Panther Rock Growers, Inc.
Cultivation and Operation Plan
APN: 210-162-007
APP# 11496

Cultivation Plan

This project seeks a Conditional Use Permit for 5,120 square feet of existing mix-light cultivation and 15,841 square feet of existing outdoor cultivation under the Humboldt County CMMLUO.

Description of Water Source, Storage, Irrigation Plan, and Project Water Usage

Water sources include a registered points of diversion (POD) and an existing rooftop rain catchment system. Existing water storage serving cultivation irrigation needs consists of a series of hard poly water storage tanks with a total volume of 197,750 gallons (see site plan for tank location and volume information). The total existing water storage is sufficient storage to serve the cultivation irrigation needs for the full forbearance period, and the existing rooftop rain catchment system has reduced reliance on the registered surface water diversion. The existing well will not be used in commercial cannabis cultivation operations and is exclusively used for domestic purposes.

An additional SRA designated 5,000-gallon hard poly tank is held in reserve for fire emergency purposes if needed.

Projected monthly water use for this project will be.

Month	Average Daily Use	Monthly Total
January	0 gal	0 gal
February	0	0
March	200	0
April	300	500
May	1,000	500
June	2,000	30,000
July	2,500	30,000
August	2,500	30,000
September	1,500	30,000
October	500	5,000
November	0	0

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All numbers are estimates and actual use may vary. Water meters will be installed and more accurate and complete data will be collected and reported to all relevant agencies.

Total water usage for commercial cultivation is anticipated to average 126,000 gallons per year.

Rain Catchment Water Source Sufficiency

Using rain fall data collected from the Prism Climate Group website averaging the low rain years only (eliminating all average to above average rain years from the table below) indicates an average rainfall for the project area during low rain years at 47.39 inches annually.

Year	**Annual Rain Fall**
1985	38.80
1991	44.64
1994	54.58
2007	57.69
2008	57.18
2013	27.65
2015	60.02
2020	38.59
Average rain fall in a low rain year	**47.39**

There are a total of three structures proposed to collect rain water with a proposed roof top rain gutter collection system. Those structures include a 32'x56' shed (1,792 square feet), a generator shed with roof line dimensions of 16'x18' (288 square feet), and a 4'x8' shed (32 square feet) for a total rain catchment collection area of 2,112 square feet. With 2,112 square feet of collection area and an average low annual rain fall amount of 47.39 inches and a conversion factor of .6234, water collection capacity will results in the collection of 62,394 gallons during an average low rain year. During an average to above average rain fall year additional rain would be collected and stored for use in the dry season. During an average to above average rain fall year the proposed root top rain catchment system has the potential to meet all of the projects irrigation water needs.

Irrigation

Panther Rock Growers, Inc. will use a combination of emitter irrigation and hand watering.

All water and nutrient applications will be performed at agronomic rates consistent with but not in excess of plant needs or manufacturer's specifications.

Compliance with SWRCB Order

The applicant is registered with the waterboard, maintains annual reporting as required, and developed and submitted a Site Management Plan for this site. Many of the proposed upgrades have already been

implemented and those that remain will be completed before the time lines indicated in the anticipated project conditions of approval.

Annual waterboard reporting will be shared with all other relevant agencies by request.

Description of Site Drainage

Drainage features include French drains, ditch relief culverts and class III streams. Drainage features flow to a naturally vegetated area to assist in water infiltration and sediment stabilization.

Prior to the onset of the rainy season the property is treated to a "winterization" protocol. Any remaining cultivation solid waste is removed from the site and delivered to a licensed receiving facility. All winter weather preparation is developed or maintained; waterbars and roadside drainage ditches are cleared as needed, straw mulch and or waddles are applied if there are any areas of erosion concern.

Invasive Species Control Plan

Manual removal of any observed invasive species is implemented during normal operations. When removed they are and composted on site with care taken to avoid seed dispersal as much as feasible. Prior to the bloom and seed period for any particular invasive species all reasonable effort will be made to remove as many invasive species individuals as is feasible. Invasive species will be removed and their spread will be reduced or eliminated as much as possible. Chemical treatments are avoided.

