	Use	Start Date	End Date	To Storage (gallons)	To Use (gallons)
Old Well	Cannabis	Jan. 1	Dec. 31	0	0
Well	Cannabis	Jan. 1	Dec. 31	38,000	100,000

Table 4. Summary of water storage on the parcel.

Water Storage Type	Size (gallons)	Quantity	Total (gallons)
HDPE	5,000	5	25,000
HDPE	4,000	2	8,000
HDPE	2,500	2	5,000
		Total:	38,000
HDPE (Mixing)	1,000	1	1,000
HDPE (Mixing)	500	2	1,000

5. Fertilizers, Pesticides and Herbicides

5.1. Application, Storage and Disposal

At **MP5** there are nutrient mixing tanks and nutrient storage within the riparian setbacks, and these will need to be relocated to a location outside the setbacks. All fertilizers, pesticides, herbicides and rodenticides shall be mixed or prepared in locations where they cannot enter a waterbody (surface or groundwater). Fertilizers, pesticides, herbicides and rodenticides shall be applied at agronomic rates specified on the product label. The enrollee will keep a log of their fertilizers, pesticides and herbicides use for annual reporting. All labels will be kept, and directions followed when amendments and fertilizers are applied. All liquid chemicals will be stored in separate secondary containment. During the off season

all chemicals will be stored in a covered building. Agricultural chemicals will not be applied within 48-hr of a predicted rain event with a 50% or greater chance of 0.25-inches. Disposal of unused products will be consistent with labels on containers. Empty containers will be disposed of at an authorized recycling center. Spill clean-up kits will be stored in the nutrient/fuel sheds. No restricted materials or pesticides will be used or stored on site. No greater than 319 pounds of nitrogen per acre per year shall be applied. A summary of fertilizers, pesticides, and herbicides used annually are listed on the next page in Table 5. A calculation completed by GRC, clarified that the amount applied per acre per year is 173.18 lbs. of nitrogen and 254.88 lbs. of phosphorous.

Table 5. Overview of annual chemical use.

Product Name	Chemical Type	N-P-K or Active Ingredient	Annual Use (lbs. or gallons)
Plant Therapy	Insecticide	All-natural oils	12 gal
Dr. Zymes	Bio-Insecticide/Bio-Fungicide	Proprietary fermentation product/ citric acid	18 gal
Companion	Bio-Fungicide	2-3-2	4 gal
Actinovate	Bio-Fungicide	Soil bacterium	1 lb.
Dr. Earth	Fertilizer	4-4-4	1,000 lbs.
Goddess	Fertilizer	2-1-4	60 gal
Grow A & B	Fertilizer	2-1-6	24 gal
Bloom A & B	Fertilizer	0-5-4	64 gal
King Kola	Fertilizer	0.3-2-3	24 gal
Honeycomb	Fertilizer	0.5-0.5-1	24 gal

5.2. Spill Prevention and Clean Up

A spill cleanup kit will be located near or made available wherever chemicals, fuels, or amendments are stored or used. In case of a major spill of fertilizers, or any petroleum products, the cannabis cultivator shall immediately notify the California Office of Emergency Services at 1-800-852-7550 and initiate cleanup activities for all spills that could enter a waterbody or degrade groundwater.

6. Petroleum

6.1. Use, Storage, and Disposal

The residence is grid tied and the cultivation area uses small generators and a small solar array for energy production. Generators are the primary power source. There is a generator shed with adequate secondary containment, however it is within the riparian setbacks and needs to be relocated (**MP5**). Fueling of the generators, as well as any other equipment or vehicles, will also take place outside of the riparian

setbacks. All equipment containing petroleum derivatives will be inspected regularly for leaks. When the generators are not in use they will be stored in a covered building with an impermeable floor. A summary of annual petroleum use is listed on the following page in Table 6. At **MP3** by the well there are fuel containers and a small generator not stored properly. These will be place under a cover and on a drip catchment basin.

Table 6. Overview annual petroleum usage.

Product	Chemical Type	Annual Use (lbs. or gallons)
Gasoline	Petroleum	100 gallons
Motor Oil	Petroleum	2 gallons

7. Cultivation Waste, Trash/Refuse and Domestic Wastewater

7.1. Trash/Refuse Overview

All trash is locked up in the garbage shed on site and is removed on a regular basis to a waste management facility. No trash or debris will be allowed to enter a watercourse or riparian setback area. Compostable cultivation waste will be stored in a location and manner where it cannot be transported to surface waters. Spent growth medium (e.g. soil) shall either be reused, disposed of at an appropriate waste site, or be spread outside of riparian setbacks and planted with native vegetation. At **MP3 & MP4** there are cultivation-related materials that remain exposed such as chicken fertilizer, plastic netting, soil pots, and structures. These will need to be gathered and stored appropriately or taken to a waste management facility. A portion of this terraced area, which is no longer used for cultivation, is partially inside a riparian setback.

7.2. Domestic Wastewater BPTC Measures

Portable chemical toilets will be brought onto the site for the seasonal workers. Portable toilets will be serviced regularly and located outside of riparian setbacks and away from unstable areas.

8. Winterization Measures

8.1. Summary

It is required that winterization measures be completed annually before the onset of the winter rainy season. The SWRCB has defined the winter season as beginning November 1st and concluding April 1st. Winterization measures apply to cultivation areas, any additional disturbed areas including roads, and stream crossings. These measures aim to prepare the site for an extended period of heavy precipitation during which frequent access, monitoring, and maintenance can be challenging or infeasible. The end goal is to reduce the erosion of unstable areas and prevent the delivery of eroded sediment to sensitive waterways. One of the primary techniques of winterization consists of stabilizing all bare soils with straw and seed. Fiber rolls shall additionally be installed at grade breaks and along slopes of disturbed areas to break up flow paths, thereby reducing the speed and erosive energy of runoff. No heavy machinery shall be used during the winter season to avoid the degradation of saturated roadways and unstable surfaces.

Soil stockpiles shall be guarded before the onset of winter with a cover and/or perimeter controls such as fiber rolls. There is one soil stockpile at **MP7** which needs to be covered prior to the winter period. The soil stockpiles at **MP5** and **MP6** need to be removed from the riparian setbacks and placed in a stable location and then covered prior to the rainy season. Culverts shall be inspected and maintained to ensure integrity during winter. This includes clearing inlets and outlets of sediment and/or debris and ensuring that sufficient energy dissipation exists at outlets to reduce bank erosion. Seasonal access roads shall be locked to ensure that roads are not in use during the wet season by trespassers. Aside from the erosion control components to winterization, a general and thorough site cleanup will be performed to remove all refuse from the site. Additionally, all fertilizers and petroleum products to be left on site will be stored in secondary containment and locked in the shipping container to avoid spillage and discharge to surface or groundwater. Winterization measures for High-Risk Sites are covered in more detail in the Disturbed Area Stabilization Plan to be submitted for that site.

9. Monitoring

Monitoring is broken up into 3 reports; Facility Status, Site Maintenance, and Storm Water Runoff Monitoring. For High-Risk sites all three monitoring reports need to be completed. See "Site Erosion and Sediment Control Plan" for details on the Site Maintenance and Storm Water Runoff Monitoring. Annual reports for the cultivation site will be submitted to the North Coast Regional Water Quality and Control Board (NCRWQCB) prior to March 1 of the following year. The annual report shall include the following: Facility Status, Site Maintenance, and Storm Water Runoff Monitoring; Name and contact information for the person responsible for operation, maintenance, and monitoring. Reporting documents can be emailed to northcoast@waterboards.ca.gov or mailed to 5550 Skylane Blvd., Ste. A, Santa Rosa, CA 95403.

Table 7. Facility status monitoring requirements.

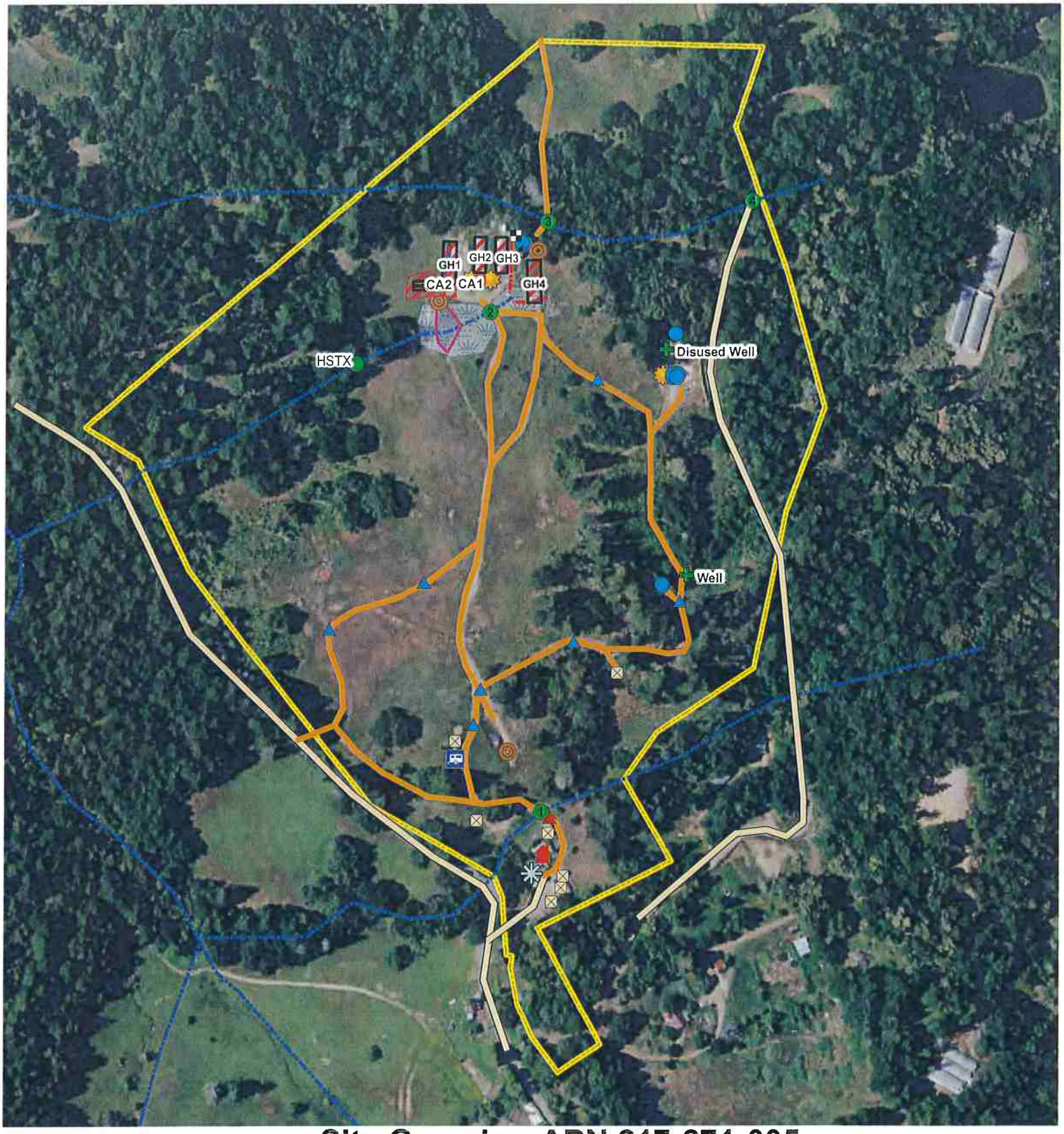
Monitoring Requirement	Description
Winterization Measures Implemented	Report winterization procedures implemented, any outstanding measures, and the schedule for completion.
Tier Status Confirmation	Report any change in tier status. (Stabilization of disturbed areas may change the tier status of a facility. Contact the Regional Water Board if a change in status is appropriate.)
Third Party Identification	Report any change in third party status as appropriate.
Nitrogen Application	Report monthly and annual total nitrogen use for bulk, solid, and liquid forms of nitrogen. Provide the data as lbs./canopy acre/time (month or year) as described in Nitrogen Management Plan.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Legally Responsible Person_____ **Date**_____

