

September 18, 2019



To whom it may concern,

Attached is the Water Resource Protection Plan for APN 210-191-051, 210-191-052, and 210-191-008 / RWQCB WDID 1B161106CHUM / SWRCB App# 417143. This document was written and/or last updated by NRM in August 2017. Since this date, there have been some changes to the project operations and property infrastructure.

This property has been enrolled in the SWRCB and the Site Management Plan associated with this enrollment was due by 9/12/19. NRM is submitting this WRPP as a placeholder for the SMP. NRM is currently working on completing the SMP, which will accurately encompass all aspects of the project/property and how they relate to water quality; the SMP will also address any changes/improvements that need to be made in order for the property to be in compliance with all BPTCs.

Sincerely,

A handwritten signature in black ink that reads "Alicia Heitzman".

Alicia Heitzman
Cannabis Compliance Supervisor
aheitzman@nrmcorp.com
(707) 269-1377

**Water Resource Protection Plan
for APN 210-191-008,
210-191-051 and 210-292-052
WDID# 1B161106CHUM**

Humboldt County

Submitted to:

*California Regional Water Quality Control Board -
North Coast Region
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403*

Prepared by:

*Alicia Heitzman & Greg Gibbs
Natural Resources Management Corporation
1434 3rd Street
Eureka, CA 95501*