Detail of Measures taken to Ensure Protection of the Watershed and Nearby Habitat

The access road network has appropriate water bars which have been in place for more than 5 years. The road is maintained with erosion mitigation and is hydrologically disconnected from surface waters as much as practicable.

Noise sources are minimized by the use of a noise attenuation shed and the choice of low noise model generators (Honda EU7000). The historic diesel 65KW Airman generator remains on site within the existing generator shed for noise abatement but it is not needed to support the current project. The generator shed has an eight inch secondary containment lip around the entire perimeter. Gasoline is stored in 5-gallon containers within that secondary containment. No lights or fans are run in the canopy area for this project further reducing the need for generator use eliminating additional noise sources and ensuring additional habitat disturbance is avoided. The generator is only needed on a seasonal basis in the spring for mother plant and immature plant development and in the fall for dry shed climate control. During the bulk of the cultivation season, no power is needed to support this project.

Lights are run in the immature plant area which is housed within the existing shed (see site map call out "Q") and little to no light is allowed to escape. International Dark Sky Standards are met to help insure preservation of neighboring habitat. No light is visible from neighboring properties.

Lights may also be run in the two mix light greenhouses, featured on the site map as call out "L". When lights are run, light shielding will be used from at least one half hour prior to sunset and until at least one half hour after sunrise to ensure little to no light is allowed to escape in conformance with International Dark Sky Standards.

All structures are appropriately graded; otherwise, the natural contours of the parcel have not been altered.

Fuels and other chemicals are contained in a secure location under a roof within secondary containment. No reportable quantities of fuels or cultivation chemicals are housed on site.

SRA Fire Water Tank and Turn Around

There is a 5,000-gallon hard poly tank held in reserve for fire suppression if needed (see site plan for location).

There is a designated Hammer Head T Turnaround on site for emergency vehicle turnaround (see site plan for location).

Protocols for Proper Storage and Use of Fertilizers, Pesticides, and Other Regulated Products

All chemicals used in cultivation are stored in a secure chemical storage shed (see site plan for storage location(s)). Proposed products for use in cultivation include: Fox Farm Potting Soil, General Hydroponic Grow and Bloom, Stutzman's - Chicken Manure, Spare Time Bat Guano, Oyster Shell Flower, Glacial Rock Dust, Dolomite. Pest management will be performed with a combination of preventative and spot treatments with the following products: Safer Soap, Mildy Cure, and Dr. Zymes (see materials safety data sheets submitted with the DEH form for more information on products). Panther Rock Growers, Inc. also uses a natural compost heap. Panther Rock Growers, Inc. reserves the right to use other products for cultivation needs as availability dictates.

Energy Plan

Power is sourced from the onsite generator (Honda EU7000). The generator is housed in a noise attenuation shed with a full perimeter 8" secondary containment lip and is run for limited intervals in the spring and fall only. Generator maintenance is performed off site.

Waste Management Plan

All cannabis plant material is composted on site in secure composting locations (see site plan for locations).

All other solid waste is collected, sorted, and contained on site in a secure location under cover until such time as it can be hauled to a licensed waste management facilities (see site plan for location). Solid waste is secured in a 5'x10' chain-link dog kennel style enclosure to preclude wildlife tampering. Typically, Fortuna Transfer-station is used. Dump receipts are retained.

Sewage Disposal Plan

Human waste is handled by the onsite waste water treatment system (septic). The existing system is functioning properly and has sufficient capacity to handle the existing and proposed load. If additional services are needed for future employee's an additional septic will be developed or an ADA compliant portable facility will be maintained on site. If the portable facility is needed it will be maintained at

regular intervals sufficient to ensure undesirable conditions do not develop. Service receipts will be retained.