10. Remediation Summary Table

Map Point (MP)	Topic	Issue	Remediation Measure	Treatment Priority	Expected Completion Date	Actual Completion Date
MP1	**Land Development and Maintenance, Erosion Control, and Drainage Features**	A rill on a seasonal road with a 20% grade could worsen and discharge sediment.	Install rock and a rolling dip here to send sediment into a vegetated area.	**High**	Oct 2019	
MP2	**Riparian and Wetland Management; Land Development and Maintenance, Erosion Control, and Drainage Features**	A newly graded flat with fill perched on a seasonal wet area and a stream.	Decommission and restore the natural slope. Stabilize the bare soil with a revegetation plan.	**Moderate**	Oct 2020	
MP3	**Cultivation-Related Waste; Fertilizer, Pesticides, and Petroleum Products**	A deck for a shed with nutrients and cultivation materials has no cover or drip catchment to prevent accidental spills or dispersal of materials. Fuels and a generator by the well have no secondary containment.	Place the nutrients and materials into a containment. Store the fuels and the generator in a secondary containment meaning a cover from rain/debris and a drip catchment basin.	**High**	Oct 2019	
MP4	**Cultivation-Related Waste**	A disused cultivation area that is partially within the riparian setbacks has exposed cultivation related wastes.	Remove the cultivation related wastes to a waste management facility.	**Low**	Oct 2020	
MP5	**Fertilizer, Pesticides, and Petroleum Products; Soil Disposal and Spoils Management**	Nutrient mixing tanks, spoil pile, soil pots, fuel storage, and a cultivation area within the riparian setbacks.	Relocate the cultivation related activity to outside the riparian buffers and then stabilize the bare soil.	**Moderate**	Oct 2020	
MP6	**Riparian and Wetland Management; Soil Disposal and Spoils Management**	Cultivation spoils perched adjacent to a wet seasonal area. There are no wattles or tarps for the spoils.	Remove spoils to an area out of riparian setbacks that is stable.	**High**	Oct 2019	
MP7	**Soil Disposal and Spoils Management**	No wattles or tarps for the spoils which would prevent transport of the sediment.	Cover piles with tarp and surround with wattle prior to winter period.	**High**	Oct 2019	
MP8	**Land Development and Maintenance, Erosion Control, and Drainage Features**	The road could possibly become hydrologically connected to the class II stream during the rainy season. There are signs of rills.	Place a water bar the spans from the inboard ditch to the grassy meadow towards the riparian vegetation.	**High**	Oct 2019	



Site Overview APN 217-271-005

- Parcel Boundary
- Structures
- Cultivation Area
- Rough Wetland
- Decommissioned Pond

Roads

- Permanent
- Seasonal
- Skid

Watercourses

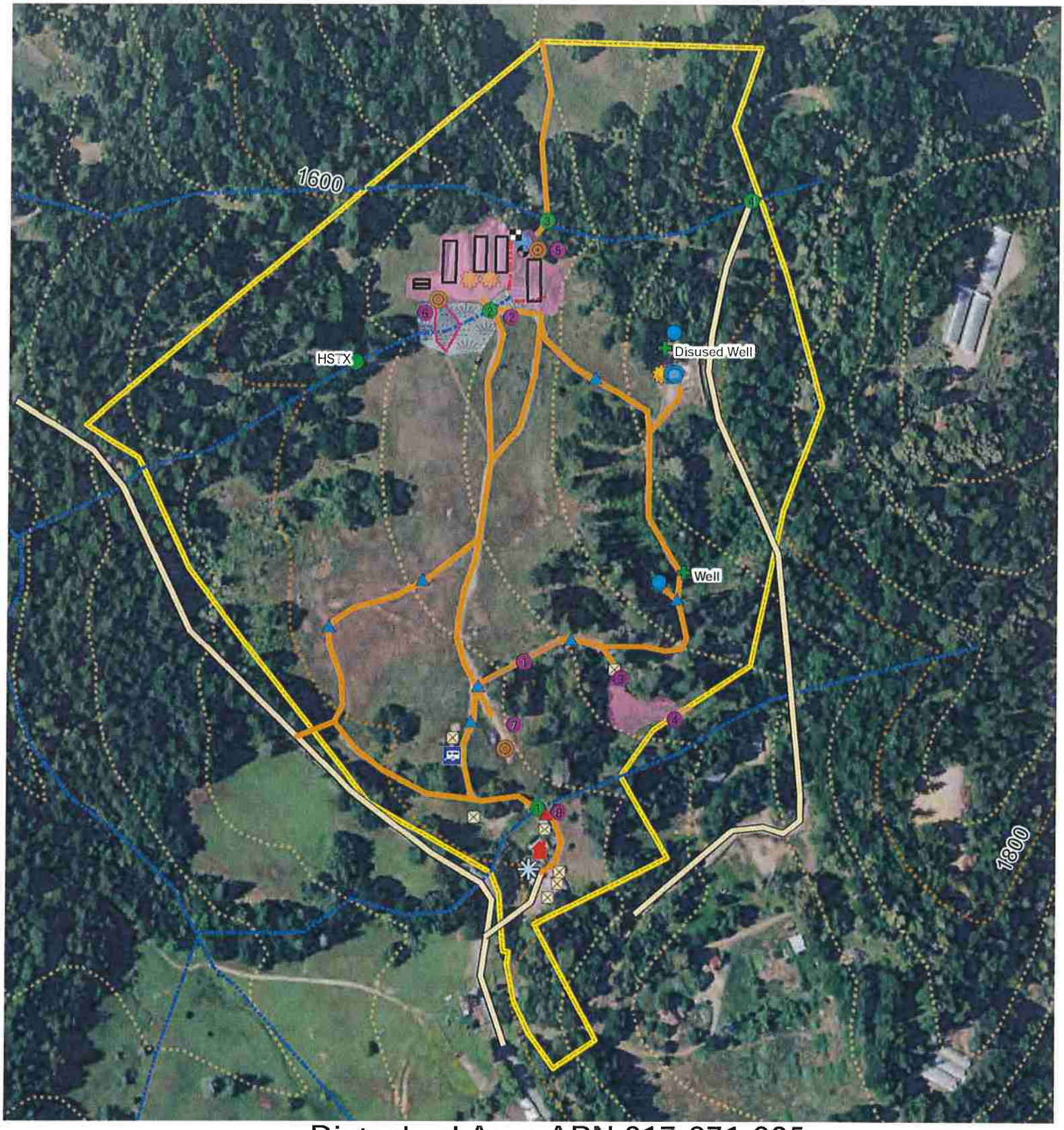
- Class I
- Class II
- Class III
- Class IV

- Stream Crossing
- Water Source
- Water Tank
- Residence
- RV/Trailer
- Septic
- Storage Shed
- Fuel Storage
- Fertilizer Storage
- Spoils
- Solar
- Rolling Dips
- Water Bars

N
W E
S

Contour Interval: 40ft
imagery: 2016 NAIP

0 125 250 500 750 Feet



Disturbed Area APN 217-271-005

Parcel Boundary
Structures
Rough Wetland
Decommissioned Pond
Disturbed Area

Roads

Permanent
Seasonal
Skid

Watercourses

Class I
Class II
Class III
Class IV

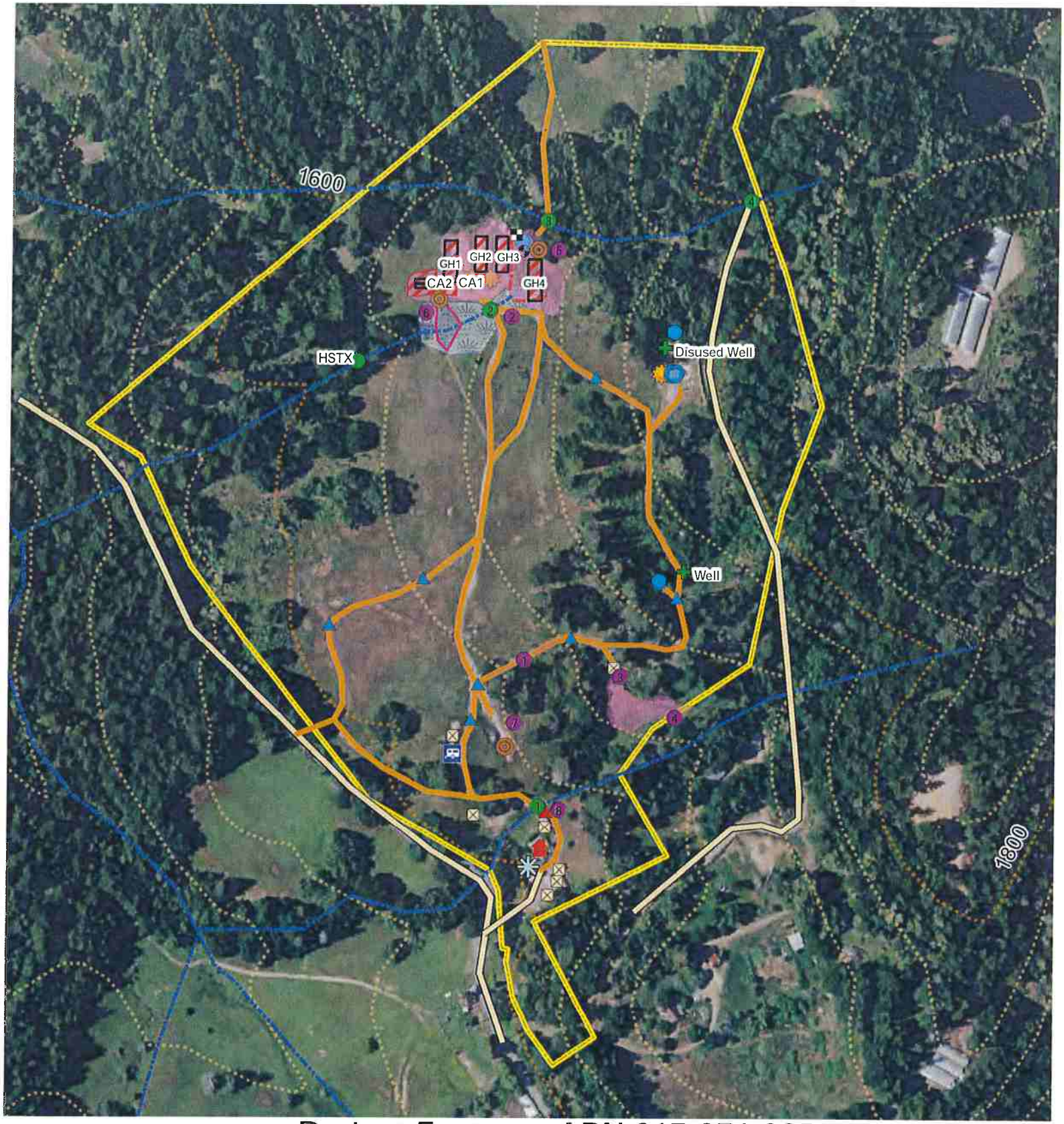
Stream Crossing
Water Source
Water Tank
Residence
RV/Trailer
Septic
Storage Shed

Fuel Storage
Fertilizer Storage
Spoils
Map Points
Solar
Rolling Dips
Water Bars

N
W E
S

Contour Interval: 40ft
imagery: 2016 NAIP

0 125 250 500 Feet



Project Features APN 217-271-005

- Parcel Boundary
- Structures
- Cultivation Area
- Rough Wetland
- Decommissioned Pond
- Disturbed Area

Roads

- Permanent
- Seasonal
- Skid

Watercourses

- Class I
- Class II
- Class III
- Class IV
- Stream Crossing
- Water Source
- Water Tank
- Residence
- RV/Trailer
- Septic
- Storage Shed
- Fuel Storage
- Fertilizer Storage
- Spoils
- Map Points
- Solar
- Rolling Dips
- Water Bars

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Contour Interval: 40ft
imagery: 2016 NAIP

0 125 250 500 Feet

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JUL 09 2018
CDFW - EUREKA

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
REGION 1 – NORTHERN REGION
619 Second Street
Eureka, CA 95501

STREAMBED ALTERATION AGREEMENT
NOTIFICATION NO. 1600-2016-0482-R1
Unnamed Tributary to Larabee Creek, Tributary to the Eel River and the Pacific Ocean

Ms. Tonya Smith
Smith Water Diversion, Culverts, and Pond Project
5 Encroachments

This Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Wildlife (CDFW) and Ms. Tonya Smith (Permittee).