August 2nd, 2017



Site Maps for Parcel

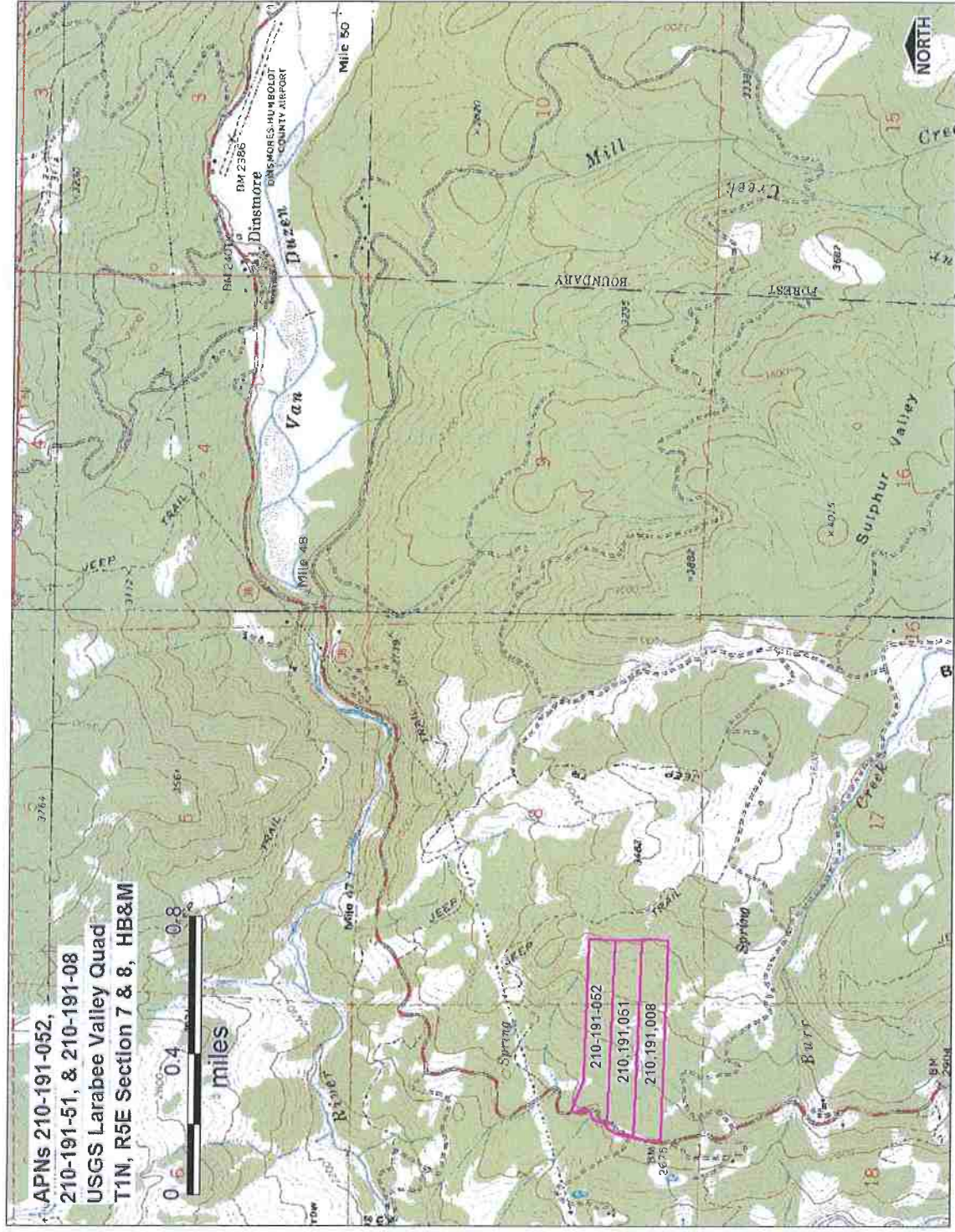


Figure 1. Vicinity map for parcels 210-191-51, 210-191-52, and 210-191-08

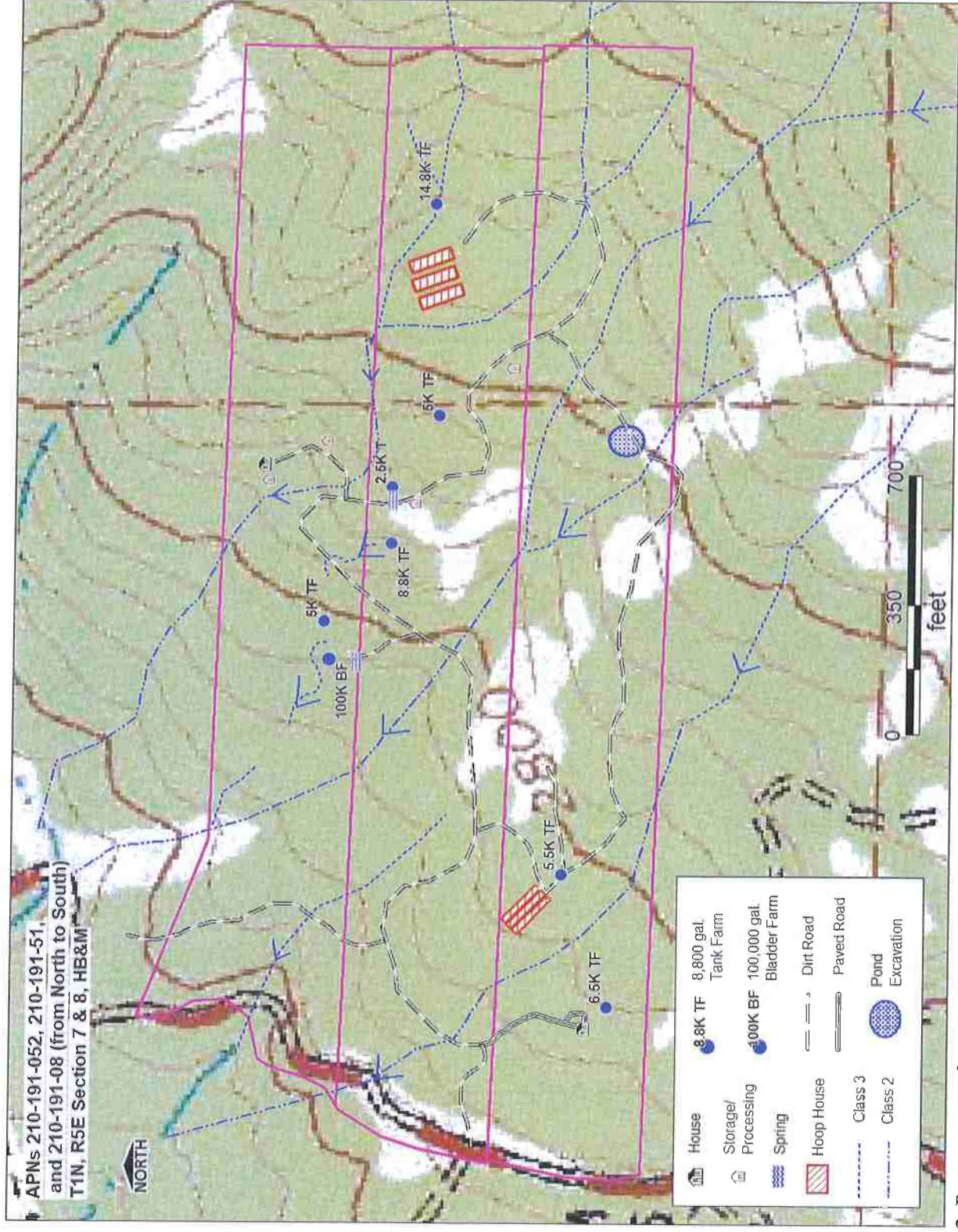


Figure 2. Property map for parcels 210-191-51, 210-191-52, and 210-191-08, showing all infrastructure



Figure 3. Property map for parcels 210-191-51, 210-191-52, and 210-191-08, showing all infrastructure



Figure 4. Property map for parcels 210-191-51, 210-191-52, and 210-191-08, showing all waterways and associated culverts/crossings

Water Resource Protection Plan

This document serves as the water resource protection plan (WRPP) for site APN 210-191-51, 210-191-52, and 210-191-08 pursuant to Order No. R1-2015-0023. On August 13, 2015, the North Coast Regional Water Quality Control Board (NCRWQCB; Regional Water Board) adopted a General Waiver of Waste Discharge requirements and General Water Quality Certification for Discharges of Waste Resulting from Cannabis Cultivation and Associated Activities or Operations with Similar Environmental Effects in the North Coast Region, Order No. R1-2015-0023. One of the requirements of Order No. R1-2015-0023 is to prepare a Water Resource Protection Plan (WRPP) for all sites that are enrolled under Tier 2 of the order.

Summary

The parcels were purchased in 2015 by the current owner/operators. These three contiguous parcels combine for approximately 81 acres and meet the tier two standards laid out by the NCRWQCB. The combined cultivation area is 19,500 square feet, all in hoop houses (Figure 2, 3). The eastern cultivation flat contains three 33' x 12' hoop houses and the western cultivation flat contains three 17' x 130' hoop houses. These hoop houses are used for light deprivation cultivation. Currently, the plants are in 20-gallon pots and hand watered. However, a riparian buffer zone encroachment has been identified with the hoop house locations on the middle flat.

Soils are reused each year. The landowner has built a three-sided retaining wall to mix and compile his spoils, which is then covered for the wet season. There are no spoils piles that present a hazard to water quality on the property.

Water on this property is scarce over the summer months. Domestic water comes from a small spring located near the northern house site, which was ruled jurisdictional by CDFW for the limited summer supply it produces. A well was drilled, which is more than 200 feet deep, but has proved to be dry. Supplemental water has been hauled in to meet the irrigation needs. The landowner has been working with Baird Engineering to construct rainwater ponds to meet the irrigation demand. Water storage on the property totals 148,100 gallons amongst various size hard tanks and bladders on the property.

The property has two residential dwellings. The northern house (on parcel 210-191-052) has a septic system that is in the process of being permitted through Baird Engineering. There are also additional cargo containers and storage structures at this site. Parcel 210-191-008 has a paved road up to a garage/house structure, and a generator shed. The building is in the process of being permitted through Baird Engineering. This site also has a septic, but it was not functioning correctly and regularly cleaned porta-potties were set up as a temporary measure.

Current Conditions

Watercourses

There is a network of class 3 and 2 watercourses that flow North West across these parcels. These waterways eventually make their way to the Van Duzen River. There are also two springs on parcel 210-191-051. The eastern-most spring is the domestic water source and the western spring is more of a cut bank seep in the cutbank of the existing flat (Figure 3).

