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Overview of Environmental Health and Safety Compliance Issues Facing the Cannabis Industry

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As more states legalize the use of cannabis[1], the market value of the U.S. cannabis industry is projected to reach $30 billion annually by 2025. Fifteen states currently allow the recreational use of cannabis and 36 states allow for the use of cannabis for medicinal purposes. In addition, there is increasing pressure at the federal level to legalize cannabis for both medicinal and recreational uses. In order to sustain this rapid growth, ensuring consistent compliance with applicable environmental, health and safety rules and regulations cannot be underestimated.

As further discussed below, each stage of the cannabis manufacturing process presents its own environmental, health and safety challenges. For example, emissions associated with cannabis growing and processing operations can trigger permitting requirements as well as potential lawsuits from neighboring properties. Wastewater discharges from these operations are regulated at the local, state and federal levels. Ensuring the proper management of hazardous wastes generated during processing and extraction is critical to minimizing the risk of environmental liabilities. In addition, strict compliance with state and federal health and safety operations is integral to protecting worker health and safety.

This article is intended to highlight typical environmental, health and safety issues that may be applicable to cannabis operations throughout the United States. Because these regulatory requirements are often location-specific, it is important to engage with knowledgeable professionals to ensure that one identifies the applicable rules and regulations to ensure compliance and avoid potential penalties and lawsuits.

CANNABIS EMISSIONS

One of the more evident environmental issues associated with cannabis operations relates to emissions, and more specifically, odor issues. Growing and extraction operations generate a number of regulated emissions. For example, terpene emissions–emitted from the cannabis plant itself–are classified as volatile organic compounds ("VOCs"). Butane, which can be used during the oil extraction process, is also classified as a VOC. Because terpene emissions have a very strong odor, cannabis growing and processing operations are often the target of enforcement actions and/or private party litigation. As further discussed below, cannabis operations should proactively take steps to minimize the risks of private party and enforcement litigation and ensure compliance with applicable air permit requirements.

Private Party Litigation

Private party claims are typically initiated by adjacent property owners alleging common law nuisance theories. For example, several residents and a nonprofit organization in Carpinteria, California filed a class action lawsuit against several commercial cannabis operations on February 27, 2020.[2] The plaintiffs sought monetary and injunctive relief for nuisance, trespass, and violations of California's Unfair Competition Law. The plaintiffs alleged that the cannabis growing operations resulted in reduced property values, exposure to chemicals, and "an ever-present noxious odor."[3] The plaintiffs stated that their goal is not money, but rather injunctive relief from the "awful smells and noxious odors and chemicals."[4] As of January 2021, the litigation was ongoing.

In addition to state common law claims, since cannabis is still classified as a Schedule I drug under the federal Controlled Substances Act (21 U.S.C. § 811), the use, sale and/or possession of cannabis containing THC in excess of 0.3% is illegal under federal law. Enterprising plaintiffs have sought to capitalize on cannabis's illegal status by challenging cannabis growing and processing operations under the federal Racketeer Influenced and Corrupt Organization Act ("RICO").

Section 1962 of the RICO statute "makes it unlawful for a person employed by or associated with an enterprise to conduct the enterprise's affairs through a pattern of racketeering activity."[5] Federal courts have consistently held that cannabis growing operations can constitute racketeering activities. For example, the *Hickenlooper* court found that "cultivating marijuana for sale—which the Marijuana Growers admit they agreed to do and allegedly began and are continuing to do—is by definition a racketeering activity."[6]

To successfully plead a RICO claim, a plaintiff must allege (1) injuries to business or property (2) caused by these violations. For example, in *Hickenlooper*, the plaintiffs alleged that the mere existence of the cannabis growing operations coupled with the noise and smell from those operations (i) interfered with their use and enjoyment of the land; and (ii) resulted in a diminished market value of the property. The *Hickenlooper* court found that plaintiffs had properly alleged an injury to their property under Colorado law that would survive a motion to dismiss.[7]

Following the *Hickenlooper* decision, the Oregon district court in *Ainsworth v. Owenby et al.,* 326 F. Supp.3d 111 (D. Ct. Ore. 2018) also found the cannabis growing operations violated the RICO statute. However, the court found that under Oregon law, the impairment of use and enjoyment of one's property was a non-compensable property interest.[8] Plaintiffs also failed to "plausibly allege a concrete financial loss."[9] Because plaintiff did not claim any past or present effort or intent to rent, sell, or otherwise monetize their property interests, the district court dismissed plaintiffs' RICO lawsuit.

