IN THE MATTER OF : ***APPLICATION NOS. 201903454, 201500823, 201903451, 201903425***

WHEELABRATOR PUTNAM, INC. : **December 8, 2021**

PROPOSED FINAL DECISION

I.
SUMMARY

Wheelabrator Putnam, Inc. ("Applicant") has filed applications with the Department of Energy and Environmental Protection ("DEEP" or "Department") seeking permits (i) to modify its existing solid waste permits to construct and operate an ash residue landfill; (ii) to renew and modify its existing permit to discharge into the sanitary sewer; and (iii) to modify its existing permit to discharge into the groundwater. General Statutes §§22a-208a, 22a-430, Regs., Conn. State Agencies §§ 22a-209-4, 22a-209-7, and 22a-209-14, 22a-430-3, 22a-430-4, with consideration of regulations governing remediation standards and water quality standards. These applications are in regard to a 68-acre expansion of the Ash Residue Landfill ("Monofill") located in Putnam.[1] The Department determined that the applications were complete and, following its sufficiency and technical review, determined that the proposed expansion is necessary and that the applications complied with the relevant statutes and regulations. A Notice of Tentative

[1] A Monofill is a landfill that is intended to be used for only one type of waste, which here is limited to ash residue.

Determination to approve the applications was published on June 16, 2021, with the draft permits. A petition for hearing was filed on July 16, 2021.

The parties in this matter are the Applicant and DEEP. A Motion for Admission Pro Hac Vice and a Petition to Intervene were concurrently filed by counsel for the Conservation Law Foundation ("CLF") on September 27, 2021. Because the Motion for Admission Pro Hac Vice was improperly before me pursuant to the Connecticut Practice Book §2-16, it was denied; the Petition to Intervene was then determined to be moot.[2]

CLF participated in the hearing process by speaking during the public hearing and submitting written comments for the record. Other public comments were received in this matter both in support of and in opposition to these applications.

Following the evidentiary hearing, the Applicant and DEEP staff jointly filed the attached Agreed Draft Decision ("ADD," Attachment I).

I have reviewed the entire administrative record in this proceeding, including the documents and testimony in the record as evidence. The parties' ADD has been evaluated in the light of the relevant statutes and regulations. I have considered public concerns, comments and questions made throughout this hearing process and the responses of the Applicant and DEEP staff to that public input.

The factual findings and conclusions of law set out in the ADD are comprehensive and fully supported by substantial evidence in the record and demonstrate that the proposed activities regarding the expansion of the Monofill set forth in the applications, and as conditioned by the draft permits (Attachment II), comply with the relevant statutes and regulations. I therefore adopt the ADD in full as my proposed final decision, including the proposed condition regarding PFAS

[2] The petition also had procedural and substantive issues on which the denial was based, including that it was not a verified pleading as required under General Statutes §22a-19.

monitoring in the groundwater permit. I also make the following supplemental findings of fact and conclusions of law.

II.
FINDINGS OF FACT

1. There was a typographic error in the ADD in Finding of Fact 53, on Page 16. The Applicant published notice of the Pretreatment Renewal on February 4, 2015. (Ex. DEEP 51.)
2. Public comments were received regarding the Applicant's dedication to the community, the need for the utilization of trash to energy facilities, and the public belief that the Applicant has "fulfilled its responsibilities during the two plus years of [a] thorough permitting process to ensure regulatory compliance." (See Public Comments, Wolanin, October 1, 2021, Newth, October 4, 2021).
3. Public concerns such as the presence of PFAS at the site, the alleged failure of the double lined system, the "need for such a large addition to the ash landfill," and the impact of discharging "toxic ash" on surrounding water quality were raised through the public comments. (Public Comments, Eastwood, Taylor, October 7, 2021.)
4. The evidence in the record persuasively and credibly addressed the concerns of the public. The record supports a determination that the applications, and the regulated activity it describes, comply with all relevant statutes and regulations enumerated in the ADD.
5. Facilities that generate ash residue are required to follow federal and state sampling and testing protocols to demonstrate that all materials delivered to the Monofill meet the regulatory definition of nonhazardous material and are appropriate waste for the Monofill. (Ex. APP- 28 p.5)
6. Public comments regarding the determination of need for this expansion were submitted to the Department before the release of the June 7, 2021, Preliminary Determination of Need.

This hearing did not include that issue as it was addressed by the Department pursuant to General Statute §22a-208d. Nevertheless, it is noteworthy that the Monofill currently receives ash residue generated by resource recovery facilities located in Bridgeport, Hartford, Lisbon, Plainfield, and Preston, Connecticut and Peekskill, New York, indirectly affecting more than eighty percent of the State's population. The life expectancy of the current facility is expected be reached in 2022. If no other disposal is developed by that time, there will be nowhere in this region for disposal of the ash material. The state has five waste to energy facilities, through which the majority of the waste generated in Connecticut is disposed, which generates the ash material. There are about two million tons of Municipal Solid Waste ("MSW") in the state being disposed, which generates about 500,00 tons of ash per year. In the absence of local disposal, ash would need to travel very far out of the state. (Test., Frigon, G., October 18, 2021,[3] exs. APP-28 p.5, DEEP- 82, 86.).

7. The Applicant undertook an alternatives assessment and submitted appropriate information pertaining to that analysis. The Alternatives Analysis demonstrates that the Putnam site is the only practicable location in Connecticut to site an ash monofill capable of serving the long-term needs of Connecticut's resource recovery facilities. (Exs. APP-21, 28 p. 5).

8. As required for any new or expanded landfill in Connecticut, this expanded facility will be sited in a location where there will be no degradation of the current environmental quality if there was a complete failure of the baseliner systems. Regs., Conn. State Agencies §§ 22a-430-4(c)(20)(E), 22a-209-4(b)(2)(A), and 22a-209-14(e). The modification to the groundwater discharge permit does not allow active discharge of leachate to the ground-water and actively requires monitoring for any potential leachate. The permit is in place to

[3] The evidentiary hearing occurred on October 18, 2021, via Zoom. All referenced testimony occurred during the evidentiary hearing on that date.

protect the groundwater of the state. As per the requirements of the regulations, if any leachate were to escape the baseliner system, it would go into the Quinebaug River. Any such discharge would not change the quality of the river water and the Quinebaug River is not a drinking water supply because of historic contamination. (Test. Musial, D, Tanguay, V, exs. APP-29 p.2; APP- 29 p.3, DEEP-14, 31).

9. The hydrogeologic investigation conducted during the permitting process included an expanded monitoring network in the vicinity of Phases 7-11, which consisted of installation of one monitoring well triplet, six monitoring well couplets, two single monitoring wells, and two staff gauges in the Quinebaug River. Six piezometers[4] were installed in isolated wetlands and three piezometers were installed in the unnamed perennial stream to assess ground-water flow. (Ex. APP-29 p.2)
10. The Applicant is required to conduct environmental monitoring going forward and report to the DEEP quarterly and annually pursuant to the environmental monitoring program. (Exs. DEEP-36, 67, 68, APP-29 p. 5.)
11. While public comments and concerns were raised regarding the potential failure of the Monofill baseliner, the history of the monitoring program conducted on the site has not identified groundwater, surface water or sediment analytical data that is indicative of a failure of the Monofill baseliner or leachate collection systems. (Ex. APP-29 p. 6.)
12. Baseliner systems and materials are designed to last for hundreds of years. The baseliner system at the Monofill includes the following from bottom to top:

    a. Soil subgrade
    b. Secondary barrier layer consisting of a sixty-mil high density polyethylene geomembrane
    c. Secondary leachate collection system consisting of a bi-planar geocomposite drain equivalent to twelve inches of drainage sand with a permeability of 1 x

[4] A piezometer is a device used for measuring the pressure of groundwater.

10^{-3} centimeters/second and a tri planar geocomposite to convey leachate in lieu of pipes

d. Primary barrier layer consisting of a sixty-mil HDPE geomembrane
e. Primary leachate collection system consisting of twenty-four inches of granular soil and a network of six-inch diameter slotted leachate collection pipes.

(Test. Musial, D., exs., DEEP-27, APP-30 pp. 2-3).

13. A site visit occurred on September 21, 2021. The visit consisted of traveling to four locations by vehicle and walking to three locations on foot. The site is approximately 400 acres of land. Through the site visit, I observed the surrounding area, the transportation of ash via trucks delivering the ash material, neighboring properties, and the areas of the property where Phases 7-11 will be constructed, including wetlands that will be impacted. Through the site visit, I observed abandoned materials from prior owners which will be cleaned up through the construction of the expansion. I also observed the existing ash landfill and the current practices in place to contain the ash material.

14. The issue of trucks carrying ash material through town was raised through public concerns. At the site visit, I noted that the site is located on private property at the end of a miles long driveway and is located close to the highway. Additionally, it is notable that several direct neighbors to this site wrote public comments in support of the expansion.

15. At the time of the public comment and evidentiary hearings, only the draft wastewater discharge permit contained language in regard to monitoring PFAS. After the public comment and the evidentiary hearing, the Applicant and DEEP staff agreed to a modification to the groundwater draft permit. The ADD contains the proposed modification to the groundwater permit that includes language for PFAS monitoring. (See ADD p. 35-37, test. Bieger, P, Tanguay, V, ex. DEEP-80).

III.
CONCLUSIONS OF LAW

Ten expert witnesses offered testimony during the evidentiary hearing. (Exs. DEEP -85-90, APP -28-31). I found each expert witnesses' testimony that was presented to be credible and persuasive. As further detailed in the ADD, reliance on DEEP staff is appropriate when determining the information and studies required through the permit process and the Department may rely on own expertise. See *MacDermid v. Dep't of Environmental Protection*, 257 Conn. 128, 139 (2001) ("when the application of agency regulations requires technical, case by case review, that is precisely the type of situation that calls for agency expertise"). The case at hand requires significant technical and specific review for each application, and the experts put forth demonstrated a great depth of understanding of the regulatory and statutory requirements in this matter, with each expert respectively agreeing that the application they worked on met the statutory requirements.

I. The application to modify a solid waste permit to construct and operate an ash residue landfill complies with the applicable requirements of General Statutes § 22a-208a and relevant implementing regulations, Regs., Conn. State Agencies §§ 22a-209-4, 22a-209-7, and 22a-209-14.

The ADD fully demonstrates how the application to modify a solid waste permit to construct and operate an ash residue landfill complies with the applicable requirements of General Statutes §22a-208a and the relevant implementing regulations.

The application for a solid waste permit to construct and operate an ash residue landfill goes through several stages of review within the Department. Prior to a draft permit being drafted and released, it undergoes a sufficiency review of the submitted documents required to review the application. After all required information is submitted, the Department conducts a technical review, which includes but is not limited to an environmental compliance review of operations at the site. At the conclusion of the sufficiency and technical review, DEEP staff develop the draft

permit and issue a notice of tentative determination. (See Exs. DEEP-10, 28, 39 to 44, 46-49, 76 to 79, 81, 82, 85).

II. The application to review and modify a permit to discharge into the waters of the State (sanitary sewer), complies with the applicable requirements of General Statutes §22a-430 and relevant implementing regulations, Regs., Conn. State Agencies §§ 22a-430-3, 22a-430-4.

As the ADD fully addresses, the application to review and modify a permit to discharge into the waters of the State (sanitary sewer), complies with the applicable requirements of General Statutes §22a-430 and the relevant implementing regulations.

The Department conducted an extensive review of the pretreatment renewal application and conducted a sufficiency review and technical review of the application prior to developing the draft permit. See Exs. DEEP-14, 52, 53, 54, 55, 56, 58, 80, 84, 88. As part of this review, DEEP staff conducted a review of the Applicant's compliance history with respect to the current pretreatment permit. Ultimately, the technical review determined that the proposed, treated discharge would not adversely affect the Putnam public water treatment works or the waters of the state (Ex. DEEP 88). Notably, the draft permit contains an enforceable compliance schedule which requires the Applicant to submit a sampling plan, including undergoing sampling events for PFAS. The monitoring requirements can be found in draft fact sheet (Exs. DEEP-84, 88).

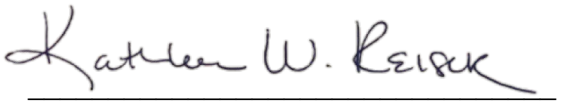
III. The application for a permit to modify a permit to discharge into the waters of the State (groundwater) complies with the applicable requirements of General Statute §22a-430 and relevant implementing regulations, Regs., Conn. State Agencies §§22a-430-3 and 22a-430-4, with consideration of regulations governing remediation standards and water quality standards.

The ADD demonstrates that the application for a permit to modify a permit to discharge into the waters of the State (groundwater) complies with the applicable requirements of General Statutes §22a-430 and the relevant implementing regulations.

The DEEP staff completed a thorough and complete review of the application in regard to modifying a permit to discharge into the groundwaters of the state. See Exs. DEEP-14, 26, 28, 29, 31, 33, 35, 36, 38, 63 to 70, 81, 82, 87, 105.

IV.
CONCLUSION AND RECOMMENDATION

If conducted as proposed and in accordance with the terms and conditions of the draft permits, including the proposed condition on PFAS monitoring in the groundwater permit, these regulated activities will be consistent with all relevant statutes and regulations. I recommend that the Commissioner finalize and issue the requested permits as soon as possible so this project may proceed.



Kathleen W. Reiser, Hearing Officer

STATE OF CONNECTICUT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
OFFICE OF ADJUDICATIONS

IN THE MATTER OF	**:**	**APPLICATION NOS. 201903454,**
	:	**201500823, 201903451, 201903452**
	:	
WHEELABRATOR PUTNAM INC.	**:**	**November 19, 2021**

AGREED DRAFT DECISION

Pursuant to § 22a-3a-6(1)(3)(A)(ii) of the Rules of Practice of the Connecticut Department of Energy & Environmental Protection ("DEEP"),[1] Wheelabrator Putnam Inc. (the "Applicant") and DEEP staff (collectively, the "Parties") respectfully submit this Agreed Draft Decision in the above-captioned application matter. The Parties respectfully request that the Hearing Officer issue this Agreed Draft Decision as the Proposed Final Decision.

I. SUMMARY

In connection with its planned expansion of the Putnam Ash Residue Landfill (the "Monofill"), the Applicant has applied to DEEP seeking to: (i) modify its existing solid waste permits to construct and operate an ash residue landfill pursuant to Conn. Gen. Stat. § 22a-208a and the relevant implementing regulations (Application No. 201903454); (ii) renew and modify its existing permit to discharge into the sanitary sewer pursuant to Conn. Gen. Stat. § 22a-430 and the relevant implementing regulations (Application Nos. 201500823 and 201903451), and (iii) modify its existing permit to discharge into the groundwater pursuant to Conn. Gen. Stat. §

[1] Throughout this Agreed Draft Decision the term "DEEP" also refers to the prior name of the agency, the Connecticut Department of Environmental Protection.

22a-430 and the relevant implementing regulations (Application No. 201903452)(collectively, the "Applications").[2]

The Applicant has proposed a 68-acre lateral expansion of the Monofill to construct and operate five new phases ("Phases 7 through 11"), which is projected to increase the Monofill's capacity by approximately 17 million cubic yards. The development of Phases 7 through 11 will include installing, among other things, dual synthetic geomembrane liners with leachate collection and leak detection systems, storm water management features, and future final cover systems. The Monofill's 60-acre baseliner footprint ("Phases 1 through 6")—which has operated for over 20 years—has approximately 1.2 million cubic yards of remaining practical airspace that is projected to provide uninterrupted, useful life through the end of 2022. The proposed expansion in Phases 7 through 11 will extend the Monofill's useful life and allow it to continue operating for at least another 25 years. The proposed expansion will also allow the separately-permitted recyclable metals recovery facility located at the Monofill to continue operating beyond 2024.

On June 16, 2021, DEEP issued a Notice of Tentative Determination approving the Applications. A petition for hearing, dated July 16, 2021 was filed with the DEEP Office of Adjudications, which initiated the hearing process. The parties to this matter are the Applicant and DEEP.

[2] The Applicant has sought other approvals that are not subject to this proceeding, including among others: (i) a Water Quality Certification under Section 401 of the Federal Clean Water Act, as amended (Exhibit ("Ex.") DEEP-83), which was included in DEEP's Notice of Tentative Determination (Exs. DEEP-76, 90); (ii) DEEP's Preliminary Determination of Need issued on June 7, 2021 pursuant to Conn. Gen. Stat. 22a-208d (Exs. DEEP-82, 86); and (iii) the groundwater reclassification issued on September 10, 2021, pursuant to which the groundwater under the Monofill's proposed expansion area was reclassified from GB to GC (Exs. DEEP-75, 89).

Based on a review of the record in this proceeding, including the documentary evidence, witness testimony, and public comments, the Applicant, through the presentation of substantial evidence, has met its burden of proof by demonstrating that the proposed expansion of the Monofill, if conducted in accordance with the proposed draft permits (Exs. DEEP-77-80, 105) (the "Draft Permits"), as with the modifications proposed herein, complies with the relevant statutory standards, namely Connecticut General Statutes §§ 22-208a and 22a-430 and the relevant implementing regulations. As such, the Draft Permits, with the modifications proposed herein, should be issued as final permits.

II. FINDINGS OF FACT

The evidentiary record in this proceeding is extensive, with more than 130 exhibits admitted as full exhibits. (*See, e.g.*, Exs. DEEP-1-107, APP-1-33.) As a result, more than one source may support a finding of fact. Citations to the record in this Agreed Draft Decision may cite only some of the documents or pages of testimony that support a finding. The Hearing Officer has broad discretion to give weight to the evidence found to be most complete, credible, and relevant. *See, e.g., Windels v. Environmental Protection Commission,* 284 Conn. 286, 291 (2007) (reasoning that the trier of facts is "privileged to adopt whatever testimony he [or she] reasonably believes to be credible."). The reliance on, and reference to, certain sources does not imply that the other sources in the record do not also support that finding, but rather that the sources cited are sufficient.

A. The Monofill's History and Existing Operations

1. In the early 1990s, the Applicant partnered with the Town of Putnam to develop the Monofill for the long-term management and disposal of ash residue generated by resource recovery facilitates ("RRF's") from across the region. The Monofill was later permitted to also accept residue from coal-fired power generation plants. (Exs. DEEP-2, 8, 10, 14; *see also* APP-28.)

2. The Monofill is comprised of several properties owned by the Applicant, with the exception of one property leased by the Applicant from the Town of Putnam. The closed and capped Town of Putnam municipal solid waste landfill is located on the leased property. The Monofill is bound on three sides by physical barriers: River Road and Carpenter Pond to the west, Carpenter Brook to the north, and the Quinebaug River to the east. The southern boundary is defined by a property line with an abutting private owner with whom the Applicant has deeded property rights. There are three privately-owned residential properties abutting the Monofill on River Road along the western boundary of the Monofill, each of which have deeded agreements with the Applicant. The Monofill is accessed by a nearly 2-mile long private access road originating from Technology Park Drive off of Kennedy Drive. The access road is located on privately-owned properties over which the Applicant has easements. An access point to River Road is also available for emergency situations. (*See* Exs. DEEP-6, 26, 34; APP-28.)

3. The Monofill was constructed in accordance with a Permit to Construct (No. SW-116031) issued by DEEP on March 19, 1998. Since disposal operations commenced, the Monofill has operated in accordance with the Permit to Operate (No. 1160430-PO) issued on May 6, 1999. Several modifications to those permits have been made since that time. (*See* Exs. DEEP-2, 34, 35; *see also* Ex. DEEP-82.)

4. The Monofill also operates under several water-related permits issued by DEEP, including the Pretreatment Permit (No. SP0002303) and the Groundwater Discharge Permit (No. LF0000055) that were issued on May 6, 1999. DEEP last renewed the Pretreatment Permit on June 29, 2011. At the time Applicant filed the Applications, there were three outstanding pretreatment permit applications that were presently under review, including the Applicant's Pretreatment Permit renewal application discussed below. The Groundwater Discharge Permit was renewed on August 30, 2018. (Exs. DEEP-14, 34, 35.)

5. The Monofill opened on May 13, 1999 and has since served as the primary disposal location for ash residue generated by the majority of Connecticut's RRF's. (Exs. DEEP-2, 8, 10, 14.)

6. The Monofill's existing permitted baseliner footprint, Phases 1 through 6, encompasses approximately 60-acres that has been developed in six separate phases over the past 20 years. Phases 1 through 6 have a total permitted disposal capacity of approximately 9 million cubic yards. This quantity includes ash residue, operational cover soils, and materials used for interior access roadways. The Monofill's long-term average in-place density factor is approximately 1.3 tons of ash residue received per cubic yard of consumed disposal capacity. Using this density factor, the current

permitted capacity of Phases 1 through 6 equates to roughly 11.7 million tons of ash residue. (*See* Exs. DEEP-2, 8, 10, 14, 27; APP-28.)

7. The Applicant is currently filling in the area of Phases 5 and 6. As of July 2021, there were approximately 1.2 million cubic yards of remaining permitted airspace at the Monofill. This airspace is projected to provide uninterrupted, practical life through the end of 2022. Additional permitted airspace that would extend the practical life is available on the upper plateau of the Monofill; however, filling this airspace would require the stoppage and dismantling of the recyclable metals recovery facility located in Phases 1 and 2. (*See* Exs. DEEP-2, 8, 10, 14; APP-28.)

8. The Monofill is permitted to accept non-hazardous ash residue generated by RRF's and coal-fired power generation plants. Facilities that generate ash residue are required to follow Federal and State sampling and testing protocols to demonstrate that all material delivered to the Monofill meets the regulatory definition of a non-hazardous material. (Exs. APP-28; DEEP-8, 34.)

9. The Monofill currently receives ash residue generated by RRF's located in Bridgeport, Hartford, Lisbon, Plainfield, and Preston, Connecticut and in Peekskill, New York. These RRF's serve the solid waste management needs of more than 3 million people in more than 100 communities in Connecticut alone, representing over 80 percent of the State's entire population. The Monofill is now the only ash residue management and disposal facility operating in Connecticut, as well as the only active landfill in Connecticut equipped with a modern geosynthetic baseliner system. (*See* Exs. DEEP-2, 8, 10, 14, 82; *see also* Ex. APP-28.)

10. In accordance with State regulations, ash residue is required to be transported to the Monofill in covered, watertight trailers and containers. Random trailer inspections are periodically conducted at the Monofill. Any trailer observed with a concern is issued a deficiency notice that, in turn, is provided to the responsible transportation company. Additionally, the Applicant submits a log of any issued notices to DEEP on a quarterly basis. (Exs. APP-28; DEEP-34.)

11. Vehicles transporting the ash residue to the Monofill primarily use Federal and State-numbered highways and routes. All ash residue delivery vehicles accessing the Monofill enter via the access road from Technology Park Drive off of Kennedy Drive. All vehicles are directed to the working face of the Monofill for disposal via road signs, traffic control devices, or other means. (*See* Exs. APP-28; DEEP-34.)

12. Pursuant to Regulations of Connecticut State Agencies ("RCSA") § 22a-209-7(d), access to the Monofill is controlled at all points of vehicle entry through the use of appropriate fences, gates, and signs to prevent

unauthorized use. The Quinebaug River, Carpenter Brook, and Carpenter Pond form natural boundaries on the east, north and west sides of the site, respectively. The vehicle entrances to the Monofill from the private access road and from River Road are controlled by gates or other suitable barriers. Additionally, a sign posted at the main entrance at Carpenter Brook bears the name of the permittee and hours of use. A notice is posted at the main entrance stating that only authorized users are allowed to access the Monofill. Further, the main access road to the Monofill from Kennedy Drive is maintained so as to be passable by all vehicles that utilize the Monofill. (Ex. DEEP-34.)

13. The Monofill currently receives an average of 60 to 90 loads of ash residue on a daily basis. The Monofill is permitted to receive ash residue between 7:00 a.m. and 6:00 p.m., Monday through Saturday, and between 8:30 a.m. and 5:30 p.m. on Sundays. The recyclable metals recovery operation located at the Monofill is permitted to operate 24 hours per day, 7 days per week. (Exs. APP-28; DEEP-9, 34.)

14. The ash residue received by the Monofill is transported, deposited, processed, placed, landfilled and covered with appropriate cover material in accordance with the Monofill's Facility Operations and Maintenance ("O&M") Plan and the applicable requirements set forth in the State regulations. (*See* Exs. DEEP-34; APP-30.)

15. Since 2015, the Monofill has operated an advanced recyclable metals recovery system within the baseliner area that processes the ash residue received to extract a significant quantity of recyclable scrap metals. The ash residue is unloaded at a staging area, where it will age for about 5 to 10 weeks depending upon the characteristics of the ash and the weather conditions. After the necessary period of aging, the ash from the staging area is transported to the metals recovery system for processing. This system currently removes more than 20,000 tons of metal-containing materials annually, boosting State-wide scrap metal recycling rates by more than 10 percent when it commenced operations. (*See* Exs. DEEP-2, 8, 10, 14, 34, 82; *see also* Ex. APP-28.)