Roads

All the roads on the three parcels are dirt roads, except for the portion that leads to the house on APN 210-191-008. The paved road is in decent shape. The roads themselves are in decent shape, but the many stream crossings and existing ditch relief culverts need work. We are also recommending installing an additional 6 ditch relief culverts and 3 rolling dips to reduce erosion and sediment delivery (Figure 4).

Watercourse Crossings – see Figures 4 & 5. Project labels can be found on figure 6.

There is a total of 6 stream crossings and 3 ditch relief culverts on this property. All stream crossings need to be replaced and were included in the 1600 permit application for this parcel. The ford/fill crossing (project 3) on parcel 210-191-008 will also need to be upgraded. Figure 5 shows mapped watershed used size culverts with CulvertQ. CulvertQ sizing information can be found in Table 1.

The Eastern most 24" (project 2) plastic culvert was recently installed. Unfortunately, the existing culvert was improperly installed: the culvert has a change in grade and a crease midway through the crossing. Moreover, CulvertQ analysis recommends a 30" culvert at this location to accommodate the predicted $Q=100$ flow volume. The current CMP is not set to grade or on a uniform surface.

The fill crossing (project 3) has an existing drainage structure at a topographic low. There is no diversion potential here, but there is a small amount of potential future erosion: 3-4 yd³ based on 2 ft. knick point downstream.

The 30" plastic culvert on a Class 2 stream (project 4) appears to be undersized based on the size of bedload, the width of the stream, and the small woody debris collected at the inlet. The pipe also has water flowing out underneath the culvert outlet, evidence of compromised function. Moreover, CulvertQ analysis recommends a 36" culvert at this location to accommodate the predicted $Q=100$ flow volume.

The northern most 12" CMP (project 5), at first glance, this appears to be a Ditch Relief Culvert; upon closer inspection, there is a small stream upslope of the road which drains about 0.45 acres. The culvert shotguns at the outlet, then becomes sheet flow on the slope below. CulvertQ analysis recommends an 18" culvert at this location to accommodate the predicted $Q=100$ flow volume.

The 36" plastic culvert (project 6) was recently installed. CulvertQ analysis predicts that this culvert is properly sized for the $Q=100$ flow event. Unfortunately, the existing culvert was improperly installed: the culvert has a change in grade and a crease midway through the crossing. The CMP also shotguns at the outlet.

The western 12" crossing is a rusted, compromised culvert on a Class 3 stream (project 7). The road has not been used in many years and there is an abundance of wetland indicator vegetation (*Juncus*) in the area around and past the stream crossing.

The western 24" is a Corrugated Plastic Culvert on a Class 2 stream (project 8). The inlet is partially crushed, the outlet is eroding the right bank at high flow, and CulvertQ analysis recommends a 30" culvert to accommodate the predicted $Q=100$ flow volume at this location.

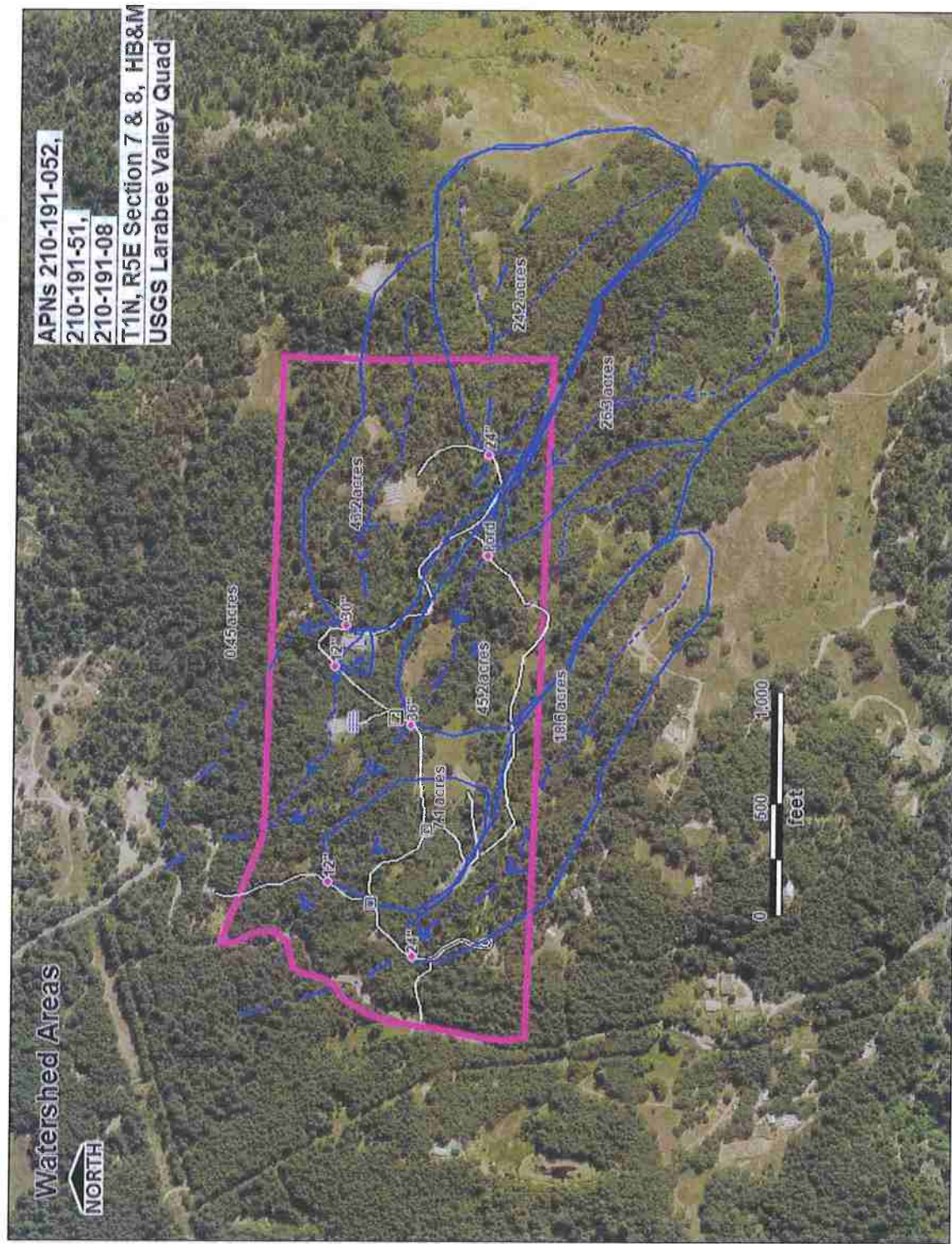


Table 1. Existing Culvert Information and Culvert Size Recommendations Based on Culvert Q