In *Bokaie v. Green Earth Coffee, LLC*, No. 18-cv-05244-JST, 2018 WL 6813212 (N.D. Cal. 2018) four families filed suit against an unlicensed cannabis growing operation and had several grievances related to the cannabis cultivation, such as noises, odors, medical complications, and reduced property value. Similar to *Ainsworth*, the court found that the plaintiffs' injuries, including "sickening cannabis odor" and loud noise, are considered personal injuries and are not compensable under RICO.[10] While the plaintiffs alleged "a diminution in present market value of their homes, because the nuisance ha[d] been abated and the cause of the depreciation had been removed," the plaintiffs failed to sufficiently plead an injury to property.[11] Therefore, the district court dismissed the plaintiffs' RICO lawsuit.

In another case, *Momtazi Family, LLC v. Wagner*, 2019 WL 4059178 (D. Or. 2019), the plaintiff brought suit against a neighboring cannabis growing operation, alleging diminished property value and rental income and decreased marketability of its wine grapes grown on the property due to concerns that the cannabis growing operations contaminated the grape supply.[12] The court found the reasoning in *Ainsworth* persuasive and agreed that the plaintiff alleged facts that stated a plausible claim for a RICO violation. Therefore, the court denied the defendants' motion to dismiss.

While these RICO claims to date have been largely unsuccessful, it is likely that cannabis operations will continue to face RICO claims until such time as the federal government decriminalizes cannabis.

Local and State Regulations

As cannabis operations continue to proliferate, state and local governments are increasingly promulgating regulations and ordinances that directly regulate cannabis emissions. In addition to these cannabis-

specific regulations, governmental entities can also rely on nuisance common law statutes to regulate cannabis emissions.

Most cannabis odor regulations are promulgated at the local level. For example:

LOCAL REGULATIONS – SPECIFIC TO CANNABIS OPERATIONS

LOCATION	LANGUAGE EXCERPT
Los Angeles, California	"A Business Premises shall be properly ventilated and the exhaust air filtered to neutralize the odor from cannabis so that the odor cannot be detected by a person with a normal sense of smell at the exterior of the Business Premises or on any adjoining property. No operable windows or exhaust vents shall be located on the building façade that abuts a residential use or zone. Exhaust vents on rooftops shall direct exhaust away from residential uses or zones. (Violation Type – Moderate)"[13]
Oakland, California	"Cannabis facilities shall be designed to provide sufficient odor absorbing ventilation and exhaust system so that any odor generated inside the facility is not detected outside the building, on adjacent properties or public rights-of-way, or within any other unit located within the same building as the Cannabis operator, if the use only occupies a portion of a building."[14]
Long Beach, California	"Every Adult-Use Cannabis Business shall implement adequate ventilation system and odor control filtration measures to prevent odors from inside the cannabis facility from being detected outside the cannabis facility."[15]
Pendleton, Oregon	"Unlawful Release of Marijuana Odor. No owner of real property or person in charge thereof shall allow, permit or cause the odor of marijuana to emanate from that premises to any other property."[16]

In the absence of state and/or local regulations specifically targeting cannabis operations, most state and local governments have general nuisance regulations that can be used to regulate these emissions.

GENERAL NUISANCE

LOCATION	LANGUAGE EXCERPT
Illinois	"An objectionable odor nuisance exists: a) On or adjacent to residential, recreational, institutional, retail sales, hotel or educational premises when odor is detectable in the ambient air after it is diluted with eight volumes of odor-free air as measured by the Scentometer;"[17]
Pennsylvania	"b)Odors. (1) An operator shall implement the plan approved under § 273.136 (relating to nuisance minimization and control plan) to minimize and control public nuisances from odors. If the Department determines during operation of the facility that the plan is inadequate to minimize or control public nuisances, the Department may modify the plan or require the operator to modify the plan and obtain Department approval."[18]
Denver, Colorado	"The purpose of this rule is to mitigate and control nuisance Odors within the city and county of Denver by specifying when an Odor Control Plan ("OCP") is required, establishing the required components of an OCP, and detailing the approval process for OCPs."[19] "It shall be an unlawful nuisance for any person to cause or permit the emission of odorous air contaminants from any source so as to result in detectable odors that leave the premises upon which they originated and interfere with the reasonable and comfortable use and enjoyment of property."[20]

In November 2019, relying on the above-referenced Pennsylvania nuisance statute, the Pennsylvania Department of Environmental Protection ("PDEP") initiated an enforcement action against a hemp drying, processing and storage facility. PDEP claimed that these operations resulted in objectionable odors which constituted a public nuisance.[21]

In December 2019, PDEP entered into a consent order and agreement with the hemp facility. The consent order imposed additional monitoring and odor abatement requirements on the company, required the company to conduct a technical study into technologies and equipment for ventilation and odor control for the facility and to apply to install such equipment as appropriate. In addition, the company was assessed a $29,000 civil penalty.