16. After being processed at the metals recovery system, the remaining ash residue is placed and covered in double-geosynthetic baseliner containment areas that are designed to collect all waters that have contacted the ash residue. Runoff from around this system is considered contact runoff and is managed in the same way as leachate. A wheelwash station at the Monofill is utilized to minimize off-site tracking of sediments by vehicles exiting the baseliner areas. The wash water from the wheelwash station is collected and managed as wastewater. All leachate and wash waters are combined as wastewater and discharged to an on-site pretreatment system. The pretreatment system is designed to maintain the Monofill's effluent wastewater pH to within the pH range specified in the

Pretreatment Permit. From the on-site pretreatment system, all wastewater is pumped to the Town of Putnam Water Pollution Control Facility ("WPCF") for treatment and its ultimate discharge. There are several sedimentation ponds located around the monofill to manage non-contact stormwater runoff from precipitation events. (Ex. DEEP-35; *see also* Exs. DEEP-34, APP-30.)

17. Since the Monofill began operations, the Applicant has implemented a comprehensive environmental monitoring program for Phases 1 through 6 in accordance with the Groundwater Permit. The program currently includes: (i) quarterly sampling of 16 monitoring wells located around Phases 1 through 6; (ii) quarterly leachate sampling from the baseliner area; (iii) quarterly inspections to identify leachate seeps or iron oxide precipitates; (iv) surface water and sediment sampling every nine months from the Carpenter Brook drainage corridor and the Quinebaug River (surface water sampling of the Quinebaug River is also conducted in the quarter following each nine-month sampling event); and (v) habitat monitoring every nine months at several ecologically-representative plots distributed around the Monofill properties. The quarterly and annual environmental monitoring reports are, in turn, submitted to DEEP. (Ex. APP-29.)

18. The environmental monitoring program has not identified groundwater, surface water or sediment analytical data that is indicative of a failure of the Monofill's baseliner or leachate collection systems. These results are reinforced by the fact that no leachate flow has been observed in the secondary baseliner collection system during the more than 20 years that the Monofill has been in operation, and therefore there is no indication of leakage from the primary baseliner. (Ex. APP-29.)

B. <u>The Monofill's Proposed Expansion</u>

i. The Development of Phases 7 through 11

19. The Applicant controls several properties abutting the southern limit of the existing baseliner footprint (Phases 1 through 6) that will allow for the Phases 7 through 11 lateral expansion of the Monofill. Phases 7 through 11 encompasses approximately 68-acres adjoining Phases 1, 2, and 3, and are planned to be constructed in 5 separate phases of baseliner construction over the next 15 to 20 years. Each individual baseliner construction phase is designed to incorporate the ongoing and future operations at the existing Monofill and will utilize its existing support facilities, including the main entrance gate and access road, existing stormwater ponds, the wheelwash station, the wastewater pretreatment system, and the existing forcemain discharge to the Town of Putnam WPCF. Additional support infrastructure to support Phases 7 through 11 will be installed, including internal access roads, stormwater basins, and

leachate sideriser pump stations. (*See* Exs. DEEP-2, 8, 10, 14, 27, 82; APP-1, 28, 30.)

20. Phases 7 through 11 will add a total design capacity of approximately 17 million cubic yards to the Monofill. This correlates to approximately 22.1 million tons of ash residue when applying the Monofill's historic density factor of 1.3 tons/cubic yard. Based on the recovery rates of the Monofill's recyclable metals recovery system, this added capacity would also allow for more than 1.5 million tons of scrap metals to be recovered from the ash residue at the Monofill over the operating life of Phases 7 through 11. (Exs. DEEP-10, 82.)

21. The rate of fill for the Monofill has fluctuated from 390,000 tons to 775,000 tons of ash residue per year of the course of its operating life. In 2017, the Monofill received approximately 581,000 tons of ash residue for disposal, which consumed a surveyed volume of roughly 448,000 cubic yards. If the rate of fill remains consistent, the Applicant expects that the proposed expansion of Phases 7 through 11 will provide at least 25 to 30 years of ash residue disposal capacity. (Exs. DEEP-10, 82.)

22. In the late 2000s, the Applicant approached the Town of Putnam to express an interest in extending the life of the Monofill beyond Phases 1 through 6. In 2010, the Town of Putnam appointed a committee to review the Monofill's expansion potential and, if viable, develop an acceptable amendment to the Applicant's ground lease with the Town of Putnam to allow for the expansion. The Town of Putnam's committee met with the Applicant over a period of several years, eventually reaching consensus for an amendment in late 2014. After receiving approvals from the Town of Putnam Finance Commission, Planning Commission, and Board of Selectmen, a near-unanimous vote at a July 2015 special town meeting approved the terms of the amended ground lease. The amended ground lease was executed in March 2016. (Ex. APP-28.)

23. After the amended ground lease's execution, the Applicant commenced formal environmental assessments and the preparation of more detailed site layouts and engineering designs. Using information from these initial assessments, the Applicant held a multi-disciplinary pre-application meeting with DEEP staff in March 2017 to review the Monofill's expansion potential and to discuss the permitting path. Following the pre-application meeting, the Applicant provided DEEP with a proposed scope for the hydrogeologic study in April 2017 and received concurrence in May 2017. The Applicant installed numerous additional groundwater wells and environmental monitoring stations and commenced the mandatory, year-long hydrogeologic study in July 2017. (Ex. APP-28; *see also* Ex. DEEP-60-61.)

24. In accordance with the Applicant's Public Participation Plan approved by DEEP's Environmental Justice program in October 2018, the Applicant hosted a local public information meeting in March 2019 and a public open house in May 2019. (Ex. APP-28; *see also* Ex. DEEP-6.)

ii. The Results of the Hydrogeologic Investigation Support the Phase 7 through 11 Expansion

25. The Applicant's consultant, Brown and Caldwell, conducted a comprehensive field investigation and evaluation, consistent with the agreed-upon scope of study, to determine the groundwater elevations and flow patterns in the vicinity of Phases 7 through 11, which included over a year of groundwater and surface water monitoring activities. The investigation resulted in the Hydrogeologic Investigation Report, which the Applicant submitted to DEEP with its Applications in order to satisfy the hydrogeologic requirements of RCSA §§ 22a-430-4(c)(20)(E), 22a-209-4(b)(2)(A), 22a-209-14(e), and DEEP's Checklist for Solid Waste Disposal Areas. The results of the analysis showed that there are two main aquifers in the proposed expansion area, including a shallow sand and deep sand aquifer. Additionally, the evaluation continued to confirm the results of the Monofill's original 1996 hydrogeologic evaluation which showed that the Quinebaug River is the major drainage feature in northeastern Connecticut and the ultimate discharge point for all surface drainage and groundwater flow from Phases 1 through 6, as well as Phases 7 through 11. (Exs. DEEP-14, 26; APP-5, 29.)

26. As set forth in the Hydrogeologic Investigation Report, groundwater contour maps developed from the year-long monitoring program show consistent flow directions in both the shallow and deep sand aquifers toward the Quinebaug River. Further, prior aquifer tests conducted on the opposite side of the river from the Monofill detected no hydraulic connection between deep sand aquifer wells on the opposite sides of the river, indicating that the Quinebaug River is indeed a hydraulic barrier in the area of the Monofill. Based on these determinations, in the unlikely event of failure of the Monofill's baseliner system, the resulting leachate release would discharge to the Quinebaug River, as similarly-determined previously for the existing Phases 1 through 6 area of the Monofill. (Exs. DEEP-14, 26; APP-5, 29.)

27. The results in the Hydrogeologic Investigation Report show that there are no groundwater or surface water drinking supplies potentially impacted by the Monofill and that all potentially impacted groundwater will discharge to the Quinebaug River. Thus, the hydrogeologic conditions in Phases 7 through 11 are suitable for extending the Monofill's baseliner footprint. (Exs. DEEP-14, 26; APP-5, 29.)

iii. The Results of the Leachate Impact Analysis Support the Phase 7 through 11 Expansion

28. To satisfy the requirements of DEEP's permit applications for wastewater discharges (DEP-WD-APP-100) and construction and operation of solid waste facilities (DEP-SW-APP-100), Brown and Caldwell prepared a Leachate Impact Analysis to support the permitting of the lateral expansion of the Monofill's baseliner area comprised of Phases 7 through 11. The Leachate Impact Analysis was included in the Applications submitted to DEEP. By regulation, this analysis evaluated the potential environmental impacts if there were a complete failure of the Monofill's baseliner systems. (Exs. DEEP-14, 31; APP-29.)

29. The Leachate Impact Analysis estimated the theoretical leachate discharge volumes and quality characterization. The analysis also estimated theoretical concentrations of pollutants discharged to the Quinebaug River and adjacent floodplain wetlands under the worst-case conditions required by the regulations. The analysis showed that the combination of progressively-constructing new baseliner cells and the capping of completed areas (consistent with the current operation of Phases 1 through 6 and the future operation of Phases 7 through 11) would assure that the full Monofill footprint would never be entirely uncovered or uncapped, and therefore the worst-case scenario could never occur. (Exs. DEEP-14, 31; APP-29.)

30. The Leachate Impact Analysis demonstrated that the theoretical impacts from the combined potential impacts of the existing Phases 1 through 6, plus the addition of Phases 7 through 11, will not result in exceedances of water quality standards in the Quinebaug River, or in wetlands located in the floodplain of the Quinebaug River. (Exs. DEEP-14, 31; APP-29.)

iv. The Development of a Compliant Environmental Monitoring Program

31. As part of its Applications, the Applicant submitted an Environmental Monitoring Program ("EMP") prepared by Brown and Caldwell that updated the current environmental monitoring and reporting requirements for Phases 1 through 6 to reflect the addition of Phases 7 through 11 of the Monofill. The objective of the EMP is to detect trends in groundwater quality, water quality in surrounding surface waters, sediment chemistry in surrounding surface water bodies, and long-term ecological changes in the flood zones of surrounding streams and the Quinebaug River, and to determine if any such trends are attributed to the operation of the Monofill. (Exs. DEEP-36, 67, 68; APP-29, 32.)

32. The EMP was updated and resubmitted on February 11, 2021 and, most recently, on September 30, 2021. The updated EMP from February 2021 included, among other things, agreed-upon additional provisions to

monitor adjacent private water supply wells, updated statistical control concentrations, modifications to laboratory reporting limits for some parameters, and modified criteria for when the results of statistical analyses would require submitting a plan to DEEP to evaluate elevated groundwater concentrations. The updates in the current EMP from September 2021 consisted of agreed-upon revisions to minimum laboratory reporting limits for some parameters to levels that can be customarily achieved by State-approved laboratories. (Exs. DEEP-36, 67, 68; APP-29, 32.)

v. The Engineering Design of Phases 7 through 11 Complies with the Applicable Statutory and Regulatory Requirements for Solid Waste Facilities

33. The Applicant engaged Civil & Environmental Consultants, Inc. ("CEC"), to prepare the engineering design for Phases 7 through 11 and its associated operating and sequencing plans. CEC's Engineering Design Report, drawings, and accompanying appendices were submitted to DEEP as part of its Applications. (Exs. DEEP-27-38; APP-30.)

34. The Engineering Design Report provides that the baseliner system for Phases 7 through 11 will comply with Section 22a-209-14 of the RCSA by including a liner system with a leachate collection system and detection zone, as well as a leachate treatment and discharge system. The proposed baseliner system design is consistent with the baseliner system successfully utilized in Phases 1 through 6. There is a minimum 60-inch separation between the subbase and the maximum high groundwater table and bedrock, with the exception of the secondary leachate collection sumps which will receive a supplementary barrier layer of a geosynthetic clay liner. Maximum high groundwater elevations were determined based on field investigation performed by Brown and Caldwell. (Exs. DEEP-27; APP-30.)

35. As set forth in the Engineering Design Report's Leachate Management System Analysis, CEC performed engineering analyses during the design of the baseliner leachate collection and detection systems. The results indicate that the proposed secondary leachate collection and detection, as well as he primary leachate collection system, will comply with the regulatory requirements. (Exs. DEEP-28; APP-30.)

36. The Engineering Design Report also states that the operational sequencing of Phases 7 through 11 is designed to minimize stormwater infiltration to reduce leachate generation in accordance with Section 22a-208-14(h) of the RCSA. Specific features that assist in minimizing infiltration include the sequenced construction of baseliner phases, cell sizing, filling sequence, usage of operational and intermediate cover, incremental installation of final cover, and isolation of the leachate collection system during operations. (Exs. DEEP-27; APP-30.)

37. In particular, Phases 7 through 11 have been designed to be constructed in 5 phases of baseliner construction, varying in size from approximately 11-acres to 18-acres. A perimeter berm will surround the entire footprint and interior phase berms that are a minimum of 4-feet high will be constructed to separate each individual phase. Each phase will be constructed only when the additional airspace is needed based on the actual filling conditions. (Exs. DEEP-27; APP-30.)

38. Phase separation berms will be constructed with a geomembrane liner welded to the baseliner to hydraulically isolate the active phase. Leachate collection pipes will be terminated and capped within the active phase and pipes in the adjacent phase will be terminated in the berm. Filling operations will occur approximately 10-feet from the internal toe of the phase berm to allow for future removal of the phase separation berms. When operations are ready to move into the adjacent phase, the geomembrane flap within the phase separation berm will be removed and the pipes will be connected to provide a continuous leachate collection system. (Exs. DEEP-27; APP-30.)

39. The Stormwater Management Report appended to the Engineering Design Report describes the proposed stormwater management system, which consists of components designed to manage stormwater runoff, including diversion swales, riprap lined down chutes, culverts, extended detention basins, sediment fore bays, and riprap outlet protection at stormwater outfall locations. (Exs. DEEP-30; APP-30.)

40. The Stormwater Management Report also documents how a hydrologic analysis and hydraulic analysis were performed. The hydrologic analysis showed that the system will maintain peak rates of runoff off-site at rates less than the existing conditions. The hydraulic analysis demonstrated that the proposed drainage infrastructure exceeds the regulatory requirements that the stormwater management system be capable of containing a 25-year design storm which produces 3-inches of rainfall in a 24-hour period. The hydraulic analysis also demonstrated that the stormwater management system is capable of managing the rainfall from a 100-year design storm which produces 6.9-inches of rainfall in a 24-hour period without exceeding the design capacity. (Exs. DEEP-30, 44; APP-30.)

41. Relatedly, the Stormwater Management Report shows how the proposed stormwater management system was designed to comply with the DEEP Stormwater Quality Manual Sizing Criteria Standards. The Stormwater Management Report documents calculations showing that the prescribed water quality volume of peak flow would be achieved, that sufficient recharge volume exists to minimize loss of annual pre-development groundwater recharge, and that the peak rate of runoff would not increase from existing conditions. (Exs. DEEP-30; APP-30.)

42. As outlined in the Engineering Design Report's Geotechnical Slope Stability Analysis, a geotechnical analysis was performed that included slope stability analyses of the foundation soils, base and final cover liner systems, and the ash residue that will be disposed in the Monofill. The analysis addresses stability during construction, operation, and closure of Phases 7 through 11, under static and seismic conditions, as appropriate. The analyses were utilized to develop the interface shear strength criteria for the base liner system and final cover system components in order to provide adequate Factors of Safety for stability. (Exs. DEEP-29; APP-30.)

43. The Engineering Design Report also included Project Technical Specifications, which set forth individual sections for the various components necessary for the Monofill construction, including an explicit set of requirements to be satisfied by the material, product, or system. Specification sections are included for the baseliner and final cover construction components to detail the requirements that the supplied materials and the installation must meet to comply with the regulations and the engineering design. The Project Technical Specifications will be utilized during construction to verify compliance of materials and installation. (Exs. DEEP-32; APP-30.)

44. The Engineering Design Report's Quality Assurance Plan ("QAP") was developed to provide a plan detailing how construction of the Monofill baseliner and final cover systems will be constructed as specified in the design, and to comply with the regulatory requirements. The QAP will be followed by all parties during construction of both the baseliner and final cover systems. (Exs. DEEP-33; APP-30.)

45. The Engineering Design Report includes an updated Facility Operations and Maintenance Plan ("Facility O&M Plan") that describes the procedures and practices that will be employed by the Monofill to verify that it will be operated in compliance with the approved plans and permits as well as the applicable regulatory requirements. As discussed above, the original Facility O&M Plan was included in the original 1996 permit application package for Phases 1 through 6 and approved. The original Facility O&M Plan, which has been subsequently updated to document operating changes at the Monofill, has been successfully implemented during operations of Phases 1 through 6. Accordingly, the Facility O&M Plan provided with the Engineering Design Report has been updated with the Phases 7 through 11 Applications. (Exs. DEEP-34; APP-30.)

46. The Collection and Treatment System Operations and Maintenance Plan ("Systems O&M Plan") provides a general description of the methods and provisions for the operation and maintenance of the wastewater collection and treatment systems present at the Monofill that are necessary for proper operations and to verify compliance with the applicable permits and

regulations. The Systems O&M Plan was included in the original 1996 application for Phases 1 through 6 and was updated in 2008 as part of the June 2011 renewal of the Pretreatment Permit. The Systems O&M Plan has been implemented successfully during operations of Phases 1 through 6. Accordingly, the Systems O&M Plan in the Phases 7 through 11 Applications closely follows the plan previously submitted. (Exs. DEEP-35; APP-30.)

47. The Closure/Post-Closure Plan details compliance with the final closure regulations in RCSA §22a-209 and the requirements of Part 14 and 15 of the Checklist for Solid Waste Disposal Areas. The engineering design basis for the closure includes the final cover components in compliance with the regulatory requirements in RCSA § 22a-209-14(i). The final grading plan is designed to minimize the potential for adverse drainage resulting from long-term settlement, divert stormwater runoff to surface water controls structures, provide long-term stabile slope conditions and provide access to the monofill surface for maintenance and repair of the final cover and surface water control structures. The Closure/Post-Closure Plan also documents how the closed Monofill will be monitored and maintained to minimize leachate generation and monitor groundwater and surface water for at least 30 years after the entire lined footprint is capped. Finally, the Closure/Post-Closure Plan will be utilized as portions of the monofill are closed and after completed closure to verify compliance with the regulations and the Checklist. (Exs. DEEP-37; APP-30.)

vi. The Wetland Impacts and Development of the Wetland Mitigation Plan

48. The Applicant retained AECOM to delineate and evaluate wetlands and associated resource areas, to conduct site surveys for notable wildlife and plant species, and to develop the necessary mitigation approach. (Ex. APP-31.)

49. As set forth in the Existing Conditions Report that is attached as Attachment D to AECOM's Conceptual Conservation and Protection Plan, nine separate wetland areas were field delineated within the area needed to construct Phases 7 through 11. The nine wetland areas have been historically impacted due to previous sand and gravel mining, man-made alterations, and agricultural activities throughout the site. Indeed, discarded and abandoned material such as tires and old farm equipment are littered within and around the wetland areas and wetland buffers. As part of its planned expansion, the Applicant will remove all such materials and dispose of them properly. (Exs. APP-31, 33; D. Musial Test., Evidentiary Hearing Recording, 10/18/21, at 31:40.)[3]

[3] References to live testimony are in the following format: "[Witness] Test., [Date], [Time]."

50. AECOM prepared the Wetland Mitigation Plan, which incorporates measures that will be taken to create new wetlands and adjacent upland habitat areas in perpetuity to mitigate for unavoidable impacts to existing wetlands. The Wetland Mitigation Plan was prepared in consultation with DEEP to provide wetland mitigation that creates adjacent upland forested habitats that are anticipated to create migratory pathways for wildlife presently found, or have the potential to be found, at the Monofill. The purpose of the Wetland Mitigation Plan is to replicate, and likely enhance, the wetland functions and values lost or adversely affected by the incremental future filling activities associated with Phases 7 through 11. Consequently, creation will, to the extent practicable, replace the existing wetland resource area habitats in as close of a proximity as possible and in the same configurations as they currently occur under existing conditions. To accommodate DEEP's recommended approach, the mitigation areas to be constructed will be located near existing water resource functions, taking into consideration factors such as habitat diversity, connectivity, and, for wetlands and streams, a balance of wetlands and uplands. The overall goal is to provide no net loss of existing wetland functional values and statutory interests within the affected watersheds through the preservation, restoration, and/or creation of wetlands and adjacent forested uplands. (Exs. APP-31, DEEP-83.)

C. Procedural Facts[4]

i. The Applications

51. The Applicant filed the following Applications with DEEP seeking authorization to expand the Monofill through the development of Phases 7 through 11:

    a. Application No. 201903454 seeking to modify (i) the existing Permit to Construct (No. SW-1160391) that authorized the construction of Phases 1 through 6 of the Monofill; and (ii) the existing Permit to Operate the Monofill (No. 1160430-PO), pursuant to Conn. Gen. Stat. § 22a-208a and the relevant implementing regulations (the "Solid Waste Application");

    b. Application Nos. 201500823 and 201903451 seeking to renew and modify the existing Pretreatment Permit (No. SP0002303)—which authorizes the discharge of wastewater associated with ash landfill leachate, vehicle wheel washing, and miscellaneous activities related to operating the Monofill to the Town of Putnam WPCF—

[4] Certain findings of fact in this section, or portions thereof, are based on the docket file in this matter, consisting of pleadings, rulings, notices and other correspondence between the Parties, petitioners, and the Office of Adjudications. The docket file is available for inspection by contacting the Office of Adjudications.

to incorporate the development of Phases 7 through 11, pursuant to Conn. Gen. Stat. § 22a-430 and the relevant implementing regulations (collectively, the "Pretreatment Application"); and

c. Application No. 201903452 seeking to modify the Monofill's existing Groundwater Discharge Permit (No. LF0000055) in order to incorporate the proposed expansion of Phases 7 through 11, pursuant to Conn. Gen. Stat. § 22a-430 and the relevant implementing regulations (the "Groundwater Application").

(*See* Exs. DEEP-1-38, 50, 76.)

52. DEEP received the Applicant's Pretreatment Permit renewal application (No. 201500823) on February 2, 2015 (the "Pretreatment Renewal"). (Exs. DEEP-50, 88.)

53. The Applicant published notice of the Pretreatment Renewal on January 7, 2015 in accordance with Conn. Gen. Stat. § 22a-6g. (Ex. DEEP-51.)

54. On or about March 1, 2019, DEEP received (i) the Solid Waste Application; (ii) the Pretreatment Permit modification application (No. 201903451) (the "Pretreatment Modification"); and (iii) the Groundwater Application. (Exs. DEEP-1-38, 62, 85, 87-89.)

55. The Applicant published notice of the Solid Waste Application, the Pretreatment Modification, and the Groundwater Application in the Norwich Bulletin on March 16, 2019 in accordance with Conn. Gen. Stat. § 22a-6g. (Ex. DEEP-58.)

ii. DEEP Staff's Solid Waste Application Review and Determinations

56. After the Applications were submitted, the Applicant and DEEP held an application submission meeting on March 5, 2019 for the Applicant to present the final design for the expansion and the associated environmental considerations. (Ex. APP-28.)

57. After conducting a sufficiency review of the Solid Waste Application in accordance with Conn. Gen. Stat. § 22a-208a(b), RCSA §§ 22a-3a-5(a) and 22a-209-4, as well as DEEP policy and practice, DEEP staff issued a Notice of Insufficiency ("NOI") on May 7, 2019 requesting additional information regarding the zoning approvals from the Town of Putnam Zoning Commission for Phases 7 through 11. (Exs. DEEP-39, 85.)

58. On May 20, 2019, the Applicant submitted a letter in response to the May 7, 2019 NOI. DEEP Staff reviewed the Applicant's May 7, 2019 letter and deemed it satisfactory. (Exs. DEEP-40, 85.)

59. On November 19, 2019, DEEP staff issued a Notice of Sufficiency informing the Applicant that the Solid Waste Application was sufficient and would be reviewed for technical adequacy in accordance with Conn. Gen. Stat. § 22a-208a(a), RCSA § 22a-209-4, and DEEP policy and practice. (Exs. DEEP-41, 85.)

60. During the technical review of the Solid Waste Application, DEEP staff evaluated whether compliance with Conn. Gen. Stat. § 22a-208a and RCSA §§ 22a-209-4, 22a-209-7, and 22a-209-14 had been met. (Ex. DEEP-85.)

61. The technical review of the Solid Waste Application involved reviewing the Solid Waste Application materials provided by the Applicant, the preparation of requests for additional information, and the review of the responses and materials provided by the Applicant. (Ex. DEEP-85.)

62. On August 10, 2020, during its technical review of the Solid Waste Application, DEEP staff requested that the Applicant provide additional information on a number of topics. (Exs. DEEP-42, 85.)

63. On November 30, 2020, the Applicant responded to DEEP staff's August 10, 2020 request. DEEP staff reviewed the Applicant's submittal and deemed it substantially complete, except for certain minor issues that required clarification in the DEEP's March 9, 2021 Request for Additional Information. The Applicant provided a responsive submission on March 10, 2021. (Exs. DEEP-44, 46, 85.)

64. The Applicant also provided documentation of zoning approval from the Town of Putnam Zoning Commission attached to a letter dated November 20, 2020, which was the subject of the NOI issued during the preliminary review. (Exs. DEEP-43, 85.)

65. Additionally, the Applicant provided DEEP with a letter, dated June 10, 2021, that attached an updated project determination issued by DEEP's Natural Diversity Data Base program on June 9, 2021. (Ex. DEEP-47.)

