



**VIA ELECTRONIC MAIL**

April 23, 2018

Greg Gould  
Washington Department of Ecology  
PO Box 47600  
Olympia, WA 98504-7600

**RE: Petition for Land Disposal Restriction Treatment Variance at Fire Mountain Farms  
Newaukum Prairie Facility**

Dear Mr. Gould:

Emerald Kalama Chemical, LLC (Emerald) and Fire Mountain Farms, Inc. (FMF) jointly submit this petition for a treatment variance pursuant to Washington Administrative Code WAC 173-303-140(2)(a) (incorporating by reference 40 Code of Federal Regulation (CFR) §268.44 (h) – (m)) from the combustion land disposal restriction (LDR) treatment standard that the Washington State Department of Ecology (Ecology) has alleged is applicable to the mixture of industrial wastewater treatment plant (WWTP) biological solids (IWBS) generated by Emerald at its Kalama facility, municipal wastewater treatment plant biosolids (biosolids) accepted by FMF, secondary wastewater treatment solids (SWTS) accepted by FMF, and wastewater treatment system solids (WTSS) accepted by FMF (collectively known as mixed material). This petition accompanies the delisting petition for the same mixture, which is being submitted to the U.S. Environmental Protection Agency (EPA) and Ecology concurrently herewith (Delisting Petition).

**Reason for Treatment Variance Request (40 CFR 268.44(h)(2)).<sup>1</sup>**

The majority of the mixed material (approximately 86 percent) is comprised of biosolids generated by municipal WWTPs. Municipal biosolids do not meet any of the criteria under which the mixed material is listed as a hazardous waste and there are no constituents (or other factors) that could cause the waste to be a hazardous waste; therefore, no treatment standards are applicable. Biosolids are approved by EPA and Ecology for land application.

The mixed material contains approximately 21.1 tons of SWTS from the Darigold Chehalis facility. The Chehalis plant produces dry milk products. The SWTS do not meet any of the criteria under which the mixed material is listed as a hazardous waste and there are no constituents (or other factors) that could cause the waste to be a hazardous waste; therefore, no

---

<sup>1</sup> Emerald has not provided a WAC citation where there is no corresponding Ecology regulation.

treatment standards are applicable. Ecology granted the SWTS a beneficial use determination (BUD-SA-15-08) for application to agricultural fields as a nitrogen supplement.

The mixed material contains approximately 1.1 ton of WTSS from the Port of Longview. The Port operates a small wastewater treatment system to provide primary treatment of the water that was used to clean the dock, conveyor system, and associated sumps at Berth 2. Berth 2 is used to transfer nonhazardous materials. The WTSS does not meet any of the criteria for which the waste was listed as hazardous and there are no constituents (or other factors) that could cause the waste to be a hazardous waste; therefore, no treatment standards are applicable.

The mixed material contains approximately 24.7 tons of IWBS. The IWBS are produced in Emerald's biological WWTP. The WWTP treats process wastewater as well as groundwater containing contamination from historical spills. As part of that treatment process, the plant generates IWBS. Emerald's IWBS are basically the same material as municipal biosolids. Although several RCRA waste codes are associated with the material, the IWBS do not meet any of the criteria for which the waste was listed as hazardous and there are no constituents (or other factors) that could cause the waste to be a hazardous waste. However, Ecology alleges that the waste codes for acetaldehyde (U001) and methanol (U154) apply to the IWBS.

Pursuant to an extensive waste designation process conducted at Ecology's request, in September 2014, Emerald identified certain other hazardous waste streams that enter, or potentially enter, Emerald's WWTP. These waste streams include, among others, the following two listed wastes:

- U001 (acetaldehyde), which potentially enters the wastewater treatment plant in extremely small quantities due to the potential that very small amounts of pure product acetaldehyde could be spilled during loading and unloading operations.
- U154 (methanol), which potentially enters the wastewater treatment plant in extremely small quantities due to the potential that very small amounts of pure product methanol could be spilled during loading and unloading operations.

U001 and U154 are listed wastes solely on the basis of ignitability, and the resulting IWBS do not exhibit the ignitability characteristic, therefore as set forth in 40 CFR 261.3(g)(2)(ii); WAC 173-303-070(2)(c)(i), these two waste codes should not apply to the material.