Although the above-referenced enforcement action was initiated against a processing facility, cannabis-growing operations should be cognizant that in some states, agricultural operations are specifically exempted from the state nuisance regulations. For example, California's Santa Barbara Air Pollution Control District regulations provide that "[g]rowing and harvesting of cannabis is considered an agricultural operation" and is therefore exempt from the general prohibition on the discharge of air contaminants that cause a public nuisance.[22]

In order to mitigate the risk of private-party and/or regulatory enforcement actions related to facility emissions, care should be taken when siting new cannabis growing and processing operations to avoid placing these facilities in close proximity to residential properties, schools, and other recreational uses. In addition, installation of emission controls can help abate odors and minimize potential odor issues. Examples of such technologies include air purifiers, molecular filtration, oxidation systems, and neutralizing agents. Molecular filtration, commonly referred to as carbon filtration, works by filtering the odor from the air, whereas the oxidation systems destroy the odor from the air.

Air Permitting

As noted previously, cannabis growing and processing operations emit a variety of air contaminants including but not limited to VOCs and combustion by-products. These contaminants are regulated under the federal Clean Air Act ("CAA"). In addition to the federal CAA requirements, many states impose their own more stringent permitting requirements. As further discussed below, cannabis processing operations have the greatest potential to trigger air permitting requirements but emissions from growing operations may trigger permitting requirements in the not too distant future.

As a general matter, only major sources require federal CAA permits and the threshold for major source status is significantly higher than the emissions typically associated with cannabis processing operations. For example, the CAA VOC major source threshold is 100 tons per year.[23] However, as noted above, states may set lower permitting thresholds.

Recent guidance issued by the Michigan Department of Environmental Quality ("MDEQ") suggests that VOC emissions from cannabis processing operations could exceed Michigan's forty (40) ton per year threshold that would trigger the obligation to obtain a permit prior to commencing operations.[24] In addition, cannabis operations with natural gas-fired boilers or emergency generators are likely to require a permit to install these pieces of equipment in Michigan.[25]

The Oregon Department of Environmental Quality also issued air permitting guidance for cannabis operations. Oregon's VOC permitting threshold is only ten (10) tons per year—larger cannabis growing operations could emit in excess of ten tons of VOC emission per year.[26] In addition, boilers in excess of 10 million BTU/hour heat input and generators in excess of 30,000 horsepower must be permitted under Oregon's air regulations.[27]

The permitting obligations discussed above are more likely to be triggered by cannabis processing operations. Although cannabis-growing operations emit VOCs (terpenes), there are not generally accepted methodologies for measuring VOC emissions emitted by the cannabis plants so it is difficult to determine whether these operations exceed the air permit threshold. However, there are ongoing efforts to develop methodologies for measuring these emissions and so the obligation for growing operations to obtain air permits may not be too far in the future.[28]

WATER RESOURCES AND PERMITTING

Before one can even get to the stage of worrying about emissions, cannabis growing operations must ensure that they have adequate water resources to support their operations. In addition, wastewater and stormwater discharges from growing and processing operations may trigger permitting obligations under federal, state and local laws.

Water Resources

Ensuring adequate access to water for cannabis growing operations can be a significant challenge, especially as water scarcity and climate change considerations place barriers to readily accessible sources of water for irrigation purposes. Typically, irrigation water for smaller greenhouse or indoor facilities would come from a local municipal or regional

water supplier. Water for irrigation of larger outdoor growing operations is more likely to come from a surface water or groundwater source. Each of these sources poses its own unique challenges.

With respect to local and/or regional water suppliers, attention should be paid to ensuring that the water supplier can support the operations from both a capacity and infrastructure perspective. Local and/or regional suppliers may impose use restrictions and/or conservation requirements for cannabis operations. For example, Massachusetts provides a list of best management practices for water use as it applies to cannabis operations, such as automation of watering systems, implementation of a water recapturing system or micro-irrigation system.[29] The California State Water Resources Control Board developed a Cannabis Cultivation Policy, approved on April 16, 2019 by the Office of Administrative Law.[30] The Water Conservation and Use section details several requirements including a monthly inspection of the water delivery system, implementation of water conserving irrigation methods, and daily records of water used for irrigations of cannabis.[31]

Surface water diversions pose their own unique challenges. For example, in California, in order to obtain a CalCannabis growing license, growers must document that they have access to an available water supply source.[32] California growers planning to divert surface water for irrigation purposes must possess a water right for the diversion.[33] Growers are then required to cease diversion of surface during the dry season (from April 1st through October 31st) which means that water must be diverted during the wet season and stored for use during the dry season.

Due to the illegal nature of cannabis at the federal level, federally managed water resources are off limits for use in cannabis growing operations. For example, the Bureau of Reclamation oversees diversions of water from the Colorado River for irrigation in parts of Nevada and Southern California. These diverted waters cannot be used for cannabis operations.

