

**ATTACHMENT 1B**

**Cultivation & Operations Plan**

# Cultivation Operations Plan

APN 221-211-025

Reuben Valdivia

Kokua Farms

## Description Of Cultivation Activities



Kokua farms is a 8,000 sq. foot outdoor, sun grown, Medical cannabis garden. We are situated on a north facing ridge, in sunny Etersburg, Humboldt County California. Our growing techniques are guided by organic principles. No artificial, or supplemental light is utilized on our farm. The soil is amended using only organic materials such as, greensand, rock phosphate, kelp meal, oyster shell, fish meal, crab meal bonemeal, chicken compost ,and earthworm castings. We do implement cover crops and crop rotation.

In December or January legumes such as Fava beans are planted fix nitrogen, and to control erosion, and encourage biologic diversity. In April the flowering legumes are weed- wacked down, then tilled back into the soil with a few organic amendments.

Alternating crops from cannabis to legumes for these 3 months help to fix nitrogen. In mid February or early March cannabis seeds are germinated in the greenhouse within the farm greenhouse canopy.

In April we plant our 1,000 sq. ft green house with 300 clones for our light deprivation. No supplemental light is utilized on these plants. Organic teas and top dressings are given to the plants until they are ready to cover for 8 weeks.

These plants will be covered at 5:30 pm and uncovered 10:00 pm. Covering usually begins in July and is finished in early September. These plants are heavily mulched, and on drip irrigation. We trellis with recycled trellis.

The full term plants are planted in June and July. A layer of mulch is utilized to help the plants maintain water. Coconut coir is used for its sustainability in favor of sphagnum peat moss. The plants are on drip irrigation. The large plants are supported with fencing. Wire cages for support.

Our plants are fertilized periodically with organic teas and top dressed. We shy away from jugs of chemicals and we prefer a pick up truck of organic compost instead.

In September the plants are weened of any fertilizer and are only given clear water and allowed to wilt slightly. Watering is greatly reduced at this point in time. After a clean a rinse period plants are done. and harvested in late September or usually mid October.

Irrigation is a combination of hand watering with a hose and drip irrigation with a 1/2 inch poly pipe to 1/4 inch drip line, 2 per plant.

A 600 gallon compost tea brewer is used to brew organic compost teas, fish and kelp feedings, and other fertilizing needs.

Starting in September ready plants previously de-leafed tops are harvested. Using pruners and clean scissors, buds are bucked off branches and buds are run through the twister- brand trimming machine. Any visible mold or mildew is cut out and discarded. Machine trimmed buds are then spread onto clean screened drying racks. Buds may be flipped with a clean metal dust pan at this time. Fans and dehumidifiers or wood heat is used to prevent any mold from occurring. Stems are segregated. Special care is given to seeded branches, they are segregated and hung to dry separately. After harvest, root balls, trunks and other stems are gathered and tarped to stay dry for later burning, in legal permitted fire pile

Harvesting & Drying continue on September and October.

Curing and Trimming continues on November and December.

We take pride in sustaining a very environmentally friendly garden that benefits the land around it, uses virtually zero electricity , maximizes water conservation, and has a very low carbon foot print.

## Water Source Description

The water for Kokua Farms comes from 2 small springs located near the top of the ridge. The springs are permitted diversions and gravity takes some of the water down a poly pipe to 97,455 gallons of hard plastic water tank storage.

20- 3000 gallon tanks

6- 5000 gallon tanks

1- 2500 gallon tank

1- 1200 gallon tank

1- 600 gallon tank

1- 550 gallon tank

1- 300 gallon tank

1- 4000 gallon above ground swimming pool rain catchment

1- 55 gallon olive barrel

All tanks are filled during the rainy season, before forbearance period, from April till October.

The crop is divided into 3 sections and every section is watered every three days, early mornings or late evening hours. Water requirements are as little as 60 gallons a day in the spring to as much as 700 gallons a day in August.

221 211 025



## Projected Water Usage

January - Tanks are being filled. Overflow on tanks are plumbed to link tanks gravity. Float valves are utilized. Rain water is being caught into 15,000 gallon system.

February - Rain water is being caught into 15,000 gallons system.

March - Rain water is being caught into 15,000 gallon system. Last chance to get more and fill tanks.

April - 600 plants are getting 1/2 gallon waterings, every third day. 6000 gallons are budget for April.

May - 600 plants are getting 1 gallon watering every third day. May's water budget is 9000 gallons.

June - 600 plants are getting 2 gallons waterings every third day. June's water usage is 12,000 gallons. male plants are pulled up now.

July - most of the male plants have been killed, leaving the 300 clones and about 150 female from seed. These 450 plants get 3 gallons watering every third day. July's water usage 18,000 gallons.

August - 80 to 100 large plants are now drinking 10 gallons every 3 days. The 300 light deprivation plants are using very little water and harvest should begin at the end of the month. In August 25,000 gallons in estimated usage. Pollen is distributed to the designed seed females this month and the last of the male plants are destroyed.

September - The remaining plants are in flower and are requiring less water and take about 5 gallons every other day. 18,000 gallons are allowed for September.

October - The plants require less water this month and are given 5 gallons every third day. With the cooler weather and the rain the water demands should be only 5,000 gallons for October. Everything should be harvested by this time.

November - Forbearance is over, tanks are beginning to be refilled again.

December - Tanks are filling off registered complaint springs, fee are up to date. Receipt are kept from RWQCB and Fish and Game and Planning.

