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April 23, 2020

Mr. Jeff Holwager
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REQUEST FOR DTSC EVALUATION OF ACUTE AQUATIC 96-HOUR BIOASSAY FOR UNPROCESSED CANNABIS PLANT MEDIA WASTE AND OTHER AGRICULTURAL CROP WASTE

Dear Mr. Holwager:

Thank you for your Hazardous Waste Technical Advisory Group (TAG) / Steering Committee Issue Tracking Sheet submitted on August 14, 2018, to the Department of Toxic Substances Control (DTSC) from the Southern California Hazardous Waste TAG and Certified Unified Program Agency (CUPA) Forum Board (CFB). Your question is

“The CUPAs and Hazardous Waste TAG would like guidance from DTSC on if the fish bioassay should be used to evaluate hazardous waste criteria on a crop [referring to cannabis waste] that is otherwise regulated by multiple State agencies, including with a regulatory path for waste plant media in the solid waste stream.”

Subsequently on August 7, 2019, during the Hazardous Waste Steering Committee meeting Mr. Nicholas Crain requested that all agricultural waste be included in the evaluation of an exclusion from management as hazardous waste.

BACKGROUND

Currently there are three state licensing agencies for cannabis related regulations: California Department of Consumer Affairs - Bureau of Cannabis Control, California Department of Food and Agriculture – CalCannabis Cultivation Licensing, and California Department of Public Health - Manufactured Cannabis Safety Branch. Each agency has its own set of waste management regulations.

For purposes of this response, “unprocessed cannabis wastes” are plant materials (stalks, leaves, and stems) that have not undergone any chemical processing (i.e., with hazardous materials¹ or other chemicals). In California Code of Regulation, title 3, section 8000, “Process,” “Processing,” and “Processes” is defined as:

“...all activities associated with the drying, curing, grading, trimming, rolling, storing, packaging, and labeling of cannabis or nonmanufactured cannabis products.”

Currently, “cannabis waste” is defined in California Code of Regulation, title 17, section 40100 as “waste that contains cannabis or cannabis products but is not otherwise a hazardous waste as defined in Public Resources Code section 40141.” Pursuant to California Code of Regulations, title 3, section 8108:

“For the purposes of this section, ‘cannabis waste’ is organic waste, as defined in section 42649.8(c) of the Public Resources Code.”

California manages cannabis waste, which is not otherwise hazardous, as organic waste pursuant to California Code of Regulations, title 17, section 40290(a). In Public Resources Code section 42649.8(c), “organic waste” is defined:

“‘Organic waste’ means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.”

Under state law, cannabis waste is only regulated as an organic waste when it does not meet the definition of hazardous waste. It is the responsibility of the generator to determine if their cannabis waste should be handled as hazardous waste² as specified in California Code of Regulations, title 22, chapter 10, section 66260.200, subsections (a) and (c).

STATUS OF MATERIAL UNDER FEDERAL LAW

Under federal law, agricultural crops returned to the soil as fertilizers are solid wastes, are not hazardous wastes, and are excluded from the Resource Conservation and Recovery Act (RCRA) Subtitle C regulations for the management of hazardous waste. Pursuant to 40 Code of Federal Regulations section 261.4 (b)(2)(i):

¹ As defined in Health and Safety Code section 25501.

² As defined in Health and Safety Code section 25117.

“(b) Solid wastes which are not hazardous wastes. The following solid wastes are not hazardous wastes:

[...]

“(2) Solid wastes generated by any of the following and which are returned to the soils as fertilizers:

“(i) The growing and harvesting of agricultural crops.”

Agricultural crops are excluded while cannabis waste is not specifically excluded in the federal regulations. The term “agricultural crops” is not defined in RCRA Subtitle C regulations. The Merriam-Webster online definitions of “agriculture” and “crop” are:

- “Agriculture: the science, art, or practice of cultivating the soil, producing crops, and raising livestock and in varying degrees the preparation and marketing of the resulting products.”³
- “Crop: a plant or animal or plant or animal product that can be grown and harvested extensively for profit or subsistence.”⁴

Because cannabis is a controlled substance listed by the United States Drug Enforcement Administration in 21 Code of Federal Regulations part 1308, it is conditionally exempt from 40 Code of Federal Regulations parts 262 through 273. Pursuant to 40 Code of Federal Regulations section 266.506(a)(1):

“(a) Conditional exemptions. Provided the conditions of paragraph (b) of this section are met, the following are exempt from 40 CFR parts 262 through 273:

“(1) Hazardous waste pharmaceuticals that are also listed on a schedule of controlled substances by the Drug Enforcement Administration in 21 CFR part 1308,[...]”