Groundwater can also be a source of water for cannabis operations, but often requires a permit. For example, Oregon's Water Resources Department developed guidance for options for obtaining water legally.[34] Cannabis operations can obtain a water right permit for groundwater. There is a groundwater use exemption for non-irrigation related commercial purposes.[35] Under this exemption, up to 5,000 gallons per day can be used for commercial or industrial use without a water right, which covers processing cannabis.[36]

Wastewater Discharges

Wastewater discharges from indoor cannabis growing and processing operations are generally considered industrial waste and subject to local, state and federal regulations. These regulations may require permits and/or specific authorization for these wastewater discharges. Although the focus of this section is on indoor operations, outdoor growing operations are agricultural activities that may be subject to state-specific agricultural discharge regulations.[37]

Typically, wastewater from cannabis processing operations is discharged directly to a publicly owned treatment plant ("POTW"). The POTW must approve the discharge and a permit may be required. The POTW will likely impose discharge limits that include things like total suspended solids, pH and biochemical oxygen demand. Cannabis processing and extraction operations may trigger additional permitting obligations due to the nature of the wastewater discharges associated with these operations (i.e., VOCs from the extraction process). For example, treatment of the industrial wastewater may be necessary before it can be discharged to the POTW.

Rural operations that may not have ready access to a POTW and therefore discharge directly to the ground and/or surface water trigger a different set of permitting requirements. Discharges directly to ground water (i.e., discharges onto land that infiltrate down to the groundwater) are generally regulated by state groundwater discharge programs. For example, in Michigan discharge of water containing pollutants to the ground, groundwater, or surface water requires a permit from Department of Environment, Great Lakes, and Energy.[38]

Discharges directly into a water body require a National Pollutant Discharge Elimination System ("NPDES") permit. The federal Clean Water Act ("CWA"), 33 U.S.C. §1251 et seq., regulates discharges of pollutants into waters of the United States and enforcement of this permitting requirement has generally been delegated to states. A NPDES permit will set specific limits for acceptable levels of pollutants in the discharge that are designed to ensure that the discharge does not adversely impact water quality or health. To date, all states (excluding Idaho, Massachusetts, New Hampshire, New Mexico, Washington, D.C. Puerto Rico, and all Native American and Federally-owned properties) have been delegated authority for managing the federal requirements of the NPDES program so affected facilities would need to obtain such permits from the state regulators.

In addition to wastewater discharges from cannabis growing and processing operations, the CWA also regulates stormwater discharges. Stormwater discharges from cannabis facilities can include runoff from cultivation operations that may contain fertilizers and pesticides as well as precipitation coming into

contact with outdoor industrial operations such as storage tanks, materials storage, and loading/unloading operations.

In lieu of obtaining a site-specific stormwater discharge permit, the more typical approach is to submit a "notice of intent" indicating that the operator requests authorization to discharge stormwater to waters of the United States under what is referred to as NPDES Stormwater Multi-Sector General Permit ("MSGP"). These MSGPs have been promulgated at both the federal and state levels and basically require that regulated industries implement "best management practices" ("BMPs") to prevent the discharge of pollutants into streams, rivers, lakes and coastal waters.

The California State Water Resources Control Board developed a cannabis cultivation best management practices guidance document.[39] The California guidance identifies a number of BMPs including storing products in a way that does not allow for runoff to surface waters and installing buffer strips to filter runoff of chemicals from irrigation. Some localities have also developed their own BMP guidance documents. For example, Mendocino County, California developed a BMP guidance document for cannabis cultivators with funding from the California State Water Boards.[40] These BMPs must be documented in the facility's Stormwater Pollution Prevention Plan ("SWPPP") which is required by most MSGPs.[41]

In situations where an industrial facility can demonstrate that its industrial materials are protected from exposure to rain, snow, and/or runoff, the facility may elect to submit a "No Exposure Certification." Once that certification is submitted, then the facility is exempt from the obligations of the MSGP although once the certification is submitted, the facility must ensure that the no exposure status is maintained or risk potential penalties.[42]

WASTE MANAGEMENT

Cannabis Waste

There a number of waste streams associated with cannabis growing, processing and extraction operations. One significant waste stream is "cannabis waste" that generally consists of non-flower plant material (stems, seeds, leaves, roots, soils). This waste is generally regulated at the state and local level and in many jurisdictions, cannabis waste must be rendered unrecognizable and unusable, combined with other waste so the resulting mixture is at least 50 percent cannabis free, and secured in a locked container.

Presently, most cannabis waste is disposed of in landfills but other disposal options include composting, in-vessel digestion, or incineration. If composting, care must be taken to ensure that the waste is not contaminated since bleach or other chemicals that may be added to the cannabis waste rendering it unsuitable for composting. Incineration must occur at temperatures that are high enough to destroy the organic constituents. In-vessel digestion is a technically complex process that requires careful control over airflow, temperature, moisture and odors.