66. As part of its review of the Solid Waste Application, DEEP Staff submitted a Compliance History Review Request Form to the Waste Engineering and Enforcement Division's Enforcement Program in accordance with the Environmental Compliance History Policy. The completed Compliance History Review Request Form, which was signed by the Supervising Analyst of the Enforcement Program, noted that no further action was necessary, and that review of the Solid Waste Application may proceed. (Ex. DEEP-85.)

67. After completing the technical review of the Solid Waste Application, DEEP staff concluded that the Solid Waste Application met the established standards and was deemed approvable. (Ex. DEEP-85.)

68. DEEP staff then prepared the draft modification to the Applicant's Permit to Construct No. SW-1160391 and the draft modification to the Applicant's Permit to Operate No. 1160430-PO (collectively, the "Draft Permits to Construct and Operate"). (Exs. DEEP-78, 79, 85.)

69. As part of the Solid Waste Application, the Applicant provided to DEEP the information specified in Conn. Gen. Stat. § 22a-208d(c), including, but not limited to, information regarding (i) the remaining capacity of the Monofill's existing footprint in Phases 1 through 6; (ii) the Monofill's estimated rate of fill; (iii) the RRF's with potential to be served by the Monofill; (iv) the lack of other in-State disposal alternatives; and (v) a demonstration of capacity need of the RRF's that are customers of the Monofill. DEEP assessed the need for the Monofill expansion on the basis of the information provided. (Exs. DEEP-10, DEEP-86.)

70. Based on the information provided by the Applicant, DEEP made a preliminary determination that there is a need for expansion of the Monofill. That preliminary determination of need was included in the Notice of Tentative Determination published on June 16, 2021. (Exs. DEEP-48, 49, 82, 85).

iii. DEEP Staff's Pretreatment Application Review and Determinations

71. After conducting a sufficiency review of the Pretreatment Renewal in accordance with Conn. Gen. Stat. § 22a-430, RCSA 22a-430-4(c), and DEEP policy and practice, DEEP staff issued a Notice of Sufficiency on April 8, 2015 informing Applicant that the Pretreatment Renewal was sufficient and would be reviewed for technical adequacy. Until a final decision is made, the Pretreatment Permit has continued to remain in effect pursuant to Conn. Gen. Stat. § 22a-6j(a). (Exs. DEEP-52, 88.)

72. The Pretreatment Modification was placed into an administrative hold and, with the Applicant's approval, was added to the Pretreatment Renewal as an addendum. The Pretreatment Renewal and Pretreatment Modification are collectively referred to as the "Pretreatment Application." (Exs. DEEP-58, 88.)

73. With respect to the Pretreatment Application, the Applicant proposed no changes to the presently permitted flow rates to the Town of Putnam WPCF. Due to the phased construction and closure of the baseliner cells, the flow rates would remain essentially the same. In addition, the chemical quality of leachate to be generated in Phases 7 through 11 would essentially be the same as the leachate currently generated in Phases 1

through 6. Accordingly, the Applicant requested that leachate generation from Phases 7 through 11 be included in the Pretreatment Permit associated with Phases 1 through 6. (Ex. DEEP-14.)

74. During the technical review of the Pretreatment Application, DEEP staff evaluated whether the Pretreatment Application complied with Conn. Gen. Stat. § 22a-430 and RCSA §§ 22a-430-3 and 22a-430-4. (Ex. DEEP-88.)

75. The technical review of the Pretreatment Application included, among other things, evaluating: (i) the Applicant's wastewater generating operations; (ii) the discharge characteristics of the wastewater generated from the Monofill; (iii) the effect of the discharge on the Town of Putnam WPCF or the waters of the State; (iv) the Applicant's wastewater pretreatment system and instrumentation; (v) the equalization of the discharge; (vi) the Applicant's operation and maintenance plan; (vii) the Applicant's spill prevention and control plan; (viii) the Applicant's endangered species protections; (ix) the Applicant's resource conservation operations; (x) the Applicant's completion of its DEEP-approved Environmental Justice Plan; (xi) Applicant's payment of its permit fees; and (xii) Applicant's compliance history. (Ex. DEEP-88.)

76. During its technical review, DEEP staff separately evaluated the discharge characteristics of landfill leachate, wheel wash water, miscellaneous related wastewaters, and storm water generated by the Monofill. On February 22, 2021, DEEP staff requested that the Applicant provide additional wastewater sampling data. Applicant provided the requested sampling data by letter, dated March 16, 2021. (Exs. DEEP-53, 54, 88.)

77. Additionally, the Applicant provided DEEP with a letter, dated June 10, 2021, that attached an updated project determination issued by DEEP's Natural Diversity Data Base program on June 9, 2021. (Exs. DEEP-55, 88.)

78. With respect to the Applicant's wastewater pretreatment system, the Applicant sought approval for an updated pretreatment system on March 14, 2016 to replace the existing pretreatment system. DEEP approved this request and issued a treatment system modification and process modification approval on January 20, 2021. The updated pretreatment system, which has not yet been constructed, will include equalization and pH neutralization with modernized reagent feed equipment, pumps, and monitoring systems. (Exs. DEEP-56, 88.)

79. Through its technical review of the Pretreatment Application, DEEP staff determined that the proposed pH-neutralized discharge would not adversely affect the Town of Putnam WPCF or the waters of this State in accordance with Conn. Gen. Stat. § 22a-430 and RCSA §§ 22a-430-3 and 22a-430-4. DEEP staff also found that the Applicant's pH-neutralized

discharge can comply with all federal, state, and technically-based local effluent limitations. (Ex. DEEP-88.)

80. As part of its review of the Pretreatment Application, DEEP staff conducted a review of the Applicant's compliance history with respect to the existing Pretreatment Permit. With the exception of two Notices of Violation received in 2015 and 2017 that have been complied with, the Applicant's compliance record shows a history of compliance with environmental laws. Nothing in the Applicant's compliance record should preclude granting the Pretreatment Application. (Ex. DEEP-88.)

81. After completing the technical review of the Pretreatment Application and supporting information, DEEP staff prepared a draft reissued and modified pretreatment permit (the "Draft Pretreatment Permit"). Section 7 of the Draft Pretreatment Permit contains a schedule that requires the Applicant to submit a sampling plan and undergo sampling events for poly-fluorinated alkyl substances ("PFAS"). This information will be used to determine the need for, and level of, any treatment or control of PFAS in the discharge to the Town of Putnam WPCF. A detailed explanation of all limits and monitoring requirements is included in a draft fact sheet. (Exs. DEEP-80, 84, 88.)

iv. DEEP Staff's Groundwater Application Review and Determinations

82. With respect to the Groundwater Application, the permit modifications incorporate the theoretical leachate discharge from Phases 7 through 11 in the unlikely worst-case scenario of a complete failure of the Monofill's underlying baseliner system. The modification also incorporates infiltration of non-contact stormwater runoff at the stormwater basins to be installed to service Phases 7 through 11, similar to what is presently permitted for Phases 1 through 6. (Ex. DEEP-14.)

83. After conducting a preliminary review of the Groundwater Application in accordance with Conn. Gen. Stat. § 22a-430, RCSA 22a-430-4(c) and DEEP policy and practice, DEEP Staff issued a NOI on August 29, 2019 requesting additional copies of certain application materials. (Ex. DEEP-63.)

84. By letters dated September 9, 2019 and October 22, 2019, the Applicant responded to the August 29, 2019 NOI and provided the requested materials. (Exs. DEEP-64, 65.)

85. On March 9, 2020, DEEP staff issued a Notice of Sufficiency informing the Applicant that the Groundwater Application was sufficient and would be reviewed for technical adequacy in compliance with Conn. Gen. Stat. § 22a-430 and RCSA §§ 22a-430-3 and 22a-430-4. (Ex. DEEP-66.)

86. The technical review involved: (i) evaluating the Groundwater Application and supporting materials by utilizing the Remediation Standard Regulations ("RSRs") criteria, as defined by RCSA §§ 22a-133k-1 to 22a-133k-3, inclusive, and the Water Quality Standards ("WQS") criteria, as defined by RCSA §§ 22a-426-1 to 22a-426-9, inclusive; and (ii) meeting with the Applicant and its consultants to discuss adding language in the Applicant's EMP regarding provisions for testing private drinking water supply wells on residential properties that abut the proposed expansion area in Phases 7 through 11. (Ex. DEEP-87.)

87. After meeting with DEEP staff, the Applicant submitted an updated EMP on February 11, 2021 that included, among other things, additional provisions to monitor adjacent private water supply wells, updated statistical control concentrations, modifications to laboratory reporting limits for some parameters, and modified criteria for when the results of statistical analyses would require submitting a Plan to DEEP to evaluate elevated groundwater concentrations. (Exs. DEEP-67, 68, 97, APP-29.)

88. Once the technical review of the Groundwater Application was completed, DEEP staff concluded that the Groundwater Application met the applicable statutory and regulatory standards. DEEP staff further concluded that the documentation submitted demonstrates that the existing and proposed monitoring well network to monitor surface water, groundwater, precipitation, and leachate concentrations to comply with the criteria set forth in the RSRs and the WQS. In addition, DEEP staff concluded that the inclusion of private drinking water well testing in accordance with criteria set forth in the RSRs and the Department of Public Health drinking water action levels is protective of human health. (Ex. DEEP-87.)

89. In connection with preparing a draft modification of the Applicant's groundwater discharge permit, DEEP staff requested additional clarifying information from the Applicant regarding locations of leachate sideriser pump stations referenced within the updated EMP. The Applicant provided the requested information, which was incorporated into the draft permit modification. (Exs. DEEP-69, 70, 87.)

90. DEEP staff prepared a draft modification of the groundwater discharge permit (the "Draft Groundwater Permit"). (DEEP-82.).

91. DEEP subsequently received comments from the Applicant requesting consideration of several modifications to the Draft Groundwater Permit, including adjusting the reporting limits listed for the surface water parameters based on the reporting limits that typical commercial laboratories can achieve, revising statistical language, adjusting the frequency of reporting temporal trends in monitoring data, and correcting minor typographical errors. (Ex. DEEP-87.)

92. After consulting with the Department of Public Health Environmental Laboratory, a private laboratory, and DEEP's Water Planning and Management Division staff to evaluate the requested reporting limit modifications, DEEP staff prepared a revised Draft Groundwater Permit (the "Revised Draft Groundwater Permit"). (Exs. DEEP-87, 105.).

93. The Revised Draft Groundwater Permit adjusts the reporting limits accordingly, and also revised certain statistical language, certain statistical reporting language, and certain typographical errors. (Exs. DEEP-87, 105.)

v. DEEP's Notice of Tentative Determination and the Pre-Hearing Process

94. On June 16, 2021, DEEP issued a Notice of Tentative Determination tentatively approving the Applicant's Solid Waste Application, Pretreatment Application, and Groundwater Application (the "NTD"). (Ex. DEEP-76.)

95. In accordance with Con. Gen. Stat. § 22a-6, DEEP published the NTD in the Norwich Bulletin and the DEEP Public Notice Webpage on June 16, 2021. (Ex. DEEP-76.)

96. DEEP's Office of Adjudications received a petition, dated July 16, 2021, from Susan Eastwood of Ashford, Connecticut signed by 25 or more persons requesting a public hearing on the Applications (the "Petition"). (*Petition for Hearing,* dated July 16, 2021.)

97. The Petition was granted pursuant to Conn. Gen. Stat. §§ 22a-208(e) and 22a-430. (*Office of Adjudications Letter to Ms. Eastwood,* dated July 26, 2021.)

98. As a result of the Petition, a status conference was held on August 10, 2021, during which the Parties agreed, among other things, to prehearing procedures and dates for a prehearing conference, a site visit, a hearing to receive public comment, and an evidentiary hearing. (*Status Conference Summary Notice of Pre-Hearing Conference, Hearings, and Site Visit,* dated August 10, 2021.)

99. On September 9, 2021, DEEP published a Notice of Public Hearing in the Norwich Bulletin and on the DEEP Public Notice Webpage in accordance with Conn. Gen. Stat. § 22a-371(f). (DEEP-77; *Revised Publication Date for Notice of Hearing Notice of Meeting Re: Site Visit,* dated August 17, 2021.)

100. On September 21, 2021, a site visit was held, attended by the Hearing Officer, the Parties, the petitioner (Ms. Eastwood), and interested members of the public. (*See Status Conference Summary Notice of Pre-Hearing Conference, Hearings, and Site Visit,* dated August 10, 2021.)

101. On September 27, 2021, counsel for Conservation Law Foundation ("CLF") filed a Motion for Admission *Pro Hac Vice* and CLF's Petition to Intervene in this proceeding. The Applicant and DEEP both filed timely objections. The Motion for Admission *Pro Hac Vice* and CLF's Petition to Intervene were both denied. (*Ruling re: Motion for Admission Pro Hac Vice and Petition to Intervene*, dated October 7, 2021.)

102. No additional persons, including the petitioner, sought the status of intervenor or intervening party in this proceeding.

103. The Applicant and DEEP each submitted prehearing information, which contained the legal issues to be resolved, proposed witnesses and a list of proposed exhibits, as well as copies of the proposed exhibits. On September 30, 2021, a pre-hearing conference was held to address outstanding issues, identify and consent to the Parties' proposed expert witnesses, and admit exhibits to facilitate an orderly and expeditious hearing process. (*Pre-Hearing Conference Summary*, dated October 1, 2021.)

vi. The Hearing to Receive Public Comment and the Evidentiary Hearing

104. A public hearing was held via remote video conference on October 13, 2021, and written public comments were accepted until October 15, 2021. (*Pre-Hearing Conference Summary*, dated October 1, 2021.)

105. At the public hearing, Ms. Eastwood was sworn in as a public speaker and offered comments about her opposition to the Monofill's proposed Phases 7 through 11 expansion. (S. Eastwood Test., Public Hearing, 10/13/21, at 25:15.) There were no other sworn public speakers during the public hearing.

106. The evidentiary hearing was held on October 18, 2021, via remote video conference. At the evidentiary hearing, testimony from ten expert witnesses was accepted into the record on behalf of the Applicant and DEEP staff.

107. At the onset of the evidentiary hearing, the Parties stipulated to the admissibility of the remaining proposed exhibits that had been submitted, including the pre-filed testimony of the Parties' disclosed experts. (Evidentiary Hearing, 10/18/21, at 00:03:50.)

108. After Ms. Eastwood sought to be considered an expert witness instead of a fact witness in this proceeding, counsel for the Parties conducted a *voir dire* of Ms. Eastwood to assess her expert qualifications. (S. Eastwood Test., Evidentiary Hearing Recording, 10/18/21, at 11:03, 14:03.)

109. Once the *voir dire* concluded, the Hearing Officer ruled that Ms. Eastwood did not qualify as an expert in this proceeding, and that her

sworn public comments would be treated as fact testimony offered by a lay witness. (*See* S. Eastwood Test., Evidentiary Hearing, 10/18/21, at 23:50.)

110. Testifying on behalf of the Applicant were Donald W. Musial, P.E. (Ex. APP-28), Donald W. Podsen, LSP, PG, CGWP (Ex. APP-29), Amy J. Knight, P.E. (Ex. APP-30), and Thomas J. Keough, Jr. (Ex. APP-31).

111. Mr. Musial, the Applicant's Vice President of ash monofills, testified, among other topics, about: (i) the history of the Monofill, including the development of Phases 1 through 6; (ii) the current conditions of the Monofill; (iii) the Applicant's proposed lateral expansion of the Monofill through the development of Phases 7 through 11; (iv) the overall project design of Phases 7 through 11; (v) the reasons for the proposed continuation of the Monofill's operation through the development of Phases 7 through 11; (vi) the development and operation of the advanced recyclable metals recovery facility located at the Monofill; and (vii) the Applications, including discussions with DEEP staff and other agencies regarding proposed lateral expansion of the Monofill in Phases 7 through 11; and (viii) the Applicant's compliance with applicable environmental justice requirements. (Ex. APP-28; *see also* D. Musial Test., Evidentiary Hearing, 10/18/21, at 24:31.)

112. At the evidentiary hearing, Mr. Musial also addressed the public comments about the life of the Monofill's baseliner system, and about PFAS. Specifically, Mr. Musial testified that research shows that the geomembrane components of the baseliner systems—such as those employed at the Monofill—can last for hundreds of years, at minimum. (D. Musial Test., Evidentiary Hearing, 10/18/21, at 25:23.)

113. Mr. Musial also explained that the Applicant is engaged nationally on the development of PFAS regulations. Mr. Musial testified that the Applicant does not manufacture or otherwise generate PFAS at its sites, including the Monofill. Rather, solid waste facilities are receivers of PFAS from the general public and have a responsibility to manage those types of contaminants properly. Mr. Musial further explained that preliminary research shows that PFAS is destroyed at high temperatures, and, consequently, there is potential that a significant quantity of PFAS is destroyed during the combustion process at in RRFs. Thus, leachate generated by the ash residue received those facilities and transported to the Monofill is likely to contain reduced levels of PFAS than leachate from a typical solid waste landfill. Still, in the permitting process with DEEP staff, the Applicant agreed to a condition in a Pretreatment Permit that requires future PFAS monitoring of the discharge to the Town of Putnam WPCF. The Applicant is also willing to consider testing for PFAS in other places, such as in groundwater, as the procedures for sampling and standards for comparing actionable levels of PFAS are developed by

federal and state regulatory agencies. (D. Musial Test., Evidentiary Hearing, 10/18/21, at 28:06.)

114. Mr. Podsen, a Managing Hydrogeologist at Brown and Caldwell, testified, among other topics, about: (i) the hydrogeologic conditions in the vicinity of Phases 7 through 11, as set forth in the Hydrogeologic Investigation Report (Ex. DEEP-26); (ii) the Leachate Impact Analysis (Ex. DEEP-31), which demonstrated that the theoretical potential impacts of adding Phases 7 through 11 of the Monofill will not result in exceedances of the water quality standards in the Quinebaug River or in the wetlands located in the floodplain of the Quinebaug River; (iii) the Applicant's Environmental Monitoring Plan and updated versions; and (iv) the historic environmental monitoring of Phases 1 through 6 of the Monofill, which results have shown no indication of leakage or a failure from the baseliner or leachate collection systems. (Ex. APP-29; *see also* Exs. DEEP-36, 67, 68, and APP-32; D. Podsen Test., Evidentiary Hearing, 10/18/21, at 36:02.)

115. Ms. Knight, a Principal at Civil & Environmental Consultants, Inc., testified, among other topics, about the engineering design of Phases 7 through 11, specifically the base and final grading, operational sequencing plans, leachate collection system, stormwater management system, and geotechnical analyses, as well as the Project Technical Specifications, Quality Assurance Plan, Operations and Maintenance Plan, and the Closure/Post Closure Plan. (Ex. APP-30; *see also* Exs. DEEP-27-38; A. Knight Test., Evidentiary Hearing, 10/18/21, at 37:09.)

116. Mr. Keough, a Senior Wetland Scientist and Permitting Specialist at AECOM, testified, among other topics, about the direct wetland impacts and proposed mitigation measures with respect to wetlands, wildlife, and State-listed Threatened and Engineered Species of the Phases 7 through 11 area of the Monofill. (Ex. APP-31; *see also* T. Keough Test., Evidentiary Hearing, 10/18/21, at 40:09.)

117. Testifying on behalf of DEEP staff were David McKeegan (Ex. DEEP-85), Gabrielle Frigon (Ex. DEEP-86), Veronica Tanguay (Ex. DEEP-87), Patrick Bieger (Ex. DEEP-88), Corinne Fitting (Ex. DEEP-89), and Farrah Ashe (Ex. DEEP-90).

118. Mr. McKeegan, an Environmental Analyst III in the Waste Engineering and Enforcement Division within DEEP's Bureau of Materials Management and Compliance Assurance, testified, among other topics, about DEEP's review of the Solid Waste Application, the development of the Draft Permits to Construct and Operate, and his professional opinion that the Solid Waste Application is both technically complete and complies with the applicable statutory and regulatory standards. (Ex. DEEP-85; *see also* D. McKeegan Test., Evidentiary Hearing, 10/18/21, at 41:26.)

119. Ms. Frigon, an Assistant Director for the Waste Engineering and Enforcement Division within DEEP's Bureau of Materials Management and Compliance Assurance, testified, among other topics, regarding DEEP's preliminary determination of need for the expansion of the Monofill. (Ex. DEEP-86; *see also* G. Frigon Test., Evidentiary Hearing, 10/18/21, at 43:55.)

120. Ms. Frigon also addressed comments questioning the need for the expansion of the Monofill. (G. Frigon Test., Evidentiary Hearing, 10/18/21, at 46:15.)

121. Mr. Bieger, a Sanitary Engineer I in the Water Permitting and Enforcement Division within DEEP's Bureau of Materials Management and Compliance Assurance, testified, among other topics, about DEEP's review of the Pretreatment Application, the development of the Draft Pretreatment Permit, and his professional opinion that the Pretreatment Application complies with all relevant statutory and regulatory criteria, and will protect the waters of the state from pollution. (Ex. DEEP-88; *see also* P. Bieger Test., Evidentiary Hearing, 10/18/21, at 51:41.)

122. Mr. Bieger further testified that the Pretreatment Permit regulates the discharge of PFAS through a compliance schedule requiring the Applicant to submit a sampling plan and undergo sampling for PFAS. (P. Bieger Test., Evidentiary Hearing, 10/18/21, 52:22.)

123. Ms. Ashe, an Environmental Analyst II in the Land and Water Resources Division within DEEP's Bureau of Water Protection and Land Reuse, testified, among other topics, about DEEP's review of the Applicant's Section 401 Water Quality Certification application, the approval of that application as set forth in DEEP's Notice of Tentative Determination, and the Draft 401 Water Quality Certification. (Ex. DEEP-90; *see also* Exs. DEEP-76, 83; F. Ashe Test., Evidentiary Hearing, 10/18/21, at 54:50.)

124. Ms. Tanguay, an Environmental Analyst II in the Remediation Division of DEEP's Bureau of Water Protection and Land Reuse, testified, among other topics, about DEEP's review of the Groundwater Application, the development of the Draft Groundwater Permit and revisions thereto, and her professional opinion that the Groundwater Application is both technically complete and complies with the applicable statutory and regulatory standards. (Ex. DEEP-87; *see also* V. Tanguay Test., Evidentiary Hearing, 10/18/21, at 55:55.)

125. Ms. Tanguay provided clarifying testimony as to the purpose of a groundwater discharge permit, which is to act as a safeguard for the groundwater of the state by monitoring at and around the Monofill for potential leachate leaking from the double-baseliner system into the

groundwater. (V. Tanguay Test., Evidentiary Hearing, 10/18/21, at 56:45.)

126. Ms. Tanguay also testified as to the reasons why the Draft Groundwater Permit, as currently drafted, does not require that groundwater be monitored for PFAS. First, Ms. Tanguay explained that there currently is no approved analytical method for testing groundwater for PFAS. Second, Ms. Tanguay stated that there are no groundwater protection criteria set at the federal or state level for PFAS at this time. Third, Ms. Tanguay explained that since PFAS can be ubiquitous in the environment, if found present in a particular area, it can be challenging to identify the source of PFAS. Still, Ms. Tanguay said that an evaluation was ongoing as to whether a PFAS condition similar to the Draft Pretreatment Permit could be inserted in the Draft Groundwater Permit. If it were scientifically possible and legally allowable, Ms. Tanguay would recommend inserting such language in the final groundwater permit. (V. Tanguay Test., Evidentiary Hearing, 10/18/21, at 59:13-1:02:38.)

127. Ms. Fitting, a Supervising Environmental Analyst in the Water Planning and Management Division within DEEP's Bureau of Water Protection and Land Reuse, testified, among other topics, regarding DEEP's review of the Applicant's request for groundwater reclassification under the Monofill expansion area from GB to GC, and DEEP's decision to grant the groundwater reclassification. (Ex. DEEP-89.)[5]

III. CONCLUSIONS OF LAW

Pursuant to RCSA § 22a-3a-6(f), "[i]n a proceeding on an application, the applicant and other proponents of the application shall have . . . the burden of persuasion with respect to each issue which the commissioner is required by law to consider. . . . Each factual issue in controversy shall be determined upon a preponderance of the evidence." The Applicant has satisfied its burden. Indeed, as more fully explained below, the evidence in the record—including the un-contradicted testimony of experts retained by the Applicant and members of

[5] Ms. Fitting was not available to attend the evidentiary hearing on October 13, 2021. As such, the Parties stipulated to the admission of Ms. Fitting's pre-filed testimony (Ex. DEEP-89) and waived the right to cross-examination. (*See* Evidentiary Hearing, 10/18/21, at 06:10.)

DEEP staff—demonstrates that each statutory and regulatory criteria against which the Applications must be evaluated have been satisfied.