Existing Culvert Information and Culvert Size Recommendation										
										Number of Records Imported =
ID#	Existing Culvert Diameter (in)	Headwall (HW) Height (in)	HW/D (ratio)	Discharge Method	Q100 (cfs)	Capacity (cfs)	Is Culvert Undersized?	Recommended Culvert Diam. (in)	Recommendation	7
Project 2	24	36	1.5	Rational	17	12	TRUE	30	Q100	
Project 3	0	0	0.0	Rational	18	0	TRUE	30	Q100	
Project 4	30	30	1.0	Rational	30	20	TRUE	36	Q100	
Project 5	12	12	1.0	Rational	0	0	TRUE	18	Q100	
Project 6	36	36	1.0	Rational	32	32		36	Q100	
Project 7	12	12	1.0	Rational	5	0	TRUE	18	Q100	
Project 8	24	40	1.7	Rational	13	12	TRUE	30	Q100	

Cultivation Areas

There are five flats within the parcels that either currently have cultivation on them, or have in the past. For the 2017 season, there are two flats that make up the total ~19,500 square feet of cultivation space. Currently active cultivation flats:

- The eastern-most flat (project 1) was expanded within this last year, without a permit. This work will need to be addressed by restoring a portion of this terrace, which may have truncated a class 3 stream.
- The western-most flat plants are cultivated in hoop houses and this cultivation area does not fall within any stream buffers.
- An older cultivation area due east of the western most flat was also used for cultivation in 2017.

Cultivation methods and details about this area will be recorded by NRM during fall monitoring in 2017.

The two middle flats were found in 2016 to be within the path of surface waters. All cultivation has been removed from these flats.

The original plan for a single one-million-gallon pond (work point 1) was deemed inappropriate for the location by CDFW and RWQCB. The pond was partially excavated and will need to be filled back in and re-contoured.

General Property Conditions

For the winter, spoils are contained in a three-sided retaining structure that has been tarped. There is a very minimal amount of general trash on the property, which can easily be picked up by hand. Cultivation related materials are stored in the cargo shipping container on site. Petroleum products are stored in the new generator shed that has a secondary containment foundation.

List of Chemicals Stored Onsite & Information about Use

A generator shed with a concrete foundation was installed late last year. This new shed is large enough to provide proper secondary containment for all petroleum products in case of a major malfunction. All generators and gas cans have been moved to this location.

Nutrients are mixed into 300 to 500-gallon tanks located at each cultivation site. All plants are hand watered at agronomic rates as to not create excess water or nutrient percolation beyond the root zone. A cargo container is used to store fertilizers. Fertilizers are applied as needed every 3rd to 4th watering. Fertilizers stored on site include: Canna Bioline (Soluble OMRI organic fertilizer), Canna PK 13/14 (soluble mix of potassium and phosphorus), Superthrive, Grow-more 30-10-10 NPK, MaxSea (seaweed, bloodmeal, and a blend of soluble fertilizer salts); Hi-Brix molasses, Molasses, Ph up (Liquid solution of KOH and K₂CO₃), and Ph down (Liquid solution of food grade Phosphoric acid).

No pesticides or fungicides are used. The land owner relies on beneficial insects such as ladybugs. If pest populations require further management, the land owner plans to use organic products such as citric acid for control.

For future compliance, all nutrients, pesticides, herbicides, and fungicides used will be recorded. The product name, amount used and method of application will be recorded each time a product is used. A copy of these records will be kept onsite. Quantities used annually will be reported to the NCRWQCB by March 31st of the following year with the MRP (Appendix C, Monitoring and Reporting Program).

Water Use

Domestic water comes from a small spring located near the upper house site, which was ruled jurisdictional by CDFW for the limited summer supply it produces. Domestic water use has not been monitored, so there are not yet any accurate estimates. Supplemental water has been hauled in to meet the irrigation needs of the grow. Water storage on the property totals 148,100 gallons in various sized hard tanks and bladders throughout the three parcels.

A well, located adjacent to the seasonal class 2 drainage with the 30" culvert, in proximity to all the spring and seepy areas, was dug for 200 feet yet proved to be dry.

The total area of cultivation is 19,500 square feet. It was estimated that 3,800 gallons of water were purchased and hauled in each week. With this estimate, water usage was calculated at 675,500 gallons for the season, including domestic needs.

The landowner has been working with Baird Engineering to construct rainwater ponds to comply with the non-diversionary period. Initially, a one-million-gallon pond was proposed by the engineers at one location, but the excavation of this pond was started before any plans or permits had been issued. Instead, designs are being made for two rainwater catchment ponds to address water storage and irrigation needs over the summer period.

For future compliance, **water meters will be used** to quantify water use for irrigation and storage. A photo of the meter reading will be taken weekly to document water use.

