

City of Santa Rosa
Planning & Economic
Development Department
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ODOR CONTROL STUDY

May 2021

Interior Tenant Improvement
3515 Industrial Drive
Santa Rosa CA 95403

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717 College Avenue Second Floor
Santa Rosa, CA 95402

Background

Growing plants generate odors. Cannabis is no different especially in the last few weeks before harvest.

Indoor grow rooms house a large number of cannabis plants in a relatively small area which results in a concentrated plant odor. The odor is removed from the building by exhausting it to the outside and fresh ventilation air is brought in for occupant comfort. The exhaust air stream carrying the odor must be cleaned before being released from the building.

The pages which follow are an Odor Control Report for a project located at 3515 Industrial Drive in Santa Rosa, California. The Report outlines the proposed grow room interior spaces and describes how cannabis generated odors will be monitored, assessed and controlled. Only a small percentage of the odor generated will escape the building due to both exhaust filtration and air pressurization control.

The end result is a grow operation which releases only a minimal amount of odor allowing this operation to exist harmoniously with adjacent business's and the public at large.

References:

Applicable Project Air Quality and Land Use Standards

1. California Mechanical Code, 2019
2. ANSI/ASHRAE Standards 62.1 and 62.2 Indoor Air Quality
3. California Energy Code, Section 120.1(b)2] Ventilation Requirements
4. City of Santa Rosa California Ordinance 2017 025 (updated May 16, 2019) Section f of the Cannabis CUP Permit/Zoning Clearance, Process Guide and Application Checklist

5/26/21

Scope

This is a plan for odor control for a cannabis indoor growing facility located at 3515 Industrial Drive in Santa Rosa, California (Reference Sheet A-2). This growing facility is broken up in the following space uses:

1. Grow Rooms (Flowering, Vegetative, Mother and Clone)
2. Irrigation Room
3. Shipping/Receiving Area
4. Storage Rooms
5. Locker Room
6. General Office Spaces and Support

The cannabis plants omit odor as they grow and are processed.

The objective of the odor control plan is two fold:

- Confine most plant generated odors to the rooms where plants are grown, dried and handled. This means that plant generated odors are treated on a room level to minimize transfer of odor between rooms.
- Confine plant generated odors within the building. This means that most of the plant generated odor will not leave the building. The outside area around the building perimeter is mostly odor free. This does not mean that 100% of the odor is eliminated. It does mean that the odor that manages to escape from the building is minimal. The adjacent properties and the public ways are not subjected to an odor generated by the processes within the building.

Method of Odor Control

Cannabis generated odor is gas which is liberated from the plant and enters the air space of the room. The odor will be controlled in two ways:

1. A pressurization difference between adjacent rooms and the outside of the building will be maintained. The pressure difference eliminates most of the odor migration between adjacent spaces and between the inside and outside of the building. Pressurization differences are set in place and maintained thru balancing the HVAC system properly.
2. Odor "Collecting": The odor is in the room air and must be removed. Room air is passed through a filter system, odors adsorbed then clean air exhausted from the building. The filter system that removes the odor from the air contains activated

carbon. The use of activated carbon filtration is widely used and accepted as a “state of the art” as a proven method for removing odors from air streams. Here are the specifics:

- Activated carbon (sometimes referred to as charcoal filtration) is a bed of carbon typically in granular or powdered form. The carbon is made up of millions of pores (porous spaces). As air moves thru the carbon bed the pollutants “stick” to these porous surfaces. This process of the pollutants moving from the air stream to the surface of the carbon bed is called adsorption.
- The individual particles of carbon that make up the carbon bed result in a very large surface area. This surface area is typically good for several weeks of pollutant collection – this depends on the amount of polluted air moving thru the bed. After several weeks of use the carbon filter is replaced with a fresh carbon filter. The carbon removed may be cleaned and reused (but not by the end user – this is usually done by a service specializing in reclaiming activated carbon). This is called re-charging the carbon.
- Activated carbon is probably the most widely used and accepted method for removing odors/smells cannabis growing. When filters are maintained (replaced) regularly cannabis odors leaving the building are minimized resulting in acceptable air quality for air streams exhausted from the building and in the space around the building.

Building Air System Design

The building air system design will compliment room pressurization and odor control in exhaust air streams. This is how this will work:

1. The grow and process rooms are broken up into separate air handler zones.
2. Ventilation and conditioned air is supplied to each zone.
3. Each zone is set up with an exhaust system.
4. Ventilation air is filtered then enters the air space with conditioned air and circulated. The exhaust air rate leaving the room is greater than the ventilation air rate entering the room. This imbalance in air flow streams gives the room a net negative pressurization which keeps odors contained within the room.
5. The exhaust air stream is carbon filtered. The carbon adsorbs the room generated odors before the air leaves the building.
6. All filter systems have service access for filter replacement as needed. The building operators will have a regular filter maintenance program in place.
7. While there is negative air pressure between rooms the overall building will be designed to maintain a net positive pressurization to the outside. The reason for this is to limit unfiltered, non conditioned outdoor air from entering the building (thru cracks around man door and service doors, etc). After start up, we sometimes find that the net

positive pressurization is not working from an odor control stand point (ie, odor transfer between rooms is allowing excessive odor into “common” areas of the building). Should this occur, the building is re-balanced for a net negative pressurization to maintain odor control.

Odor Monitoring, Accessing and Mitigation

Odor monitoring is simply walking the perimeter of the building and walking the roof to check for cannabis generated odor. Checking means there should be very little or no cannabis related odor that can be smelled. If a cannabis odor is detected it is accessed for weak, moderate or strong. Moderate and strong odors must be mitigated that same day of detection. Mitigation includes the following responses:

1. Replacing all carbon filters
2. Check for duct leaks which would allow the cannabis odor to reach the exhaust system without being carbon filtered.
3. Check exhaust fans to make sure they are running.
4. Check ventilation air source to ascertain ventilation air is reaching the room.
5. Check for changes at the room level – such as propping a door open, removing a ceiling tile, blocking an air register or an exhaust opening, etc.

All odor monitoring, accessing and mitigation shall be done under the direction of the facilities manager or assigns. Protocol includes a dated, follow up report of an odor incident and mitigation measures taken.

Staff will be trained to enforce odor control protocol as follows:

1. Monthly staff meetings enforcing odor control awareness. Each employee is an active part of process odor control detection. All employees will be reminded to notice outdoor odor levels and to report any changes detected to outdoor odor levels to their supervisor.
2. Each staff member will be reminded to report changes in odor levels in any room and/or odors noticed to travel between rooms. Such changes indicate a change in room pressurization level, room filtration level or both. Either of these odor changes are to be reported to supervisors that same day.

Any odor complaint/observation from a neighboring property or the general public will be taken seriously by management. Odor reporting forms are available at the facility and will be handed out to formally report the odor complaint.

The Odor Detection Form will look something like this:

Odor Report Form

Date _____ Time _____

Location odor detected _____

Description of Odor _____

Source of Odor Estimate (example, from open door, off roof, at rear wall, etc)

Weather Conditions (ie, hot, no wind, rain day, etc)

Name _____

Date _____

Report accepted by _____ Date _____