A. Expert Testimony

When considering technically complex issues, administrative agencies typically rely on experts. *See, e.g., River Bend Associates, Inc. v. Conservation & Inland Wetlands Commission,* 269 Conn. 57, 78 (2004) (determination of impacts to an inland wetland is a technically complex matter for which inland wetland commissions typically rely on evidence provided by experts). "When the application of agency regulations requires a technical, case-by-case review, that is precisely the type of situation that calls for agency expertise." *MacDermid v. Dep't of Environmental Protection,* 257 Conn. 128, 139 (2001). The issues raised in this proceeding are also the type of issues on which DEEP may rely on its own expertise. *See Conn. Building and Wrecking Co. v. Carothers,* 218 Conn. 580, 593 (1991) ("An agency composed of [experts] is entitled . . . to rely on its own expertise within the area of its professional competence.").

In this proceeding, DEEP offered testimony from six expert witnesses, David McKeegan, Gabrielle Frigon, Veronica Tanguay, Patrick Bieger, Corinne Fitting, and Farrah Ashe. (Exs. DEEP-85-90.) Likewise, four expert witnesses testified on behalf of the Applicant: Donald W. Musial, P.E., Donald W. Podsen, LSP, PG, CGWP, Amy J. Knight, P.E., and Thomas J. Keough, Jr. (Exs. APP-28-31.) Each testified that, in their expert opinion, the Applicant's proposed activities in connection with the Monofill's proposed expansion, as set forth in the Applications, complied with the relevant statutory and regulatory criteria. (*See* Exs. DEEP-85-90; APP-28-31.) No expert evidence was offered to refute their opinions. This un-contradicted expert testimony constitutes substantial evidence upon which the Hearing Officer can base her conclusions. "An administrative agency is not required to believe any of the witnesses, including expert witnesses... but it must not disregard the only expert evidence available on the issue . . . ."

Bain v. Inland Wetlands Commission, 78 Conn. App. 808, 817 (2003); *see also Feinson v. Conservation Comm'n,* 180 Conn. 421, 429 (1980) (lay commission must accept expert testimony). "The trier of fact is not required to believe unrebutted expert testimony, but may believe all, part or none of such unrebutted expert evidence." *Bancroft v. Commissioner of Motor Vehicles*, 48 Conn. App. 391, 405 (1998).

The un-contradicted expert testimony offered in this proceeding is credible and provides a substantial basis upon which the Hearing Officer may determine that the Applicant has satisfied the relevant statutory and regulatory criteria and recommend that the Draft Permits, as modified, be issued. The analysis that follows is intended to amplify the conclusions reached by these experts and provide context for the recommendation that the proposed Draft Permits, with the proposed modifications, be issued as final permits.

B. <u>The Solid Waste Application and the Draft Permits to Construct and Operate Are Consistent With and Satisfy All Applicable Provisions of Conn. Gen. Stat. § 22a-208a and the Relevant Implementing Regulations</u>

The activities proposed in the Solid Waste Application, as conditioned by the proposed Draft Permits to Construct and Operate (Exs. DEEP-78-79), are regulated by the applicable portions of the Connecticut Solid Waste Management Act ("CSWMA"), Conn. Gen. Stat. § 22a-208a, and the relevant implementing regulations, RCSA §§ 22a-209-4, 22a-209-7, and 22a-209-14.

Conn. Gen. Stat. § 22a-208a(a) authorizes the Commissioner of Energy and Environmental Protection (the "Commissioner") to issue, renew, and modify permits for the construction, alteration and operation of solid waste facilities "under such conditions as he [or she] may prescribe and upon submission of such information as he [or she] may require." In making a decision whether to grant or deny such a permit modification, the Commissioner "shall consider the character of the neighborhood in which such a facility is located and may impose

requirements for hours and routes of truck traffic, security and fencing and for measures to prevent the blowing of dust and debris and to minimize insects, rodents, and odors." *Id.* Additionally, when making a decision to grant or deny a permit to construct an ash residue disposal area, the Commissioner "shall consider any provision which the applicant shall make for a double liner, a leachate collection or detection system and the cost of transportation and disposal of ash residue at the sight under consideration." *Id.* RCSA §§ 22a-209-4, 22a-209-7, and 22a-209-14 implement the provisions of the CSWMA that address lined ash residue disposal facilities.

When considering the Solid Waste Application, DEEP must also consider the need for the proposed expansion of the Monofill. This requirement, found in Conn. Gen. Stat. § 22a-208d, requires the Commissioner to determine that the Monofill expansion is "necessary to meet the solid waste disposal needs of the state and will not result in substantial excess capacity of resources recovery facilities or disposal areas." Conn. Gen. Stat. § 22a-208d(a). The Applicant is required to submit certain information specified in § 22a-208d(c)(1), and the information is to be evaluated using criteria specified in § 22a-208d(c)(2), in part to "insure that no waste is accounted for more than once as a result of transfer from one vehicle or facility to another or for any other reason." After evaluating the required information provided by the Applicant, DEEP staff made a preliminary determination that there is a need for the proposed expansion, and published and accepted public comments on that preliminary determination as required by Conn. Gen. Stat. § 22a-208d(b). It is this preliminary determination that permits DEEP to move forward with its review and approval of the Solid Waste Application, and to issue the Draft Permits to Construct and Operate as final permits. Conn. Gen. Stat. § 22a-208d(b).

The Solid Waste Application filed by the Applicant is technically complete and complies with the requirements of the applicable statutes and relevant implementing regulations (Conn. Gen. Stat. § 22a-208a and RCSA §§ 22a-209-4, 22a-209-7, and 22a-209-14).

The Commissioner properly conducted a public hearing on the Solid Waste Application pursuant to the Petition in accordance with Conn. Gen. Stat. §§ 22a-208a(e).

The Applicant has demonstrated by a preponderance of the evidence that it satisfied all of the applicable criteria under the applicable statutes and relevant implementing regulations (Conn. Gen. Stat. § 22a-208a and RCSA §§ 22a-209-4, 22a-209-7, and 22a-209-14).

DEEP has demonstrated through the evidence entered into the record on this matter that the processing and review of the Solid Waste Application and preparation of the Draft Permits to Construct and Operate were conducted in accordance with RCSA §§ 22a-209-4, 22a-209-7, and 22a-209-14, as well as consistent with DEEP policy and practice.

C. The Pretreatment Application and the Draft Pretreatment Permit are Consistent With and Satisfy All Applicable Provisions of Conn. Gen. Stat. 22a-430 and the Relevant Implementing Regulations

The activities proposed in the Pretreatment Application, as conditioned by the proposed Draft Pretreatment Permit (Ex. DEEP-80), are regulated by the applicable portions of the Connecticut Water Pollution Control Act, ("CWPCA"), Conn. Gen. Stat. § 22a-430, and the relevant implementing regulations, RCSA §§ 22a-430-3 and 22a-430-4.

The Commissioner is authorized to issue or renew a permit for any discharge of water, substance or material into the waters of the state. Conn. Gen. Stat. § 22a-430(a). The Commissioner may only exercise this power upon a determination that any proposed discharge would not cause pollution to the waters of the state or any proposed system to treat such discharge would protect the waters of the state from pollution. Conn. Gen. Stat. §§ 22a-430(b)(B) and 22a-430(b)(C). The Commissioner must also consider the criteria and standards

that are applied to determine whether an application is complete, whether an applicant will be able to comply with the terms and conditions of a proposed permit, and whether a discharge will pollute the waters of the state or whether a treatment system will prevent pollution of the waters of the state. RCSA §§ 22a-430-3 and 22a-430-4. The statute and relevant implementing regulations also require that the discharge must not endanger human health or the environment, and thus be consistent with the WQS criteria and the provisions of the federal Clean Water Act. Conn. Gen. Stat. §22a-430(a), (b), (i)(I); RCSA § 22a-430-4(p)(2).

The Pretreatment Application filed by the Applicant is technically complete and complies with the requirements of the applicable statutes and relevant implementing regulations (Conn. Gen. Stat. § 22a-430, RCSA §§ 22a-430-3 and 22a-430-4).

The Commissioner properly conducted a public hearing on the Pretreatment Application pursuant to the Petition in accordance with Conn. Gen. Stat. §§ 22a-430.

The Applicant has demonstrated by a preponderance of the evidence that it satisfied all of the standards and requirements of the applicable statutes and relevant implementing regulations (Conn. Gen. Stat. § 22a-430, RCSA §§ 22a-430-3 and 22a-430-4). The Applicant's treatment system and resulting discharge to the Town of Putnam WPCF, as conditioned by the proposed Draft Pretreatment Permit, will protect the waters of the state from pollution and does not endanger human health or the environment.

DEEP has demonstrated through the evidence entered into the record on this matter that the processing and review of the Pretreatment Application and drafting of the Draft Pretreatment Permit were conducted in accordance with RCSA §§ 22a-430-3 and 22a-430-4, as well as consistent with DEEP policy and practice.

D. The Groundwater Application and the Revised Draft Groundwater Permit, as Modified, are Consistent With and Satisfy All Applicable Provisions of Conn. Gen. Stat. 22a-430 and the Relevant Implementing Regulations

i. The Revised Draft Groundwater Permit Should Be Issued as a Final Permit

The activities proposed in the Groundwater Application, as conditioned by the proposed Revised Draft Groundwater Permit (Ex. DEEP-105), are regulated by the applicable portions of the CWPCA, Conn. Gen. Stat. § 22a-430, and the relevant implementing regulations, RCSA §§ 22a-430-3 and 22a-430-4, with consideration of the relevant RSRs criteria, §§ 22a-133k-1 to 22a-133k-3, inclusive, and WQS criteria, §§22a-426-1 to 22a-426-9, inclusive.

The Commissioner is authorized to issue or renew a permit for any discharge of water, substance or material into the waters of the state. Conn. Gen. Stat. § 22a-430(a). The Commissioner may only exercise this power upon a determination that any proposed discharge would not cause pollution to the waters of the state or any proposed system to treat such discharge would protect the waters of the state from pollution. Conn. Gen. Stat. §§ 22a-430(b)(B) and 22a-430(b)(C). The Commissioner must also consider the criteria and standards that are applied to determine whether an application is complete, whether an applicant will be able to comply with the terms and conditions of a proposed permit, and whether a discharge will pollute the waters of the state or whether a treatment system will prevent pollution of the waters of the state. RCSA §§ 22a-430-3 and 22a-430-4. The statute and relevant implementing regulations also require that the discharge must not endanger human health or the environment, and thus be consistent with the WQS criteria and the provisions of the federal Clean Water Act. Conn. Gen. Stat. § 22a-430(a), (b), (i)(I); RCSA § 22a-430-4(p)(2); WQS criteria, RCSA §§22a-426-1 to 22a-426-9, inclusive. Finally, the discharge must comply with the RSRs criteria.

The Groundwater Application filed by the Applicant is technically complete and complies with the requirements of the applicable statutes and relevant implementing regulations

(Conn. Gen. Stat. § 22a-430; RCSA §§ 22a-430-3 and 22a-430-4), as well as complies with the RSRs criteria and WQS criteria.

The Commissioner properly conducted a public hearing on the Groundwater Application pursuant to the Petition in accordance with Conn. Gen. Stat. §§ 22a-430.

The Applicant has demonstrated by a preponderance of the evidence that it satisfied all of the standards and requirements of the applicable statutes and relevant implementing regulations (Conn. Gen. Stat. § 22a-430, RCSA §§ 22a-430-3 and 22a-430-4). The Applicant's existing and proposed monitoring-well network to monitor surface water, groundwater, precipitation, and leachate concentrations comply with the criteria set forth in the RSRs and WQS. The Applicant's proposed system, as conditioned by the proposed Revised Draft Groundwater Permit, will protect the waters of the state from pollution and does not endanger human health or the environment.

DEEP has demonstrated through the evidence entered into the record on this matter that the processing and review of the Groundwater Application and drafting of the Revised Draft Groundwater Permit (Ex. DEEP-105) were conducted in accordance with RCSA §§ 22a-430-3 and 22a-430-4, as well as consistent with DEEP policy and practice.

ii. A Condition of Approval Should Be Added to the Revised Draft Groundwater Permit Regarding PFAS

In her testimony, Ms. Tanguay, an analytical chemist working in DEEP's remediation division tasked with reviewing the Groundwater Discharge Permit, spoke to the challenges encountered with regulating discharges of PFAS to groundwater. Ms. Tanguay testified that it is currently difficult to test for PFAS, that there are no criterion with which to compare test results, and that it is difficult to determine the source of PFAS pollution. Ms. Tanguay further testified that DEEP was continuing to evaluate permit language regarding monitoring groundwater for

PFAS under certain circumstances and that if it were technically possible and legally allowable, would suggest adding a condition to the Groundwater Discharge Permit. That work has continued, and DEEP staff and the Applicant have agreed to recommend that the following condition be added to the Revised Draft Groundwater Permit (Ex. DEEP-105):

The Parties propose the below compliance language be amended to the Draft Groundwater Permit as a new subsection (J) under Section 3: Monitoring Requirements.

(J) Per- and Polyfluorinated Alkyl Substances (PFAS) Monitoring

(i) **Schedule**

The Permittee shall assure compliance with the terms and conditions of this Permit and sections 22a-430-3 and -4 of the RCSA in accordance with the following schedule:

(a) On or before thirty (30) days after the effective date of this permit, the Permittee shall employ or retain one or more qualified professionals acceptable to the Commissioner, which may include but not limited to a licensed environmental professional or technical environmental professional, to prepare the documents and implement or oversee the actions required by this section of the permit and shall, by that date, notify the Commissioner in writing of the identity of such professionals. Such professionals employed or retained by the Permittee shall have demonstrated knowledge of the per – and polyfluorinated alkyl substances (PFAS) and the sampling protocols and analytical laboratory methods associated with identifying and quantifying PFAS. The Permittee shall employ or retain one or more qualified professionals, which may include but not limited to a licensed environmental professional or technical environmental professional, acceptable to the Commissioner until the actions required by this section of the permit have been completed, and within ten (10) days after employing or retaining any professional(s) other than one(s) originally identified under this paragraph, the Permittee shall notify the Commissioner in writing of the identity of such other professional. The Permittee shall submit to the Commissioner a description of a professional's education, experience and training, which is relevant to the work required by this permit within ten (10) days after a request for such a description. Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable professional unacceptable.

(b) On or before ninety (90) days after the effective date of this permit, the Permittee shall submit for the Commissioner's review and approval a PFAS baseline monitoring plan.

(1) The plan shall, at a minimum, identify the analytical method, laboratory and sampling protocols including quality control and quality assurance (QA/QC) procedures to be implemented, and the number and volume of samples to be collected at each location.

(2) Upon receipt of the Commissioner's approval, such plan shall be initiated to conduct quarterly sampling of the leachate from locations identified in Section 3(D)(i)(a) as L-6.

(3) On or before one-hundred and twenty (120) days after the receipt of the Commissioner's approval, the Permittee shall initiate the collection of a single round of baseline groundwater sampling from the following monitoring wells identified in Section 3(B)(i) as MW-24S, MW-24D, MW-29S, MW-29D, MW-28S, MW-28D, MW-30S, MW-14S, MW-14D, MW-23S, MW-23D, MW-27S and MW-27D for analysis of PFAS.

(c) Following the initial PFAS sampling, in the event of confirmed environmental impacts due to the release of leachate from the monofill, the Permittee shall submit for the Commissioner's review an update to the PFAS monitoring plan that identifies the schedule of sampling events and sampling locations including provisions of monitoring of residential wells as appropriate.

(ii) **Reporting**

(a) The monitoring results shall be reported in accordance with Section 5.

The Parties propose the below language be amended to the Draft Groundwater Permit as a new subsection (H) under Section 4: Sample Analysis.

(H) PFAS analyses shall be performed using the methods approved by the EPA pursuant to 40 CFR 136. If no test method is approved by 40 CFR 136, PFAS analyses shall be performed in accordance with the modified EPA method 537.1 including isotope dilution run by a Connecticut certified laboratory that follows the Department of Defense's Quality System Manual Table B-15 QA/QC.

(a) For the purpose of this permit, perfluorinated and polyfluorinated alkyl substances (PFAS) shall mean, at a minimum:

Analyte	Acronym	Chemical Abstract Services Registry Number (CASRN)
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluorodecanoic acid	PFDA	335-76-2
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluoro-n-heptanoic acid	PFHpA	375-85-9
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoro-n-nonanoic acid	PFNA	375-95-1
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluoro-n-octanoic acid	PFOA	335-67-1
Perfluorotetradecanoic acid	PFTA	376-06-7
Perfluorotridecanoic acid	PFTrDA	72629-94-8
Perfluoroundecanoic acid	PFUnA	2058-94-8
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
4,8-dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4

IV. PROPOSED FINAL RECOMMENDATION

DEEP's tentative determination that the Applications be approved, as conditioned by the Draft Permits, with the recommended modification to the Revised Draft Groundwater Permit, is supported by the substantial evidence in the record. The Applicant has met its burden of proving, by a preponderance of the evidence, that the proposed activities should be permitted through the credible testimony of expert witnesses and the submission of documentary evidence as described above. It is therefore respectfully recommended that the Commissioner issue the

requested permits, incorporating the terms and conditions of the proposed Draft Permits, and with the recommended modification.

V. AGREEMENT

Based on the foregoing, the undersigned hereby agree to the granting of final permits subject to the conditions stated in the Draft Permits, as modified herein.

Respectfully Submitted,

STAFF OF THE DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

By: : */s/ Brendan Schain*

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APPLICANT,
WHEELABRATOR PUTNAM INC.

By: */s/ Jane K. Warren*

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CERTIFICATION

I hereby certify that a copy of the foregoing was e-mailed on November 19, 2021 to the Hearing Officer and all parties through their counsel of record listed below, and that courtesy copies have been provided, as directed by the Hearing Officer, to those individuals listed below.

Party-DEEP Staff:

Brendan Schain
Brendan.Schain@ct.gov
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Office of Legal Counsel – Environmental Quality
Connecticut Department of Energy and Environmental Protection
79 Elm Street, Hartford, CT 06106-5127

Courtesy Copies:

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/s/ Jane K. Warren
Jane K. Warren

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

MODIFICATION TO
PERMIT TO CONSTRUCT NO. SW-1160391

PERMITTEE:	Wheelabrator Putnam Inc.
FACILITY ADDRESS:	344 River Road, Putnam, Connecticut
PERMIT No.	SW-1160391-MPC

Pursuant to Section 22a-208a of the Connecticut General Statutes ("CGS") and Section 22a-209-4 of the Regulations of Connecticut State Agencies ("RCSA"), a PERMIT TO CONSTRUCT ("Permit") IS HEREBY ISSUED by the Commissioner of Energy and Environmental Protection ("Commissioner") to Wheelabrator Putnam Inc. ("Permittee") to construct a double lined solid waste disposal area for the receipt and disposal of Residue located at 344 River Road, Putnam, Connecticut ("Facility"). Subsequently, Permit to Construct No. SW-1160391 issued on March 19, 1998, as amended on June 1, 1999 by Minor Permit Amendment to Permit to Construct No. SW-1160391, as modified on May 21, 2002 by Permit Modification No. SW-1160391-PC/M and as amended on December 19, 2017 by Minor Permit Amendment to Permit to Construct No. SW-1160391/MA, IS HEREBY MODIFIED.

A. GENERAL TERMS AND CONDITIONS

1. a. This Permit is based on and incorporates by reference pertinent and appropriate sections of documents and specifications submitted as part of Application No. 201903454 to modify the Permit to Construct, including:
    i. Application form dated February 28, 2019;
    ii. Facility Operations and Maintenance Plan (O&MP) dated February 28, 2019;
    iii. A Site Plan prepared by Brown and Caldwell, Alan R. Kirschner, P.E., dated February 28, 2019;
    iv. Volume 1 Part 1, Permit Application, Phases 7 through 11, Putnam Ash Residue Landfill, Putnam, Connecticut, prepared by Civil & Environmental Consultants, Inc., dated February 28, 2019;
    v. Volume 2, Hydrogeologic Report, Phases 7 through 11, Putnam Ash Residue Landfill, Putnam, Connecticut, prepared by Civil & Environmental Consultants, Inc., dated February 28, 2019;
    vi. Volume 3, Engineering Report, Phases 7 through 11, Putnam Ash Residue Landfill, Putnam, Connecticut, prepared by Civil & Environmental Consultants, Inc., dated February 28, 2019;
    vii. Volume 4, set of engineering drawings (Sheet 1 through 55, inclusive) titled *Design Drawings Phases 7 through 11 Putnam Ash Residue Landfill, Putnam, Connecticut* – Sheet 2 through 27, inclusive identified as Drawing No. H1 through Drawing No. H26 prepared by Brown and Caldwell, Alan R. Kirschner, P.E., dated February 28, 2019 and Sheets 28 through 55, inclusive identified as Drawing No. E1 through Drawing No. E28 prepared by Civil & Environmental Consultants, Inc., Amy J. Knight, P.E., dated February 28, 2019;
    viii. Volume 5, Application for U.S. Army Corps of Engineers Department of the Army Permit, Individual Permit Authorization and Connecticut 401 Water Quality Certification, Wheelabrator Putnam, Inc., Putnam Ash Residue Landfill, Phases 7 through 11, Putnam, Connecticut; Application No. 201903463, prepared by AECOM, dated February 28, 2019;
    ix. Correspondence to the Department of Energy and Environmental Protection (the "Department") from Wheelabrator Putnam Inc. dated November 30, 2020,

submitted in response to the Department's request for additional information dated August 10, 2020, including revised engineering Drawing Nos. E3, E5 through E10, E12, E13, E19, E21, E23, and E25 prepared by Civil & Environmental Consultants, Inc., Amy J. Knight, P.E., dated February 28, 2019, revised December 1, 2020;

x. Correspondence to the Department from Wheelabrator Putnam Inc. dated March 10, 2021, submitted in response to the Department's request for additional information dated March 9, 2021, including the Facility Operations and Maintenance Plan, revised March 10, 2021 and engineering Drawing No. E10 revised March 10, 2021; and

xi. Correspondence to the Department from Wheelabrator Putnam Inc. dated June 10, 2021 transmitting a determination letter from the Department's Natural Diversity Data Base (NDDB) Program, dated June 9, 2021, which requires protection and mitigation strategies for State Endangered, Threatened and Special Concern species known in the vicinity of the project.

b. The Permittee shall maintain at the Facility and have available for reference by Facility staff and inspection by the Commissioner:
   i. All documents or copies of such documents submitted as Application No. 201903454 and any document submitted in support of said application for the life of this Permit; and
   ii. A copy of this Permit and the Facility's Facility Plan which consists of the Operation and Maintenance Plan and the engineered drawings which describe the Facility and its construction; and

c. The Permittee shall for the life of this Permit, provide to the Department notification within thirty (30) Days of any changes in the information provided as part or in support of the application on which this Permit was based. Any inaccuracies found in the information submitted by the Permittee may result in revocation, reissuance, or modification of this Permit and civil or criminal enforcement actions.

2. As used in this Permit, the following definitions apply:

"Certified Operator" means the solid waste facility operator or an employee of such operator who is present at the facility and oversees or carries out the daily operations authorized through this Permit, and whose qualifications are currently certified in accordance with Section 22a-209-6 of the RCSA.

"CFR" means the Code of Federal Regulations in effect the date this Permit is issued.

"Commissioner" means the Commissioner of Energy and Environmental Protection.

"Day" means calendar day.

"Department" means the Department of Energy and Environmental Protection.

"Professional Engineer" or "P.E." means an engineer licensed to practice in the state of Connecticut.

"Residue" as defined in Section 22a-209-1 of the RCSA means bottom ash, air pollution control residue, and other residues from the combustion process at resource recovery facilities, municipal solid waste incinerators and biomedical waste incinerators. For the purpose of this Permit, residue also includes ash generated from the wood biomass gasification process and the coal combustion process.

3. The Permittee shall comply with all terms and conditions of this Permit. This Permit consists of the conditions contained herein and the specifications contained in the application documents, except where such specifications are superseded by the more stringent conditions contained herein. Violation of any provision of this Permit may be subject to enforcement action pursuant, but not limited, to Sections 22a-6, 22a-208, 22a-225 and 22a-226 of the CGS.

4. The Permittee shall make no changes to the specifications and requirements of this Permit, except in accordance with law.

5. To the extent that any term or condition of this Permit is deemed to be inconsistent or in conflict, with any term or condition of any Permit previously issued for this Facility, including any modifications thereto, or with any data or information contained in the application, or any other documents incorporated by reference in this Permit, the term or condition of this Permit shall control and remain enforceable against the Permittee.

6. Provided a permit modification is not required pursuant to Sections 22a-208a(d)(1) or 22a-208a(e) of the CGS, the Permittee shall submit for the Commissioner's review and written approval all necessary documentation supporting any proposed physical and/or operational upgrades, improvements and/or minor changes in the Facility design, practices or equipment. The Commissioner may issue a written approval only if, in the Commissioner's judgment, the proposed physical and/or operational upgrades, improvements and/or minor changes: (a) are deemed necessary for a better and more efficient operation of the Facility; (b) do not significantly change the nature of the Facility, or its impact on the environment; and (c) do not warrant the issuance of a permit or authorization pursuant to Section 22a-208 et seq. of the CGS.