Many states require that records be kept documenting the proper disposal of the cannabis waste. For example, in California, cannabis licensees must maintain records documenting the appropriate disposal of cannabis waste for a period of seven years.[43] Similarly, Oklahoma's Medical Waste Management Act requires licensees to create and maintain documentation of the precise volumes and manner in which the cannabis waste is disposed; this documentation must have a witness affidavit and signature attesting to the lawful disposal under penalty of perjury.[44]

Hazardous Waste

Cannabis operations may also generate hazardous waste which is the subject of stringent federal and state regulations. Examples of hazardous waste that may be generated by cannabis operations include:

- Mercury-containing lighting;
- Pesticides or other chemicals used in the cultivation process;
- Solvents or other chemicals used in the production of cannabis concentrate; and
- Cannabis soaked in a flammable solvent for purposes of producing a cannabis concentrate.

Hazardous wastes are regulated under the federal Resource, Conservation, and Recovery Act ("RCRA").[45] RCRA imposes a number of requirements on the handling and disposal of hazardous wastes, including specific requirements regarding the quantity and amount of time that hazardous wastes can remain on site. The extent of these requirements depends in part on the volume of hazardous wastes generated by a facility on a monthly basis, with the least restrictive requirements applying to operations that generate less than 100 kilograms of hazardous waste per month and the more stringent requirements applying to operations that generate in excess of 1,000 kilograms of waste per month.[46] There are also specific training requirements for employees that handle these hazardous wastes.[47]

Cannabis operations should also be cognizant of regulations governing universal waste. "Universal waste" includes certain batteries, pesticides, mercury-containing equipment, lamps and aerosol cans.[48] The RCRA regulations governing universal wastes are much less stringent than those that apply to hazardous waste. For example, universal wastes can be stored on-site

for a year and do not need to be shipped with a hazardous waste manifest or by a licensed hazardous material transporter.

The liabilities that can be triggered by the improper disposal of hazardous wastes are significant. The Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §9601 et seq. ("CERCLA") imposes liability on parties responsible for the presence of hazardous substances. CERCLA liability is joint and several, meaning that any one potentially responsible party may be held liable for the entire cleanup of the site.[49]

PESTICIDES

Registration

Pesticide use in the United States is governed by the Federal Insecticide Fungicide and Rodentcide Act ("FIFRA"). FIFRA requires federal registration of all pesticides produced or sold in the United States and it is illegal to use a pesticide on a crop without federal registration. Since cannabis remains classified as a Schedule I substance under the Controlled Substances Act, U.S. EPA has not approved any pesticides for use on cannabis.

However, the 2018 Farm Bill authorized the cultivation of hemp (containing less than 0.3 percent THC).[50] Following the 2018 Farm Bill, U.S. EPA approved 10 pesticides for use in cultivating hemp during the 2020 growing season. Nine of the products are bio-pesticides and one is a conventional pesticide.[51] Many of the pesticides authorized for use on hemp are likely to be equally effective on cannabis plants. However, care must be taken to ensure that these pesticides are used in accordance with the specific use restrictions on the label both to minimize the risk of the pesticide application but also to minimize the risk of pesticide residue on the cannabis itself.

In the absence of FIFRA-approved pesticides for use on cannabis crops, states have released their own approved-pesticide lists. For example:

- Oregon and Washington have developed a list of approved pesticides for use in cannabis production.
- Nevada and Massachusetts exempt certain pesticide products, considered to be "minimum risk" (also known as Federal Insecticide, Fungicide and Rodenticide Act 25b products) for use on cannabis crops.
- Some states have allowed use of pesticides approved for use on tobacco crops to be used on cannabis crops.

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WORKER PROTECTION

Notwithstanding that FIFRA has not specifically approved any pesticides for use on cannabis crops, various state and federal laws still require that employers take steps to protect their employees from the risks of pesticide poisoning and injury. For example, U.S. EPA's Agricultural Worker Protection Standard ("WPS") requires employers to provide their employees with specific training regarding the use of pesticides and the required personal protective equipment. The WPS applies to both outdoor and indoor cannabis growing operations.[52]

Most states have adopted U.S. EPA's WPS setting a minimum bar but some states had adopted more stringent worker protection requirements. For example, Washington developed guidance specifically for cannabis growers including topics such as pesticide application and training.[53]

WORKER SAFETY IN THE CANNABIS INDUSTRY

In addition to the environmental compliance and WPS issues discussed above, cannabis operations are subject to federal health and safety standards. In 2020, the cannabis industry was estimated to have employed approximately 250,000 workers in the United States and these workers are exposed to a wide range of hazards associated with the growing, harvesting, extracting and processing of cannabis products.