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, the Permittee initially notified CDFW on September 29, 2016, that the Permittee intends to complete the project described herein.

WHEREAS, pursuant to FGC section 1603, CDFW has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in the Agreement necessary to protect those resources.

WHEREAS, the Permittee has reviewed the Agreement and accept its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, the Permittee agrees to complete the project in accordance with the Agreement.

PROJECT LOCATION

The project to be completed is located within the Larabee Creek watershed, approximately 0.5 miles north northwest of the town of Blocksburg, County of Humboldt, State of California. The project is located in Section 20, T2S, R5E, Humboldt Base and Meridian; in the Blocksburg U.S. Geological Survey 7.5-minute quadrangle; Assessor's Parcel Number 217-271-05; latitude 40.2823 N and longitude 123.6395 W.

PROJECT DESCRIPTION

The project is limited to 5 encroachments (Table 1). One encroachment is for water diversion from an Unnamed Tributary to Larabee Creek. Water is diverted from shallow ground water for domestic use. Work will include use and maintenance of the water diversion infrastructure. Three encroachments are to replace undersized culverts. Work

for these encroachments will include excavation, culvert removal, culvert installation, backfilling, compaction of fill, and rock armoring as necessary to minimize erosion. The last encroachment is removal of an instream pond. Work for this encroachment will include excavation of impoundment and restoration of watercourse and adjacent topography.

Table 1. Project encroachments with description.

ID	Latitude/Longitude	Description
POD	40.2823, -123.6395	Water diversion from off channel shallow ground water spring box.
Crossing-1	40.2792, -123.6402	Replace undersized 18" diameter culvert with minimum 30" diameter culvert.
Crossing-2	40.2823, -123.6406	Replace undersized 12" diameter culvert with minimum 18" diameter culvert.
Crossing-3	40.2829, -123.6403	Replace undersized 18" diameter culvert with minimum 36" diameter culvert.
Pond	40.2822, -123.6410	Remove on-stream pond and restore watercourse.

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include: Southern Torrent Salamander (*Rhyacotriton variegatus*), Coastal Tailed Frog (*Ascaphus truei*), Chinook Salmon (*Oncorhynchus tshawytscha*), Coho Salmon (*O. kisutch*), Steelhead Trout (*O. mykiss*), Coastal Cutthroat Trout (*O. clarki*), Northern Red-legged Frog (*Rana aurora*), Foothill Yellow-legged Frog (*Rana boylii*), amphibians, reptiles, aquatic invertebrates, mammals, birds, and other aquatic and riparian species.

The adverse effects the project could have on the fish or wildlife resources identified above include:

Impacts to water quality:
increased water temperature;
reduced instream flow;
temporary increase in fine sediment transport;

Impacts to bed, channel, or bank and direct effects on fish, wildlife, and their habitat:
loss or decline of riparian habitat;
direct impacts on benthic organisms;

Impacts to natural flow and effects on habitat structure and process:
cumulative effect when other diversions on the same stream are considered;
diversion of flow from activity site;
direct and/or incidental take;
indirect impacts;
impediment of up- or down-stream migration;

water quality degradation; and
damage to aquatic habitat and function.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

The Permittee shall meet each administrative requirement described below.

1.1 Documentation at Project Site. The Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to CDFW personnel, or personnel from another state, federal, or local agency upon request.

1.2 Providing Agreement to Persons at Project Site. The Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to all persons who will be working on the project at the project site on behalf of the Permittee, including but not limited to contractors, subcontractors, inspectors, and monitors.

1.3 Adherence to Existing Authorizations. All water diversion facilities that the Permittee owns, operates, or controls shall be operated and maintained in accordance with current law and applicable water rights.

1.4 Change of Conditions and Need to Cease Operations. If conditions arise, or change, in such a manner as to be considered deleterious by CDFW to the stream or wildlife, operations shall cease until corrective measures approved by CDFW are taken. This includes new information becoming available that indicates that the bypass flows and diversion rates provided in this agreement are not providing adequate protection to keep aquatic life downstream in good condition or to avoid "take" or "incidental take" of federal or State listed species.

1.5 Notification of Conflicting Provisions. The Permittee shall notify CDFW if the Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, CDFW shall contact the Permittee to resolve any conflict.

1.6 Project Site Entry. The Permittee agrees to allow CDFW employees access to any property it owns and/or manages for the purpose of inspecting and/or monitoring the activities covered by this Agreement, provided CDFW: a) provides 24 hours advance notice; and b) allows the Permittee or representatives to participate in the inspection and/or monitoring. This condition does not apply to CDFW enforcement personnel.

2. Avoidance and Minimization Measures

To avoid or minimize adverse impacts to fish and wildlife resources identified above, the Permittee shall implement each measure listed below.

2.1 Permitted Project Activities. Except where otherwise stipulated in this Agreement, all work shall be in accordance with the Permittee Notification received on September 29, 2016, together with all maps, BMP's, photographs, drawings, and other supporting documents submitted with the Notification.

2.2 Maximum Diversion Rate. The maximum instantaneous diversion rate from the water intake shall not exceed 3 gallons per minute (gpm) at any time.

2.3 Seasonal Diversion Minimization. No more than 200 gallons per day shall be diverted during the low flow season from May 15 to October 15 of any year. Water shall be diverted only if the Permittee can adhere to conditions 2.2 of this Agreement.

2.4 Measurement of Diverted Flow. The Permittee shall install a device acceptable to CDFW for measuring the quantity of water diverted to and from the spring box. This measurement shall begin as soon as this Agreement is signed by the Permittee. The Permittee shall record the quantity of water diverted to and from the system on a weekly basis. Alternatively, the Permittee can record the frequency of pumping and the time to fill storage.

2.5 Intake Structure. No polluting materials (e.g., particle board, plastic sheeting, bentonite) shall be used to construct or screen, or cover the diversion intake structure.

2.6 Intake Screening. Screens shall be installed on intakes wherever water is diverted, and shall be in place whenever water is diverted. Openings in intakes shall not exceed 1/8 inch diameter (horizontal for slotted or square openings) or 3/32 inch for round openings. The Permittee shall regularly inspect, clean, and maintain screens in good condition.

2.7 Water Conservation. The Permittee shall make best efforts to minimize water use, and to follow best practices for water conservation and management.

2.8 Water Storage Maintenance. Storage tanks shall have a float valve to shut off the diversion when tanks are full to prevent overflow from being diverted when not needed. The Permittee shall install any other measures necessary to prevent overflow of tanks resulting in more water being diverted than is used.

2.9 State Water Code. This Agreement does not constitute a valid water right. The Permittee shall comply with State Water Code sections 5100 and 1200 et seq. as appropriate for the water diversion and water storage. The application for this

registration is found at: http://www.swrcb.ca.gov/waterrights/publications_forms/forms/docs/sdu_registration.pdf.

2.10 Work Period. All work, not including water diversion, shall be confined to the period **June 15 through October 1 of each year**. Work within the active channel of a stream shall be **restricted to periods of dry weather**. Precipitation forecasts and potential increases in stream flow shall be considered when planning construction activities. Construction activities shall cease and all necessary erosion control measures shall be implemented prior to the onset of precipitation. Work associated with the pond removal shall be completed by October 1, 2017.

2.11 Extension of the Work Period. If weather conditions permit, and the Permittee wishes to extend the work period after October 1, a written request shall be made to CDFW at least 5-working days before the proposed work period variance. Written approval (letter or e-mail) for the proposed time extension must be received from CDFW prior to activities continuing past October 1.

2.12 Stream Protection. No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete washings, oil or petroleum products, or other deleterious material from project activities shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into the stream. All project materials and debris shall be removed from the project site and properly disposed of off-site upon project completion.

2.13 Equipment Maintenance. Refueling of machinery or heavy equipment, or adding or draining oil, lubricants, coolants or hydraulic fluids shall not take place within stream bed, channel and bank. All such fluids and containers shall be disposed of properly off-site. Heavy equipment used or stored within stream bed, channel and bank shall use drip pans or other devices (e.g., absorbent blankets, sheet barriers or other materials) as needed to prevent soil and water contamination.

2.14 Hazardous Spills. Any material, which could be hazardous or toxic to aquatic life and enters a stream (i.e. a piece of equipment tipping-over in a stream and dumping oil, fuel or hydraulic fluid), the Permittee shall immediately notify the California Emergency Management Agency State Warning Center at 1-800-852-7550, and immediately initiate clean-up activities. CDFW shall be notified by the Permittee within 24 hours at 707-445-6493 and consulted regarding clean-up procedures.

2.15 Excavated Fill. Excavated fill material shall be placed in locations where it cannot deliver to a watercourse (i.e., stable upland location). To minimize the potential for material to enter the watercourse during the winter period, all excavated and relocated fill material shall be tractor contoured (to drain water) and tractor compacted to effectively incorporate and stabilize loose material into existing road and/or landing features.

2.16 Runoff from Steep Areas. The Permittee shall make preparations so that runoff from steep, erodible surfaces will be diverted into stable areas with little erosion potential or contained behind erosion control structures. Erosion control structures such as straw bales and/or siltation control fencing shall be placed and maintained until the threat of erosion ceases. Frequent water checks shall be placed on dirt roads, cat tracks, or other work trails to control erosion.

2.17 Culvert Installation.

2.17.1 Existing fill material in the crossing shall be excavated down vertically to the approximate original channel and outwards horizontally to the approximate crossing hinge points (transition between naturally occurring soil and remnant temporary crossing fill material) to remove any potential unstable debris and voids in the older fill prism.

2.17.2 Culvert shall be installed to grade, aligned with the natural stream channel, and extend lengthwise completely beyond the toe of fill. If culvert cannot be set to grade, it shall be oriented in the lower third of the fill face, and a downspout or energy dissipator (such as boulders, rip-rap, or rocks) shall be installed above or below the outfall as needed to effectively control stream bed, channel, or bank erosion (scouring, headcutting, or downcutting).