B. AUTHORIZATION TO CONSTRUCT AND MAINTAIN

1. The existing Facility consists of: a 60 acre parcel of land (bordered to the east and south by the Quinebaug River, to the west by River Road and to the north by Carpenter Brook and a private sand and gravel operation); a designated paved entrance road (including a bridge over the Quinebaug River) off of Kennedy Drive identified as Technology Park Drive; a gravel perimeter access road; a mobile office trailer; a wheel wash station; a leachate pretreatment building; leachate pumping stations; stormwater runoff controls (e.g., diversion swales and down chutes) including four (4) detention basins; heavy equipment including front-end loader, excavator, back-hoe, bulldozer, vibratory roller, dump trucks, water truck for dust control, street sweeper, etc.; a designated five (5) acre residue windrow staging area; an automated MRU, with a three-sided weather resistant enclosure, consisting of a dedicated residue feed hopper, multiple material conveyance belts, various automated material sorters, multiple material receiving bins for the receipt of processed residue, sorted ferrous metals, and sorted nonferrous metals; an automated nonferrous metal CUF, with a weather resistant enclosure, consisting of a dedicated nonferrous metal concentrate feed hopper, multiple conveyance belts, a material sorting screen, a fine particle collector, and a receiving bin for

receipt of processed non-ferrous metal concentrate; a vehicle weighing station including two vehicle scales and a scale house; and a mobile office trailer for operations and laboratory use.

2. The Permittee is authorized to construct the following at the Facility in accordance with all applicable law, including this Permit:
   a. A new 68-acre baseliner system, adjacent to the southern limits of the existing Phases 1 through 6, constructed in five (5) separate phases identified as Phase 7 through Phase 11 with each phase containing a double liner system consisting of a: (i) protective cover (i.e., granular soil); (ii) primary leachate collection system (i.e., 24 inches of granular soil with 6-inch slotted polyvinyl chloride (PVC) leachate collection pipes enveloped with crushed stone); (iii) primary liner [i.e., 60 mil textured high density polyethylene (HDPE)]; (iv) secondary leachate collection system (i.e., geosynthetic bi-planar geocomposite drainage material combined with tri-planer geocomposite); (v) secondary liner [i.e., 60 mil textured high density polyethylene (HDPE)]; and (vi) subbase (i.e., in-situ native soil five feet above maximum high groundwater and bedrock surface);
   b. A leachate removal system for the primary and secondary leachate collection system including all associated piping, pumps, pump stations, etc. to convey leachate to the existing on-site pretreatment system;
   c. Stormwater runoff controls (e.g., diversion swales and down chutes) including three (3) detention basins; and
   d. A gravel perimeter access road around the landfill.

3. The Permittee is authorized to maintain the Facility as described in Condition Nos. B.1. and B.2. of this Permit.

4. The Permittee shall control dust, odors, water discharges and noise resulting from the construction and maintenance of the Facility at all times to assure compliance with applicable requirements of the RCSA, and any other applicable laws, including the Occupational Safety and Health Administration (OSHA).

5. Proper sedimentation and erosion controls shall always be implemented and maintained by the Permittee and/or its contractor(s) during activities associated with the construction of the Facility. For specific details on the design, application and installation of erosion and sedimentation control structures refer to Connecticut's Guidelines for Soil Erosion and Sediment Control, dated May 2002, as amended.

6. The Permittee shall, within thirty (30) Days from the completion of the construction, of each of the identified Phase 7 through Phase 11, as described in Condition No. B.2. or any maintenance undertaken pursuant to Condition No. B.3. of this Permit, submit a written notification for the Commissioner's review and written approval. Such notification shall include at a minimum:
   a. P.E. certified statement that the construction of each phase of the Facility has been completed in accordance with approved plans and specifications and the Quality Assurance Plan (QAP);
   b. P.E. certified as-built drawings; and
   c. A request for written authorization from the Commissioner to operate in accordance with Section B. of Permit No. 1160430-MPO, issued on DATE.

7. In accordance with the Department's NDDB Program determinaton letter dated June 9, 2021 (attached as Exhibit A), in addition to the requirements and conditions provided in said letter,

the Permittee shall develop and implement an endangered species protection and mitigation plan including:

a. Retain a qualified invertebrate expert, familiar with the species listed in the June 9, 2021 NDDB determination letter to help implement the specific measures contained therein and based on the protection, conservation and mitigation protocols identified in the *Conceptual Conservation and Protection Plan* submitted by AECOM as revised January 15, 2020;

b. Retain a qualified herpetologist and have the herpetologist on-site during all construction to ensure listed amphibian and reptilian species and turtles are not adversely impacted during the moving of heavy equipment and tree clearing, particularly during May, June and July when turtles are choosing nest sites;

c. If spadefoot toads are observed during the construction phase(s) of this project, immediately notify the NDDB Program. The Permittee shall also halt all work until a conservation plan is developed for the eastern spadefoot and accepted by the NDDB Program; and

d. Retain a qualified botanist or plant ecologist, familiar with the species listed in the June 9, 2021 NDDB determination letter to help implement the specific measures contained therein and based on the protection, conservation and mitigation protocols identified in the *Conceptual Conservation and Protection Plan* submitted by AECOM as revised January 15, 2020.

The experts required above shall be retained to provide on-site services at the landfill sufficient to ensure compliance with the Department's Natural Diversity Data Base determination letter dated June 9, 2021.

8. The Permittee shall: (a) control all traffic related to the construction of the Facility in such a way as to mitigate queuing of vehicles off-site and any excessive or unsafe traffic impact in the area where the Facility is located; (b) unless otherwise exempted, ensure that vehicles are not left idling for more than three (3) consecutive minutes pursuant to Section 22a-174-18(b)(3) of the RCSA; (c) prominently post and maintain signs limiting such vehicle idling time within the Facility.

9. Unless otherwise specified in writing by the Commissioner, any documents required to be submitted under this Permit shall be directed to:

Solid Waste Program
Waste Engineering and Enforcement Division
Bureau of Materials Management and Compliance Assurance
Department of Energy and Environmental Protection
79 Elm Street, Hartford, CT 06106-5127
Or via email to DEEP.Solid&HazWasteReports@ct.gov

10. Any document, including, but not limited to any notice, which is required to be submitted to the Commissioner under this Permit shall be signed by a duly authorized representative of the Permittee, as defined in Section 22a-430-3(b)(2) of the RCSA, and by the individual or individuals responsible for actually preparing such documents, each of whom shall certify in writing as follows:

> "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement in the submitted information may be punishable as a criminal offense."

Any false statement in any document submitted pursuant to this Permit may be punishable as a criminal offense in accordance with Section 22a-6 of the CGS, pursuant to Section 53a-157 of the CGS, and in accordance with any other applicable statute.

11. The date of submission to the Commissioner of any document required by this Permit shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this Permit, including but not limited to, notice of approval or disapproval of any document or other action shall be the date such notice is personally delivered or the date three (3) Days after it is mailed by the Commissioner, whichever is earlier. Any document which is due or required on a weekend or a legal state or federal holiday shall be submitted by the next business day thereafter.

12. This Permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to, any and all public and private rights and to any federal, state or local laws or regulations pertinent to the Facility or activity affected thereby.

13. Nothing in this Permit shall affect the Commissioner's authority to institute any proceeding or to take any actions to prevent violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law.

14. Nothing in this Permit shall relieve the Permittee of other obligations under applicable federal, state, and local laws. Prior to commencing the construction activities, authorized herein, the Permittee or its contractor(s) shall register for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities effective on October 1, 2013 and as amended (construction stormwater general permit), and comply with all applicable terms and conditions.

15. All other terms and conditions contained in Permit to Construct No. SW-1160391 issued on March 19, 1998 and as amended on June 1, 1999 and as modified on May 21, 2002 and as further amended on December 19, 2017 remain unchanged.

16. This Permit may be revoked, suspended, modified, or transferred in accordance with applicable laws.

Issued on this _____ day of insert month, 2021.

By _____
Betsey Wingfield
Deputy Commissioner

Application No. 201903454
Permit to Construct No. SW-1160391-MPC
Permittee - e-Certified
City/Town Clerk - e-Certified

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PERMIT TO CONSTRUCT

Pursuant to Connecticut General Statutes (CGS) Section 22a-208a and Regulations of Connecticut State Agencies (RCSA) Sections 22a-209-4, 22a-209-7 and 22a-209-14, the Commissioner of Environmental Protection (hereinafter the "Commissioner") hereby issues this permit to Wheelabrator Putnam Inc. (hereinafter the "Permittee") to construct a double lined landfill at 344 River Road, Putnam, Connecticut to be utilized solely for the disposal of "residue" as that term is defined in Section 22a-209-1 RCSA. The area covered by this permit is described in the submittals referenced in paragraph 1 below, but generally is located west, north of and adjacent to the existing Putnam Landfill. Hazardous wastes shall not be accepted, processed, disposed of or stored at this landfill.

The facility shall be constructed in accordance with the following submittals:

1. (A) A report entitled "Volume 1, Permit Applications Putnam Ash Residue Landfill, Putnam, Connecticut", prepared for the applicant by EMCON dated May 31, 1996 and received by the Bureau of Waste Management's Waste Engineering and Enforcement Division (WEED) on June 6, 1996.

   (B) A report entitled "Volume 2, Hydrogeological Investigation, Putnam Ash Residue Landfill, Putnam, Connecticut", prepared for the applicant by EMCON dated May 31, 1996 and received by WEED on June 6, 1996.

   (C) A report entitled "Volume 3, Leachate Impact Analysis and Engineering Report, Putnam Ash Residue Landfill, Putnam, Connecticut", prepared for the applicant by EMCON dated May 31, 1996 and received by WEED on June 6, 1996.

   (D) Forty-seven (47) sheets of engineering drawings entitled "Volume 4, Facility Permit Plans May 1996, Putnam Ash Residue Landfill, Putnam, Connecticut", prepared for the applicant by EMCON and received by WEED on June 6, 1996.

   (E) Letter and supporting documents from Benjamin G. Siebecker, P.E., EMCON to David McKeegan, DEP Bureau of Waste Management, Waste Engineering and Enforcement Division, dated September 23, 1996, including a set of engineering drawings entitled "Volume 4, Revised

Engineering Plans September 1996, Putnam Ash Residue Landfill, Putnam, Connecticut", prepared for the applicant by EMCON and received by WEED on September 25, 1996.

CONSTRUCTION REQUIREMENTS

2. The Permittee shall notify the Commissioner of the date when construction will commence. Site preparation and construction of landfill Phases 1 through 6, including support facilities, shall not commence until the Commissioner has received, reviewed, and approved in writing the following documents for each of the identified phases of the facility:

   (A) The final design drawings and details for the double lined landfill area, including construction storm water controls and sequence of construction events.

   (B) The final design and construction bid specifications for site preparation, construction, and materials specifications.

   (C) The Quality Assurance Consultant (QAC) and the Quality Assurance Plan (QAP) as outlined in paragraph 4 below.

   (D) Estimates and detailed outlines of the closure and post-closure maintenance and monitoring sureties.

3. The facility shall be constructed in accordance with the following design features which may incorporate alternate technologies pursuant to Section 22a-209-7(x)(2) RCSA :

   (A) The liner design and leachate collection system in accordance with paragraph 1(C), above.

   (B) A final slope not exceeding a ratio of 1:3 (one vertical on three horizontal) and using the erosion control techniques detailed within the reports and submittals outlined in paragraphs 1(C) and 1(E), above.

4. Quality assurance shall be provided as follows during construction:

   (A) At all times during the site preparation and liner installation, including the bottom and top liner systems, the Permittee shall retain the services of a Quality Assurance Consultant (QAC) to document that site preparation,

the liner and its installation are in accordance with applicable plans and specifications that have been approved in writing by the Commissioner. The QAC shall be independent from the Permittee, manufacturer(s) and installer(s), and the QAC and each of such other persons shall also be responsible for observing and documenting their activities related to liner system installation.

(B) Sixty (60) days prior to commencing site preparation, the Permittee shall submit to the Commissioner for review and written approval a detailed Quality Assurance Plan (QAP) developed specifically for this project. The QAP shall outline the duties of the QAC in detail, including but not limited to, the titles and position descriptions of all personnel who will be working on the project and the responsibilities of such personnel. In addition, the QAP shall include, but not be limited to, procedures for testing and reporting on the integrity of all geotextiles utilized in the construction of the facility under both on-site and laboratory testing conditions, procedures for observing and reporting on all site preparation activities including any excavation and soil material installation, whether the site was prepared and the liner installed in conformance with all applicable regulations and with the plans and specifications that have been approved in writing by the Commissioner, and other details as necessary to ensure adequate quality assurance at the site.

(C) On or before thirty (30) days prior to commencing site preparation, the Permittee shall retain a QAC acceptable to the Commissioner to implement the QAP approved by the Commissioner pursuant to sub-paragraph 4.B above, and shall, by that date, notify the Commissioner in writing of the identity of such QAC, and submit to the Commissioner a description of such QAC's relevant education, experience and training. Permittee shall retain a QAC acceptable to the Commissioner until facility construction is completed, and, at least 30 days before retaining any QAC other than one originally identified under this paragraph, Permittee shall notify the Commissioner in writing of the identity of such other QAC. The QAC retained shall, at a minimum, have experience as the QAC for four (4) double-lined membrane underliner systems at solid waste disposal areas in the eastern United States. Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable QAC unacceptable.

OPERATION AND MAINTENANCE REQUIREMENTS

5. The Permittee shall operate and maintain the facility in accordance with all applicable laws and regulations and with all site development, operation and management, erosion and sedimentation control, landscaping and other management details and plans approved by the Commissioner.

6. The Permittee shall dispose of residue only on those portions of the property delineated for that purpose, as shown on the site engineering drawings referenced in paragraph 1 above, and such disposal shall be accomplished in strict accordance with the approved facility operation and management plan and applicable regulations, including without limitation Sections 22a-209-2 through 22a-209-8 and Section 22a-209-14 RCSA.

7. Residue shall be monofilled in accordance with section 22a-209-14 RCSA. The facility shall be graded, covered, and seeded in accordance with the plans approved by the Commissioner and Section 22a-209-14 of the Regulations of Connecticut State Agencies. All sources of final cover material shall be approved in advance and prior to acceptance at the site by the Commissioner.

8. The Permittee may operate the facility in accordance with the following procedures, which may incorporate alternate technologies in accordance with Section 22a-209-7(x)(2) RCSA:

   (A) Management of snow as specified in the report referenced in paragraph 1(C) above.

   (B) Completion of final cover construction as specified within paragraphs 1(C) and 1(E) above within six (6) months of completing the final lift of any portion of the facility.

   (C) Provision of daily cover as specified in Section 22a-209-7(l)(2) RCSA, until such time as the Commissioner may grant final approval of an alternate schedule for the application of daily cover material.

PRECONDITIONS FOR FACILITY USE

9. Deposition of residue in landfill Phases 1 through 6 shall not commence until a permit to operate has been issued pursuant to Section 22a-208a CGS and Section 22a-209-4 RCSA; and the Commissioner has received, reviewed, and approved in writing the following:

   (A) The final detailed landfill operation and management plan.

(B) The surety for post-closure maintenance and monitoring.

(C) As-built drawings of the prepared area(s) showing backfill, elevations of fill, and measured maximum high water table and engineering certification that the site preparation and liner construction has been completed in accordance with the approved site engineering plans and reports.

(D) Final report of the QAC.

10. Prior to commencing residue disposal in the prepared area, the Permittee shall install permanent liner limit markers in accordance with Section 22a-209-14(g)(1)(C)(ii) RCSA.

11. Prior to commencing residue disposal in any area(s) prepared for such disposal, the Permittee shall install and maintain the storm runoff and erosion control measures described in the site operation and management plan, paragraph 1(C) above. The Permittee shall install and maintain a rain gauge at the site at all times during site operation.

REPORTING

12. For the operating life of the facility, the Permittee shall retain the services of a professional engineer registered in Connecticut to inspect the facility on a quarterly basis and ensure that the Permittee is preparing, developing and operating the facility in strict accordance with the site operation and management plans approved by the Commissioner. Said engineer shall prepare a written inspection report regarding each quarterly inspection. Within 30 days after each inspection, the permittee shall provide to the Commissioner a copy of the engineer's inspection report which shall include, but is not limited to:

(A) A discussion of the site preparation, development and operation and its conformance with engineering plans, interim and final contours, slope stabilization, erosion and storm water runoff control, and sequence of fill;

(B) Status of the effectiveness of and the operation and maintenance of sediment ponds associated with the facility;

(C) Tonnage of residue disposed of at the facility and approximate remaining permitted capacity;

(D) Discussion of the effectiveness of the operation of the leachate collection and leak detection systems, including but not limited to flow volumes, quality of leachate, trends in quantity and quality, response of the systems to precipitation events, daily precipitation amounts from the onsite rain gauge, and condition of the liner, piping, pumps, meters, and pretreatment systems;

(E) Each corrective measure taken, if any, in response to said report.

(F) The weekly leakage recordings required by paragraph 16, the log required by paragraph 17 and any other information specified by this permit to be in such report.

13. The Permittee shall comply with the ground and surface water quality monitoring program as may be required in any permit issued by the Commissioner pursuant to Section 22a-430 CGS for the facility. Monitoring shall continue for at least thirty (30) years after site closure.

14. (A) The permittee shall submit to the Commissioner for his review and written approval annual reports which identify active and planned efforts relating to the use of residue. The report shall include but not be limited to: (a) a brief summary of technological progress made within the year with respect to residue re-use; (b) identification of the major residue markets and end uses in the Northeast, if any; (c) a detailed description of residue utilization demonstration projects proposed or undertaken in Connecticut, if any; (d) the contracted and/or projected use rates, if any, of residue from any resource recovery facility which would otherwise have disposed of residue at the facility; and (e) the impact of this residue use on the anticipated operational life of the Putnam ash residue disposal area. The first such report shall be submitted on the 30th of June immediately following commencement of residue disposal at the site, and on June 30th of each year thereafter. Items (a), (b) and (c) may be submitted in a joint report compiled by all ash disposal facilities permitted in the State of Connecticut.

(B) The permittee shall submit to the Commissioner on an annual basis for his review and written approval a topographical map of the site which provides information on site contours and the rate of fill compared to permitted contours. The first such report shall be submitted on the 30th of June immediately following

commencement of residue disposal at the site, and on June 30th of each year thereafter.

(C) The permittee shall submit to the Commissioner quarterly reports in accordance with Section 22a-208e CGS on forms provided by the Commissioner.

ADDITIONAL REQUIREMENTS

15. Assurance of closure and post-closure financing shall be provided by the Permittee as follows:

(A) Closure: Prior to the construction of each landfill phase, the Permittee shall submit for the Commissioner's review and approval cost estimates for site closure and thirty (30) year post-closure maintenance and monitoring programs. The closure and post-closure cost estimates shall be based on the costs of hiring a third party to close the landfill and to conduct post-closure care activities. Within thirty (30) days following the Commissioner's review and written approval, the Permittee shall post a surety for those costs in accordance with Section 22a-209-4(i) RCSA.

(B) Post-Closure: No later than sixty (60) days before the Permittee begins to dispose of residue at the facility pursuant to this permit, the Permittee shall post a bond or establish other financial assurance ("financial assurance mechanism") in conformity with any of the financial mechanisms identified in 40 CFR 264.145. Except as specified herein, and with the modifications specified in Section 22a-209-4(i)(1)(A), (C) and (D) RCSA, the provisions of 40 CFR 264.141, 40 CFR 264.144, 40 CFR 264.145 and 40 CFR 264.151, as they exist on the date of issuance of this permit, shall govern the establishment, wording, maintenance and release of such financial assurance mechanism. The term "post-closure plan" in the federal regulations shall mean the plan submitted by the Permittee pursuant to Section 22a-209-14(e)(6) RCSA. Such financial assurance mechanism shall be established in an amount no less than the detailed cost to be estimated and documented by the Permittee, and approved by the Commissioner, to cover the cost of post-closure maintenance and monitoring of the facility for a period of at least five years in accordance

with the plan submitted by the Permittee pursuant to Section 22a-209-14(e)(6). The Permittee shall maintain such financial assurance mechanism for no less than thirty (30) years. The amount of the financial assurance mechanism shall be adjusted by the Permittee no later than sixty (60) days prior to each anniversary date of the establishment of such financial assurance mechanism in order to reflect inflation and any other change in the cost of post-closure care for the facility, as approved by the Commissioner, for the five years following the adjustment (or for such lesser period of time as may remain in the period of required post-closure care). The Permittee shall not decrease the amount of the financial assurance mechanism without the prior written approval of the Commissioner.

(C) Failure to comply with conditions A and B above shall constitute a violation of this permit, and may subject the Permittee to enforcement action, including but not limited to the penalty provisions of CGS Sections 22a-226 and 22a-226a.

16. The primary liner system for landfill Phases 1 through 6 shall have an action leakage rate (ALR) of 25 gallons/acre/day. The leakage shall be recorded at least weekly for each individual cell from flow meters on the secondary liner system (leak detection system) and such weekly recordings shall be reported as part of the report submitted in accordance with paragraph 12 above. Should the average daily flow rate for any cell exceed the ALR for 30 consecutive days, the permittee shall report such exceedance to the Commissioner within 10 days of the last exceedance. The permittee shall then have 30 days in which to study the cause and evaluate the need for corrective action, if appropriate, for the leakage and report these findings in writing to the Commissioner.

17. Concurrent with any such submittals made to the Department, the permittee shall provide copies of all monitoring, inspection and compliance correspondence and reports between the Department and the Permittee, to the Town of Putnam, Office of the Mayor, 126 Church Street, Putnam, CT.

Throughout the term of this permit the Permittee shall provide a telephone "hotline" available to receive questions and complaints from area residents and other persons regarding the landfill, and shall designate a contact person responsible for responding to these inquiries. The Permittee shall arrange for the timely and appropriate response during normal business hours to any and all questions and complaints. The Department shall be informed of all

complaints received and the nature of the response provided by the Permittee to the person registering the complaint by a log provided with each quarterly report submitted as required by paragraph 12 of this permit.

18. The permittee shall form, no later than ninety days after the issuance of the permit to construct, a committee [hereinafter "Committee"] of at least five and no more than nine individuals, comprised of residents along the subject roadways who volunteer to be a part of the Committee, at least one individual who will be running the facility, and at least one individual with decision-making authority for Wheelabrator Putnam. Representatives of the Town of Putnam and the Town of Pomfret shall be invited to serve on the Committee. The Committee shall meet as frequently as the Committee decides, but no less than every calendar quarter, and such meetings shall be held at a location and time that facilitates attendance by the residents. The Committee shall be free to establish its own procedures and tasks, including resolution of traffic and safety concerns of the residents and the applicant along the subject roadways. The Committee meetings shall be open to the public. Within thirty days of the issuance of the construction permit, the permittee shall publish a notice in the local Putnam newspaper giving notice of the establishment of the Committee, including a phone number where individuals can call to volunteer to participate. Notice of such publication and a copy of the attendance sheet for all Committee meetings held shall be sent to the Commissioner.

19. In the event that Condition 18 cannot be satisfied because no residents have volunteered to participate in the Committee or because safety concerns are resolved, and either contingency is demonstrated to the Commissioner's satisfaction, Condition 18 may be severed without affecting the remainder of the permit and conditions.

20. Any document required to be submitted to the Commissioner under this permit shall, unless otherwise specified in writing by the Commissioner, be directed to: Director, Waste Engineering & Enforcement Division, Waste Management Bureau, Department of Environmental Protection, 79 Elm Street, Hartford, CT, 06106-5127.

21. Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this permit shall be signed by a duly authorized representative of the Permittee and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments and certify that

based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense."

22. The date of submission to the Commissioner of any document required by this permit shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action shall be the date such notice is personally delivered or the date three days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" as used in this permit means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.

23. The permittee shall use best efforts to submit to the Commissioner all documents required by this permit in a complete and approvable form. The Commissioner may approve any document required by this permit with conditions or modifications. If the Commissioner indicates that any document or other action is deficient and does not approve it with conditions or modifications, it is deemed disapproved, and the permittee shall correct the deficiencies and resubmit it within the time specified by the Commissioner or, if no time is specified by the Commissioner, within thirty days of the Commissioner's notice of deficiencies. Nothing in this paragraph shall excuse noncompliance or delay. No approval by the Commissioner under this permit shall be valid or take effect unless and until the Commissioner specifies in writing which portion of the permit the Commissioner deems to have been satisfied.

24. The permittee shall cause the facility to be operated in conformity with all applicable law, including Section 22a-209-6 RCSA which requires operator certification. The permittee shall operate the facility. All persons under the supervision of the permittee shall be given sufficient training to identify waste residue or any other material received at the facility which is not suitable for processing and take proper action in handling such waste residue or any other material.

25. This permit is subject to and in no way derogates any present or future property rights or powers of the State of Connecticut and conveys no property rights in real estate or material nor any exclusive privileges and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the property or activity affected hereby.

26. This permit may be revoked, suspended, modified or transferred in accordance with applicable law.

27. Nothing in this permit shall affect the Commissioner's authority to institute any proceeding to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law.

28. Nothing in the permit shall relieve the Permittee of its obligation to obtain all necessary permits prior to commencing its operations at the site.

Dated in Hartford, Connecticut this 19th day of May, 1998.