Hazardous Materials

There are no reportable quantities of hazardous materials kept on site. All small quantities of fuels are housed in secondary containment and stored in a secure covered location. Fuel is stored in 5-gallon containers as discussed above and liquid fertilizers are purchased in limited quantities (typically 5-gallon containers), stored in their original purchase container, and either immediately used or stored under cover in secondary containment.

Description of Cultivation Activities

This project seeks a Conditional Use Permit for 5,120 square feet of existing mix-light cultivation and 15,841 square feet of existing outdoor cultivation under the Humboldt County CMMLUO.

No lights are currently run in the mix-light area, but lights may be needed in the future and Panther Rock Growers intends to maintain that area with that option at this time. Light deprivation technique is applied to some or all of the outdoor area and some or all of that outdoor area may be cultivated with open-air full-term technique depending on seasonal conditions and other agriculturally significant variables.

Cultivation is performed in either plastic pots, smart pots, raised beds with 1/8 inch ground cloth 1 foot deep in the soil for gopher control, or in native soil. The final planting medium decision will be made depending on site conditions at the time of planting and will be made in accord with Humboldt County code requirements related to prime ag soil and slope requirements.

Soil Management

Cultivation is performed with a variety of methods including raised beds, plastic or smart pots, or native soil beds. Soil is turned and amended in the spring and at the time of turn over between mix-light and light deprivation cycles.

Used soil is reclaimed: soil is covered with a layer of dolomite during the off season to prevent pests from contaminating or remaining in the soil. Grass naturally grows in the soil medium during the off season. In the spring amendments are added and turned into the soil which is then reused in the following cultivation season/cycle.

Greenhouse Description

This site maintains two greenhouses as featured on the site map (see site map call out “L”). Small PVC hoops are temporarily applied to raised beds when light deprivation technique is used (see site map call outs “P & O”).

Open Air Outdoor

The decision to perform open-air full-term outdoor cultivation or light deprivation will be determined seasonally depending on environmental conditions of any given year and availability of corporate

officers to perform light deprivation. Typically, a combination of some open air outdoor and some light deprivation will be applied to the outdoor cultivation areas.

Processing Plan

Processing is currently performed by Panther Rock Grower, Inc. corporate officers and immediate family members in the existing dry shed as featured on the site map. If non-family member employees are used in the future then F-1 occupancy standards and permitting will be met as required by Humboldt County Code. If Humboldt County regulations are updated to allow more lenient processing standards the standards in place at that time will be met.

Drinking water is provided on site from the existing registered spring diversion.

Parking Plan

There is more than sufficient parking available on site. Specific parking is as designated on the site plan, but there is additional road side parking available if needed without blocking emergency vehicle access.

Employees

Currently up to 6 family members and corporate officers operate the project. In the future up to 3 additional employees or independent contractors may be used to support operations. The maximum number of anticipated employees is 9. This represents minimal if any increase in road use. Carpooling is encouraged.

No on-site employee housing is provided at this time.

Number of Cultivation Cycles Proposed

Both mix-light and light deprivation light cycle manipulation may be practiced on this project. Seasonal conditions will dictate the number of cultivation cycles that may be performed. A typical year will include 1 cultivation cycle but more may be achieved if seasonal weather conditions allow.

Conformance with Dark Sky Standards

For mix-light cultivation areas and the ancillary propagation area, if lights are run in the future will be shielded with blackout tarp light shielding such that little to no light is allowed to escape. Light from greenhouses shall not be visible from neighboring properties between a half hour before sunset until a half hour after sunrise.

Noise Source Assessment and Mitigation Plan

Power is sourced with a low noise Honda EU7000 generator housed in a noise attenuation shed which is used during the spring for immature plant development and the fall for drying. The generator is run for approximately 6 weeks for 18 hours a day in April and May and for about 2-4 weeks for 12 hours per day in the fall. The generator produces less than 50 dBA at 100 feet when in operation. The generator is housed within the noise containment shed which also has an eight inch tall secondary containment lip.

No fans are run in the greenhouses at this time.

No noise disturbance to neighbors or wildlife will result from this project.