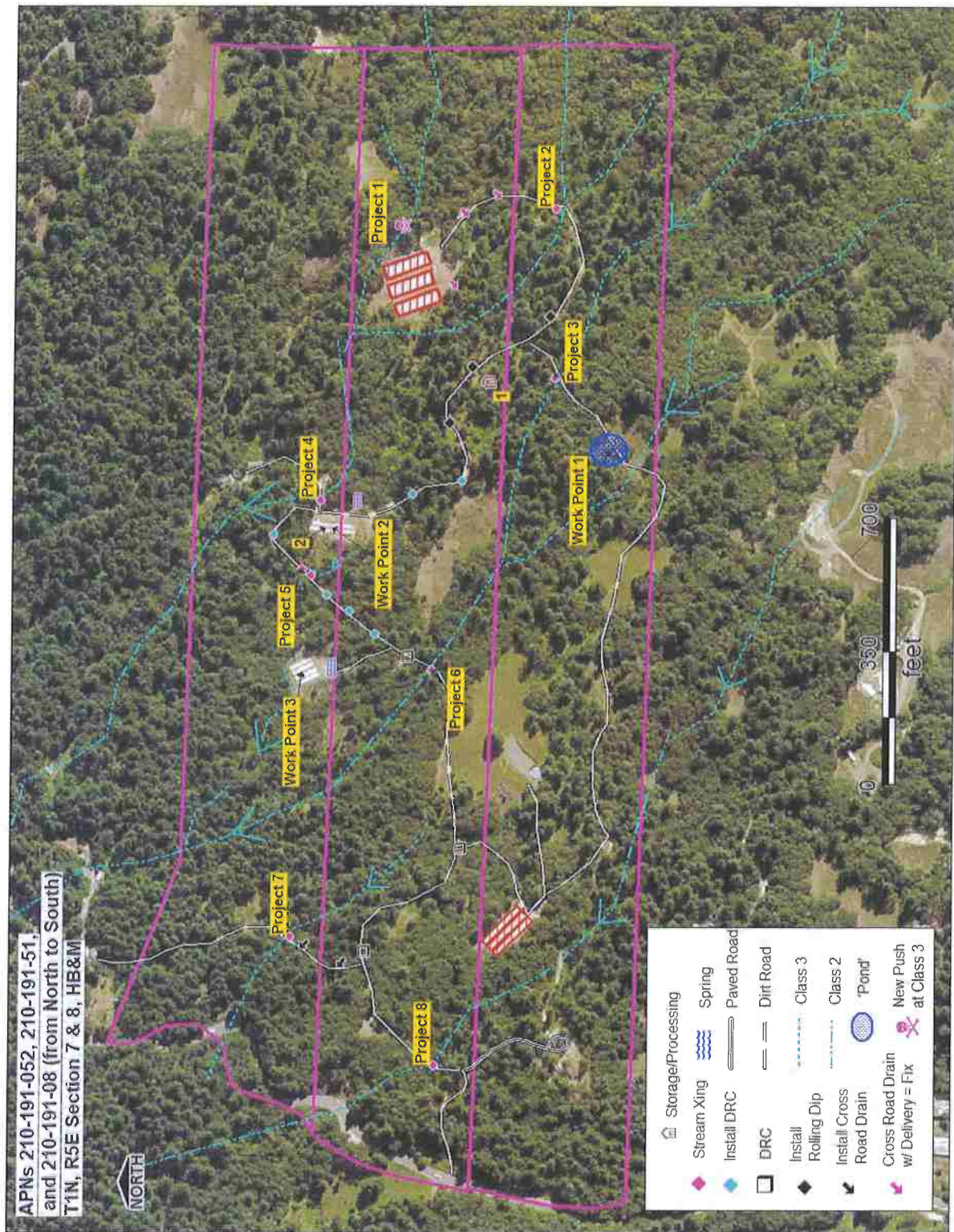


Figure 6. Corrective actions map for parcels 210-191-51, 210-191-52, and 210-191-08

Corrective Actions Please refer to Figure 5, Corrective Actions map

Table 2. Features that need improvement. See Appendix B for Associated Standard Conditions (A.S.C.)

Map Point	Map Point Description	A.S.C.	Temp. BMP	Permanent BMP	Priority for Action	Schedule for completion of Permanent BMP	Completion Date
Project 1	Terrace 1	1, 3	N/A	Create infiltration zone	1	September 1, 2018	
Project 2	Culvert Replacement (24")	2	N/A	Replace with 30" CMP	2	September 1, 2018	
Project 3	Ford/Fill Crossing	1, 2	N/A	Apply coarse rock to road section of excavation	3	September 1, 2022	
Project 4	Culvert Replacement (30")	2	N/A	Replace with 36" CMP	2	September 1, 2018	
Project 5	Culvert Replacement (12")	2	N/A	Replace with 18" CMP	2	September 1, 2018	
Project 6	Culvert Replacement (36")	2	N/A	Replace/reset culvert at proper grade	2	September 1, 2018	
Project 7	Culvert Replacement (12")	2	N/A	Remove culvert, restore crossing to natural channel	2	September 1, 2018	
Project 8	Culvert Replacement (24")	2	N/A	Replace with 30" CMP	2	September 1, 2018	
Work Point 1	Pond Excavation	3	N/A	Fill hole with berm material, recontour	2	September 1, 2018	
Work Point 2	Terrace #2	1	N/A	Improve ditch	1	September 1, 2017	
Work Point 3	Terrace #3	1	N/A	Restore terrace	2	September 1, 2018	
Misc.	Additional Road Drainage Features	1	N/A	Install additional road drainage features	1	September 1, 2017	
1	Gutters on Storage Building	5	N/A	Install rain gutters to stop rainwater from adding to road erosion	1	September 1, 2017	
2	Install water storage	5	N/A	Install the additional 530,000 gallons of storage required to meet the non-diversionary period	1	September 1, 2017	

Priority time frames: 1 is high priority with treatment being planned to occur immediately; 2 is a high priority for treatment to occur prior to the start of the non-diversion period; 3 is a moderate priority for treatment to occur within a year, or prior to the winter of the second season of operations; 4 is a lower priority with treatment being planned within the shortest time possible, but no later than the expiration of this Order (five years).