2.17.3 Culvert bed shall be composed of either compacted rock-free soil or crushed gravel. Bedding beneath the culvert shall provide for even distribution of the load over the length of the pipe, and allow for natural settling and compaction to help the pipe settle into a straight profile. The crossing backfill materials shall be free of rocks, limbs, or other debris that could allow water to seep around the pipe, and shall be compacted.

2.17.4 Culvert inlet, outlet (including the outfall area), and fill faces shall be armored where stream flow, road runoff, or rainfall energy is likely to erode fill material and the outfall area.

2.17.5 Permanent culverts shall be sized to accommodate the estimated 100-year flood flow [i.e. ≥1.5 times the width of the active (bankfull) channel width or the 100-year flood size, whichever is greater], including debris, culvert embedding, and sediment loads.

2.18 Rock Armor Placement.

2.18.1 No heavy equipment shall enter the wetted stream channel.

2.18.2 No fill material, other than clean rock, shall be placed in the stream channel.

2.18.3 Rock shall be sized to withstand washout from high stream flows, and extend above the ordinary high water level.

2.18.4 Rock armoring shall not constrict the natural stream channel width and shall be keyed into a footing trench with a depth sufficient to prevent instability.

2.19 If necessary, appropriately spaced grade control shall be installed in restored watercourse to prevent headcutting.

2.20 Project Inspection. The Project shall be inspected by Timberland Resource Consulting or a licensed engineer to ensure that the stream crossings were installed as designed. A copy of the inspection report, including photographs of each site, shall be submitted to CDFW **within 90 days of completion of this project**.

3. Reporting Measures

3.1 Measurement of Diverted Flow. Copies of the **water diversion records (condition 2.4)** shall be submitted to CDFW at 619 Second Street, Eureka, CA 95501 **no later than December 31 of each year beginning in 2017**.

3.2 Project Inspection. The Permittee shall submit the **Project Inspection Report** (condition 2.20) to CDFW, LSA Program at 619 Second Street, Eureka, CA 95501

CONTACT INFORMATION

Written communication that the Permittee or CDFW submits to the other shall be delivered to the address below unless the Permittee or CDFW specifies otherwise.

To Permittee:

Ms. Tonya Smith
28306 Alderpoint Road
Blocksburg, California 95514
415-269-2833

To CDFW:

Department of Fish and Wildlife
Northern Region
619 Second Street
Eureka, California 95501
Attn: Lake and Streambed Alteration Program
Notification #1600-2016-0482-R1

LIABILITY

The Permittee shall be solely liable for any violation of the Agreement, whether committed by the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

This Agreement does not constitute CDFW's endorsement of, or require the Permittee to proceed with the project. The decision to proceed with the project is the Permittee's alone.

SUSPENSION AND REVOCATION

CDFW may suspend or revoke in its entirety this Agreement if it determines that the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, is not in compliance with the Agreement.

Before CDFW suspends or revokes the Agreement, it shall provide the Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide the Permittee an opportunity to correct any deficiency before CDFW suspends or revokes the Agreement, and include instructions to the Permittee, if necessary, including but not limited to a directive to immediately cease the specific activity or activities that caused CDFW to issue the notice.

ENFORCEMENT

Nothing in the Agreement precludes CDFW from pursuing an enforcement action against the Permittee instead of, or in addition to, suspending or revoking the Agreement.

Nothing in the Agreement limits or otherwise affects CDFW's enforcement authority or that of its enforcement personnel.

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or an activity related to it.

This Agreement does not relieve the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and

subcontractors, from complying with other applicable statutes in the FGC including, but not limited to, FGC sections 2050 *et seq.* (threatened and endangered species), 3503 (bird nests and eggs), 3503.5 (birds of prey), 5650 (water pollution), 5652 (refuse disposal into water), 5901 (fish passage), 5937 (sufficient water for fish), and 5948 (obstruction of stream).

Nothing in the Agreement authorizes the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

AMENDMENT

CDFW may amend the Agreement at any time during its term if CDFW determines the amendment is necessary to protect an existing fish or wildlife resource.

The Permittee may amend the Agreement at any time during its term, provided the amendment is mutually agreed to in writing by CDFW and the Permittee. To request an amendment, the Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the corresponding amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

TRANSFER AND ASSIGNMENT

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of the Agreement to another entity shall not be valid or effective, unless the transfer or assignment is requested by the Permittee in writing, as specified below, and thereafter CDFW approves the transfer or assignment in writing.

The transfer or assignment of the Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, the Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

EXTENSIONS

In accordance with FGC section 1605(b), the Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, the Permittee shall submit to CDFW a completed CDFW "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). CDFW shall process the extension request in accordance with FGC 1605(b) through (e).

If the Permittee fails to submit a request to extend the Agreement prior to its expiration, the Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (FGC section 1605(f)).

EFFECTIVE DATE

The Agreement becomes effective on the date of CDFW's signature, which shall be: 1) after the Permittee signature; 2) after CDFW complies with all applicable requirements under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable FGC section 711.4 filing fee listed at http://www.wildlife.ca.gov/habcon/ceqa/ceqa_changes.html.

TERM

This Agreement shall **expire five years** from date of execution, unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. The Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after the Agreement expires or is terminated, as FGC section 1605(a)(2) requires.

AUTHORITY

If the person signing the Agreement (signatory) is doing so as a representative of the Permittee, the signatory hereby acknowledges that he or she is doing so on the Permittee's behalf and represents and warrants that he or she has the authority to legally bind the Permittee to the provisions herein.

AUTHORIZATION

This Agreement authorizes only the project described herein. If the Permittee begins or completes a project different from the project the Agreement authorizes, the Permittee may be subject to civil or criminal prosecution for failing to notify CDFW in accordance with FGC section 1602.

CONCURRENCE

The undersigned accepts and agrees to comply with all provisions contained herein.

FOR ~~Ms. Tonya Smith~~

Tonya Smith — Date 7/6/18

FOR DEPARTMENT OF FISH AND WILDLIFE

Scott Bauer — Date 7/17/18

Scott Bauer
Senior Environmental Scientist Supervisor

Prepared by: Ryan Bourque, Senior Environmental Scientist Specialist, December 27, 2016

SECTION 2 – REQUIREMENTS RELATED TO WATER DIVERSIONS AND WASTE DISCHARGE FOR CANNABIS CULTIVATION

The following Requirements apply to any water diversion or waste discharge related to cannabis cultivation.

No.	TERM
Land Development and Maintenance, Erosion Control, and Drainage Features	
Limitations on Earthmoving	
1.	Cannabis cultivators shall not conduct grading activities for cannabis cultivation land development or alteration on slopes exceeding 50 percent grade, or as restricted by local county or city permits, ordinances, or regulations for grading, agriculture, or cannabis cultivation; whichever is more stringent shall apply. The grading prohibition on slopes exceeding 50 percent does not apply to site mitigation or remediation if the cannabis cultivator is issued separate WDRs or an enforcement order for the activity by the Regional Water Board Executive Officer.
2.	Finished cut and fill slopes, including side slopes between terraces, shall not exceed slopes of 50 percent and should conform to the natural pre-grade slope whenever possible.
3.	Cannabis cultivators shall not drive or operate vehicles or equipment within the riparian setbacks or within waters of the state unless authorized under 404/401 CWA permits, a CDFW LSA Agreement, coverage under the Cannabis General Order water quality certification, or site-specific WDRs issued by the Regional Water Board. This requirement does not prohibit driving on established, maintained access roads that are in compliance with this Policy.
4.	Cannabis cultivation land development and access road construction shall be designed by qualified professionals. Cannabis cultivators shall conduct all construction or land development activities to minimize grading, soil disturbance, and disturbance to aquatic and terrestrial habitat.
5.	The cannabis cultivator shall control all dust related to cannabis cultivation activities to ensure dust does not produce sediment-laden runoff. The cannabis cultivator shall implement dust control measures, including, but not limited to, pre-watering of excavation or grading sites, use of water trucks, track-out prevention, washing down vehicles or equipment before leaving a site, and prohibiting land disturbance activities when instantaneous wind speeds (gusts) exceed 25 miles per hour. Cannabis cultivators shall grade access roads in dry weather while moisture is still present in soil to minimize dust and to achieve design soil compaction, or when needed use a water truck to control dust and soil moisture.
Construction Equipment Use and Limitations	

6.	Cannabis cultivators shall employ spill control and containment practices to prevent the discharge of fuels, oils, solvents and other chemicals to soils and waters of the state.
7.	Cannabis cultivators shall stage and store equipment, materials, fuels, lubricants, solvents, or hazardous or toxic materials in locations that minimize the potential for discharge to waters of the state. At a minimum, the following measures shall be implemented: 1. Designate an area outside the riparian setback for equipment storage, short-term maintenance, and refueling. Cannabis cultivator shall not conduct any maintenance activity or refuel equipment in any location where the petroleum products or other pollutants may enter waters of the state as per Fish and Game Code section 5650 (a)(1). 2. Frequently inspect equipment and vehicles for leaks. 3. Immediately clean up leaks, drips, and spills. Except for emergency repairs that are necessary for safe transport of equipment or vehicles to an appropriate repair facility, equipment or vehicle repairs, maintenance, and washing onsite is prohibited. 4. If emergency repairs generate waste fluids, ensure they are contained and properly disposed or recycled off-site. 5. Properly dispose of all construction debris off-site. 6. Use dry cleanup methods (e.g., absorbent materials, cat litter, and/or rags) whenever possible. Sweep up, contain, and properly dispose of spilled dry materials.
Erosion Control	
8.	The cannabis cultivator shall use appropriate erosion control measures to minimize erosion of disturbed areas, potting soil, or bulk soil amendments to prevent discharges of waste. Fill soil shall not be placed where it may discharge into surface water. If used, weed-free straw mulch shall be applied at a rate of two tons per acre of exposed soils and, if warranted by site conditions, shall be secured to the ground.
9.	The cannabis cultivator shall not plant or seed noxious weeds. Prohibited plant species include those identified in the California Invasive Pest Plant Council's database, available at: www.cal-ipc.org/paf/. Locally native, non-invasive, and non-persistent grass species may be used for temporary erosion control benefits to stabilize disturbed land and prevent exposure of disturbed land to rainfall. Nothing in this term may be construed as a ban on cannabis cultivation that complies with the terms of this Policy.
10.	Cannabis cultivators shall incorporate erosion control and sediment detention devices and materials into the design, work schedule, and implementation of the cannabis cultivation activities. The erosion prevention and sediment capture measures shall be effective in protecting water quality. • Interim erosion prevention and sediment capture measures shall be implemented within seven days of completion of grading and land disturbance activities, and

	shall consist of erosion prevention measures and sediment capture measures including: ○ Erosion prevention measures are required for any earthwork that uses heavy equipment (e.g., bulldozer, compactor, excavator, etc.). Erosion prevention measures may include surface contouring, slope roughening, and upslope storm water diversion. Other types of erosion prevention measures may include mulching, hydroseeding, tarp placement, revegetation, and rock slope protection. ○ Sediment capture measures include the implementation of measures such as gravel bag berms, fiber rolls, straw bale barriers, properly installed silt fences, and sediment settling basins. • Long-term erosion prevention and sediment capture measures shall be implemented as soon as possible and prior to the onset of fall and winter precipitation. Long-term measures may include the use of heavy equipment to reconfigure access roads or improve access road drainage, installation of properly-sized culverts, gravel placement on steeper grades, and stabilization of previously disturbed land. • Maintenance of all erosion protection and sediment capture measures is required year round. Early monitoring allows for identification of problem areas or underperforming erosion or sediment control measures. Verification of the effectiveness of all erosion prevention and sediment capture measures is required as part of winterization activities.
11.	Cannabis cultivators shall only use geotextiles, fiber rolls, and other erosion control measures made of loose-weave mesh (e.g., jute, coconut (coir) fiber, or from other products without welded weaves). To minimize the risk of ensnaring and strangling wildlife, cannabis cultivators shall not use synthetic (e.g., plastic or nylon) monofilament netting materials for erosion control for any cannabis cultivation activities. This prohibition includes photo- or bio-degradable plastic netting.
12.	Cultivation sites constructed on or near slopes with a slope greater than or equal to 30 percent shall be inspected for indications of instability. Indications of instability include the occurrence of slope failures at nearby similar sites, weak soil layers, geologic bedding parallel to slope surface, hillside creep (trees, fence posts, etc. leaning downslope), tension cracks in the slope surface, bulging soil at the base of the slope, and groundwater discharge from the slope. If indicators of instability are present, the cannabis cultivator shall consult with a qualified professional to design measures to stabilize the slope to prevent sediment discharge to surface waters.
13.	For areas outside of riparian setbacks or for upland areas, cannabis cultivators shall ensure that rock placed for slope protection is the minimum amount necessary and is part of a design that provides for native plant revegetation. If retaining walls or other structures are required to provide slope stability, they shall be designed by a qualified professional.
14.	Cannabis cultivators shall monitor erosion control measures during and after each storm event that produces at least 0.5 in/day or 1.0 inch/7 days of precipitation, and repair or replace, as needed, ineffective erosion control measures immediately.