The federal workplace standards of the Occupational Safety and Health Act ("OSHA") have been law since 1970 and notwithstanding cannabis's illegal status under federal law, cannabis operations are subject to the OSHA regulations just like every other industry in the United States.[54] In addition to the federal OSHA regulations, employers are also subject to state-OSHA programs that may impose more stringent workplace safety requirements.

OSHA imposes specific health and safety requirements, including OSHA's General Duty Clause that requires that all employers provide a work environment that is "free from recognized hazards that are causing or likely to cause death or serious physical harm."[55] OSHA requires that employers with greater than 10 employees maintain injury and illness logs and prepare annual summary reports referred to as OSHA 300A reports. There are also specific reporting requirements for serious work-place injuries and fatalities.

Common hazards for workers in the cannabis industry include the following:

- Biological hazards: mold exposures for indoor growing operations caused by improper ventilation, as well as dermal exposure to THC;

- Chemical hazards: exposure to pesticides and fertilizers; exposure to carbon dioxide in greenhouses being used to optimize growing operations; exposure to disinfectant/cleaning chemical agents and corrosive chemicals;
- Physical hazards: flammable and combustible liquids, walking/working surface risks; confined spaces; working at heights; noise.
- Occupational injuries: electrical shocks from poor wiring, cuts, pinches, ergonomic injuries; machine and tool usage.

There are specific OSHA standards governing each of these common hazards.

- **Step 1**
  Assess the workplace for hazards;
- **Step 2**
  Implement engineering controls and administration controls (work practices) to control or eliminate these hazards to the extent feasible;
- **Step 3**
  Select appropriate PPE to protect employees from hazards that cannot be eliminated or controlled through use of engineering controls and work practices; and
- **Step 4**
  Inform and train your employees on the need for PPE and how to use the PPE.

Typical PPE for employees at cannabis operations includes the use of (1) respirators to protect from overexposure to hazardous gases such as carbon dioxide; (2) protective coveralls, lab coats, aprons, footwear and gloves to minimize exposure during cutting, harvesting and during the application of pesticides and/or use of hazardous chemicals; (3) eye and face protection to minimize contact with THC, pesticides and chemicals; and (4) hearing protection to minimize the risk of overexposure from chippers, moving equipment, compressors and conveyers.

Ensuring that workplace operations are conducted in a safe manner that is compliant with both the federal and state OSHA requirements is critically important for the obvious reason that we want to ensure that each employee that comes to work in the morning can go home at the end of the day.

Failure to comply with these requirements can result in significant penalties. For example:

- In November 2019, OSHA fined operators of a hemp processing facility in Oregon $825,000 for allowing employees to live and work in an unsafe building.[56]
- In December 2018, Cal/OSHA fined a cannabis manufacturer in California $50,470 after an oil-extraction explosion that resulted in severe burns to an employee.[57]

Ensuring the health and safety of one's employees is not only a moral imperative, but also critical to ensuring the ability to continue to operate without significant fines or penalties.

CONCLUSION

As the cannabis industry continues to grow, cannabis operations will face mounting scrutiny. Each stage of the cannabis process has its own environmental, health and safety challenges, such as odor, emissions, pesticide use, wastewater discharges, and worker safety. Now more than ever before, it is critical that cannabis operations comply with local, state and federal regulations in order to establish a sustainable framework which will ensure that that the industry can continue to reach new highs.

SOURCES

[1] Although this article is focused on cannabis operations, many of the regulatory requirements have equal applicability to hemp operations.

[2] *See Santa Barbara County Coalition for Responsible Cannabis et al. v. Ever-Bloom Inc. et al.*, 20CV01124 (Santa Barbara Cty. Sup. Ct. Feb. 27, 2020).

[3] *Id.* at 2.

[4] *Id.*

[5] *Safe Streets Alliance v. Hickenlooper et al.*, 859 F.3d 865, 881 (10th Cir. 2017).

[6] *Id.*

[7] *Id.* at 886; On remand, a jury ruled in favor of the cannabis growing operations, finding that plaintiffs had failed to prove that the cannabis growing operations damaged plaintiffs' property.

[8] *Id.* at 1122

[9] *Id.* at 1126.

[10] *Id.* at 8.

[11] *Id.* at 10.

[12] *Id.* at 4.

[13] Los Angeles, California, Amendments to Cannabis Regulations (July 23, 2018), https://cannabis.lacity.org/sites/g/files/wph1081/f/Amendments%20to%20Cannabis%20Regulations.CLEAN_.7.23.18.pdf.

[14] Oakland, California, 2018-2019 Administrative Regulations and Performance Standards for City Of Oakland Cannabis Operators, http://www2.oaklandnet.com/oakca1/groups/cityadministrator/documents/procedure/oak071140.pdf.