- Project 1 is the restoration of a portion of an existing terrace which may have truncated a class 3 stream. The watercourse had questionable flow during a rain event in early April, but did show collection (puddles). The crenulation terminates at a recent cutbank along the back edge of the terrace. No flow was seen reaching the terrace on this date, but some mitigation seems appropriate to keep potential concentrated flow from interacting with terrace cultivation. Establishing a connection between the class 3 terminus and the broad, low-gradient swale off the northern edge of the terrace is one potential treatment. It is probable that this connection never occurred naturally. An alternative, and our preferred treatment, is to create an infiltration zone at the current terminus that would prevent any potential interaction with the terrace, and protect water quality here. Either treatment will require approximately 300 square feet of disturbance to unvegetated ground.
- Project 2 is currently a 24" plastic culvert that was recently installed. Unfortunately, the existing culvert was improperly installed: the culvert has a change in grade and a crease midway through the crossing. Moreover, CulvertQ analysis recommends a 30" culvert at this location to accommodate the predicted Q=100 flow volume. The new CMP should be placed at a steeper grade, on a uniform surface. Rock armor should be applied at the inlet. The culvert replacement will disturb approximately 120 square feet of channel. No vegetation will be disturbed at this site.
- Project 3 is currently a fill crossing. The existing drainage structure is a topographic low. There is no diversion potential here, but there is a small amount of potential future erosion: 3-4 yd³ based on 2 ft. knick point downstream. Recommended improvement of this crossing is to excavate from the knick point to upstream of the road and apply coarse rock to road section of excavation. Channel disturbance at this site will be approximately 60 ft². Grass will be the only vegetation disturbed.
- Project 4 is currently a 30" plastic culvert on a Class 2 stream. The CMP appears to be undersized based on the size of bedload, the width of the stream, and the small woody debris collected at the inlet. The pipe also has water flowing out underneath the culvert outlet, evidence of compromised function. Moreover, CulvertQ analysis recommends a 36" culvert at this location to accommodate the predicted Q=100 flow volume. Therefore, this crossing will be upgraded to a 36" CMP installed at grade, with rock armor applied at the inlet. Channel Disturbance at this site will be approximately 120 ft².
- Project 5 is currently a 12" CMP. At first glance, this appears to be a Ditch Relief Culvert; upon closer inspection, there is a small stream upslope of the road which drains about 0.45 acres. The culvert shotguns at the outlet, then becomes sheet flow on the slope below. CulvertQ analysis recommends an 18" culvert at this location to accommodate the predicted Q=100 flow volume. This crossing will be upgraded to an 18" CMP. Channel disturbance at this site will be approximately 60 ft².
- Project 6 is currently a 36" plastic culvert that was recently installed. CulvertQ analysis predicts that this culvert is properly sized for the Q=100 flow event. Unfortunately, the existing culvert was improperly installed: the culvert has a change in grade and a crease midway through the crossing. The CMP also shotguns at the outlet. This culvert will be replaced/reset to grade with a proper coupler and a smooth uniform bedding surface. Channel Disturbance at this site will be approximately 120 ft². No vegetation disturbance will occur at this site.
- Currently, Project 7 is a rusted, compromised, 12" culvert on a Class 3 stream. The road has not been used in many years and there is an abundance of wetland indicator vegetation (juncis) in the area around and past the stream crossing. This crossing should be upgraded with an 18" culvert. We recommend, however, that the 12" culvert be removed and the crossing be restored to mimic the natural channel conditions. Moreover, 2 waterbars should be installed on the left road approach to eliminate the road tread

contribution to this stream. Bare dirt areas will be seeded with native grass. Channel Disturbance at this site will be approximately 200 ft².

- Project 8 is currently a 24" Corrugated Plastic Culvert on a Class 2 stream. This culvert also looks new, but has problems. The inlet is partially crushed, the outlet is eroding the right bank at high flow, and CulvertQ analysis recommends a 30" culvert to accommodate the predicted Q=100 flow volume at this location. This crossing will be upgraded with a 30" CMP set to grade, with armor at the inlet and at the right bank of the outlet. Channel Disturbance at this site will be approximately 150 ft².
- Currently, Work Point 1 is a partial Pond Excavation. This excavation was started and then the site was evaluated and determined to be a poor location for a pond due to its proximity to a Class 3 stream. Our recommendation is that this hole be filled back in with the berm material. The area should be recontoured to mimic the original topography and all bare soil seeded with native grass.
- At work point 2, upslope of Terrace 2, there is a productive spring daylighted in the inboard ditch. Currently this input flows approximately 90' feet to a class 2 stream at Project 4. The ditch shows little to zero sediment production, but appeared marginal in carrying capacity for a very large flow event. The treatment here will be to improve the ditch by deepening and widening it and applying rock to eliminate post-treatment sediment production.
- At work point 3, surface water, in the form of sheet flow, enters the terrace from upslope and concentrates in the ditch, where it is carried around the terrace perimeter and exits as a concentrated flow at the northwest corner of the terrace. The setting at this terrace has been determined to be unviable for cultivation. The treatment here will be to restore the terrace by recovering the sidecast fill and recontouring the slope to mimic the pre-disturbance topography. The result of this project will restore the natural sheet flow and/or infiltration conditions at this site.
- A 40'x60' metal building that is used for storage/processing will need to have rain gutters installed. This could also be used to collect rain water to fill storage. Currently, the rainwater that runs off the roof is enough to cause erosion of the road that goes past this building.

Winter Site Preparation

Prior to winter rains at the end of the growing season the following steps will be taken to prepare the site for winter.

- Soil used in cultivation is reused each year and stored in containment during the winter
- Any bare soil on the fill slopes on the landing will be covered with straw 2 to 3 inches thick and secured with a tackafier.
- Cannabis stems and root balls will be burned
- All nutrients, fuels, and other chemicals will be placed in a secure storage shed
- All cultivation trash and debris will be properly disposed of at a waste disposal facility. Receipts for disposal will be kept.
- Any vegetation or debris obstructing the inlet or outlet of the culverts will be removed and disposed of where they cannot enter any streams and at least 200 feet from any streams
- Roads should be monitored to make sure that all waterbars/rolling dips are functioning properly

Monitoring

Corrective Action Monitoring

NRM will conduct a monitoring visit to the site following the completion of work points 1-3, the additional road drainage features and the installation of a rain catchment system in November of 2017. A monitoring visit will also be completed by NRM in November 2018 after the completion of projects 1, 2, and 4-8. Project 3 will be monitored by NRM after its completion in November 2022. The purpose of this visit will be to ensure the work was done correctly and meets the standard conditions of the order. Photos will be taken of each feature. Records will be kept on site, on file at NRM, and submitted to the water board. If the work does not meet standard conditions NRM will provide the landowner instructions and guidance for improving it so it meets the standard conditions.