However, RCRA and Ecology regulations both provide that LDR applicability is determined at the "point of generation" of a hazardous waste. Ecology has alleged that the point of generation of the Emerald IWBS is when the various wastewaters enter the wastewater treatment system.<sup>2</sup> Thus, according to Ecology, the IWBS are subject to the LDR treatment standards for U001 and U154 listed wastes. Although Emerald and FMF disagree that the LDRs for those two waste codes apply to the IWBS, without waiving any arguments made or that may be made in

---

<sup>2</sup> It is Emerald's position that the Emerald IWBS are in a different treatability group from the wastewater entering the system and, therefore, that the wastewater treatment plant is a new point of generation and the Emerald IWBS are a newly generated waste. As such the applicability of LDRs is governed by which waste codes actually apply to the newly generated material - i.e., U019 and U220. Emerald made this argument in front of the PCHB but the PCHB - incorrectly - ignored EPA guidance and instead deferred to Ecology. See, e.g., Letter from James R. Berlow, Director Hazardous Waste Minimization and Management Division, to Mr. Barton Day, RO 14207.

connection with this matter, in the interest of resolving this issue, Emerald and FMF have agreed to comply with the LDR treatment standards that are applicable to U001 and U154 listed wastes.

The LDR treatment standard for both U001 and U154 is combustion. However, as noted below, combustion is not the most appropriate treatment for the IWBS. Table 1 of 40 CFR 268.40(j) provides an alternate concentration-based LDR treatment standard for U154 code (methanol). Methanol has not been detected in the mixed material; therefore, the concentration-based treatment standard has likely been met (see Table B-4 in Appendix B of the Delisting Petition). Therefore, and as set forth in the Agreement dated June 3, 2016, Emerald is requesting a treatment variance from the combustion standard for acetaldehyde.

**The petitioners' names and addresses (40 CFR 268.44(i); 40 CFR 260.20(b)(1); WAC 173-303-710(1)(b)(i)).**

Emerald Kalama Chemical, LLC  
1296 NW 3rd Street  
Kalama, WA 98625

**Business Location:**

Fire Mountain Farms, Inc.  
856 Burnt Ridge Road  
Onalaska, WA 98570

**Physical Location of Waste:**

Fire Mountain Farms, Inc.  
349 State Route 508  
Chehalis, WA 98532

**Statement of petitioners' interest in the proposed action (40 CFR 268.44(i); 40 CFR 260.20(b)(2); WAC 173-303-910 (1)(b)(ii)).**

Emerald is seeking EPA and Ecology approval to delist the mixed material within the Newaukum Prairie storage unit on a one time basis subject to the following two conditions: (1) Disposal of the mixed material in a Subtitle D landfill, and (2) Compliance with the concentration-based Land Disposal Restrictions for the following dangerous waste codes: U019, U154, U220, and F003, and obtaining a variance for the combustion LDR treatment standard for U001 wastes.<sup>3</sup>

As described more fully in the Delisting Petition, Ecology issued Administrative Order No. 10938 (Sept. 11, 2014) (Order) to Emerald and FMF alleging that Emerald and FMF are co-generators of dangerous waste at the Newaukum Prairie storage unit. The alleged dangerous waste is comprised of a mixture of Emerald IWBS, biosolids, SWTS, and WTSS. The Emerald IWBS carry the following listed hazardous waste codes – U019, U154, U220, F003, and U001. The Order requires Emerald and FMF to undertake four different corrective actions, the first three of which have been completed to Ecology's satisfaction. The fourth – cleanup and closure of the three units in which the mixed material is being stored – is the subject of and reason for this Treatment Variance Request.

---

<sup>3</sup> By seeking a treatment variance for U001 listed wastes, Emerald is not waiving any argument they have made or may make in the future regarding the applicability of the LDR treatment standard for U001.

Emerald provided the IWBS to FMF pursuant to a long-standing recycling agreement between the two parties, under which FMF would recycle Emerald's material as a fertilizer. It was the parties' intent and understanding that this recycling arrangement was consistent with an Ecology regulation that exempts such waste-derived fertilizer from regulation as a hazardous waste. Although the practice continued for many years and with Ecology's knowledge, Ecology concluded in 2014 that the material is not eligible for the "fertilizer exemption," that the practice does not constitute legitimate recycling, that the Emerald IWBS are a solid and hazardous waste and, therefore, that the mixed material is a solid and hazardous waste. Emerald immediately complied with an Ecology request to stop sending the IWBS to FMF for recycling and the mixed material is currently being stored at FMF's Burnt Ridge, Newaukum Prairie and Big Hanaford facilities. On September 11, 2014, Ecology issued the Order to both Emerald and FMF.