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## Quantitative Site Characterization

Sum of all cultivation areas (ft <sup>2</sup> )	8,900
<sup>1</sup> Distance from cultivation area (ft) to nearest Class I Watercourse	200+ ft
<sup>2</sup> Distance from cultivation area (ft) to nearest Class II Watercourse	200+ ft
<sup>3</sup> Distance from cultivation area (ft) to nearest Class III Watercourse	200+ ft
Average slope of cultivated area (%)	12%
Number of road crossings of surface waters	0
<sup>6</sup> Total water storage capacity (gallons)	95,000
<sup>7</sup> Total nitrogen used (lbs)	60 of compost & manure
<sup>7</sup> Total phosphorus used (lbs)	300 of bonemeal

<sup>5</sup>Report minimum distance from ANY cultivation area to this watercourse.

Watercourse Class definitions can be found in the footnotes on page 6 of NCRWQCB Order No. R1-2015-0023.

<sup>6</sup>One acre-foot is 325,851 gallons.

<sup>7</sup>Calculate nitrogen (and phosphorus) content for individual products and sum all products used.

Dry and liquid forms of products can be calculated as follows:

**Dry Fertilizer: Nitrogen (lbs) = ( %N / 100 ) x weight of product used (lbs)**

**Liquid Fertilizer: Nitrogen (lbs) = ( %N / 100 ) x density of product (lbs / gal) x volume of product used (gal)**

## <sup>8</sup>Water Use

Total surface water diversion ( <sup>6</sup> gallons)												
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
90,000	3,000	4,000	0	0	0	0	0	0	0	0	0	5,000
Water input to storage ( <sup>6</sup> gallons)												
<sup>9</sup> Input Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rain	3,000	3,000	3,000	0	0	0	0	0	0	0	0	0
Spring(s)	90,000	3,000	4,000	0	0	0	0	0	0	0	0	5,000
Water use ( <sup>6</sup> gallons)												
<sup>9</sup> Application Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tank(s)	3,000	3,000	4,000	6,000	9,000	12,000	18,000	25,000	18,000	5,000	3,000	3,000

<sup>8</sup>Water use reporting includes domestic water if the residence is associated with cannabis cultivation.

<sup>9</sup>Combine multiple cases (e.g. multiple tanks) of a single source category (e.g. "Tank(s)") into a single row.

If water is applied from storage, indicate the type of storage (Bladder(s), Pond(s), Tank(s), or Other) as the application source. If "Other" is selected for either Input Source or Application Source please provide a brief description here:

109,000  
total  
for  
the  
year.

## <sup>10</sup>Digital Signature

Reuben Valdivia

Validate and Create Submittal

<sup>10</sup>Type full legal name to sign form

If you are experiencing problems completing this form electronically please contact the Cannabis Unit at the North Coast Regional Water Quality Control Board for assistance at (707) 576-2676 or by email at northcoast.cannabis@waterboards.ca.gov.

I confirm that the water used for  
irrigation is reflected accurately in  
the water use table enclosed.

Reuben Valdivia

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### Description of Drainage

The graded flat is well out sloped draining uniformly of the outboard edge of the landing to the north and northwest and does not direct run off onto the main access road flat is approximately 1200 feet from blue slide creek located to the north. the hillside between the flat and blue slide creek is heavily forested with 2nd growth Douglas fir, and madrone trees, and tan oak. Cal Fire determined.

221 211 025



## Inspection report and Erosion Control Plan

On December 9, 2016 Reuben Valdivia had contacted Cal Fire for an inspection of a Road and an approximately 1acre graded area that was made in 2011 on parcel no. 221-211-025. At the request of the land owner, The State of California Dept. of Forestry and Fire Protection and the land owner conducted a field inspection of the property to identify sources of potential future erosion to a watercourse and recommended erosion control and erosion prevention treatment to mitigate the potential for erosion and sediment delivery. After walking the entire road and the entire perimeter of the footprint, Call Fire Forester Tim Myers concluded that although un-permitted he could tell that I had graveled the road and spread enough hay and planted enough grass seed and red clover seed to keep the road and the flat in good condition . he told me that he could tell the hay I had applied many years ago was doing a good job and that I had not just done before he came to make it look good. Mr Myers did identify one problem with some stumps protruding from under the fill ~~on the south~~ <sup>to the north</sup> downward slope of the fill, he asked me to hire a excavator or large machine to pull up all the stumps on the edge of the fill or under it, because they could rot out and cause a slide . This work was completed and the entire area and road were graveled. This disturbed area was covered with thick hay mulch. And will reseed the slope before the rainy season.

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## Addendum To Cultivation Plan

The source of electricity is a 4 Solar Panels array set on a pole and a small battery bank of 4 batteries.

This powers fans. No supplemental light was utilized on plants.

A Honda 3000 gasoline generator is utilized to keep the batteries charged for the project.



Pursuant to the MMRSA, Health and Safety Code Section 19322(a)(9). Reuben Valdivia ( Kokua Farms) is an 'agricultural employer' as defined in the Alatorre -Zenovich\_ Dunlap-Berman Agriculture Labor Relations Act of 1975 (Part 3.5 commencing with Section 1140) of Division 2 of the Labor Code), to the extent not by law."

Kokua Farms complies with all protocols.

Processing operations are maintained in a clean and sanitary condition including all work surfaces and equipment. Tables are wiped clean every morning and every night. Trim machines and scissors are cleaned often, twice a day or more with alcohol or citrus cleaner, or with organic olive oil. Hands are washed before work and after breaks. Gloves and face masks that function properly are used. No tobacco products are smoked in the house. No snacking while working. Any visible mold or mildew is removed and burned or disposed of properly.



### Security Plan

Cultivation area is fenced and behind two locked gates. Two camera are installed. No visitors or minors allowed on the property. Emergency Phone Numbers are posted. All laws are adhered to. Product will be lab tested and only distributed through legal dispensaries only.