Annual Monitoring

Fall / Winter Monitoring

Annual monitoring for this site will follow the revised Appendix C from the Order No. 2015-0023. Each year, monitoring will occur on a minimum of three occasions: prior to October 15th; by December 15th; and immediately following a precipitation event with 3 inches of accumulation in a 24hr period.

During each monitoring event, the following items will be inspected:

1. Pumps, nutrients, fertilizers, and any petroleum products are stored in a dry, enclosed location.
2. Soils, growing mediums and any spoils are properly contained and covered to prevent nutrient leaching.
3. Culvert inlets and outlets
4. Waterbars

Monitoring may be done by the landowner/registrant. Photos will be taken at each monitoring point. Monitoring photos and notes will be kept on-site. The landowner/registrant will submit monitoring forms and photos to NRM or the NCRWQCB.

Growing Season Monitoring

During the growing season, the landowner will monitor the following items at least monthly:

- Tanks, bladders, and water lines to ensure there are no leaks
- Cultivation area during or immediately after watering to ensure irrigation water is infiltrating (not running off)
- Cultivation area to ensure that all fertilizers and other chemicals are properly contained in the storage shed and that all trash and debris is properly contained and secured.

The landowner/registrant will keep a record of monitoring completion dates and any necessary corrective actions. A copy of this record will also be submitted to NRM.

During the growing season, all fertilizer and irrigation water use will be tracked. The type and amount of fertilizers used and the monthly total of water used for irrigation will be reported to NRM by December 31st of each year.

The annual monitoring report will be submitted to the Regional Water Board by March 31st of each year. The report will include the Appendix C reporting form the NCRWQCB Order No. R1-2015-0023.

Water Resource Protection Plan

Name of Legally Responsible Person (LRP) _____

Title for LRP (owner, lease, operator, etc.) _____

Signature: _____ Date: _____

WRPP prepared by: **Natural Resources Management Corp. (NRM)**

Date: _____

NRM Signature: _____

Appendix A. Photo Documentation –



Spoils containment, tarped on top when not in use.



Project 1 - Truncated Class 3 stream. Looking Upstream.



Project 2. 24" Corrugated Plastic Culvert, Looking Downstream.



Project 2. Corrugated Plastic Culvert inlet, Looking Downstream.



Project 3. Fill Crossing, Looking Toward Right Bank.



Project 3. Fill Crossing, Looking Toward Left Bank.



Project 4. Corrugated Plastic Culvert inlet, Looking Downstream.



Project 7. From road left; Looking road right. Person in Axis of Crossing. Stream flow from right to left.



Project 8. Looking downstream at inlet.

Appendix B. Associated Standard Conditions

I. As described in the Order, dischargers will fall within one of three tiers.

Discharger shall be in the tier that covers the most impactful part of the operations (i.e., different sections of a property cannot be divided among the tiers). **All dischargers**, regardless of Tier are subject to the standard conditions in section **I.A**, MRP section **I.D.**, and General Terms, Provisions and Prohibitions. **Tier 2 Dischargers** are also subject to section **I.B. (a Water Resources Protection Plan)**, and Tier 3 Dischargers are subject to sections **I.A.**, **I.B.** (if cultivating cannabis), and **I.C.**

A. Standard Conditions, Applicable to All Dischargers

1. Site maintenance, erosion control and drainage features

- a. Roads shall be maintained as appropriate (with adequate surfacing and drainage features) to avoid developing surface ruts, gullies, or surface erosion that results in sediment delivery to surface waters.
- b. Roads, driveways, trails, and other defined corridors for foot or vehicle traffic of any kind shall have adequate ditch relief drains or rolling dips and/or other measures to prevent or minimize erosion along the flow paths and at their respective outlets.
- c. Roads and other features shall be maintained so that surface runoff drains away from potentially unstable slopes or earthen fills. Where road runoff cannot be drained away from an unstable feature, an engineered structure or system shall be installed to ensure that surface flows will not cause slope failure.
- d. Roads, clearings, fill prisms, and terraced areas (cleared/developed areas with the potential for sediment erosion and transport) shall be maintained so that they are hydrologically disconnected, as feasible, from surface waters, including wetlands, ephemeral, intermittent and perennial streams. Connected roads are road segments that deliver road surface runoff, via the ditch or road surface, to a stream crossing or to a connected drain that occurs within the high delivery potential portion of the active road network. A connected drain is defined as any cross-drain culvert, water bar, rolling dip, or ditch-out that appears to deliver runoff to a defined channel. A drain is considered connected if there is evidence of surface flow connection from the road to a defined channel or if the outlet has eroded a channel that extends from the road to a defined channel (http://www.forestsandfish.com/documents/Road_Mgmt_Survey.pdf).
- e. Ditch relief drains, rolling dip outlets, and road pad or terrace surfaces shall be maintained to promote infiltration/dispersal of outflows and have no apparent erosion or evidence of soil transport to receiving waters.
- f. Stockpiled construction materials are stored in a location and manner so as to prevent their transport to receiving waters.

2. Stream Crossing Maintenance

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

- b. Culverts and stream crossings shall be designed and maintained to address debris associated with the expected 100-year peak streamflow.
- c. Culverts and stream crossings shall allow passage of all life stages of fish on fish-bearing or restorable streams, and allow passage of aquatic organisms on perennial or intermittent streams.
- d. Stream crossings shall be maintained so as to prevent or minimize erosion from exposed surfaces adjacent to, and in the channel and on the banks.
- e. Culverts shall align with the stream grade and natural stream channel at the inlet and outlet where feasible. At a minimum, the culvert shall be aligned at the inlet. If infeasible to align the culvert outlet with the stream grade or channel, outlet armoring or equivalently effective means may be applied.
- f. Stream crossings shall be maintained so as to prevent stream diversion in the event that the culvert/crossing is plugged, and critical dips shall be employed with all crossing installations where feasible. If infeasible to install a critical dip, an alternative solution may be chosen.