Emerald and FMF appealed Ecology's Order to the Washington State Pollution Control Hearings Board (PCHB) but on September 28, 2015, the PCHB ruled in favor of Ecology. Emerald and FMF filed separate appeals with Washington State Superior Court. Those appeals have been consolidated and are currently stayed by agreement of all parties. The parties have since negotiated an Agreement<sup>4</sup>, dated June 3, 2016, which sets forth specific steps that Emerald and FMF agree to undertake to satisfy the remaining corrective action obligation in the Order. Among other things, the Agreement states that Emerald and FMF will file three separate delisting petitions covering the material currently stored in the three different FMF units. If the delisting petitions are granted, the parties intend to dispose of the mixed material in a Subtitle D landfill, and clean and close the three units in accordance with the terms of the Agreement.

**Description of the proposed action, including (where appropriate) suggested regulatory language (40 CFR 268.44(i); 40 CFR 260.20(b)(3); WAC 173-303-910 (1)(b)(iii)).**

The proposed action is for Ecology to issue a site-specific variance from the combustion LDR treatment standard for the mixed material currently stored at FMF's Newaukum Prairie facility.

**A statement of the need and justification for the proposed action, including any supporting tests, studies, or other information (40 CFR 268.44(i); 40 CFR 260.20(b)(4); WAC 173-303-910 (1)(b)(iv)).**

As established by the data supporting the Newaukum Prairie delisting petition and herein, the combustion treatment method is inappropriate for the mixed material for the following reasons.

As discussed in the Newaukum Prairie delisting petition submitted concurrently, the mixed material contains approximately 7 percent IWBS. Approximately 93 percent of the mixed materials is not alleged to carry the U001 waste code.

In accordance with 40 CFR 261.21(a) and WAC 173-303-090 (5)(a), the mixed material does not exhibit the characteristic of ignitability. Further, the mixed material is comprised of 90% or more

---

<sup>4</sup> Ecology. 2016a. Agreement for Conditional Compliance with Ecology Administrative Order No. 10938 During Judicial Review, Washington State Department of Ecology. June 3.

of water<sup>5</sup>. Water will not burn. The water would have to be removed before the mixed material could be incinerated. Removing the water would require a tremendous amount of energy that would likely have a negative impact on the environment and is inappropriate for the mixed material.

The alleged source of acetaldehyde (U001) to the mixed material is Emerald's IWBS. However, Emerald's WWTP provides a proven treatment method for acetaldehyde. It is not necessary, nor is it appropriate to treat the IWBS by combustion, as the potentially discarded acetaldehyde that may be present in the wastewater entering the WWTP would likely be present in very low concentrations. The acetaldehyde that could potentially enter the WWTP is likely digested by the microorganisms cultivated for that purpose. The IWBS are produced in the WWTP during the digestion of many types of organic molecules in the wastewater. IWBS are basically the same material as municipal WWTP biosolids, that is essentially the dead and decaying microorganisms used to digest and thereby chemically transform the undesirable components present in the wastewater into benign, and in many cases useful, compounds. The IWBS are unlikely to contain acetaldehyde at a concentration that would be harmful to human health or the environment.

In accordance with 40 CFR 261.21(a)(1) and WAC 173-303-090 (5)(a), the IWBS do not exhibit the characteristic of ignitability. The chemicals present in the wastewater are biologically treated in the aerobic and/or anaerobic digesters of the WWTP. As noted above, the waste codes for U001 and U154 – among others – should no longer apply to the IWBS because the IWBS are not likely to be ignitable. Because the IWBS are not likely to be ignitable, they are unlikely to burn.

**After receiving an application for a site-specific variance from a treatment standard, the Assistant Administrator, or his delegated representative, may request any additional information or samples which may be required to evaluate the application (40 CFR 268.44(j)).**

Emerald will provide additional information or samples if requested by Ecology or EPA.

**A generator, treatment facility, or disposal facility that is managing a waste covered by a site-specific variance from a treatment standard must comply with the waste analysis requirements for restricted wastes found under §268.7 (40 CFR 268.44(k)).**

40 CFR 268.7 requires generators to “determine if the waste has to be treated before it can be land disposed. This is done by determining if the hazardous waste meets the treatment standards in §268.40, 268.45, or §268.49. This determination can be made concurrently with the hazardous waste determination required in §262.11 of this chapter, in either of two ways: testing the waste or using knowledge of the waste.”