[15] Long Beach, California, DIVISION III. – GENERAL OPERATING CONDITIONS, 5.92.540 – Ventilation and filtration system, https://library.municode.com/ca/Long_Beach/codes/municipal_code?nodeId=TIT5REBUTRPR_CH5.92ADECABUAC_DIVIIIGEOPCO_SDICAFALORE_5.92.420LORE.

[16] Pendleton, Oregon, City Council Agenda (May 19, 2015), https://cityofpendletonor.civicweb.net/document/4305.

[17] Ill. Admin. Code tit. 35, § 245.121(a).

[18] 25 Pa. Code § 273.218.

[19] Denver, Colorado, Rules & Regulations Governing Nuisance Odors (January 2017), https://www.denvergov.org/content/dam/denvergov/Portals/771/documents/EQ/Odor/Updated%20Nuisance%20Odor%20Rules-Regs%20Jan%202017.pdf.

[20] Denver, Colorado, Code of Ordinances, https://www.denverinc.org/wp-content/uploads/2015/12/Denver-Air-Pollution-Control-Ordinance.pdf.

[21] PA DEP Order, https://www.environmentalsafetyupdate.com/wp-content/uploads/sites/248/2019/12/PA-DEP-Order-Matter-of-Patriot-Shield-PA-LLC.pdf.

[22] Santa Barbara County Air Pollution Control District, APCD ADVISORY Air Quality and Cannabis Operations (Apr. 26, 2019, last updated May 7, 2019), https://www.ourair.org/wp-content/uploads/APCD-Cannabis-Advisory-v2.pdf.

[23] The 100 ton per year threshold applies to attainment and marginal and moderate non-attainment areas. The threshold drops to 50 tpy for serious non-attainment areas, 25 tpy for severe non-attainment areas, and 10 tpy for extreme non-attainment areas.

[24] Mich. Admin. Code R. 336.1119; Michigan, Protecting Air Quality When Growing and Processing Marihuana Guidance (August 2019),https://www.michigan.gov/documents/egle/egle-tou-aqd-MarihuanaProcessingAirGuidance_664273_7.pdf.

[25] *Id*.

[26] Oregon Department of Environmental Quality, Title V Rules and Fees, https://www.oregon.gov/deq/aq/aqPermits/Pages/TVrule.aspx.

[27] Oregon Department of Environmental Quality, Air Contaminant Discharge Permit Application Guidelines (revised Jan. 21, 2020), https://www.oregon.gov/deq/FilterPermitsDocs/acdp-applguidelines.pdf.

[28] Currently, a study is underway in Colorado to determine the quantity of VOC emissions from marijuana plants throughout their growth cycle. As more information on emissions from grow operations becomes available, marijuana cultivation operations may become subject to air permitting requirements.

[29] Cannabis Control Commission, Commonwealth of Massachusetts, Guidance on Best Management Practices for Water Use (Apr. 4, 2019), https://mass-cannabis-control.com/wp-content/uploads/2019/04/Guidance-on-Best-Management-Practices-for-Water-Use.pdf.

[30] California State Water Resources Control Board, Cannabis Cultivation Policy Principles and Guidelines for Cannabis Cultivation (Apr. 16, 2019), https://www.waterboards.ca.gov/water_issues/programs/cannabis/docs/policy/final_cannabis_policy_with_attach_a.pdf.

[31] *Id*.

[32] Cal. Bus. & Prof. Code § 26060.1; California State Water Resources Control Board, Cannabis Cultivation Frequently Asked Questions (FAQs), https://www.waterboards.ca.gov/water_issues/programs/cannabis/faqs.html (last updated Oct. 18, 2019).

[33] California State Water Resources Control Board, Cannabis Cultivation Water Rights, https://www.waterboards.ca.gov/water_issues/programs/cannabis/cannabis_water_rights.html (last updated July 27, 2020).

[34] Oregon Water Resources Department, Options for Obtaining Water Legally: An Overview for Hemp, Medical Marijuana and Recreational Marijuana (Apr. 10, 2019), https://www.oregon.gov/owrd/Documents/Water_Use_and_Marijuana_Handout_FINAL.pdf.

[35] *Id*.

[36] *Id*.

[37] In California, the State Water Resources Control Board developed the Cannabis Cultivation Policy: Principles and Guidelines for Cannabis Cultivation. California State Water Resources Control Board, Cannabis Cultivation Policy Principles and Guidelines for Cannabis Cultivation (Apr. 16, 2019), https://www.waterboards.ca.gov/water_issues/programs/cannabis/docs/policy/final_cannabis_policy_with_attach_a.pdf. The policy states that "Cannabis cultivators shall not mix, prepare, over apply, or dispose of agricultural chemicals/products (e.g., fertilizers, pesticides, 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."