Schedule of Activities During the Season

Plants are propagated in the immature plant area (see site map for location) or procured from a licensed third party nursery. Lights are run to maintain the proper light cycle. Light shielding will be implemented as needed, as discussed above. A high nitrogen feeding regimen is implemented.

For 12 – 16 weeks, plants convert to flower. The light cycle is manipulated with light shielding tarps for the light deprivation portion of the project and the nutrient feeding regimen is switched to a lower nitrogen / higher phosphorous mix. Full-term plants are allowed to naturally shift to flower with the seasonal change in the light cycle.

Once the plants are ready for harvest, they are cut down, dried and cured in the on-site drying facility (see site map call out "Q"). Processing is performed in accord with the above described processing plan. The used soil is reclaimed as described above.

Table Describing Detailed Schedule of Activities During the Season

Month	Activities
February	• General site maintenance
March	• General site maintenance • Procure mother stock from a licensed nursery
April	• General site maintenance • Maintain and develop mother stock • Prepare site for growing season
May	• Develop plant stock, cut clone starts from mother plants • Transplant to larger pots as plants require • Support all plants with high Nitrogen feeding mix • Amend soil • Remove lower fan leaves as conditions indicate to improve air flow and disease resistance • Spray preventative foliar treatment as needed (see above list of products) • Haul garbage and recycling to the licensed transfer station (typically Fortuna)
June	• Plant out start stock as conditions allow • Plant support infrastructure will be implemented to support the plants as they develop. For smaller plants lateral netting may be placed such that plants can develop into the net for support when flowers are heavy later in the growing cycle. Cylinder shaped cages may be used for larger plants depending on conditions • Remove lower fan leaves as conditions indicate to improve air flow and disease resistance

	• Spray preventative foliar treatment unless substantial flower development is present (see product list above) • Haul garbage and recycling to the licensed transfer station (typically Fortuna)
July	• Feed with a liquid application (General Hydroponic solution and Bio Tea brewed on site) • Apply pest management techniques as needed in accord with the pest management plan • Remove lower fan leaves as conditions indicate to improve air flow and disease resistance • Spray preventative foliar treatment unless substantial flower development is present (see product list above) • Begin light deprivation as conditions warrant • Haul garbage and recycling to the licensed transfer station of choice
August	• Feed with a liquid application (General Hydroponic solution and Bio Tea brewed on site) • Spray preventative foliar treatment unless substantial flower development is present (see above list of products) • Remove lower fan leaves as conditions indicate to improve air flow and disease resistance • Continue light deprivation as conditions warrant • Harvest/processing if seasonal conditions allow • Haul garbage and recycling to the licensed transfer station (typically Fortuna)
September	• Feed with a liquid application (General Hydroponic solution and Bio Tea brewed on site) as conditions indicate • Limit preventative foliar treatment where substantial flower development is present • Continue light deprivation as conditions warrant • Continue light deprivation harvest/processing if seasonal conditions allow • Haul garbage and recycling to the licensed transfer station (typically Fortuna)
October	• Dry in accord with drying procedure • Continue processing in accord with the processing plan while continuing to harvest as conditions and time permit • Haul garbage and recycling to the licensed transfer station (typically Fortuna)
November	• Remove and compost any post-harvest remaining plant material • Top dress dormant soil with Dolomite for the dormant period

	• Finish drying any remaining flowers • Begin processing full-term dry flowers in accord with processing plan • Haul garbage and recycling to the licensed transfer station (typically Fortuna)
December	• Put away irrigation system for winter • General Property maintenance including road and site runoff mitigation and refuse disposal in accord with above described details
January	• General property maintenance including further road and site runoff mitigation and refuse disposal as needed

* All plant foods will be applied at agronomic rates consistent with or less than the manufacturer's suggested application rate.

** Garbage and recycling may be taken at more frequent intervals if conditions require.

Security Plan

The cultivation area is in a remote location and is accessible only through locked gates. A cellular camera is used to monitor the access road.