Access Road/Land Development and Drainage	
15.	Access roads shall be constructed consistent with the requirements of California Code of Regulations Title 14, Chapter 4. The Road Handbook describes how to implement the regulations and is available at <http://www.pacificwatershed.com/PWA-publications-library>. Existing access roads shall be upgraded to comply with the Road Handbook.
16.	Cannabis cultivators shall obtain all required permits and approvals prior to the construction of any access road constructed for cannabis cultivation activities. Permits may include section 404/401 CWA permits, Regional Water Board WDRs (when applicable), CDFW LSA Agreement, and county or local agency permits.
17.	Cannabis cultivators shall ensure that all access roads are hydrologically disconnected to receiving waters to the extent possible by installing disconnecting drainage features, increasing the frequency of (inside) ditch drain relief as needed, constructing out-sloped roads, constructing energy dissipating structures, avoiding concentrating flows in unstable areas, and performing inspection and maintenance as needed to optimize the access road performance.
18.	New access road alignments should be constructed with grades (slopes) of 3- to 8-percent, or less, wherever possible. Forest access roads should generally be kept below 12-percent except for short pitches of 500 feet or less where road slopes may go up to 20-percent. These steeper access road slopes should be paved or rock surfaced and equipped with adequate drainage. Existing access roads that do not comply with these limits shall be inspected by a qualified professional to determine if improvements are needed.
19.	Cannabis cultivators shall decommission or relocate existing roads away from riparian setbacks whenever possible. Roads that are proposed for decommissioning shall be abandoned and left in a condition that provides for long-term, maintenance-free function of drainage and erosion controls. Abandoned roads shall be blocked to prevent unauthorized vehicle traffic.
20.	If site conditions prohibit drainage structures (including rolling dips and ditch-relief culverts) at adequate intervals to avoid erosion, the cannabis cultivator shall use bioengineering techniques[12] as the preferred measure to minimize erosion (e.g., live fascines). If bioengineering cannot be used, then engineering fixes such as armoring (e.g., rock of adequate size and depth to remain in place under traffic and flow conditions) and velocity dissipaters (e.g., gravel-filled "pillows" in an inside ditch to trap sediment) may be used for problem sites. The maximum distance between water breaks shall not exceed those defined in the Road Handbook.
21.	Cannabis cultivators shall have a qualified professional design the optimal access road alignment, surfacing, drainage, maintenance requirements, and spoils handling

[12] A Primer on Stream and River Protection for the Regulator and Program Manager: Technical Reference Circular W.D. 02-#1, San Francisco Bay Region, California Regional Water Board (April 2003) http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stream_wetland/streamprotectioncircular.pdf.

	procedures.
22.	Cannabis cultivators shall ensure that access road surfacing, especially within a segment leading to a waterbody, is sufficient to minimize sediment delivery to the wetland or waterbody and maximize access road integrity. Road surfacing may include pavement, chip-seal, lignin, rock, or other material appropriate for timing and nature of use. All access roads that will be used for winter or wet weather hauling/traffic shall be surfaced. Steeper access road grades require higher quality rock (e.g., crushed angular versus river-run) to remain in place. The use of asphalt grindings is prohibited.
23.	Cannabis cultivators shall install erosion control measures on all access road approaches to surface water diversion sites to reduce the generation and transport of sediment to streams.
24.	Cannabis cultivators shall ensure that access roads are out-sloped whenever possible to promote even drainage of the access road surface, prevent the concentration of storm water flow within an inboard or inside ditch, and to minimize disruption of the natural sheet flow pattern off a hill slope to a stream.
25.	If unable to eliminate inboard or inside ditches, the cannabis cultivator shall ensure adequate ditch relief culverts to prevent down-cutting of the ditch and to reduce water runoff concentration, velocity, and erosion. Ditches shall be designed and maintained as recommended by a qualified professional. To avoid point-source discharges, inboard ditches and ditch relief culverts shall be discharged onto vegetated or armored slopes that are designed to dissipate and prevent runoff channelization. Inboard ditches and ditch relief culverts shall be designed to ensure discharges into natural stream channels or watercourses are prevented.
26.	Cannabis cultivators shall ensure that access roads are not allowed to develop or show evidence of significant surface rutting or gullying. Cannabis cultivators shall use water bars and rolling dips as designed by a qualified professional to minimize access road surface erosion and dissipate runoff.
27.	Cannabis cultivators shall only grade ditches when necessary to prevent erosion of the ditch, undermining of the banks, or exposure of the toe of the cut slope to erosion. Cannabis cultivators shall not remove more vegetation than necessary to keep water moving, as vegetation prevents scour and filters out sediment.
28.	Access road storm water drainage structures shall not discharge onto unstable slopes, earthen fills, or directly to a waterbody. Drainage structures shall discharge onto stable areas with straw bales, slash, vegetation, and/or rock riprap.
29.	Sediment control devices (e.g., check dams, sand/gravel bag barriers, etc.) shall be used when it is not practical to disperse storm water before discharge to a waterbody. Where potential discharge to a wetland or waterbody exists (e.g., within 200 feet of a waterbody) access road surface drainage shall be filtered through vegetation, slash, other appropriate material, or settled into a depression with an outlet with adequate drainage. Sediment basins shall be engineered and properly sized to allow sediment settling, spillway stability, and maintenance activities.

Drainage Culverts (See also Watercourse Crossings)	
30.	Cannabis cultivators shall regularly inspect ditch-relief culverts and clear them of any debris or sediment. To reduce ditch-relief culvert plugging by debris, cannabis cultivators shall use 15- to 24-inch diameter pipes, at minimum. In forested areas with a potential for woody debris, a minimum 18-inch diameter pipe shall be used to reduce clogging. Ditch relief culverts shall be designed by a qualified professional based on site-specific conditions.
31.	Cannabis cultivators shall ensure that all permanent watercourse crossings that are constructed or reconstructed are capable of accommodating the estimated 100-year flood flow, including debris and sediment loads. Watercourse crossings shall be designed and sized by a qualified professional.
Cleanup, Restoration, and Mitigation	
32.	Cannabis cultivators shall limit disturbance to existing grades and vegetation to the actual site of the cleanup or remediation and any necessary access routes.
33.	Cannabis cultivators shall avoid damage to native riparian vegetation. All exposed or disturbed land and access points within the stream and riparian setback with damaged vegetation shall be restored with regional native vegetation of similar native species. Riparian trees over four inches diameter at breast height shall be replaced by similar native species at a ratio of three to one (3:1). Restored areas must be mulched, using at least 2 to 4 inches of weed-free, clean straw or similar biodegradable mulch over the seeded area. Mulching shall be completed within 30 days after land disturbance activities in the areas cease. Revegetation planting shall occur at a seasonally appropriate time until vegetation is restored to pre-cannabis or pre-Legacy condition or better. Cannabis cultivators shall stabilize and restore any temporary work areas with native vegetation to pre-cannabis cultivation or pre-Legacy conditions or better. Vegetation shall be planted at an adequate density and variety to control surface erosion and re-generate a diverse composition of regional native vegetation of similar native species.
34.	Cannabis cultivators shall avoid damage to oak woodlands. Cannabis cultivator shall plant three oak trees for every one oak tree damaged or removed. Trees may be planted in groves in order to maximize wildlife benefits and shall be native to the local county.
35.	Cannabis cultivators shall develop a revegetation plan for: • All exposed or disturbed riparian vegetation areas, • any oak trees that are damaged or removed, and • temporary work areas. Cannabis cultivators shall develop a monitoring plan that evaluates the revegetation plan for five years. Cannabis cultivators shall maintain annual inspections for the purpose of assessing an 85 percent survival and growth of revegetated areas within a five-year period. The presence of exposed soil shall be documented for three years following revegetation work. If the revegetation results in less than an 85 percent success rate, the unsuccessful vegetation areas shall be replanted. Cannabis cultivators shall identify the location and extent of exposed soil associated with the site; pre- and post-revegetation

	work photos; diagram of all areas revegetated, the planting methods, and plants used; and an assessment of the success of the revegetation program. Cannabis cultivators shall maintain a copy of the revegetation plan and monitoring results onsite and make them available, upon request, to Water Boards staff or authorized representatives. An electronic copy of monitoring results is acceptable in Portable Document Format (PDF).
36.	Cannabis cultivators shall revegetate soil exposed as a result of cannabis cultivation activities with native vegetation by live planting, seed casting, or hydroseeding within seven days of exposure.
37.	Cannabis cultivators shall prevent the spread or introduction of exotic plant species to the maximum extent possible by cleaning equipment before delivery to the cannabis cultivation Site and before removal, restoring land disturbance with appropriate native species, and post-cannabis cultivation activities monitoring and control of exotic species. Nothing in this term may be construed as a ban on cannabis cultivation that complies with the terms of this Policy.
Stream Crossing Installation and Maintenance	
Limitations on Work in Watercourses and Permanently Ponded Areas	
38.	Cannabis cultivators shall obtain all applicable permits and approvals prior to doing any work in or around waterbodies or within the riparian setbacks. Permits may include section 404/401 CWA permits, Regional Water Board WDRs (when applicable), and a CDFW LSA Agreement.
39.	Cannabis cultivators shall avoid or minimize temporary stream crossings. When necessary, temporary stream crossings shall be located in areas where erosion potential and damage to the existing habitat is low. Cannabis cultivators shall avoid areas where runoff from access roadway side slopes and natural hillsides will drain and flow into the temporary crossing. Temporary stream crossings that impede fish passage are strictly prohibited on permanent or seasonal fish-bearing streams.
40.	Cannabis cultivators shall avoid or minimize use of heavy equipment[13] in a watercourse. If use is unavoidable, heavy equipment may only travel or work in a waterbody with a rocky or cobbled channel. Wood, rubber, or clean native rock temporary work pads shall be used on the channel bottom prior to use of heavy equipment to protect channel bed and preserve channel morphology. Temporary work pads and other channel protection shall be removed as soon as possible once the use of heavy equipment is complete.
41.	Cannabis cultivators shall avoid or minimize work in or near a stream, creek, river, lake, pond, or other waterbody. If work in a waterbody cannot be avoided, activities and associated workspace shall be isolated from flowing water by directing the water around the work site. If water is present, then the cannabis cultivator shall develop a site-specific plan prepared by a qualified professional. The plan shall consider partial or full stream diversion and dewatering. The plan shall consider the use of coffer dams upstream and downstream of the work site and the diversion of all flow from upstream of the upstream