3. Riparian and Wetland Protection and Management

- a. For Tier 1 Dischargers, cultivation areas or associated facilities shall not be located within 200 feet of surface waters. While 200 foot buffers are preferred for Tier 2 sites, at minimum, cultivation areas and associated facilities shall not be located or occur within 100 feet of any Class I or II watercourse or within 50 feet of any Class III watercourse or wetlands. The Regional Water Board or its Executive Officer may apply additional or alternative conditions on enrollment, including site-specific riparian buffers and other BMPs beyond those identified in water resource protection plans to ensure water quality protection. Alternative site-specific riparian buffers that are equally protective of water quality may be necessary to accommodate existing permanent structures or other types of structures that cannot be relocated.
- b. Buffers shall be maintained at natural slope with native vegetation.
- c. Buffers shall be of sufficient width to filter wastes from runoff discharging from production lands and associated facilities to all wetlands, streams, drainage ditches, or other conveyances.
- d. Riparian and wetland areas shall be protected in a manner that maintains their essential functions, including temperature and microclimate control, filtration of sediment and other pollutants, nutrient cycling, woody debris recruitment, groundwater recharge, streambank stabilization, and flood peak attenuation and flood water storage.

4. Spoils Management

- a. Spoils shall not be stored or placed in or where they can enter any surface water. Spoils are waste earthen or organic materials generated through grading or excavation, or waste plant growth media or soil amendments. Spoils include but are not limited to soils, slash, bark, sawdust, potting soils, rock, and fertilizers.
- b. Spoils shall be adequately contained or stabilized to prevent sediment delivery to surface waters.

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

5. Water Storage and Use

- a. Size and scope of an operation shall be such that the amount of water used shall not adversely impact water quality and/or beneficial uses, including and in consideration with other water use by operations, instream flow requirements and/or needs in the watershed, defined at the scale of a HUC-12 watershed or at a smaller hydrologic watershed as determined necessary by the Regional Water Board Executive Officer.
- b. Water conservation measures shall be implemented. Examples include use of rainwater catchment systems or watering plants with a drip irrigation system rather than with a hose or sprinkler system.
- c. For Tier 2 Dischargers, if possible, develop off-stream storage facilities to minimize surface water diversion during low flow periods.
- d. Water is applied using no more than agronomic rates. "Agronomic rates" is defined as the rates of fertilizer and irrigation water that a plant needs to enhance soil productivity and provide the crop or forage growth with needed nutrients for optimum health and growth, without having any excess water or nutrient percolate beyond the root zone.
- e. Diversion and/or storage of water from a stream should be conducted pursuant to a valid water right and in compliance with reporting requirements under Water Code section 5101.
- f. Water storage features, such as ponds, tanks, and other vessels shall be selected, sited, designed, and maintained so as to insure integrity and to prevent release into waters of the state in the event of a containment failure.

6. Irrigation Runoff

Implementing water conservation measures, irrigating at agronomic rates, applying fertilizers at agronomic rates and applying chemicals according to the label specifications, and maintaining stable soil and growth media should serve to minimize the amount of runoff and the concentration of chemicals in that water.

In the event that irrigation runoff occurs, measures shall be in place to treat/control/contain the runoff to minimize the pollutant loads in the discharge. Irrigation runoff shall be managed so that any entrained constituents, such as fertilizers, fine sediment and suspended organic particles, and other oxygen consuming materials are not discharged to nearby watercourses. Management practices include, but are not limited to, modifications to irrigation systems that reuse tailwater by constructing offstream retention basins, and active (pumping) and or passive (gravity) tailwater recapture/redistribution systems. Care shall be taken to ensure that irrigation tailwater is not discharged towards or impounded over unstable features or landslides.

7. Fertilizers and Soil Amendments

- a. Fertilizers, potting soils, compost, and other soils and soil amendments shall be stored in locations and in a manner in which they cannot enter or be transported into surface waters and such that nutrients or other pollutants cannot be leached into groundwater.
- b. Fertilizers and soil amendments shall be applied and used per packaging instructions and/or at proper agronomic rates (see footnote on previous page).
- c. Cultivation areas shall be maintained so as to prevent nutrients from leaving the site during the growing season and post-harvest.

8. Pesticides/Herbicides

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

9. Petroleum products and other chemicals

- a. Petroleum products and other liquid chemicals, including but not limited to diesel, biodiesel, gasoline, and oils shall be stored so as to prevent their spillage, discharge, or seepage into receiving waters. Storage tanks and containers must be of suitable material and construction to be compatible with the substance(s) stored and conditions of storage such as pressure and temperature.
- b. Above ground storage tanks and containers shall be provided with a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation.
- c. Dischargers shall ensure that diked areas are sufficiently impervious to contain discharged chemicals.
- d. Discharger(s) shall implement spill prevention, control, and countermeasures (SPCC) and have appropriate cleanup materials available onsite.
- e. Underground storage tanks 110 gallons and larger shall be registered with the appropriate County Health Department and comply with State and local requirements for leak detection, spill overflow, corrosion protection, and insurance coverage.

10. Cultivation-related wastes

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

11. Refuse and human waste

- a. Disposal of domestic sewage shall meet applicable County health standards, local agency management plans and ordinances, and/or the Regional Water Board's Onsite Wastewater Treatment System (OWTS) policy, and shall not represent a threat to surface water or groundwater.
- b. Refuse and garbage shall be stored in a location and manner that prevents its discharge to receiving waters and prevents any leachate or contact water from entering or percolating to receiving waters.
- c. Garbage and refuse shall be disposed of at an appropriate waste disposal location.

12. Remediation/Cleanup/Restoration

Remediation/cleanup/restoration activities may include, but are not limited to, removal of fill from watercourses, stream restoration, riparian vegetation planting and maintenance, soil stabilization, erosion control, upgrading stream crossings, road outslowing and rolling dip installation where safe and suitable, installing ditch relief culverts and overside drains, removing berms, stabilizing unstable areas, reshaping cutbanks, and rocking native-surfaced roads. Restoration and cleanup conditions and provisions generally apply to Tier 3 sites, however owners/operators of Tier 1 or 2 sites may identify or propose water resource improvement or enhancement projects such as stream restoration or riparian planting with native vegetation and, for such projects, these conditions apply similarly.