The treatment standard for acetaldehyde is combustion, and is the reason for this treatment variance request. Emerald used knowledge of the processes that generated the mixed material to

---

<sup>5</sup> Percent solids measured in PGG 2014 and LAI 2017 sampling of the mixed material range from 5.6-10.5%, therefore at least 90% of the mixed material is water.

determine that it is unlikely to contain acetaldehyde at a concentration that would be harmful to the environment and human health.

Emerald will send a one-time written notice to each treatment, storage, or disposal facility receiving the mixed material, and place a copy in the file. The notice will include the information indicated in column “268.7(a)(3)” of the Generator Paperwork Requirements Table in §268.7(a)(4) and the signed certification statement.

**During the application review process, the applicant for a site-specific variance must comply with all restrictions on land disposal under this part once the effective date for the waste has been reached (40 CFR 268.44(l)).**

The mixed material is currently being stored at Newaukum Prairie and will not be removed while this application for a treatment variance is pending.

**For all variances, the petitioner must also demonstrate that compliance with any given treatment variance is sufficient to minimize threats to human health and the environment posed by land disposal of the waste. In evaluating this demonstration, EPA may take into account whether a treatment variance should be approved if the subject waste is to be used in a manner constituting disposal pursuant to 40 CFR 266.20 through 266.23 (40 CFR 268.44(m)).**

Approximately 93 percent of the mixed material is from sources not alleged to carry the U001 waste code and is not likely to pose a risk to human health and the environment.

The mixed material contains approximately 7 percent IWBS which are generated in the Emerald WWTP. The Emerald Kalama facility operates the WWTP in accordance with an NPDES permit. As required by the permit, the effluent and the IWBS have been reviewed for compliance. The Kalama facility regularly sampled the IWBS and had the material analyzed for various chemical constituents on a monthly, quarterly, or annual basis (see Tables A-1 – A-4 in Appendix A of the Newaukum Prairie delisting petition). No listed hazardous chemicals have been measured at concentrations near the RCRA LDR treatment standards. Benzene has never been detected in the IWBS samples and toluene was detected once at a concentration of 69 ppb (see Table A-1 in Appendix A of the Newaukum Prairie delisting petition). The detection limits for benzene and toluene are in the microgram per kilogram range (ppb). In contrast, the land disposal treatment standards for benzene and toluene are 10 milligrams per kilogram (ppm). Therefore, if present below the detection limit, potential concentrations of benzene and toluene in the IWBS are at least three orders of magnitude below the RCRA LDR treatment standards.

Acetaldehyde is a simple molecule with an aldehyde functional group that makes it easy for microorganisms to digest. Acetaldehyde is a common metabolic product produced and subsequently digested by a plethora of microorganisms, such as those present in the Emerald WWTP. In addition to breaking down acetaldehyde, the Emerald WWTP treatment process efficiently breaks down more complex chemicals that are far more challenging to digest, such as benzene, as evidenced by the analytical data that has been collected since 1998.

Emerald had TCLP analyses performed on the IWBS in 2000 and in 2014 to determine whether any toxicity characteristic as defined in WAC 173-303-090(8) were present (see Table A-2 in Appendix A of the Newaukum Prairie delisting petition). The results were consistent and all chemicals were below the LDR treatment standards. Emerald had fish bioassays performed on the IWBS in 2000 and 2014. The percent mortality of the rainbow trout was zero for both tests (see Table A-3 in Appendix A of the Newaukum Prairie delisting petition).

The IWBS were also analyzed for pH, cyanide, sulfide, flashpoint, methanol, and acetone. All of the results were either negative or non-detect (see Table A-4 in Appendix A of the Newaukum Prairie delisting petition). The IWBS likely do not contain any other chemical constituent that would cause it to be considered hazardous.

The mixed material should be considered acceptable for disposal in a Subtitle D landfill given that the biosolids, SWTS, and WTSS are not hazardous waste and that the IWBS do not likely contain any of the chemicals above the required LDR treatment standards, do not appear to exhibit the characteristics of the associated waste codes, and comprise about 7 percent of the total mass of material in the Newaukum Prairie storage unit.

**Certification (40 CFR 268.44(c)).**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this petition and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Robert Thode *Without Prejudice*  
Fire Mountain Farms, Inc. *With reservation of rights*  
President

Date: April 25, 2018



Edward Gotch  
Emerald Kalama Chemical, LLC  
Chief Executive Officer

Date: April 24th 2018