[13] Heavy equipment is defined as large pieces of machinery or vehicles, especially those used in the building and construction industry (e.g., bulldozers, excavators, backhoes, bobcats, tractors, etc.).

	dam to downstream of the downstream dam, through a suitably sized pipe with intake screens that protect and prevent impacts to fish and wildlife. Cannabis cultivation activities and associated work shall be performed outside the waterbody from the top of the bank to the maximum extent possible.
Temporary Watercourse Diversion and Dewatering: All Live Watercourses	
42.	Cannabis cultivators shall ensure that coffer dams are constructed prior to commencing work and as close as practicable upstream and downstream of the work area. Cofferdam construction using offsite materials, such as clean gravel bags or inflatable dams, is preferred. Thick plastic may be used to minimize leakage, but shall be completely removed and properly disposed of upon work completion. If the coffer dams or stream diversion fail, the cannabis cultivator shall repair them immediately.
43.	When any dam or other artificial obstruction is being constructed, maintained, or placed in operation, the cannabis cultivator shall allow sufficient water at all times to pass downstream to maintain aquatic life below the dam pursuant to Fish and Game Code section 5937.
44.	If possible, gravity flow is the preferred method of water diversion. If a pump is used, the cannabis cultivator shall ensure that the pump is operated at the rate of flow that passes through the cannabis cultivation site. Pumping rates shall not dewater or impound water on the upstream side of the coffer dam. When diversion pipe is used it shall be protected from cannabis cultivation activities and maintained to prevent debris blockage.
45.	Cannabis cultivators shall only divert water such that water does not scour the channel bed or banks at the downstream end. Cannabis cultivator shall divert flow in a manner that prevents turbidity, siltation, and pollution and provides flows to downstream reaches. Cannabis cultivators shall provide flows to downstream reaches during all times that the natural flow would have supported aquatic life. Flows shall be of sufficient quality and quantity, and of appropriate temperature to support fish and other aquatic life both above and below the diversion. Block netting and intake screens shall be sized to protect and prevent impacts to fish and wildlife.
46.	Once water has been diverted around the work area, cannabis cultivators may dewater the site to provide an adequately dry work area. Any muddy or otherwise contaminated water shall be pumped to a settling tank, dewatering filter bag, or upland area, or to another location approved by CDFW or the appropriate Regional Water Board Executive Officer prior to re-entering the watercourse.
47.	Upon completion of work, cannabis cultivators shall immediately remove the flow diversion structure in a manner that allows flow to resume with a minimum of disturbance to the channel substrate and that minimizes the generation of turbidity.
Watercourse Crossings	
48.	Cannabis cultivators shall ensure that watercourse crossings are designed by a qualified professional.
49.	Cannabis cultivators shall ensure that all access road watercourse crossing structures allow for the unrestricted passage of water and shall be designed to accommodate the

	estimated 100-year flood flow and associated debris (based upon an assessment of the streams potential to generate debris during high flow events). Consult CAL FIRE 100 year Watercourse Crossings document for examples and design calculations, available at: http://calfire.ca.gov/resource_mgt/downloads/100%20yr%20revised%208-08-17%20(final-a).pdf.
50.	Cannabis cultivators shall ensure that watercourse crossings allow migration of aquatic life during all life stages supported or potentially supported by that stream reach. Design measures shall be incorporated to ensure water depth and velocity does not inhibit migration of aquatic life. Any access road crossing structure on watercourses that supports fish shall be constructed for the unrestricted passage of fish at all life stages, and should use the following design guidelines: • CDFW's *Culvert Criteria for Fish Passage;* • CDFW's *Salmonid Stream Habitat Restoration Manual, Volume 2, Part IX: Fish Passage Evaluation at Stream Crossings; and* • National Marine Fisheries Service, Southwest Region *Guidelines for Salmonid Passage at Stream Crossings.*
51.	Cannabis cultivators shall conduct regular inspection and maintenance of stream crossings to ensure crossings are not blocked by debris. Refer to California Board of Forestry Technical Rule No. 5 available at: http://www.calforests.org/wp-content/uploads/2013/10/Adopted-TRA5.pdf.
52.	Cannabis cultivators shall only use rock fords for temporary seasonal crossings on small watercourses where aquatic life passage is not required during the time period of use. Rock fords shall be oriented perpendicular to the flow of the watercourse and designed to maintain the range of surface flows that occur in the watercourse. When constructed, rock shall be sized to withstand the range of flow events that occur at the crossing and rock shall be maintained at the rock ford to completely cover the channel bed and bank surfaces to minimize soil compaction, rutting, and erosion. Rock must extend on either side of the ford up to the break in slope. The use of rock fords as watercourse crossings for all-weather access road use is prohibited.
53.	Cannabis cultivators shall ensure that culverts used at watercourse crossings are designed to direct flow and debris toward the inlet (e.g., use of wing-walls, pipe beveling, rock armoring, etc.) to prevent erosion of road fill, debris blocking the culvert, and watercourses from eroding a new channel.
54.	Cannabis cultivators shall regularly inspect and maintain the condition of access roads, access road drainage features, and watercourse crossings. At a minimum, cannabis cultivators shall perform inspections prior to the onset of fall and winter precipitation and following storm events that produce at least 0.5 in/day or 1.0 inch/7 days of precipitation. Cannabis cultivators are required to perform all of the following maintenance: • Remove any wood debris that may restrict flow in a culvert. • Remove sediment that impacts access road or drainage feature performance. Place any removed sediment in a location outside the riparian setbacks and stabilize the sediment. • Maintain records of access road and drainage feature maintenance and consider

	redesigning the access road to improve performance and reduce maintenance needs.
55.	Cannabis cultivators shall compact access road crossing approaches and fill slopes during installation and shall stabilize them with rock or other appropriate surface protection to minimize surface erosion. When possible, cannabis cultivators shall ensure that access roads over culverts are equipped with a critical dip to ensure that, if the culvert becomes blocked or plugged, water can flow over the access road surface without washing away the fill prism. Access road crossings where specific conditions do not allow for a critical dip or in areas with potential for significant debris accumulation, shall include additional measures such as emergency overflow culverts or oversized culverts that are designed by a qualified professional.
56.	Cannabis cultivators shall ensure that culverts used at watercourse crossings are: 1) installed parallel to the watercourse alignment to the extent possible, 2) of sufficient length to extend beyond stabilized fill/sidecast material, and 3) embedded or installed at the same level and gradient of the streambed in which they are being placed to prevent erosion.
Soil Disposal and Spoils Management	
57.	Cannabis cultivators shall store soil, construction, and waste materials outside the riparian setback except as needed for immediate construction needs. Such materials shall not be stored in locations of known slope instability or where the storage of construction or waste material could reduce slope stability.
58.	Cannabis cultivators shall separate large organic material (e.g., roots, woody debris, etc.) from soil materials. Cannabis cultivators shall either place the large organic material in long-term, upland storage sites, or properly dispose of these materials offsite.
59.	Cannabis cultivators shall store erodible soil, soil amendments, and spoil piles to prevent sediment discharges in storm water. Storage practices may include use of tarps, upslope land contouring to divert surface flow around the material, or use of sediment control devices (e.g., silt fences, straw wattles, etc.).
60.	Cannabis cultivators shall contour and stabilize stored spoils to mimic natural slope contours and drainage patterns (as appropriate) to reduce the potential for fill saturation and slope failure.
61.	For soil disposal sites cannabis cultivators shall: • revegetate soil disposal sites with a mix of native plant species, • cover the seeded and planted areas with mulched straw at a rate of two tons per acre, and • apply non-synthetic netting or similar erosion control fabric (e.g., jute) on slopes greater than 2:1 if the site is erodible.
62.	Cannabis cultivators shall haul away and properly dispose of excess soil and other debris as needed to prevent discharge to waters of the state.

Riparian and Wetland Protection and Management	
63.	Cannabis cultivators shall not disturb aquatic or riparian habitat, such as pools, spawning sites, large wood, or shading vegetation unless authorized under a CWA section 404 permit, CWA section 401 certification, Regional Water Board WDRs (when applicable), or a CDFW LSA Agreement.
64.	Cannabis cultivators shall maintain existing, naturally occurring, riparian vegetative cover (e.g., trees, shrubs, and grasses) in aquatic habitat areas to the maximum extent possible to maintain riparian areas for streambank stabilization, erosion control, stream shading and temperature control, sediment and chemical filtration, aquatic life support, wildlife support, and to minimize waste discharge.
Water Storage and Use	
Water Supply, Diversion, and Storage	
65.	Cannabis cultivators shall only install, maintain, and destroy wells in compliance with county, city, and local ordinances and with California Well Standards as stipulated in California Department of Water Resources Bulletins 74-90 and 74-81.[14]
66.	All water diversions for cannabis cultivation from a surface stream, subterranean stream flowing through a known and definite channel (e.g., groundwater well diversions from subsurface stream flows), or other surface waterbody are subject to the surface water Numeric and Narrative Instream Flow Requirements. This includes lakes, ponds, and springs (unless the spring is deemed exempt by the Deputy Director). See Section 3. Numeric and Narrative Instream Flow Requirements of this Attachment A for more information.
67.	Groundwater diversions may be subject to additional requirements, such as a forbearance period, if the State Water Board determines those requirements are reasonably necessary to implement the purposes of this Policy.
68.	Cannabis cultivators are encouraged to use appropriate rainwater catchment systems to collect from impermeable surfaces (e.g., roof tops, etc.) during the wet season and store storm water in tanks, bladders, or off-stream engineered reservoirs to reduce the need for surface water or groundwater diversions.
69.	Cannabis cultivators shall not divert surface water unless it is diverted in accordance with an existing water right that specifies, as appropriate, the source, location of the point of diversion, purpose of use, place of use, and quantity and season of diversion. Cannabis cultivators shall maintain documentation of the water right at the cannabis cultivation site. Documentation of the water right shall be available for review and inspection by the Water Boards, CDFW, and any other authorized representatives of the Water Boards or CDFW.

[14] California Well Standards are available at: http://www.water.ca.gov/groundwater/well_info_and_other/california_well_standards/well_standards_content.html.