Arthur J. Rocque, Jr.
Commissioner

Permit No. SW- 1160391

Permit Application 199601559

CERTIFICATION OF MAILING

PERMIT TO CONSTRUCT

On MARCH 27, 1998, at 2.00 ~~a.m.~~/p.m., I mailed a certified copy of ~~Order/NOV~~ No. SW-1160391 to the following, by placing it in the U.S. mail.

Wheelabrator Putnam Inc.
C/O Wheelabrator Millbury, Inc.
331 Southwest Cutoff Rd.
Millbury, MA 01527

Certification No. P-058 097 093

Sara J. D'Elia, Town Clerk
Town Hall
126 Church Street
Putnam, CT 06260

Certification No. Z H01 200 H07

Certification No. _____

Certification No. _____

Certification No. _____

Certification No. _____

Diana Sedok
Clerk Typist

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MINOR PERMIT AMENDMENT
TO
PERMIT TO CONSTRUCT NO. SW-1160391

PERMITTEE: Wheelabrator Putnam Inc.
FACILITY LOCATION: 344 River Road, Putnam
MUNICIPALITY: Putnam
PERMIT NO.: SW-1160391

Pursuant to Connecticut General Statutes (CGS) Section 22a-208a and Regulations of Connecticut State Agencies (RCSA) Section 22a-209-4, Permit to Construct No. SW-1160391 issued on March 19, 1998 by the Commissioner of Environmental Protection ("Commissioner") to Wheelabrator Putnam Inc. ("Permittee") to construct a double lined landfill ("Facility"), at 344 River Road, Putnam, Connecticut, for the disposal of ash residue, IS HEREBY AMENDED.

Specifically, the Permittee shall use the alternate access route to deliver residue to the landfill and bypass the local road system.

1. The issuance of this minor permit amendment is based on an application for a minor permit amendment prepared by Wheelabrator Putnam Inc. dated March 18, 1999 and received by the Bureau of Waste Management's Waste Engineering and Enforcement Division on March 18, 1999. The application package includes a set of engineering drawings entitled "Quinebaug River Crossing and Alternate Access Road to Putnam Ash Residue Landfill Putnam, Connecticut" prepared by Macchi Engineers, LLC dated January 1999.

2. The following language is hereby added as a condition of Permit to Construct No. SW-1160391:

> "The Permittee shall only, absent uncontrollable circumstances, use the bridge and the alternate access route (as detailed in the application referenced in paragraph 1, above) for ingress and egress of trucks delivering ash residue to or removing sand or gravel from the Facility, bypassing the local roads."

All other terms and conditions contained in the Permit to Construct No. SW-1160391 issued March 19, 1998 remain unchanged.

Issued on this 1st day of June 1999.

By _____
Arthur J. Rocque, Jr.
Commissioner

Minor Amendment to Permit to Construct No. SW-1130391
Application No. 199901048

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PERMIT MODIFICATION
PERMIT TO CONSTRUCT NO. SW-1160391 and
PERMIT TO OPERATE NO. SW-1160430-PO

PERMITTEE: Wheelabrator Putnam Inc.
FACILITY LOCATION: 344 River Road, Putnam
MUNICIPALITY: Putnam
PERMIT NO.: SW-1160391-PC/M and SW-1160430-PO/M

Pursuant to Connecticut General Statutes (CGS) Section 22a-208a and Regulations of Connecticut State Agencies (RCSA) Section 22a-209-4, Permit to Construct No. SW-1160391 and Permit to Operate No. SW-1160430-PO, issued on March 19, 1998 and May 6, 1999, respectively by the Commissioner of Environmental Protection ("Commissioner") to Wheelabrator Putnam Inc. ("Permittee") to construct and operate a residue disposal area (the "facility") located at 344 River Road, Putnam, Connecticut, ARE HEREBY MODIFIED.

Specifically, the permit modifications add language to the introductory paragraph of Permit to Construct No. SW-1160391 and change the Operation Requirements outlined in paragraph 4 of Permit to Operate No. SW-1160430-PO.

The issuance of these permit modifications is based on an application prepared by EMCON/OWT Solid Waste Services on behalf of Wheelabrator Putnam Inc. dated August 23, 2001 and received by the Department on August 24, 2001.

PERMIT TO CONSTRUCT

The introductory paragraph of Permit to Construct No. SW-1160391 is deleted and the following substituted in its place:

> Pursuant to Connecticut General Statutes (CGS) Section 22a-208a and Regulations of Connecticut State Agencies (RCSA) Sections 22a-209-4, 22a-209-7 and 22a-209-14, the Commissioner of Environmental Protection (hereinafter the "Commissioner") hereby issues this permit to Wheelabrator Putnam Inc. (hereinafter the "Permittee") to construct a double lined landfill at 344 River Road, Putnam, Connecticut to be utilized solely for the disposal of "residue" as that term is defined in Section 22a-209-1 RCSA and ash produced from coal burning power generation facilities (i.e., coal ash). The area covered by this permit is described in the submittals referenced in paragraph 1 below, but generally is located west, north of and adjacent to the existing Putnam Landfill. Hazardous wastes shall not be accepted, processed, disposed of or stored at this landfill.

PERMIT TO OPERATE

Paragraph 4 of Permit to Operate No. SW-1160430-PO is deleted and the following substituted in its place:

4. The codisposal of "residue" as defined in RCSA Section 22a-209-1 and ash produced from coal burning power generation facilities (i.e., coal ash) is hereby allowed at this facility, subject to the following:

(A) The Permittee shall ensure that there is sufficient disposal capacity available, through calendar year 2019, to accommodate the residue generated by the resource recovery facility customers currently utilizing this facility.

(B) The Permittee may accept for disposal at this facility coal ash from those generators identified in the application [i.e., Attachment E, Statement of Consistency, Section 2.1) dated August 23, 2001. The Permittee shall provide a minimum twenty-one (21) days' written notice to the Bureau of Waste Management's Waste Engineering and Enforcement Division (WEED) of its intention to accept coal ash from any source other than those identified in the application. WEED may require such source specific information, sampling data, leachate data or other information that it believes to be appropriate and necessary. Upon written notification from WEED, the Permittee shall conduct the sampling and testing of residue and coal ash mixtures in accordance with the procedures outlined in the referenced application (i.e., Attachment R, Leachate Impact Analysis, Appendix A).

(C) The Permittee shall keep a daily log of all trucks delivering coal ash to the facility and with respect to each truck shall provide the information outlined in paragraph 11 of the permit to operate, as amended.

(D) The Permittee shall ensure that all trucks delivering coal ash to the facility strictly adhere to the requirements outlined in paragraphs 3, 5, and 8 of the permit to operate, as amended.

All other terms and conditions contained in Permit to Construct No. SW-1160391 issued on March 19, 1998 and as amended on June 1, 1999 and Permit to Operate No. SW-1160430-PO issued on May 6, 1999 and as amended on October 24, 2000, attached as Appendix A of this permit modification, remain unchanged.

Issued on this 21st day of May 2002.

By _____
Arthur J. Rocque, Jr.
Commissioner

Permit Modification Nos. SW-1160391-PC/M and SW-1160430-PO/M
Application No. 200102829

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

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MINOR PERMIT AMMENDMENT
PERMIT TO CONSTRUCT NO. SW-1160391

PERMITTEE: Wheelabrator Putnam Inc.
FACILITY LOCATION: 344 River Road, Putnam
MUNICIPALITY: Putnam
PERMIT NO.: SW-1160391/MA

Pursuant to Connecticut General Statutes (CGS) Section 22a-208a and Regulations of Connecticut State Agencies (RCSA) Section 22a-209-4, Permit to Construct No. SW-1160391, issued on March 19, 1998, by the Commissioner of Environmental Protection ("Commissioner"), and as amended on June1, 1999 by a Minor Permit Amendment to Permit to Construct No. SW-1160391 and further modified on May 21, 2002 by Permit Modification No. SW-1160391-PC/M, to Wheelabrator Putnam Inc. ("Permittee") to construct a double lined landfill (i.e. residue disposal area) located at 344 River Road, Putnam, Connecticut, IS HEREBY AMENDED.

Specifically, this permit amendment adds language to Condition No. 1, Condition No. 3, and Condition No. 8 of Permit to Construct No. SW-1160391.

The issuance of this permit amendment is based on an application prepared by Brown and Caldwell on behalf of Wheelabrator Putnam Inc. dated January 6, 2017 and received by the Department of Energy and Environmental Protection ("DEEP") on January 13, 2017.

Permit to Construct No. SW-1160391 is hereby amended as described below.

The following sub-conditions are added to Condition No. 1:

1. (F) An engineering plan labeled "Drawing Number 4" and entitled "Wheelabrator Putnam Inc. – Putnam Ash Residue Landfill, Metals Recovery Facility Solid Waste Permit Application, Completed Construction Overview," prepared for the Permittee by Brown and Caldwell dated July 25, 2017 and received by the DEEP on July 25, 2017.

1. (G) An engineering plan labeled "Drawing Number 5" and entitled "Wheelabrator Putnam Inc. – Putnam Ash Residue Landfill, Metals Recovery Facility Solid Waste Permit Application, Ash Aging Area," prepared for the Permittee by Brown and Caldwell dated July 25, 2017 and received by the DEEP on July 25, 2017.

The following sub-conditions are added to Condition No. 3:

3. (C) An operational area of approximately five (5) acres located within the limits of the Putnam Ash Landfill's lined disposal cells for use in staging residue in windrows to prepare the residue for processing through an automated residue processing facility consisting of a metals recovery unit and central upgrade facility.

3. (D) An automated metals recovery unit, located within the limits of the Putnam Ash Landfill's lined disposal cells, consisting of a dedicated residue feed hopper, multiple material conveyance belts, various automated material sorters, and multiple material receiving bins for the receipt of processed residue, sorted ferrous metals, and sorted non-ferrous metals.

3. (E) An automated non-ferrous metal central upgrade facility, located within the limits of the Putnam Ash Landfill's lined disposal cells, consisting of a dedicated non-ferrous metal concentrate feed hopper, multiple conveyance belts, a material sorting screen, a fine particle collector, and a receiving bin for receipt of processed non-ferrous metal concentrate.

All other terms and conditions contained in Permit to Construct No. SW-1160391 issued on March 19, 1998 and as amended on June 1, 1999 and further modified on May 21, 2002 remain unchanged.

Issued on this 19th day of December, 2017.

By _____
Yvonne Bolton, Chief
Bureau of Material Management and Compliance Assurance

Application No. 201700605
Minor Permit Amendment of Permit to Construct SW-1160391

Connecticut Department of
ENERGY &
ENVIRONMENTAL
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MODIFICATION TO
PERMIT TO OPERATE NO. 1160430-PO

PERMITTEE: Wheelabrator Putnam Inc.
FACILITY ADDRESS: 344 River Road, Putnam, Connecticut
PERMIT No. 1160430-MPO

Pursuant to Section 22a-208a of the Connecticut General Statutes ("CGS") and Section 22a-209-4 of the Regulations of Connecticut State Agencies ("RCSA"), a PERMIT TO OPERATE ("Permit") IS HEREBY ISSUED by the Commissioner of Energy and Environmental Protection ("Commissioner") to Wheelabrator Putnam Inc. ("Permittee") to operate a solid waste disposal area for the receipt and disposal of Residue located 344 River Road, Putnam, Connecticut ("Facility"). Subsequently, Permit to Operate No. 1160430-PO issued on May 6, 1999, as amended on October 24, 2000 by Minor Permit Amendment Permit to Operate No. SW- 1160430-PO, as modified on May 21, 2002 by Permit Modification No. SW-1160430-PO/M and as amended on December 19, 2017 by Minor Permit Amendment to Permit to Operate No. 1160430-PO/MA, IS HEREBY MODIFIED.

A. GENERAL TERMS AND CONDITIONS

1. a. This Permit is based on and incorporates by reference pertinent and appropriate sections of documents and specifications submitted as part of Application No. 201903454 to modify the Permit to Operate, including:
   i. Application form dated February 28, 2019;
   ii. Facility Operations and Maintenance Plan (O&MP) dated February 28, 2019;
   iii. A Site Plan prepared by Brown and Caldwell, Alan R. Kirschner, P.E., dated February 28, 2019;
   iv. Volume 1 Part 1, Permit Application, Phases 7 through 11, Putnam Ash Residue Landfill, Putnam, Connecticut, prepared by Civil & Environmental Consultants, Inc., dated February 28, 2019;
   v. Volume 2, Hydrogeologic Report, Phases 7 through 11, Putnam Ash Residue Landfill, Putnam, Connecticut, prepared by Civil & Environmental Consultants, Inc., dated February 28, 2019;
   vi. Volume 3, Engineering Report, Phases 7 through 11, Putnam Ash Residue Landfill, Putnam, Connecticut, prepared by Civil & Environmental Consultants, Inc., dated February 28, 2019;
   vii. Volume 4, set of engineering drawings (Sheet 1 through 55, inclusive) titled Design Drawings Phases 7 through 11 Putnam Ash Residue Landfill, Putnam, Connecticut – Sheet 2 through 27, inclusive identified as Drawing No. H1 through Drawing No. H26 prepared by Brown and Caldwell, Alan R. Kirschner, P.E., dated February 28, 2019 and Sheets 28 through 55, inclusive identified as Drawing No. E1 through Drawing No. E28 prepared by Civil & Environmental Consultants, Inc., Amy J. Knight, P.E., dated February 28, 2019;
   viii. Volume 5, Application for U.S. Army Corps of Engineers Department of the Army Permit, Individual Permit Authorization and Connecticut 401 Water Quality Certification, Wheelabrator Putnam, Inc., Putnam Ash Residue Landfill, Phases 7 through 11, Putnam, Connecticut; Application No. 201903463, prepared by AECOM, dated February 28, 2019;
   ix. Correspondence to the Department of Energy and Environmental Protection (the "Department") from Wheelabrator Putnam Inc. dated November 30, 2020,

submitted in response to the Department's request for additional information dated August 10, 2020, including revised engineering Drawing Nos. E3, E5 through E10, E12, E13, E19, E21, E23, and E25 prepared by Civil & Environmental Consultants, Inc., Amy J. Knight, P.E., dated February 28, 2019, revised December 1, 2020;

x. Correspondence to the Department from Wheelabrator Putnam Inc. dated March 10, 2021, submitted in response to the Department's request for additional information dated March 9, 2021, including the Facility Operations and Maintenance Plan, revised March 10, 2021 and engineering Drawing No. E10 revised March 10, 2021; and

xi. Correspondence to the Department from Wheelabrator Putnam Inc. dated June 10, 2021 transmitting a determination letter from the Department's Natural Diversity Data Base (NDDB) Program, dated June 9, 2021, which requires protection and mitigation strategies for State Endangered, Threatened and Special Concern species known in the vicinity of the project.

b. The Permittee shall maintain at the Facility and have available for reference by Facility staff and inspection by the Commissioner:
   i. All documents or copies of such documents submitted as Application No. 201903454 and any document submitted in support of said application for the life of this Permit; and
   ii. A copy of this Permit and the Facility's Facility Plan which consists of the Operation and Maintenance Plan and the engineered drawings which describe the Facility and its operations; and

c. The Permittee shall for the life of this Permit, provide to the Department notification within thirty (30) Days of any changes in the information provided as part or in support of the application on which this Permit was based. Any inaccuracies found in the information submitted by the Permittee may result in revocation, reissuance, or modification of this Permit and civil or criminal enforcement actions.

2. As used in this Permit, the following definitions apply:

"Certified Operator" means the solid waste facility operator or an employee of such operator who is present at the facility and oversees or carries out the daily operations authorized through this Permit, and whose qualifications are currently certified in accordance with Section 22a-209-6 of the RCSA.

"CFR" means the Code of Federal Regulations in effect the date this Permit is issued.

"Commissioner" means the Commissioner of Energy and Environmental Protection.

"Day" means calendar day.

"Department" means the Department of Energy and Environmental Protection.

"Professional Engineer" or "P.E." means an engineer licensed to practice in the state of Connecticut.

"Residue" as defined in Section 22a-209-1 of the RCSA means bottom ash, air pollution control residue, and other residues from the combustion process at resource recovery facilities, municipal solid waste incinerators and biomedical waste incinerators. For the purpose of this Permit, residue also includes ash generated from the wood biomass gasification process and the coal combustion process.

3. The Permittee shall comply with all terms and conditions of this Permit. This Permit consists of the conditions contained herein and the specifications contained in the application documents, except where such specifications are superseded by the more stringent conditions contained herein. Violation of any provision of this Permit may be subject to enforcement action pursuant, but not limited, to Sections 22a-6, 22a-208, 22a-225 and 22a-226 of the CGS.

4. The Permittee shall make no changes to the specifications and requirements of this Permit, except in accordance with law.

5. To the extent that any term or condition of this Permit is deemed to be inconsistent or in conflict, with any term or condition of any Permit previously issued for this Facility, including any modifications thereto, or with any data or information contained in the application, or any other documents incorporated by reference in this Permit, the term or condition of this Permit shall control and remain enforceable against the Permittee.

6. Provided a permit modification is not required pursuant to Sections 22a-208a(d)(1) or 22a-208a(e) of the CGS, the Permittee shall submit for the Commissioner's review and written approval all necessary documentation supporting any proposed physical and/or operational upgrades, improvements and/or minor changes in the Facility design, practices or equipment. The Commissioner may issue a written approval only if, in the Commissioner's judgment, the proposed physical and/or operational upgrades, improvements and/or minor changes: (a) are deemed necessary for a better and more efficient operation of the Facility; (b) do not significantly change the nature of the Facility, or its impact on the environment; and (c) do not warrant the issuance of a permit or authorization pursuant to Section 22a-208 et seq. of the CGS.

B. AUTHORIZATION TO OPERATE

1. The Permittee is authorized to operate any or all the components specified in Permit to Construct SW-1160391 as modified by Permit No. SW-1160391-MPC upon written approval granted by the Commissioner. Such written approval shall be issued after the Permittee is deemed in full compliance with, but not limited to, the requirements of Condition No. B.6. of Permit No. SW-1160391-MPC, issued on DATE.

2. Solid waste, other than those listed herein, shall not be accepted, processed, treated, stored, or disposed on-site, or otherwise managed at the Facility without prior written approval of the Commissioner.

3. The Permittee is authorized to operate the Facility in accordance with all applicable law, including this Permit. Unless otherwise approved in writing by the Commissioner or limited by local authorities, the Permittee is authorized to operate as follows: receive at the Facility authorized solid waste Monday through Saturday 7:00 a.m. through 6:00 p.m. and Sunday 8:30 a.m. through 5:30 p.m.

4. The Permittee is authorized to receive for disposal at the Facility the following types of solid waste: (a) Residue; (b) ash generated from wood biomass gasification; and (c) ash produced from coal burning power generation facilities (i.e., coal ash).

5. The Permittee shall dispose and manage solid waste at the Facility only in the designated areas as identified in the drawings referenced in Condition No. A.1.a. of this Permit.

6. The Permittee shall:
   a. Store solid waste on-site in conformance with proper fire control measures. Routine maintenance and inspections of all fire control equipment shall be conducted in accordance with manufacturer's specifications;

   b. Ensure that all solid waste accepted at the Facility is properly managed on-site, stored, or transported to other solid waste disposal facilities authorized to accept such solid waste;

   c. Ensure that any unauthorized solid waste inadvertently received, or solid waste which is unsuitable for at the Facility is: (i) immediately sorted, separated, isolated and temporarily stored in a safe manner prior to off-site transport; (ii) recorded and reported in the quarterly report required by Condition No. B.10. of this Permit; and (iii) disposed at a facility authorized to accept such solid waste. No more than ten (10) cubic yards of unacceptable solid waste shall be stored on-site unless authorized in writing by the Commissioner. A spare container may be made available for any storage emergency at the Facility;

   d. Provide expeditious notification regarding any emergency incident (explosion, accident, fire, release, or other significant disruptive occurrence) which: (i) significantly damaged equipment or structures; (ii) interrupts the operation of the Facility for greater than twenty-four (24) hours; (iii) results in an unscheduled Facility shutdown or forced diversion of solid waste to other solid waste facilities; (iv) could reasonably create a source of pollution to the waters of the state; or (v) otherwise threatens public health.

      Such notification shall be: (i) immediately provided to the Commissioner using the 24-hour emergency response number (860) 424-3338 or the alternate number (860) 424-3333 and, in no event later than twenty-four (24) hours after the emergency incident, provided to the Solid Waste Program in the Waste Engineering and Enforcement Division of the Bureau of Materials Management and Compliance Assurance by phone at (860) 424-3366, or at another current publicly published number for the Solid Waste Program, or by facsimile at (860) 424-4059; (ii) followed by a written report no later than the fifth business day after the emergency incident detailing the cause and effect of the incident, remedial steps taken and emergency backup used or proposed to be implemented; and (iii) recorded in a log of emergency incidents. In addition to the notification requirements above, the Permittee shall comply with all other applicable reporting or notification requirements regarding the emergency incident including but not limited to, reporting required by Section 22a-450 of the CGS;

   e. Prevent the spillage of solid waste from transfer containers during on-site management, storage, and off-site transfer. Each loaded container shall be covered before transferring off-site and the haulers shall be instructed to keep the containers covered during off-site transportation;

f. Operate the Facility in a safe manner to control fire, odor, noise, spills, vectors, litter, and dust emission levels in continuous compliance with all applicable requirements, including OSHA. The Facility's premises shall be maintained, and any litter shall be removed daily; and

g. Ensure that the manufacturers' operation and maintenance manuals for each major piece of fixed or mobile equipment installed or used at the Facility are available for review by the Commissioner.

7. The Permittee shall have an operator, certified pursuant to Section 22a-209-6 of the RCSA, present at all times during Facility operation. All individuals under the supervision of such Certified Operator shall have sufficient training to identify solid waste received at the Facility which is not permitted to be received and shall take proper action in managing such solid waste.

8. The Permittee shall prominently post and maintain a sign at the Facility entrance pursuant to Section 22a-209-7(d)(3) of the RCSA that includes the Facility's name and the Department Permit number (Permit to Operate No. 1160430-MPO) issuance date and expiration date. Such sign shall also include a phone number that provides the general public the ability to register questions or complaints twenty-four (24) hours per day. The Permittee shall maintain a log of all calls received and how such calls were addressed or resolved.

9. The Permittee shall: (a) control all traffic related to the operation of the Facility in such a way as to mitigate queuing of vehicles off-site and any excessive or unsafe traffic impact in the area where the Facility is located; (b) unless otherwise exempted, ensure that vehicles are not left idling for more than three (3) consecutive minutes pursuant to Section 22a-174-18(b)(3) of the RCSA; (c) prominently post and maintain signs limiting such vehicle idling time within the Facility.

10. The Permittee shall maintain daily records as required by Section 22a-209-7(f) of the RCSA. All daily logs (including documentation related to the unannounced inspections of truck loads) shall be maintained for the life of this Permit or such other timeframe specified in writing by the Commissioner. Based on such records, the Permittee shall prepare quarterly summaries including, but not limited to, the following information as it pertains to solid waste:

    a. Type and quantity of solid waste received, including unauthorized solid waste; and
    b. Origin of waste load (regional facility name) and waste hauler name.

    The summaries required pursuant this condition shall be submitted quarterly no later than January 31, April 30, July 31, October 31, of each year on up-to-date forms prescribed by the Commissioner directly to the Solid Waste Program in accordance with Condition No. B.15 of this Permit.

11. Nothing herein authorizes any person, municipality or authority to hinder municipal or regional solid waste recycling efforts. All activities conducted by the Permittee at the Facility shall be in accordance with this Permit and consistent with the state-wide Solid Waste Management Plan, a.k.a. Connecticut's 2016 *Comprehensive Materials Management Strategy* pursuant to Sections 22a-228 and 229 of the CGS.

12. The Permittee shall, no later than sixty (60) Days after the issuance date of the written authorization to operate pursuant to Permit No. SW-1160391-MPC, establish for the Commissioner's benefit an acceptable financial assurance instrument and post the financial assurance with the Department, as required by Section 22a-6(a)(7) of the CGS.

13. The Permittee acknowledges and shall ensure that it complies with the following:
    a. The purpose of the financial assurance is to cover the third party costs for handling, removing, transporting and disposing the maximum permitted amount of unprocessed and Processed solid waste at the Facility, and any additional cost(s) to ensure the proper closure of storage areas including, but not limited to, equipment rental, site clean-up, the decontamination and disposal of all equipment and Processing and storage areas, and a fifteen percent (15%) contingency to cover unforeseen events or activities that may increase the overall cost to close the Facility.

    b. The financial assurance instrument used by the Permittee to comply with Condition No. B.12. of this Permit shall comply with the requirements of Section 22a-209-4(i) of the RCSA, and 40 CFR 264.141 to 264.143 inclusive and 40 CFR 264.151, as referenced therein. The Permittee shall ensure that the financial assurance instrument is established in a format specified by the Commissioner for closure or post-closure maintenance and care, as appropriate.

    c. The Department accepts five (5) types of financial assurance instruments, they are: (a) Trust Fund; (b) Irrevocable Standby Letter of Credit; (c) Financial Guarantee "Payment" Bond; (d) Performance Bond; and (e) Certificate of Insurance. The following documents are also required to be submitted:
        i. A cover letter signed by the Permittee shall be submitted along with the Irrevocable Standby Letter of Credit, in accordance with Section 40 CFR 264.143(d)(4);
        ii. A "Standby Trust Agreement" shall be submitted along with either an Irrevocable Standby Letter of Credit; Financial Guarantee "Payment" Bond; or Performance Bond; and
        iii. A "Certification of Acknowledgement" shall be submitted along with the Trust Fund instrument.

    d. The financial assurance shall:
        i. Be valid for and appropriately maintained during the term of this Permit;
        ii. Specify the Permittee's name, the Facility's address, the number, and issuance date of this Permit; and
        iii. Be established in one or more of, the instrument formats found on the Department's website [www.ct.gov/DEEP/financialassurance].

    e. The financial assurance instrument shall be adjusted annually for inflation within the sixty (60) Days prior to the anniversary date of the establishment of the financial assurance instrument, and whenever there is a change in operations that affects the cost of closing the Facility in accordance with 40 CFR 264.142(b) as incorporated in Section 22a-449(c)-104 of the RCSA.