STATUS OF MATERIAL UNDER STATE LAW

California requirements can be more stringent than federal requirements. There is an exclusion provided in California Code of Regulation, title 22, section 66261.4(b)(2) which includes certain solid waste exclusions under 40 Code of Federal Regulation section 261.4. However, this exclusion adds a further provision that the excluded waste shall also not exhibit a characteristic for hazardous waste. Pursuant to California Code of Regulations, title 22, section 66261.4(b):

³ Merriam-Webster. “Definition of agriculture.” <https://www.merriam-webster.com/dictionary/agriculture>, (accessed February 24, 2020).

⁴ Merriam-Webster. “Definition of crop.” <https://www.merriam-webster.com/dictionary/crop>, (accessed February 24, 2020).

“(b) Wastes which are not hazardous wastes. The following wastes are not hazardous wastes:

[...]

“(2) materials which are exempted or excluded from classification as solid waste or hazardous waste pursuant to 40 CFR section 261.4 provided they are not listed in article 4.1 of this chapter, and do not exhibit a characteristic of a hazardous waste as set forth in article 3 of this chapter[...].”

The scope of article 3, referenced in the section 66261.4 excerpt above, identifies hazardous waste characteristics including but not limited to the characteristic of acute toxicity measured using the 96-hour fish bioassay test. However, because available analytical test results demonstrate that unprocessed cannabis waste meets the hazardous waste characteristic of toxicity, this exclusion does not apply. Further discussion of the testing is provided in the following section.

HAZARDOUS WASTE DEFINED UNDER HEALTH AND SAFETY CODE AND PUBLIC RESOURCES CODE

“Cannabis waste” is defined in California Code of Regulations, title 17, section 40100 as “waste that contains cannabis or cannabis products but is not otherwise a hazardous waste as defined in Public Resources Code section 40141.” **Under state law, cannabis waste is only regulated as an organic waste when it does not meet the definition of hazardous waste.**

Public Resources Code section 40141 states:

“(a) ‘Hazardous waste’ means a waste, defined as a ‘hazardous waste’ in accordance with **Section 25117** of the Health and Safety Code, or a combination of wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may do either of the following:
“(1) Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness.
“(2) Pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of, or otherwise managed.
“(b) Unless expressly provided otherwise, ‘hazardous waste’ includes extremely hazardous waste and acutely hazardous waste.” **[Emphasis added.]**

Pursuant to California Code of Regulations, title 17, section 40290(a), the cannabis licensee is responsible to properly evaluate the waste to determine if it is managed as a hazardous waste, as defined in Public Resources Code section 40141:

“(a) A licensee shall have a written cannabis waste management plan and shall dispose of all waste, including cannabis waste, in accordance with the Public Resources Code and any other applicable state and local laws, including laws regulating ‘organic waste’ as defined in Public Resources Code section 42649.8(c). **It is the responsibility of the licensee to properly evaluate waste to determine if it should be designated and handled as a hazardous waste, as defined in section 40141 of the Public Resources Code.**” [Emphasis added.]

Pursuant to California Code of Regulation, title 3, section 8308, “a [cannabis] licensee shall manage all hazardous waste, as defined in section 40141 of the Public Resource Code, in compliance with all applicable hazardous waste statutes and regulations.” Based on available analytical test results, unprocessed cannabis waste has been determined to meet the hazardous waste characteristic of toxicity, and is, therefore, under the purview of DTSC.

The definition in Public Resource Code section 40141 adds provisions in subdivisions (a)(1) and (a)(2) to the definition of hazardous waste not found in the Health and Safety Code section 25117. These additional provisions for the definition of hazardous waste are not within DTSC’s statutory authority. Only hazardous waste, as defined in Health and Safety Code section 25117, falls under such authority:

“(a) Except as provided in subdivision (d), ‘hazardous waste’ means a waste that meets any of the criteria for the identification of a hazardous waste adopted by the department pursuant to Section 25141.

“(b) ‘Hazardous waste’ includes, but is not limited to, RCRA hazardous waste.

“(c) Unless expressly provided otherwise, ‘hazardous waste’ also includes extremely hazardous waste and acutely hazardous waste.”