[38] Michigan Department of Environment, Great Lakes, and Energy, Protecting Water Resources When growing and Processing Marijuana (May 2020), https://www.michigan.gov/documents/deq/deq-tou-wrd-Guidance-MarihuanaGrowingProcessing_636576_7.pdf.

[39] California State Water Resources Control Board, Cannabis Cultivation Best Management Practices, https://www.waterboards.ca.gov/rwqcb5//water_issues/cannabis/education_outreach/ccwdrp_bmp_flyer.pdf.

[40] Watershed Best Management Practices for Cannabis Growers and other Rural Gardeners (June 2018), https://mcrcd.org/wp-content/uploads/2018/09/Cannabis-BMP-Guide-2018_lowRes_final.pdf.

[41] During construction, where construction activities associated with the facility will disturb one or more acres of land, the facility must submit an NOI for the MSGP for construction activities. A SWPPP is required that is designed to identify specific steps that will be taken to mitigate erosion and chemical exposure of storm water in connection with project construction activities. U.S. EPA, Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites (May 2007), https://www3.epa.gov/npdes/pubs/sw_swppp_guide.pdf.

[42] 40 C.F.R. § 122.26(g); U.S. Environmental Protection Agency, Interim Revised NPDES Compliance Inspection Manual (2017), https://www.epa.gov/sites/production/files/2017-03/documents/npdesinspect-chapter-11.pdf; U.S. Environmental Protection Agency, Multi-Sector General Permit For Stormwater Discharges Associated With Industrial Activity (MSGP) (May 27, 2009), https://www3.epa.gov/npdes/pubs/msgp2008_finalpermit.pdf.

[43] 3 CCR § 8400.

[44] Medical Marijuana; Creating the Oklahoma Medical Marijuana Waste Management Act; Licenses. Effective dates. Emergency, SB 882, Okla. Reg. Sess. (2019).

[45] Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq. (1976).

[46] Environmental Protection Agency, Categories of Hazardous Waste Generators, https://www.epa.gov/hwgenerators/categories-hazardous-waste-generators.

[47] Environmental Protection Agency, Resource Conservation and Recovery Act (RCRA) Training Modules, https://www.epa.gov/rcra/resource-conservation-and-recovery-act-rcra-training-modules.

[48] 40 CFR § 273.1.

[49] Environmental Protection Agency, Superfund Liability, https://www.epa.gov/enforcement/superfund-liability; *U.S. v. Kramer*, 757 F. Supp. 397 (D.N.J. 1991).

[50] Agriculture Improvement Act of 2018, H.R.2, 115th Congress (2017-2018).

[51] The approved bio-pesticides include Azadirachtin and Neem Oil (EPA Reg. No. 70310-5, 70310-7, 70310-8), Neem Oil (EPA Reg. No. 70310-11), Reynoutria sachalinesis (EPA Reg. No. 84059-3), Bacillus amyloliquefaciens strain F727 (EPA Reg. No. 84059-28), Soybean Oil, Garlic Oil, and Resin, Oleo-, capsicum (EPA Reg. No. 91865-1), Bacillus amyloliquefaciens strain D747 (EPA Reg. No. 91865-3), and Azadirachtin (EPA Reg. No. 91865-4). The approved conventional pesticide is Potassium Salts of Fatty Acids (EPA Reg. No. 91865-2).

[52] Environmental Protection Agency, Agricultural Worker Protection Standard (WPS), https://www.epa.gov/pesticide-worker-safety/agricultural-worker-protection-standard-wps#coverage.

[53] Washington State Department of Agriculture, Worker Protection Standard (WPS) Requirements for Marijuana Growers, https://cms.agr.wa.gov/WSDAKentico/Documents/Pubs/487-WPSGuideCannabis.pdf?/487-WPSGuideCannabis.

[54] OSHA exempts certain industries including farming operations employing only family members. In addition, farming operations may also be exempt from OSHA requirements if they employ less than 10 employees and have not had an active temporary labor camp during the past 12 months. OSHA, Enforcement Exemptions and Limitations under the Appropriations Act, CPL 02-00-051 (May 28, 1998), https://www.osha.gov/enforcement/directives/cpl-02-00-051.

[55] 29 U.S.C. § 654(a)(1).

[56] Hemp Warehouse's 'Inexcusable' Conditions Lead to $825,000 Fine (Nov. 6, 2019), https://news.bloomberglaw.com/safety/inexcusable-conditions-lead-to-825-000-safety-fine.

[57] Cal/OSHA, Cal/OSHA Cites Cannabis Company for Safety Violations Following Explosion that Burned Employee (Dec. 20, 2018), https://www.dir.ca.gov/DIRNews/2018/2018-106.pdf.