14. The Permittee shall, no later than sixty (60) Days from the issuance date of this Permit perform quarterly compliance audits for the life of this Permit.

    a. The compliance audits required by this condition shall consist of a thorough and complete assessment of the Permittee's compliance with Sections 22a-209-1 through 22a-209-17 of the RCSA and with the terms and conditions of this Permit.

    b. Compliance Auditor
    The compliance audits required by this condition shall be performed by an engineer licensed to practice in Connecticut ("P.E") or consultant. Such P.E. or consultant shall be approved in writing by the Commissioner and will be required to prepare and submit to the Commissioner quarterly compliance audit reports.

    The Permittee shall, prior to the Commissioner's approval of the P.E. or consultant: (a) submit for the Commissioner's evaluation a detailed description of the P.E. or consultant's credentials (education; experience; training) which are relevant to the work required under this condition; and (b) certify to the Commissioner that such P.E. or consultant:
    i. Is not a subsidiary of or affiliated corporation to the Permittee or Permitted Facility;
    ii. Does not own stock in the Permittee or any parent, subsidiary, or affiliated corporation;
    iii. Has no other direct financial stake in the outcome of the compliance audit(s) outlined in this Permit; and
    iv. Has expertise and competence in environmental auditing and the regulatory programs being addressed through this Permit, including evaluation of compliance with requirements specified in Sections 22a-209-1 through 22a-209-17 of the RCSA and with the terms and conditions of this Permit.

    Within ten (10) Days after retaining any P.E. or consultant other than the one approved by the Commissioner ("compliance auditor") pursuant to this condition, the Permittee shall submit to the Commissioner for his review and written approval, the information and documentation specified in this condition regarding such other P.E. or consultant. Nothing in this condition shall preclude the Commissioner from finding a previously acceptable P.E. or consultant unacceptable.

    c. Scope of Compliance Audits
    Compliance audits shall:
    i. Detail the Permittee's compliance with the requirements of this Permit and all applicable provisions of Sections 22a-209-1 through 22a-209-17 of the RCSA.
    ii. Describe the Compliance Auditor's participation in and the results of inspections conducted at the Facility on the loads of solid waste received at the Facility during the compliance audit. Unless otherwise approved by the Commissioner, the compliance auditor shall inspect solid wastes unloaded from a minimum of ten (10) trucks received during the day of the compliance audit. The Compliance Auditor shall document the actual number of truck loads inspected and the findings of such inspections.

    d. Compliance Audit Report
    The results of each compliance audit shall be summarized in a Compliance Audit report. At a minimum such report shall include:

i. The names of those individuals who conducted the compliance audit;
ii. The areas of the Facility inspected;
iii. The records reviewed to determine compliance;
iv. An evaluation and detailed description of the Permittee's compliance with this Permit and applicable regulations;
v. The identification of all violations of this Permit and applicable regulations;
vi. The findings of the compliance auditor regarding the audits conducted in accordance with Condition No. B.14. of this Permit during the day of the compliance audit;
vii. A detailed description of all actions taken by the Permittee to correct the violation(s) identified in each compliance audit; and
viii. The Permittee's certification of compliance with the regulations and documentation demonstrating such compliance pursuant to this Permit. In cases where multiple counts of the same violation are discovered, the report shall include a listing of each count.

e. Permittee's Reponses to Compliance Audit
The Permittee shall comply with the following:
i. The auditing frequency shall be quarterly for the remaining life of the Permit;
ii. All violations shall immediately be brought to the attention of the Permittee by the compliance auditor. The Permittee shall notify the Department within five (5) Days of the compliance audit of all violations noted during the compliance audit;
iii. The Permittee shall correct all violations immediately. Should the Permittee be unable to immediately correct the violation, within seven (7) Days of the date the Permittee became aware of the violation(s), the Permittee shall submit for the review and written approval of the Commissioner, a detailed plan to correct all violations noted. Such plan shall also include a schedule for implementation of the corrective actions required or recommended; and
iv. The Permittee shall ensure that no later than fifteen (15) Days after a compliance audit, a compliance audit report that meets the requirements of Condition No. B.14. of this Permit, is submitted to the Commissioner. A copy of the compliance audit report shall be maintained at the Facility for the life of the Permit or for such other timeframe specified by the Commissioner.

f. In addition to any other sanction authorized by law, the Permittee shall cease accepting solid waste at the Facility in the event that the Permittee fails to submit in a timely manner the plan and schedule required by Condition No. B.14.e. of this Permit or fails to correct the violations noted by the compliance audit(s) in accordance with the approved plan and schedule. The Commissioner may seek similar sanction for any violation of this Permit.

g. **Documentation Submittal Deadlines**
The documents required to be submitted pursuant to this condition shall be submitted quarterly no later than January 31, April 30, July 31, October 31, directly to the Solid Waste Enforcement Program, in accordance with Condition No. B.15. of this Permit.

15. Unless otherwise specified in writing by the Commissioner, any documents required to be submitted under this Permit shall be directed to:

Solid Waste Program
Waste Engineering and Enforcement Division
Bureau of Materials Management and Compliance Assurance
Department of Energy and Environmental Protection
79 Elm Street, Hartford, CT 06106-5127
Or via email to DEEP.Solid&HazWasteReports@ct.gov

16. Any document, including, but not limited to any notice, which is required to be submitted to the Commissioner under this Permit shall be signed by a duly authorized representative of the Permittee, as defined in Section 22a-430-3(b)(2) of the RCSA, and by the individual or individuals responsible for actually preparing such documents, each of whom shall certify in writing as follows:

> "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement in the submitted information may be punishable as a criminal offense."

Any false statement in any document submitted pursuant to this Permit may be punishable as a criminal offense in accordance with Section 22a-6 of the CGS, pursuant to Section 53a-157 of the CGS, and in accordance with any other applicable statute.

17. The date of submission to the Commissioner of any document required by this Permit shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this Permit, including but not limited to, notice of approval or disapproval of any document or other action shall be the date such notice is personally delivered or the date three (3) Days after it is mailed by the Commissioner, whichever is earlier. Any document which is due or required on a weekend or a legal state or federal holiday shall be submitted by the next business day thereafter.

18. This Permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to, any and all public and private rights and to any federal, state or local laws or regulations pertinent to the Facility or activity affected thereby.

19. Nothing in this Permit shall affect the Commissioner's authority to institute any proceeding or to take any actions to prevent violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law.

20. Nothing in this Permit shall relieve the Permittee of other obligations under applicable federal, state, and local laws.

21. This Permit may be revoked, suspended, modified, renewed, or transferred in accordance with applicable laws.

Issued on this _____ day of insert month, 2021.

By _____
Betsey Wingfield
Deputy Commissioner

Application No. 201903454
Permit to Operate No. 1160430-MPO
Permittee - e-Certified
City/Town Clerk - e-Certified

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PERMIT TO OPERATE

Permittee: Wheelabrator Putnam Inc.
Facility Location: 344 River Road
Municipality: Putnam
Permit No.: *1160430-PO*

Pursuant to Section 22a-208a of the Connecticut General Statutes (CGS) and Section 22a-209-4 of the Regulations of Connecticut State Agencies (RCSA) a Permit to Operate is hereby granted to Wheelabrator Putnam Inc. (the "Permittee") to operate a new residue disposal area (the "facility") located at 344 River Road, Putnam, Connecticut.

The facility shall be constructed and operated in accordance with the Solid Waste Permit to Construct No. SW-1160391 issued to Wheelabrator Putnam Inc. on March 19, 1998 and the following submittals and conditions:

1. (A) A report entitled "Volume 5, Permit Applications Supplements, Putnam Ash Residue Landfill, Putnam, Connecticut" prepared for the applicant by EMCON, dated January 1997 and received by the Bureau of Waste Management on February 18, 1997.

(B) Set of engineering drawings entitled "Putnam Ash Residue Landfill, Putnam, Connecticut, Volume 6 Vol. 4 Revised Engineering Plans - Sept. 1996 and Supplemental Permit Plans" prepared for the applicant by EMCON, dated January 1997 and received by the Bureau of Waste Management's Waste Engineering and Enforcement Division (WEED) on February 18, 1997.

(C) A report entitled "Construction Certification Report Phase 1 Baseliner, Putnam Ash Residue Landfill, Putnam, Connecticut" prepared for the applicant by EMCON, dated January 1999 and received by WEED on January 13, 1999.

(D) Letter and supporting documents from Donald W. Musial, EMCON to David McKeegan (WEED), dated March 1, 1999.

(E) A report entitled "Construction Certification Report Phase 1 Infrastructure and Discharge Systems, Putnam Ash Residue Landfill, Putnam, Connecticut" prepared for the applicant by EMCON, dated April 14, 1999 and received by WEED on April 16, 1999.

OPERATION REQUIREMENTS

2. The Permittee shall not accept ash residue at the facility until the Town of Putnam's solid waste landfill and transfer station located on River Road permanently ceases to operate.

3. The Permittee shall not operate its facility except between the hours of 7 a.m. and 6 p.m. Monday through Saturday, except that the Permittee shall not allow ash trucks to enter or leave the facility on Sundays or on Christmas Day, New Years Day, Thanksgiving Day, the Fourth of July, Memorial Day and Labor Day.

4. The Permittee shall not dispose of more than 409,000 tons of ash per calendar year at the facility.

5. Except in the event of exigent circumstances, the Permittee shall require that no ash trucks travel on Moduck Road, or use any currently existing road in the "impacted neighborhood" other than the following roads: Quinebaug Avenue (to River Road), Stickney Road (from Route 44 in Pomfret to the junction of Mantup and Modock Roads), Mantup Road (to River Road) and River Road (to the facility).

6. The Permittee shall ensure that all ash trucks using the facility are regularly maintained, serviced and inspected so that no ash residue or leachate is deposited on any road. If, despite such measures, any ash residue or leachate is deposited on a road, the Permittee shall immediately, upon learning of such an event, report the incident to the DEP Waste Management Bureau and shall promptly remove and dispose of the ash residue and/or leachate to an extent and in a manner satisfactory to the Commissioner.

7. The Permittee shall ensure that the ash trucks using the facility are maintained in safe operating condition and that all noise and pollution control devices on them are fully operational.

8. The Permittee shall ensure that no trucks with capacities greater than thirty cubic yards use the facility. The Permittee shall ensure that the ash trucks using the facility are no longer than 55 feet, and no wider, mirror to mirror, than 9 feet, unless otherwise authorized in writing by the Commissioner.

9. The Permittee shall ensure that ash trucks using the facility do not queue up on Stickney Road, Mantup Road, Modock Road, River Road or Quinebaug Avenue.

10. To the extent practicable, the Permittee shall require that the ash trucks deliver full loads to the facility so that truck trips are minimized.

11. The Permittee shall keep a daily log of all ash trucks entering the facility and, with respect to each truck, shall record on the log the date, route taken, time of arrival, time of departure, source of the residue, tonnage of ash delivered, and the capacity of the truck. The Permittee shall submit the log to the Commissioner semi-annually, on January 30 and July 30, and shall make such log available to the Committee, and make it available at reasonable times for public inspection.

12. Prior to commencing the disposal of ash residue, the Permittee shall, to the full extent of its lawful capability, conduct or cause to be conducted the following mitigation measures: i) enhancement and upgrading of the warning signs at the two horizontal curves on River Road; ii) enhancement and upgrading of the warning signs in advance of the "S" curve on Quinebaug Avenue as it changes to River Road; iii) enhancement and upgrading of the warning signs in advance of the 90 degree right angle turn on Quinebaug Avenue; iv) sight distance enhancement by removal of overgrown vegetation and tree limbs within the Town right-of-way along Quinebaug Avenue, especially in the 90 degree right angle turn and the "S" curve; v) at the River Road - Mantup Road intersection, sight distance enhancement, including the northwest quadrant, by trimming back overgrown vegetation within the town right-of-way; vi) trimming back overgrown vegetation along River Road, Mantup Road, and Quinebaug Avenue to enhance sight distance and visibility of traffic signs; vii) providing a centerline along Quinebaug Avenue, River Road, and Mantup Road (Stickney Road) to separate directional traffic flow; viii) installing a "STOP" sign on the Town Farm Road approach to River Road; ix) installing a "steep grade" ahead sign on Mantup Road to alert truck drivers of the grade along this route; x) widening Mantup Road to a minimum width of 18 feet; xi) maintaining a vegetative screen surrounding the site, consistent with local zoning requirements; xii) preparing and distributing a truck driver informational package describing the traffic access corridors; and xiii) providing a daily contact and telephone number at the ash residue landfill for residents to call about periodic operational issues or questions. The Permittee shall report to the Commissioner and the Committee the progress in implementing such mitigation measures. To the extent that those measures are undertaken, the Permittee shall routinely maintain or cause to be maintained such measures.

13. Prior to commencing operation of the facility and during its operation, as needed for updating purposes, the Permittee shall prepare and provide to the management of each trucking company using the facility informational packages for each driver who will be bringing ash to the facility. The

informational package shall include, at a minimum: i) a description of the routes; ii) an identification of road(s) that cannot be used; iii) a depiction of the steep grades and sharp curves along the route, and which specifically identifies the possible problem areas, including the "S" curve on River Road and the 90 degree turn on Quinebaug Avenue; iv) a narrative emphasizing that the route passes through a residential-agricultural area; v) the location of school bus stops and turn arounds and vi) the reminder that pedestrians and bicyclists have the right-of-way.

14. The Permittee shall maintain a vegetative screen around the facility, consistent with the Town of Putnam zoning requirements, and which will not interfere with traffic sight lines.

15. The disposal of ash residue at the facility shall cease upon the occurrence of either of the following: (a) in any given calendar year, the annual tonnage limitations set forth in Condition 4 is reached; or (b) the calculated capacity of an individual cell or the landfill as a whole is reached.

16. If any of the items "i" through "x" as enumerated in Condition 12 herein, are impossible to perform, as demonstrated to the satisfaction of the Commissioner, satisfaction of individual requirements so proved may be severed without affecting the remainder of the permit and conditions.

The Permittee shall operate this residue landfill in accordance with the permit to construct, all applicable state statutes, regulations and guidelines, and all applicable documents referenced in the permits to construct and operate.

This permit to operate may be revoked, suspended, modified or transferred in accordance with the reasons and procedures set forth in Section 22a-209-4(g) and (h) of the Regulations of Connecticut State Agencies.

Issued this 6th day of May, 1999.

Arthur J. Rocque, Jr.
Commissioner

Solid Waste Permit to Operate No. 160430-PO
Permit Application No. 199601559

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PERMIT MODIFICATION
PERMIT TO CONSTRUCT NO. SW-1160391 and
PERMIT TO OPERATE NO. SW-1160430-PO

PERMITTEE: Wheelabrator Putnam Inc.
FACILITY LOCATION: 344 River Road, Putnam
MUNICIPALITY: Putnam
PERMIT NO.: SW-1160391-PC/M and SW-1160430-PO/M

Pursuant to Connecticut General Statutes (CGS) Section 22a-208a and Regulations of Connecticut State Agencies (RCSA) Section 22a-209-4, Permit to Construct No. SW-1160391 and Permit to Operate No. SW-1160430-PO, issued on March 19, 1998 and May 6, 1999, respectively by the Commissioner of Environmental Protection ("Commissioner") to Wheelabrator Putnam Inc. ("Permittee") to construct and operate a residue disposal area (the "facility") located at 344 River Road, Putnam, Connecticut, ARE HEREBY MODIFIED.

Specifically, the permit modifications add language to the introductory paragraph of Permit to Construct No. SW-1160391 and change the Operation Requirements outlined in paragraph 4 of Permit to Operate No. SW-1160430-PO.

The issuance of these permit modifications is based on an application prepared by EMCON/OWT Solid Waste Services on behalf of Wheelabrator Putnam Inc. dated August 23, 2001 and received by the Department on August 24, 2001.

PERMIT TO CONSTRUCT

The introductory paragraph of Permit to Construct No. SW-1160391 is deleted and the following substituted in its place:

> Pursuant to Connecticut General Statutes (CGS) Section 22a-208a and Regulations of Connecticut State Agencies (RCSA) Sections 22a-209-4, 22a-209-7 and 22a-209-14, the Commissioner of Environmental Protection (hereinafter the "Commissioner") hereby issues this permit to Wheelabrator Putnam Inc. (hereinafter the "Permittee") to construct a double lined landfill at 344 River Road, Putnam, Connecticut to be utilized solely for the disposal of "residue" as that term is defined in Section 22a-209-1 RCSA and ash produced from coal burning power generation facilities (i.e., coal ash). The area covered by this permit is described in the submittals referenced in paragraph 1 below, but generally is located west, north of and adjacent to the existing Putnam Landfill. Hazardous wastes shall not be accepted, processed, disposed of or stored at this landfill.

PERMIT TO OPERATE

Paragraph 4 of Permit to Operate No. SW-1160430-PO is deleted and the following substituted in its place:

4. The codisposal of "residue" as defined in RCSA Section 22a-209-1 and ash produced from coal burning power generation facilities (i.e., coal ash) is hereby allowed at this facility, subject to the following:

(A) The Permittee shall ensure that there is sufficient disposal capacity available, through calendar year 2019, to accommodate the residue generated by the resource recovery facility customers currently utilizing this facility.

(B) The Permittee may accept for disposal at this facility coal ash from those generators identified in the application [i.e., Attachment E, Statement of Consistency, Section 2.1) dated August 23, 2001. The Permittee shall provide a minimum twenty-one (21) days' written notice to the Bureau of Waste Management's Waste Engineering and Enforcement Division (WEED) of its intention to accept coal ash from any source other than those identified in the application. WEED may require such source specific information, sampling data, leachate data or other information that it believes to be appropriate and necessary. Upon written notification from WEED, the Permittee shall conduct the sampling and testing of residue and coal ash mixtures in accordance with the procedures outlined in the referenced application (i.e., Attachment R, Leachate Impact Analysis, Appendix A).

(C) The Permittee shall keep a daily log of all trucks delivering coal ash to the facility and with respect to each truck shall provide the information outlined in paragraph 11 of the permit to operate, as amended.

(D) The Permittee shall ensure that all trucks delivering coal ash to the facility strictly adhere to the requirements outlined in paragraphs 3, 5, and 8 of the permit to operate, as amended.

All other terms and conditions contained in Permit to Construct No. SW-1160391 issued on March 19, 1998 and as amended on June 1, 1999 and Permit to Operate No. SW-1160430-PO issued on May 6, 1999 and as amended on October 24, 2000, attached as Appendix A of this permit modification, remain unchanged.

Issued on this 21st day of May 2002.

By _____
Arthur J. Rocque, Jr.
Commissioner

Permit Modification Nos. SW-1160391-PC/M and SW-1160430-PO/M
Application No. 200102829

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www ct.gov/deep Affirmative Action/Equal Opportunity Employer

MINOR PERMIT AMMENDMENT
PERMIT TO OPERATE NO. 1160430-PO

PERMITTEE: Wheelabrator Putnam Inc.
FACILITY LOCATION: 344 River Road, Putnam
MUNICIPALITY: Putnam
PERMIT NO.: 1160430-PO/MA

Pursuant to Connecticut General Statutes (CGS) Section 22a-208a and Regulations of Connecticut State Agencies (RCSA) Section 22a-209-4, Permit to Operate No. 1160430-PO, issued on May 6, 1999, by the Commissioner of Environmental Protection ("Commissioner"), and as amended on October 24, 2000 by a Minor Permit Amendment to Permit to Operate No. SW-1160430-PO and further modified on May 21, 2002 by Permit Modification No. SW-1160430-PO/M, to Wheelabrator Putnam Inc. ("Permittee") to operate a residue disposal area ("Facility") located at 344 River Road, Putnam, Connecticut, IS HEREBY AMENDED.

Specifically, this permit amendment adds language to Condition No. 1 and makes changes to the operating requirements outlined in Condition No. 5 and Condition No. 6 of Permit to Operate No. 1160430-PO. The permit amendment also provides additional operating requirements as Condition No. 17 and Condition No. 18.

The issuance of this permit amendment is based on an application prepared by Brown and Caldwell on behalf of Wheelabrator Putnam Inc. dated January 6, 2017 and received by the Department of Energy and Environmental Protection ("DEEP") on January 13, 2017.

Permit to Operate No. 1160430-PO is hereby amended as described below.

The following sub-conditions are added to Condition No. 1:

1 (F) An engineering plan labeled "Drawing Number 4" and entitled "Wheelabrator Putnam Inc. – Putnam Ash Residue Landfill, Metals Recovery Facility Solid Waste Permit Application, Completed Construction Overview," prepared for the Permittee by Brown and Caldwell dated July 25, 2017 and received by the DEEP on July 25, 2017.

1. (G) An engineering plan labeled "Drawing Number 5" and entitled "Wheelabrator Putnam Inc. – Putnam Ash Residue Landfill, Metals Recovery Facility Solid Waste Permit Application, Ash Aging Area," prepared for the Permittee by Brown and Caldwell dated July 25, 2017 and received by the DEEP on July 25, 2017.

1. (H) A revised operations and management plan entitled "Facility Operations and Maintenance Plan, Putnam Ash Residue Landfill, Putnam, Connecticut," prepared for the Permittee by Brown and Caldwell dated January 3, 2017 and received by the DEEP on January 9, 2017.

Condition No. 5 is deleted and the following substituted in its place:

5 The Permittee shall only, absent uncontrollable circumstances, use the bridge and the Alternate Access Route (via Technology Park Drive from its intersection with Kennedy Drive and southward to the Putnam Ash Residue Landfill) for ingress and egress of trucks delivering ash residue to or removing sand or gravel from the facility, bypassing the local roads. In the event of uncontrollable circumstances that prevent the use of the

Alternate Access Route, the Permittee shall require that no ash trucks travel on Moduck Road or use any currently existing road in the "impacted neighborhood" other than the following roads: Quinebaug Avenue (to River Road), Stickney Road (from Route 44 in Pomfret to the junction of Mantup and Modock Roads), Mantup Road (to River Road) and River Road (to the Facility). The Permittee shall notify the Department whenever it becomes necessary for ash trucks to access the landfill via River Road. Such notification shall be made within 24 hours of each instance that the use of this access route becomes necessary.

Condition No. 6 is deleted and the following substituted in its place:

6. The Permittee shall ensure that all ash trucks using the facility are regularly maintained, serviced and inspected so that no ash residue or leachate is deposited on any road. The Permittee shall make best efforts to ensure that all vehicles exiting the landfill's lined disposal area are free of residue. If, despite such measures, any ash residue or leachate is deposited on a road, the Permittee shall immediately, upon learning of such an event, report the incident to the DEEP Bureau of Materials Management and Compliance Assurance and shall promptly remove and dispose of the ash residue and/or leachate to an extent and in a manner satisfactory to the Commissioner.

Condition No. 17 is added as follows:

17. The Permittee shall prepare and manage residue windrows to properly age and prepare the residue for processing through the Metals Recovery Facility. Residue shall be managed in such windrows only within the lined disposal cells and only within the area identified on the engineering drawing referenced in Condition No. 1. (H), above.

Condition No. 18 is added as follows:

18. All operations conducted to age and prepare the residue for processing shall be in accordance with the operating specifications described in the operations and management plan referenced in Condition No. 1 (F) above. Specifically, residue windrows shall be prepared and maintained such that the total volume of residue does not exceed 66,000 cubic yards. Such windrows shall be prepared and maintained only in the designated area described in Condition No. 17, above.

All other terms and conditions contained in Permit to Operate No. 1160430-PO issued on May 6, 1999 and as amended on October 24, 2000 and further modified on May 21, 2002 remain unchanged.

Issued on this 19th day of December, 2017.

By _____
Yvonne Bolton, Chief
Bureau of Materials Management and Compliance Assurance

Application No. 201700406
Minor Permit Amendment of Permit to Operate 1160430-PO

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MINOR PERMIT AMENDMENT
TO
PERMIT TO OPERATE NO. SW-1160430-PO

PERMITTEE: Wheelabrator Putnam Inc.
FACILITY LOCATION: 344 River Road, Putnam
MUNICIPALITY: Putnam
PERMIT NO.: SW-1160430-PO

Pursuant to Connecticut General Statutes (CGS) Section 22a-208a and Regulations of Connecticut State Agencies (RCSA) Section 22a-209-4, Permit to Operate No. SW-1160430-PO issued on May 6, 1999 by the Commissioner of Environmental Protection ("Commissioner") to Wheelabrator Putnam Inc. ("Permittee") to operate a residue disposal area (the "facility") located at 344 River Road, Putnam, Connecticut, IS HEREBY AMENDED.