70.	Cannabis cultivators shall ensure that all water diversion facilities are designed, constructed, and maintained so they do not prevent, impede, or tend to prevent the passing of fish, as defined by Fish and Game Code section 45, upstream or downstream, as required by Fish and Game Code section 5901. This includes but is not limited to the supply of water at an appropriate depth, temperature, and velocity to facilitate upstream and downstream aquatic life movement and migration. Cannabis cultivators shall allow sufficient water at all times to pass past the point of diversion to keep in good condition any fish that may be planted or exist below the point of diversion as defined by Fish and Game Code section 5937. Cannabis cultivators shall not divert water in a manner contrary to or inconsistent with these Requirements.
71.	Cannabis cultivators issued a Cannabis SIUR by the State Water Board shall not divert surface water unless in compliance with all additional Cannabis SIUR conditions required by CDFW.
72.	Water diversion facilities shall include satisfactory means for bypassing water to satisfy downstream prior rights and any requirements of policies for water quality control, water quality control plans, water quality certifications, waste discharge requirements, or other local, state or federal instream flow requirements. Cannabis cultivators shall not divert in a manner that results in injury to holders of legal downstream senior rights. Cannabis cultivators may be required to curtail diversions should diversion result in injury to holders of legal downstream senior water rights or interfere with maintenance of downstream instream flow requirements.
73.	Fuel powered (e.g., gas, diesel, etc.) diversion pumps shall be located in a stable and secure location outside of the riparian setbacks unless authorized under a 404/401 CWA permits, a CDFW LSA Agreement, coverage under the Cannabis General Order water quality certification, or site-specific WDRs issued by the Regional Water Board. Use of non-fuel powered diversion pumps (solar, electric, gravity, etc.) is encouraged. In all cases, all pumps shall: 1. be properly maintained, 2. have suitable containment to ensure any spills or leaks do not enter surface waterbodies or groundwater, and 3. have sufficient overhead cover to prevent exposure of equipment to precipitation.
74.	No water shall be diverted unless the cannabis cultivator is operating the water diversion facility with a CDFW-approved water-intake screen (e.g. fish screen). The water intake screen shall be designed and maintained in accordance with screening criteria approved by CDFW. The screen shall prevent wildlife from entering the diversion intake and becoming entrapped. The cannabis cultivator shall contact the regional CDFW Office, LSA Program for information on screening criteria for diversion(s).[15] The cannabis cultivator shall provide evidence that demonstrates that the water intake screen is in good condition whenever requested by the Water Boards or CDFW. Points of re-diversion from off-stream storage facilities that are open to the environment shall have a water intake screen, as required by CDFW.

[15] CDFW's Lake and Streambed program information is available at: https://www.wildlife.ca.gov/Conservation/LSA .

75.	Cannabis cultivators shall inspect, maintain, and clean water intake screens and bypass appurtenances as directed by CDFW to ensure proper operation for the protection of fish and wildlife.
76.	Cannabis cultivators shall not obstruct, alter, dam, or divert all or any portion of a natural watercourse prior to obtaining all applicable permits and approvals. Permits may include a valid water right, 404/401 CWA permits, a CDFW LSA Agreement, coverage under the Cannabis General Order water quality certification, or site-specific WDRs issued by the Regional Water Board.
77.	Cannabis cultivators shall plug, block, cap, disconnect, or remove the diversion intake associated with cannabis cultivation activities during the surface water forbearance period, unless the diversion intake is used for other beneficial uses, to ensure no water is diverted during that time.
78.	Cannabis cultivators shall not divert from a surface water or from a subterranean stream for cannabis cultivation at a rate more than a maximum instantaneous diversion rate of 10 gallons per minute, unless authorized under an existing appropriative water right.
82.	Onstream storage reservoirs are prohibited unless either: • The cannabis cultivator has an existing water right with irrigation as a designated use, issued prior to October 31, 2017, that authorizes the onstream storage reservoir, or • The cannabis cultivator obtains an appropriative water right permit with irrigation as a designated use prior to diverting water from an onstream storage reservoir for cannabis cultivation. Cannabis cultivators with a pending application or an unpermitted onstream storage reservoir shall not divert for cannabis cultivation until the cannabis cultivator has obtain a valid water right.
83.	Cannabis cultivators are encouraged to install separate storage systems for water diverted for cannabis irrigation and water diverted for any other beneficial uses,[16] or otherwise shall install separate measuring devices to quantify diversion to and from each storage facility, including the quantity of water diverted and the quantity, place, and purpose of use (e.g., cannabis irrigation, other crop irrigation, domestic, etc.) for the stored water.
84.	The cannabis cultivator shall install and maintain a measuring device(s) for surface water or subterranean stream diversions. The measuring device shall be, at a minimum equivalent to the requirements for direct diversions greater than 10 acre-feet per year in California Code of Regulations, Title 23, Division 3, Chapter 2.7[17]. The measuring device(s) shall be located as close to the point of diversion as reasonable. Cannabis cultivators shall maintain daily diversion records for water diverted for cannabis cultivation.

[16] Other beneficial uses of water include: domestic, irrigation, power, municipal, mining, industrial, fish and wildlife preservation and enhancement, aquaculture, recreational, stockwatering, water quality, frost protection, and heat control. (California Code of Regulations, Title 23 sections 659-672).

[17] Additional information on measuring devices may be found at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/diversion_use/water_use.shtml#measurement

	Cannabis cultivators shall maintain separate records that document the amount of water used for cannabis cultivation separated out from the amount of water used for other irrigation purposes and other beneficial uses of water (e.g., domestic, fire protection, etc.). Cannabis cultivators shall maintain daily diversion records at the cultivation site and shall make the records available for review or by request by the Water Boards CDFW, or any other authorized representatives of the Water Boards or CDFW. Daily diversion records shall be retained for a minimum of five years. Compliance with this term is required for any surface water diversion for cannabis cultivation, even those under 10 acre-feet per year.
85.	The State Water Board intends to develop and implement a basin-wide program for real-time electronic monitoring and reporting of diversions, withdrawals, releases and streamflow in a standardized format if and when resources become available. Such real-time reporting will be required upon a showing by the State Water Board that the program and the infrastructure are in place to accept real-time electronic reports. Implementation of the reporting requirements shall not necessitate amendment to this Requirement.
86.	Cannabis cultivators shall not use off-stream storage reservoirs and ponds to store water for cannabis cultivation unless they are sited and designed or approved by a qualified professional in compliance with Division of Safety of Dams (DSOD), county, and/or city requirements, as applicable. If the DSOD, county, and/or city do not have established requirements they shall be designed consistent with the Natural Resource Conservation Service National Engineering Manual. Reservoirs shall be designed with an adequate overflow outlet that is protected and promotes the dispersal and infiltration of flow and prevents channelization. All off-stream storage reservoirs and ponds shall be designed, managed, and maintained to accommodate average annual winter period precipitation and storm water inputs to reduce the potential for overflow. Cannabis cultivators shall plant native vegetation along the perimeter of the reservoir in locations where it does not impact the structural integrity of the reservoir berm or spillway. The cannabis cultivator shall control vegetation around the reservoir berm and spillway to allow for visual inspection of berm and spillway condition and control burrowing animals as necessary.
87.	Cannabis cultivators shall implement an invasive species management plan prepared by a Qualified Biologist for any existing or proposed water storage facilities that are open to the environment. The plan shall include, at a minimum, an annual survey for bullfrogs and other invasive aquatic species. If bullfrogs or other invasive aquatic species are identified, eradication measures shall be implemented under the direction of a qualified biologist, if appropriate after consultation with CDFW (pursuant to Fish and Game Code section 6400). Eradication methods can be direct or indirect. Direct methods may include hand-held dip net, hook and line, lights, spears, gigs, or fish tackle under a fishing license (pursuant to Fish and Game Code section 6855). An indirect method may involve seasonally timed complete dewatering and a drying period of the off-stream storage facility under a Permit to Destroy Harmful Species (pursuant to Fish and Game Code section 5501) issued by CDFW.
88.	Water storage bladders are not encouraged for long-term use. If bladders are used, the cannabis cultivator shall ensure that the bladder is designed and properly installed to store water and that the bladder is sited to minimize the potential for water to flow into a

	watercourse in the event of a catastrophic failure. If a storage bladder has been previously used, the cannabis cultivator shall carefully inspect the bladder to confirm its integrity and confirm the absence of any interior residual chemicals prior to resuming use. Cannabis cultivators shall periodically inspect water storage bladders and containment features to ensure integrity. Water storage bladders shall be properly disposed of or recycled and not resold when assurance of structural integrity is no longer guaranteed.
89.	Cannabis cultivators shall not use water storage bladders unless the bladder is safely contained within a secondary containment system with sufficient capacity to capture 110 percent of a bladder's maximum possible contents in the event of bladder failure (i.e., 110 percent of bladder's capacity). Secondary containment systems shall be of sufficient strength and stability to withstand the forces of released contents in the event of catastrophic bladder failure. In addition, secondary containment systems that are open to the environment shall be designed and maintained with sufficient capacity to accommodate precipitation and storm water inputs from a 25-year, 24-hour storm event.
90.	Cannabis cultivators shall not cause or allow any overflow from off-stream water storage facilities that are closed to the environment (e.g., tanks and bladders) if the off-stream facilities are served by a diversion from surface water or groundwater. Cannabis cultivators shall regularly inspect for and repair all leaks of the diversion and storage system.
91.	Water storage tanks, bladders, and other off-stream water storage facilities that are closed to the environment shall not be located in a riparian setback or next to equipment that generates heat. Cannabis cultivators shall place water storage tanks, bladders, and other off-stream water storage facilities that are closed to the environment in areas that allow for ease of installation, access, maintenance, and minimize road development.
92.	Cannabis cultivators shall install vertical and horizontal tanks according to manufacturer's specifications and shall place tanks on properly compacted soil that is free of rocks and sharp objects and capable of bearing the weight of the tank and its maximum contents with minimal settlement. Tanks shall not be located in areas of slope instability. Cannabis cultivators shall install water storage tanks capable of containing more than 8,000 gallons only on a reinforced concrete pad providing adequate support and enough space to attach a tank restraint system (anchor using the molded-in tie down lugs with moderate tension, being careful not to over-tighten) per the recommendations of a qualified professional.
93.	To prevent rupture or overflow and runoff, cannabis cultivators shall only use water storage tanks and bladders equipped with a float valve, or equivalent device, to shut off diversion when storage systems are full. Cannabis cultivators shall install any other measures necessary to prevent overflow of storage systems to prevent runoff and the diversion of more water than can be used and/or stored.
94.	Cannabis cultivators shall ensure that all vents and other openings on water storage tanks are designed to prevent the entry and/or entrapment of wildlife.