The acute aquatic toxicity 96-hour bioassay test (96-hour test) is one test used to determine whether a waste meets the hazardous waste characteristic of toxicity pursuant to California Code of Regulations, title 22, section 66261.24(a). This test criteria states that a waste meets the acute hazardous waste toxicity characteristic if it demonstrates an “acute aquatic 96-hour Lethal Concentration [LC]₅₀”⁵ less than 500 milligrams per liter (mg/L) when tested using the Static Acute Bioassay Procedures for Hazardous Waste Samples.⁶ If a waste fails the 96-hour test, it must be managed as non-RCRA hazardous waste in California, even if the waste is not regulated under the federal regulation as RCRA hazardous waste.

⁵ California Code of Regulation, title 22, section 66260.10 defines “acute aquatic 96-hour LC₅₀” as the concentration of a substance or mixture of substances in water, in milligrams per liter, which produces death within 96 hours in half of a group of at least 10 test fish.

⁶ Dr. James Polisini and Rebecca Miller, California Department of Fish and Game, Water Pollution Control Laboratory, revision November 1988.

Several local agencies (Counties of Los Angeles, San Diego, and Sacramento) collected and analyzed samples from a variety of cannabis operations. Raw plant material, solvent⁷-extracted material, and material contaminated through solvent extraction and production processes of cannabis all failed the 96-hour test. Based on these test results, unprocessed cannabis waste would be identified as non-RCRA hazardous waste.

SUMMARY

The unprocessed cannabis waste that was tested and failed the 96-hour test is non-RCRA hazardous waste. It is the responsibility of the cannabis licensee to determine whether their waste is hazardous and to appropriately manage it as such. Because the 96-hour test is one of the tests for toxicity described in state regulations, it is an acceptable test to determine whether a waste meets a characteristic of hazardous waste in California. The 96-hour test is applicable not just to cannabis waste, but it is also applicable to other green waste and agricultural crops.

In March 2019, former California Environmental Protection Agency (CalEPA) Executive Staff, Mr. Greg Vlastek, met with representatives of DTSC, California State Water Resources Control Board, and Department of Resources Recycling and Recovery (CalRecycle) to discuss the statutory authorities and programs administered by these agency boards and departments related to the management of cannabis wastes and cannabis production operations. The outcome of those discussions were also raised to the CalEPA Secretary. At an August 7, 2019, Hazardous Waste Steering Committee meeting, CUPA representatives asked whether a regulatory exclusion for cannabis and other plant wastes was a legally-valid approach to remove such wastes from hazardous waste management requirements. DTSC stated that such an exclusion in regulations would require a statutory change because current regulations and statutes do not allow DTSC to adopt at its discretion less stringent standards without an appropriate statutory authority to do so. At that time DTSC proffered that the CFB could pursue such an exclusion through a legislative change (i.e., through the legislative process).

In October 17, 2019, the CFB submitted for DTSC review and comment draft statutory language for a hazardous waste exclusion for “plant wastes” that fail the 96-hour test. On February 21, 2020, Assembly Bill 2993 was introduced which would provide for a hazardous waste exclusion for “green waste.” At this time, DTSC is unable to provide comments on this proposed legislation. If the CFB or its representatives have questions related to DTSC’s review of the proposed legislation, please contact Mr. Rick Brausch of the Office of Legislation and Regulatory Review at (916) 327-1186 or at Rick.Brausch@dtsc.ca.gov.

⁷ To date, DTSC is aware of the following solvents used for cannabis extraction: ethanol, butane, propane and carbon dioxide. This list is not all inclusive.

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DTSC will forward this response via electronic mail with a hardcopy to be sent once DTSC resumes normal operations at its headquarters location. If you have any further questions or need additional information regarding hazardous waste management requirements, please contact Ms. Tracy Young of my staff at (916) 445-5659 or at Tracy.Young@dtsc.ca.gov.

Sincerely,



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Attachment

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Issue Tracking Sheet

HW TAG Origin:

- **Sponsor:**

- **Date issue was raised:**

SUMMARY OF ISSUE

DESIRED RESOLUTION OF ISSUE

ISSUE FORWARDED TO CUPA FORUM BOARD AND/OR DTSC

DATE SUBMITTED:

SUMMARY OF COMMENTS FROM CUPA FORUM BOARD AND/OR DTSC