95.	Cannabis cultivators shall retain, for a minimum of five years, appropriate documentation for any hauled water[18] used for cannabis cultivation. Documentation for hauled water shall include, for each delivery, all of the following: 1. A receipt that shows the date of delivery and the name, address, license plate number, and license plate issuing state for the water hauler, 2. A copy of the Water Hauler's License (California Health and Safety Code section 111120), 3. A copy of proof of the Water Hauler's water right, groundwater well, or other authorization to take water, and the location of the water source, and 4. The quantity of water delivered or picked up from a water source, in gallons. Documentation shall be made available, upon request, to Water Boards or CDFW staff and any other authorized representatives of the Water Boards or CDFW.
Water Conservation and Use	
96.	Cannabis cultivators shall regularly inspect their entire water delivery system for leaks and immediately repair any leaky faucets, pipes, connectors, or other leaks.
97.	Cannabis cultivators shall use weed-free mulch in cultivation areas that do not have ground cover to conserve soil moisture and minimize evaporative loss.
98.	Cannabis cultivators shall implement water conserving irrigation methods (e.g., drip or trickle irrigation, micro-spray, or hydroponics).
99.	Cannabis cultivators shall maintain daily records of all water used for irrigation of cannabis. Daily records may be calculated by the use of a measuring device or, if known, by calculating the irrigation system rates and duration of time watered (e.g., irrigating for one hour twice per day using 50 half-gallon drips equates to 50 gallons per day (1*2*50*0.5) of water used for irrigation). Cannabis cultivators shall retain, for a minimum of 5 years, irrigation records at the cannabis cultivation site and shall make all irrigation records available for review by the Water Boards, CDFW and any other authorized representatives of the Water Boards or CDFW.
Irrigation Runoff	
100.	Cannabis cultivators shall regularly inspect for leaks in mainlines[19], laterals[20], in irrigation connections, sprinkler heads, or at the ends of drip tape and feeder lines and immediately repair any leaks found upon detection.
101.	The irrigation system shall be designed to include redundancy (e.g., safety valves) in the event that leaks occur, so that waste of water and runoff is prevented and minimized.
102.	Cannabis cultivators shall regularly replace worn, outdated, or inefficient irrigation system components and equipment to ensure a properly functioning, leak-free irrigation system at

[18] Water hauler means any person who hauls water in bulk by any means of transportation.
[19] Mainlines are pipes that go from the water source to the control valves.
[20] Laterals are the pipes between the control valve and the sprinkler heads.

	all times.
103.	Cannabis cultivators shall minimize irrigation deep percolation[21] by applying irrigation water at agronomic rates.
Fertilizers, Pesticides, and Petroleum Products	
104.	Cannabis cultivators shall not mix, prepare, over apply, or dispose of agricultural chemicals/products (e.g., fertilizers, pesticides[22], and other chemicals as defined in the applicable water quality control plan) in any location where they could enter the riparian setback or waters of the state. The use of agricultural chemicals inconsistently with product labeling, storage instructions, or DPR requirements for pesticide applications[23] is prohibited. Disposal of unused product and containers shall be consistent with labels.
105.	Cannabis cultivators shall keep and use absorbent materials designated for spill containment and spill cleanup equipment on-site for use in an accidental spill of fertilizers, petroleum products, hazardous materials, and other substances which may degrade waters of the state. The cannabis cultivator shall immediately notify the California Office of Emergency Services at 1-800-852-7550 and immediately initiate cleanup activities for all spills that could enter a waterbody or degrade groundwater.
106.	Cannabis cultivators shall establish and use a separate storage area for pesticides, and fertilizers, and another storage area for petroleum or other liquid chemicals (including diesel, gasoline, oils, etc.). All such storage areas shall comply with the riparian setback Requirements, be in a secured location in compliance with label instructions, outside of areas of known slope instability, and be protected from accidental ignition, weather, and wildlife. All storage areas shall have appropriate secondary containment structures, as necessary, to protect water quality and prevent spillage, mixing, discharge, or seepage.

[21] Deep percolation occurs when excess irrigation water is applied and percolates below the plant root zone.

[22] Pesticide is defined as follows:

- Per California Code of Regulations Title 3. Division 6. Section 6000:
  (a) Any substance or mixture of substances that is a pesticide as defined in the Food and Agricultural Code and includes mixtures and dilutions of pesticides;
  (b) As the term is used in Section 12995 of the California Food and Agricultural Code, includes any substance or product that the user intends to be used for the pesticidal poison purposes specified in Sections 12753 and 12758 of the Food and Agricultural Code.
- Per California Food and Agricultural Code section 12753(b), the term "Pesticide" includes any of the following: Any substance, or mixture of substances which is intended to be used for defoliating plants, regulating plant growth, or for preventing, destroying, repelling, or mitigating any pest, as defined in Section 12754.5, which may infest or be detrimental to vegetation, man, animals, or households, or be present in any agricultural or nonagricultural environment whatsoever.
- In laymen's terms: "pesticide" includes: rodenticides, herbicides, insecticides, fungicides, and disinfectants.

[23] More information on DPR requirements is available at:
http://www.cdpr.ca.gov/docs/legbills/laws_regulations.htm,
http://www.cdpr.ca.gov/docs/county/cacltrs/penfltrs/penf2017/2017atch/attach0301.pdf, and
http://www.cdpr.ca.gov/docs/cannabis/index.htm

	Storage tanks and containers must be of suitable material and construction to be compatible with the substances stored and conditions of storage, such as pressure and temperature.
107.	Throughout the wet season, Cannabis Cultivators shall ensure that any temporary storage areas have a permanent cover and side-wind protection or be covered during non-working days and prior to and during rain events.
108.	Cannabis cultivators shall only use hazardous materials[24] in a manner consistent with the product's label.
109.	Cannabis cultivators shall only keep hazardous materials in their original containers with labels intact, and shall store hazardous materials to prevent exposure to sunlight, excessive heat, and precipitation. Cannabis cultivators shall provide secondary containment for hazardous materials to prevent possible exposure to the environment. Disposal of unused hazardous materials and containers shall be consistent with the label.
110.	Cannabis cultivators shall only mix, prepare, apply, or load hazardous materials outside of the riparian setbacks.
111.	Cannabis cultivators shall not apply agricultural chemicals within 48 hours of a predicted rainfall event of 0.25 inches or greater with a probability greater than 50-percent. In the Lake Tahoe Hydrologic Unit, cannabis cultivators shall not apply agricultural chemicals within 48 hours of any weather pattern that is forecast to have a 30 percent or greater chance of precipitation greater than 0.1 inch per 24 hours. This requirement may be updated based on amendments to the Lahontan Regional Water Board construction storm water general order.
Fertilizers and Soils	
112.	To minimize infiltration and water quality degradation, Cannabis cultivators shall irrigate and apply fertilizer to consistent with the crop need (i.e., agronomic rate).
113.	When used, cannabis cultivators shall apply nitrogen to cannabis cultivation areas consistent with crop need (i.e., agronomic rate). Cannabis cultivators shall not apply nitrogen at a rate that may result in a discharge to surface water or groundwater that causes or contributes to exceedance of water quality objectives, and no greater than 319 pounds/acre/year unless plant tissue analysis performed by a qualified individual demonstrates the need for additional nitrogen application. The analysis shall be performed by an agricultural laboratory certified by the State Water Board's Environmental Laboratory Accreditation Program.
114.	Cannabis cultivators shall ensure that potting soil or soil amendments, when not in use, are placed and stored with covers, when needed, to protect from rainfall and erosion, to prevent discharge to waters of the state, and to minimize leaching of waste constituents into

[24] A hazardous material is any item or agent (biological, chemical, radiological, and/or physical), which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors.

	groundwater.
Pesticides and Herbicides	
115.	Cannabis cultivators shall not apply restricted materials, including restricted pesticides, or allow restricted materials to be stored at the cannabis cultivation site.
116.	Cannabis cultivators shall implement integrated pest management strategies where possible to reduce the need and use of pesticides and the potential for discharges to waters of the state.[25]
Petroleum Products and Other Chemicals	
117.	Cannabis cultivators shall only refuel vehicles or equipment outside of riparian setbacks. Cannabis cultivators shall inspect all equipment using oil, hydraulic fluid, or petroleum products for leaks prior to use and shall monitor equipment for leakage. Stationary equipment (e.g., motors, pumps, generators, etc.) and vehicles not in use shall be located outside of riparian setbacks. Spill and containment equipment (e.g., oil spill booms, sorbent pads, etc.) shall be stored onsite at all locations where equipment is used or staged.
118.	Cannabis cultivators shall store petroleum, petroleum products, and similar fluids in a manner that provides chemical compatibility, provides secondary containment, and protection from accidental ignition, the sun, wind, and rain.
119.	Use of an underground storage tank(s) for the storage of petroleum products is allowed if compliant with all applicable federal, state, and local laws; regulations; and permitting requirements.
Cultivation-Related Waste	
120.	Cannabis cultivators shall contain and regularly remove all debris and trash associated with cannabis cultivation activities from the cannabis cultivation site. Cannabis cultivators shall only dispose of debris and trash at an authorized landfill or other disposal site in compliance with state and local laws, ordinances, and regulations. Cannabis cultivators shall not allow litter, plastic, or similar debris to enter the riparian setback or waters of the state. Cannabis plant material may be disposed of onsite in compliance with any applicable CDFA license conditions.
121.	Cannabis cultivators shall only dispose or reuse spent growth medium (e.g., soil and other organic media) in a manner that prevents discharge of soil and residual nutrients and chemicals to the riparian setback or waters of the state. Spent growth medium shall be covered with plastic sheeting or stored in water tight dumpsters prior to proper disposal or reuse. Spent growth medium should be disposed of at an authorized landfill or other disposal site in compliance with state and local laws, ordinances, and regulations. Proper reuse of spent growth medium may include incorporation into garden beds or spreading on a stable surface and revegetating the surface with native plants. Cannabis cultivators shall use erosion control techniques, as needed, for any reused or stored spent growth medium

[25] https://www.epa.gov/safepestcontrol/integrated-pest-management-ipm-principles

	to prevent polluted runoff.
Refuse and Domestic Waste	
122.	Cannabis cultivators shall ensure that debris, soil, silt, bark, slash, sawdust, rubbish, creosote-treated wood, raw cement and concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to any life stage of fish and wildlife or their habitat (includes food sources) does not contaminate soil or enter the riparian setback or waters of the state.
123.	Cannabis cultivators shall not dispose of domestic wastewater unless it meets applicable local agency and/or Regional Water Board requirements. Cannabis cultivators shall ensure that human or animal waste is disposed of properly. Cannabis cultivators shall ensure onsite wastewater treatment systems (e.g., septic system) are permitted by the local agency or applicable Regional Water Board.
124.	If used, chemical toilets or holding tanks shall be maintained in a manner appropriate for the frequency and conditions of usage, sited in stable locations, and comply with the riparian setback Requirements.
Winterization	
125.	Cannabis cultivators shall implement all applicable Erosion Control and Soil Disposal and Spoils Management Requirements in addition to the Winterization Requirements below by the onset of the winter period.
126.	Cannabis cultivators shall block or otherwise close any temporary access roads to all motorized vehicles no later than the onset of the winter period each year.
127.	Cannabis cultivators shall not operate heavy equipment of any kind at the cannabis cultivation site during the winter period, unless authorized for emergency repairs contained in an enforcement order issued by the State Water Board, Regional Water Board, or other agency having jurisdiction.
128.	Cannabis cultivators shall apply linear sediment controls (e.g., silt fences, wattles, etc.) along the toe of the slope, face of the slope, and at the grade breaks of exposed slopes to comply with sheet flow length[26] at the frequency specified below.

Slope (percent)	Sheet Flow Length Not to Exceed (feet)
0 – 25	20
25 – 50	15
>50	10

[26] Sheet flow length is the length that shallow, low velocity flow travels across a site.

129.	Cannabis cultivators shall maintain all culverts, drop inlets, trash racks and similar devices to ensure they are not blocked by debris or sediment. The outflow of culverts shall be inspected to ensure erosion is not undermining the culvert. Culverts shall be inspected prior to the onset of fall and winter precipitation and following precipitation events that produce at least 0.5 in/day or 1.0 inch/7 days of precipitation to determine if maintenance or cleaning is required.
130.	Cannabis cultivators shall stabilize all disturbed areas and construction entrances and exits to control erosion and sediment discharges from land disturbance.
131.	Cannabis cultivators shall cover and berm all loose stockpiled construction materials (e.g., soil, spoils, aggregate, etc.) that are not actively (scheduled for use within 48 hours) being used as needed to prevent erosion by storm water. The cannabis cultivator shall have adequate cover and berm materials available onsite if the weather forecast indicates a probability of precipitation.
132.	Cannabis cultivators shall apply erosion repair and control measures to the bare ground (e.g., cultivation area, access paths, etc.) to prevent discharge of sediment to waters of the state.
133.	As part of the winterization plan approval process, the Regional Water Board may require cannabis cultivators to implement additional site-specific erosion and sediment control requirements if the implementation of the Requirements in this section do not adequately protect water quality.