Specifically, the minor permit amendment changes the Operation Requirements outlined in paragraphs 3, 5, 8 and 11 of Permit to Operate No. SW-1160430-PO.

The issuance of this minor permit amendment is based on an application for a minor permit amendment prepared by Wheelabrator Putnam Inc. dated June 13, 2000 and received by the Department on June 14, 2000 and a letter from Wheelabrator Putnam Inc. dated July 27, 2000 withdrawing the request to amend Operational Requirement No. 4 of the Permit to Operate.

Paragraphs 3, 5, 8 and 11 of Permit to Operate No. SW-1160430-PO are deleted and the following substituted in their place:

3. The Permittee shall not operate its facility except between the hours of 7:00 a.m. and 6:00 p.m.Monday through Saturday and between the hours of 8:30 a.m. and 5:30 p.m. on Sunday. If ash trucks are unable to access the facility by using the Alternate Access Route, the Permittee shall not operate its facility except between the hours of 7 a.m. and 6 p.m. Monday through Saturday, except that the Permittee shall not allow ash trucks to enter or leave the facility on Sundays or on Christmas Day, New Years Day, Thanksgiving Day, the Fourth of July, Memorial Day and Labor Day.

5. The Permittee shall only, absent uncontrollable circumstances, use the bridge and the Alternate Access Route for ingress and egress of trucks delivering ash residue to or removing sand or gravel from the facility, bypassing the local roads. In the event of uncontrollable circustances that prevents the use of the Alternate Access Route, the Permittee shall require that no ash trucks travel on Moduck Road or use any currently existing road in the "impacted neighborhood" other than the following roads: Quinebaug Avenue (to River Road), Stickney Road (from Route 44 in Pomfret to the junction of Mantup and Modock Roads), Mantup Road (to River Road) and River Road (to the Facility).

8. Ash trucks using the Alternate Access Route to access the facility shall comply with the regulations and standards established by the State Of Connecticut Department of Transportation for vehicle weight and capacity limits. If ash trucks are unable to use the Alternate Access Route due to uncontrollable circumstances, the Permittee shall ensure that no trucks with capacities greater than thirty cubic yards use the facility. The Permittee shall ensure that the ash trucks using the facility are no longer than 55 feet, and no wider, mirror to mirror, than 9 feet, unless otherwise authorized in writing by the Commissioner.

11. The Permittee shall keep a daily log of all trucks entering the facility and, with respect to each truck, shall record the date, tonnage of ash delivered, its origin, and the location of the cell utilized for its disposal. The Permittee shall submit the record to the Commissioner semi-annually, on January 30 and July 30.

All other terms and conditions contained in Permit to Operate No. SW-1160430-PO, issued May 6, 1999 remain unchanged.

Issued on this 24th day of October, 2000.

By _____
Arthur J. Pacque, Jr.
Commissioner

Minor Amendment to Permit to Operate No. SW-1160430-PO
Application No. 200001884

PRETREATMENT PERMIT

issued to

Wheelabrator Putnam Inc.
200 Technology Park Drive
Putnam, CT 06260

Location Address:

200 Technology Park Drive
Putnam, CT 06260

Issuance Date: [TBD – Upon Signature]
Effective Date: [1st of the Month following Issuance Date]

Permit ID: SP0002303

Expiration Date: [Five (5) Years from Effective Date]

SECTION 1: GENERAL PROVISIONS

(A) This permit is reissued in accordance with section 22a-430 of Chapter 446k, Connecticut General Statutes ("CGS"), and Regulations of Connecticut State Agencies ("RCSA") adopted thereunder, as amended, and a modified Memorandum of Agreement dated June 3, 1981, by the Administrator of the United States Environmental Protection Agency which authorizes the State of Connecticut to administer a Pretreatment Program pursuant to Title 40 of the Code of Federal Regulations Part 403 ("40 CFR Part 403").

(B) Wheelabrator Putnam Inc., ("Permittee"), shall comply with all conditions of this permit including the following sections of the RCSA which have been adopted pursuant to section 22a-430 of the CGS and are hereby incorporated into this permit. Your attention is especially drawn to the notification requirements of subsections (i)(2), (i)(3), (j)(1), (j)(6), (j)(8), (j)(9)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) and (l)(2) of section 22a-430-3.

Section 22a-430-3 General Conditions

(a) Definitions
(b) General
(c) Inspection and Entry
(d) Effect of a Permit
(e) Duty
(f) Proper Operation and Maintenance
(g) Sludge Disposal
(h) Duty to Mitigate
(i) Facility Modifications; Notification
(j) Monitoring, Records and Reporting Requirements
(k) Bypass
(l) Conditions Applicable to POTWs
(m) Effluent Limitation Violations (Upsets)
(n) Enforcement
(o) Resource Conservation
(p) Spill Prevention and Control
(q) Instrumentation, Alarms, Flow Recorders
(r) Equalization

Section 22a-430-4 Procedures and Criteria

(a) Duty to Apply
(b) Duty to Reapply
(c) Application Requirements
(d) Preliminary Review
(e) Tentative Determination

(f) Draft Permits, Fact Sheets
(g) Public Notice, Notice of Hearing
(h) Public Comments
(i) Final Determination
(j) Public Hearings
(k) Submission of Plans and Specifications. Approval.
(l) Establishing Effluent Limitations and Conditions
(m) Case by Case Determinations
(n) Permit issuance or renewal
(o) Permit Transfer
(p) Permit revocation, denial or modification
(q) Variances
(r) Secondary Treatment Requirements
(s) Treatment Requirements for Metals and Cyanide
(t) Discharges to POTWs - Prohibitions

(C) Violations of any of the terms, conditions, or limitations contained in this permit may subject the Permittee to enforcement action, including but not limited to, penalties, injunctions and/or forfeitures pursuant to applicable sections of the CGS and RCSA. Specifically, civil penalties of up to twenty-five thousand dollars ($25,000) may be assessed per violation per day.

(D) Any false statement in any information submitted pursuant to this permit may be punishable as a criminal offense under section 22a-438 or 22a-131a of the CGS or in accordance with section 22a-6, under section 53a-157b of the CGS.

(E) The authorization to discharge under this permit may not be transferred without prior written approval of the Commissioner of Energy and Environmental Protection ("the Commissioner"). To request such approval, the Permittee and proposed transferee shall register such proposed transfer with the Commissioner at least thirty (30) days prior to the transferee becoming legally responsible for creating or maintaining any discharge which is the subject of the permit transfer. Failure by the transferee to obtain the Commissioner's approval prior to commencing such discharge(s) may subject the transferee to enforcement action for discharging without a permit pursuant to applicable sections of the CGS and RCSA.

(F) Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.

(G) An annual fee shall be paid for each year this permit is in effect as set forth in section 22a-430-7 of the RCSA.

SECTION 2: DEFINITIONS

(A) The definitions of the terms used in this permit shall be the same as the definitions contained in section 22a-423 of the CGS and sections 22a-430-3(a) and 22a-430-6 of the RCSA.

(B) In addition to the above, the following definitions shall apply to this permit:

"----" in the limits column on the monitoring table means a limit is not specified but a value must be reported on the Discharge Monitoring Report ("DMR").

"Average Monthly Limit" means the maximum allowable "Average Monthly Concentration" as defined in section 22a-430-3(a) of the RCSA when expressed as a concentration (e.g. mg/l); otherwise, it means "Average Monthly Discharge Limitation" as defined in section 22a-430-3(a) of the RCSA.

"Daily Concentration" means the concentration of a substance as measured in a daily composite sample, or the arithmetic average of all grab sample results defining a grab sample average.

"Daily Quantity" means the quantity of waste generated during an operating day.

"Instantaneous Limit" means the highest allowable concentration of a substance as measured by a grab sample, or the highest allowable measurement of a parameter as obtained through instantaneous monitoring.

"Maximum Daily Limit" means the maximum allowable "Daily Concentration" (defined above) when expressed as a concentration (e.g. mg/l); otherwise, it means the maximum allowable "Daily Quantity" as defined above unless it is expressed as a flow quantity. If expressed as a flow quantity it means "Maximum Daily Flow" as defined in section 22a-430-3(a) of the RCSA.

"NA" as a Monitoring Table abbreviation means "not applicable".

"NR" as a Monitoring Table abbreviation means "not required".

"Range During Month" or "RDM", as a sample type, means the lowest and the highest values of all of the monitoring data for the reporting month.

"Range During Sampling" or "RDS", as a sample type, means the maximum and minimum of all values recorded as a result of analyzing each grab sample of; 1) a Composite Sample, or 2) a Grab Sample Average. For those permittees with continuous monitoring and recording pH meters, Range During Sampling shall mean the maximum and minimum readings recorded with the continuous monitoring device during the Composite or Grab Sample Average sample collection.

"Twice per Month" when used as a sample frequency shall mean two samples per calendar month collected no less than twelve (12) days apart.

"ug/l" means micrograms per liter.

“pg/l” means picograms per liter

SECTION 3: COMMISSIONER'S FINAL DETERMINATION

(A) The Commissioner has made a final determination and found that the continuance of the existing system to treat the discharge will protect the waters of the state from pollution. The Commissioner's final determination is based on Application No. 201500823 for permit reissuance received on February 2, 2015, Application No. 201903451 for permit modification received on March 1, 2019, and the administrative record established in the processing of such applications.

(B) From the effective date of this permit, for a term not to exceed five years and until this permit expires or is modified or revoked, the Commissioner hereby authorizes the Permittee to discharge in accordance with the terms and conditions of Permit No. SP0002303, issued by the Commissioner to the Permittee on the issuance date, Application Nos. 201500823 and 201903451 received by the Department of Energy and Environmental Protection (“Department”) on February 2, 2015 and March 1, 2019, respectively, and all modifications and approvals issued by the Commissioner or the Commissioner’s authorized agent for the discharge and/or activities authorized by, or associated with, Permit No. SP0002303, following the issuance date of this permit.

(C) The Commissioner reserves the right to make appropriate revisions to the permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions that may be authorized under the Federal Clean Water Act or the CGS or regulations adopted thereunder, as amended. The permit as modified or renewed under this paragraph may also contain any other requirements of the Federal Clean Water Act or CGS or regulations adopted thereunder which are then applicable.

SECTION 4: EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

(A) The discharge(s) shall not exceed and shall otherwise conform to the specific terms and conditions listed below. The discharge(s) is restricted by, and shall be monitored in accordance with, the table(s) below.

Table A

Discharge Serial Number:201-1 | **Monitoring Location:1**

Wastewater Description: Landfill leachate, wheel wash water, incidental storm water from wheel wash area, laboratory rinse water, contact run off and wash water from metals processing units, bleed stream from water reuse system

Monitoring Location Description: The effluent monitoring chamber (the force main pH probe is used for pH monitoring)

Discharge is to: Town of Putnam Publicly Owned Treatment Works ("POTW")

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING		
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency [2]	Sample Type or Measurement to be Reported	Instantaneous Limit or Required Range	Sample/ Reporting Frequency[2]	Sample Type or Measurement to be Reported
Arsenic, Total	mg/l	NA	----	Monthly	Daily Composite	NA	NR	Grab
Aluminum, Total	mg/l	NA	----	Monthly	Daily Composite	NA	NR	Grab
Barium, Total	mg/l	NA	----	Monthly	Daily Composite	NA	NR	Grab
Bis(2-ethylhexyl)phthalate	ug/l	----	----	Twice Per Month	Grab Sample Average	NA	NR	Grab
Cadmium, Total	mg/l	NA	0.1	Monthly	Daily Composite	0.1	NR	Grab
Chlorides, Total	mg/l	NA	----	Monthly	Daily Composite	NA	NR	Grab
Copper, Total	mg/l	NA	1.0	Monthly	Daily Composite	1.0	NR	Grab
Chromium, Hexavalent	mg/l	NA	0.1	Monthly	Grab Sample Average	0.1	NR	Grab
Chromium, Total	mg/l	NA	1.0	Monthly	Daily Composite	1.0	NR	Grab
Chemical Oxygen Demand	mg/l	NA	-----	Monthly	Daily Composite	NA	NR	Grab
Dioxin	pg/l	----	----	Twice Per Month	Grab Sample Average	NA	NR	Grab
Flow Rate (Average Daily)[1]	gpd	-----	NA	Continuous	Daily Flow	NA	NR	NA
Flow, Maximum during 24 hr period[1]	gpd	NA	300,000	Continuous	Daily Flow	NA	NR	NA
Flow (Day of Sampling)	gpd	NA	300,000	Twice Per Month	Daily Flow	NA	NR	NA
Lead, Total	mg/l	NA	0.1	Monthly	Daily Composite	0.1	NR	Grab
Mercury, Total	mg/l	NA	----	Monthly	Daily Composite	NA	NR	Grab
Molybdenum, Total	mg/l	NA	----	Monthly	Daily Composite	NA	NR	Grab
Nickel, Total	mg/l	NA	1.0	Monthly	Daily Composite	1.0	NR	Grab
Phosphorus, Total	mg/l	NA	----	Monthly	Daily Composite	NA	NR	Grab
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0-10.0	Twice Per Month	RDS
pH, Minimum	S.U.	NA	NA	NR	NA	6.0	Continuous	Continuous
pH, Maximum	S.U.	NA	NA	NR	NA	10.0	Continuous	Continuous
Selenium, Total	mg/l	NA	----	Monthly	Daily Composite	NA	NR	Grab

Silver, Total	mg/l	NA	0.1	Monthly	Daily Composite	0.1	NR	Grab
Total Dissolved Solids	mg/l	----	----	Twice Per Month	Daily Composite	NA	NR	Grab
Total Suspended Solids	mg/l	NA	----	Monthly	Daily Composite	NA	NR	Grab
Total Toxic Organics	mg/l	NA	NA	NR	Grab Sample Average	----	Monthly	Grab
Vanadium, Total	mg/l	NA	----	Monthly	Daily Composite	NA	NR	Grab
Zinc, Total	mg/l	NA	1.0	Monthly	Daily Composite	1.0	NR	Grab

Table Footnotes:

Footnotes:

[1] For this parameter the Permittee shall maintain at the facility a record of the Total Daily Flow for each day of discharge and shall report the Average Daily Flow and the Maximum Daily Flow for each month.

[2] The first entry in this column is the 'Sample Frequency'. If this entry is not followed by a 'Reporting Frequency' and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample Frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

(B) All samples shall be comprised of only those wastewaters described in this schedule. Therefore, samples shall be taken prior to combination with wastewaters of any other type and after all approved treatment units, if applicable. All samples taken shall be representative of the discharge during standard operating conditions.

(C) In cases where limits and sample type are specified but sampling is not required, the limits specified shall apply to all samples which may be collected and analyzed by the Department personnel, the Permittee, or other parties**.**

(D) Trucks that carried ash must have their wheels and tailgate washed before exiting the facility.

SECTION 5: SAMPLE COLLECTION, HANDLING AND ANALYTICAL TECHNIQUES AND REPORTING REQUIREMENTS

(A) Chemical analyses to determine compliance with effluent limits and conditions established in this permit shall be performed using the methods approved by the Environmental Protection Agency pursuant to 40 CFR 136 unless an alternative method has been approved in writing in accordance with 40 CFR 136.4 or as provided in section 22a-430-3(j)(7) of the RCSA. Chemicals which do not have methods of analysis defined in 40 CFR 136 shall be analyzed in accordance with methods specified in this permit.

(B) All metals analyses identified in this permit shall refer to analyses for Total Recoverable Metal as defined in 40 CFR 136 unless otherwise specified.

(C) The results of chemical analysis required above shall be entered on the DMR, provided by this office, and reported to the Bureau of Materials Management and Compliance Assurance at the address below. Except for continuous monitoring, any monitoring required more frequently than monthly shall be reported on an attachment to the DMR, and any additional monitoring conducted in accordance with 40 CFR 136 or other methods approved by the Commissioner shall also be included on the DMR, or as an attachment, if necessary. The report shall also include a detailed explanation of any violations of the limitations specified. The DMR shall be received at this address by the last day of the month following the month in which samples are taken.

Water Permitting and Enforcement Division (Attn: DMR Processing)
Bureau of Materials Management and Compliance Assurance
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

(D) If this permit requires monitoring of a discharge on a calendar basis (e.g. monthly, quarterly, etc.) but a discharge has not occurred within the frequency of sampling specified in the permit, the Permittee must submit the DMR as scheduled, indicating "NO DISCHARGE". For those permittees whose required monitoring is discharge dependent (e.g. per batch), the minimum reporting frequency is monthly. Therefore, if there is no discharge during a calendar month for a batch discharge, a DMR must be submitted indicating such by the end of the following month.

(E) NetDMR Reporting Requirements

1. Prior to one-hundred eighty (180) days after the effective date of this permit, the Permittee may either submit monitoring data and other reports to the Department in hard copy form or electronically using NetDMR, a web-based tool that allows Permittees to electronically submit DMRs and other required reports through a secure internet connection. Unless otherwise approved in writing by the Commissioner, no later than one-hundred eighty (180) days after the effective date of this permit the Permittee shall begin reporting electronically using NetDMR. Specific requirements regarding subscription to NetDMR and submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

   a. Submittal of *NetDMR Subscriber Agreement*

      On or before fifteen (15) days after the effective date of this permit, the Permittee and/or the person authorized to sign the Permittee's DMRs ("Signatory Authority") as described in RCSA section 22a-430-3(b)(2) shall contact the Department at deep.netdmr@ct.gov and initiate the NetDMR subscription process for electronic submission of DMR information. Information on NetDMR is available on the Department's website at www.ct.gov/deep/netdmr. On or before ninety (90) days after effective date of this permit the Permittee shall submit a signed copy of the ***Connecticut DEEP NetDMR Subscriber Agreement*** to the Department.

   b. Submittal of Reports Using NetDMR

Unless otherwise approved by the Commissioner, on or before one-hundred eighty (180) days after effective date of this permit, the Permittee and/or the Signatory Authority shall electronically submit DMRs and reports required under this permit to the Department using NetDMR in satisfaction of the DMR submission requirement of Section 5(C) of this permit.

DMRs shall be submitted electronically to the Department no later than the last day of the month following the completed reporting period. All reports required under the permit, including any monitoring conducted more frequently than monthly or any additional monitoring conducted in accordance with 40 CFR 136, shall be submitted to the Department as an electronic attachment to the DMR in NetDMR. Once a Permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to the Department. The Permittee shall also electronically file any written report of non-compliance described in Section 6 of this permit as an attachment in NetDMR. NetDMR is accessed from: http://www.epa.gov/netdmr.

c. Submittal of NetDMR Opt-Out Requests

If the Permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for electronically submitting DMRs and reports, the Commissioner may approve the submission of DMRs and other required reports in hard copy form ("opt-out request"). Opt-out requests must be submitted in writing to the Department for written approval on or before fifteen (15) days prior to the date a Permittee would be required under this permit to begin filing DMRs and other reports using NetDMR. This demonstration shall be valid for twelve (12) months from the date of the Department's approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to the Department using NetDMR unless the Permittee submits a renewed opt-out request and such request is approved by the Department.

All opt-out requests and requests for the NetDMR subscriber form should be sent to the following address or by email at deep.netdmr@ct.gov:

Attn: NetDMR Coordinator
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

(F) Copies of all DMRs shall be submitted concurrently to the local Water Pollution Control Authority(ies) ("WPCA") involved in the treatment and collection of the permitted discharge.

SECTION 6: RECORDING AND REPORTING OF VIOLATIONS, ADDITIONAL TESTING REQUIREMENTS

(A) If any sample analysis indicates that an effluent limitation specified in Section 4 of this permit has been exceeded, a second sample of the effluent shall be collected and analyzed for the parameter(s) in question and the results reported to the Bureau of Materials Management and Compliance Assurance, Water Permitting and Enforcement Division within thirty (30) days of the date of the analytical laboratory report identifying the exceedance.

(B) The Permittee shall immediately notify the Bureau of Materials Management and Compliance Assurance, Water Permitting and Enforcement Division and the local WPCA of all discharges that could cause problems to the POTW, including but not limited to slug loadings of pollutants which may cause a violation of the POTW's NPDES permit, or which may inhibit or disrupt the POTW, its treatment processes or operations, or its sludge processes, use or disposal.

(C) In addition to the notification requirements specified in Section 1(B) of this permit, if any sampling and analysis of the discharge performed by the Permittee indicates a violation of limits specified in Section 4 of this permit, the Permittee shall notify the Bureau of Materials Management and Compliance Assurance, Water Permitting and Enforcement Division within twenty-four (24) hours of becoming aware of the violation.

SECTION 7: COMPLIANCE SCHEDULE

(A) The Permittee shall assure compliance with the terms and conditions of this Permit and sections 22a-430-3 and 4 of the RCSA in accordance with the following schedule:

(1) On or before thirty (30) days after the effective date of this permit, the Permittee shall employ or retain one or more qualified professionals acceptable to the Commissioner to prepare the documents and implement or oversee the actions required by this section of the permit and shall, by that date, notify the Commissioner in writing of the identity of such professionals. Such professionals employed or retained by the Permittee shall have demonstrated knowledge of the per – and polyfluorinated alkyl substances ("PFAS") and the sampling protocols and analytical laboratory methods associated with identifying and quantifying PFAS. The Permittee shall employ or retain one or more qualified professionals acceptable to the Commissioner until the actions required by this section of the permit have been completed, and within ten (10) days after employing or retaining any professional(s) other than one(s) originally identified under this paragraph, the Permittee shall notify the Commissioner in writing of the identity of such other professional. The Permittee shall submit to the Commissioner a description of a professional's education, experience and training, which is relevant to the work required by this permit within ten (10) days after a request for such a description. Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable professional unacceptable.

For the purposes of this permit "PFAS" means, at a minimum, the following perfluorinated and polyfluorinated alkyl substances:

Analyte	**Acronym**	**Chemical Abstract Services Registry Number (CASRN)**
Hexafluoropropylene oxide dimer acid	**HFPO-DA**	**13252-13-6b**
N-ethyl perfluorooctanesulfonamidoacetic acid	**NEtFOSAA**	**2991-50-6**
N-methyl perfluorooctanesulfonamidoacetic acid	**NMeFOSAA**	**2355-31-9**
Perfluorobutanesulfonic acid	**PFBS**	**375-73-5**
Perfluorodecanoic acid	**PFDA**	**335-76-2**
Perfluorododecanoic acid	**PFDoA**	**307-55-1**
Perfluoroheptanoic acid	**PFHpA**	**375-85-9**
Perfluorohexanesulfonic acid	**PFHxS**	**355-46-4**
Perfluorohexanoic acid	**PFHxA**	**307-24-4**
Perfluorononanoic acid	**PFNA**	**375-95-1**
Perfluorooctanesulfonic acid	**PFOS**	**1763-23-1**
Perfluorooctanoic acid	**PFOA**	**335-67-1**
Perfluorotetradecanoic acid	**PFTA**	**376-06-7**
Perfluorotridecanoic acid	**PFTrDA**	**72629-94-8**
Perfluoroundecanoic acid	**PFUnA**	**2058-94-8**
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	**11Cl-PF3OUdS**	**763051-92-9c**
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	**9Cl-PF3ONS**	**756426-58-1d**
4,8-dioxa-3H-perfluorononanoic acid	**ADONA**	**919005-14-4e**

(2) On or before one-hundred and twenty (120) days after the effective date of this permit, the Permittee shall submit for the Commissioner's review and approval a sampling plan on which to take a minimum of two (2) separate and distinct samples of each permitted process discharge for analysis of PFAS. PFAS analyses shall be performed using the methods approved by the EPA pursuant to 40 CFR 136. If no test method is approved by 40 CFR 136, PFAS analyses shall be performed in accordance with the modified EPA method 537.1 including isotope dilution run by a Connecticut certified laboratory that follows the Department of Defense's Quality System Manual Table B-15 QA/QC requirements. At a minimum this plan must identify the test method, laboratory, schedule of sampling events, sampling protocols including sample quality control procedures to be implemented, sampling locations, and number and volume of samples to be collected at each location.

(3) The Permittee shall perform the approved actions in accordance with the approved sampling plan, but in no event shall the approved actions be completed later than ninety (90) days after the approval of the sampling plan submitted pursuant to Section 7(A)(2) of this permit. Within thirty (30) days after completing such actions, the Permittee shall submit all sample results generated as a result of executing the approved plan to the Commissioner in writing.

(B) The Permittee shall submit to the Commissioner all documents required by this section of the permit in a complete and approvable form. If the Commissioner notifies the Permittee that any document or other action is deficient, and does not approve it with conditions or modifications, it is deemed disapproved, and the Permittee shall correct the deficiencies and resubmit it within the time specified by the Commissioner or, if no time is specified by the Commissioner, within thirty (30) days of the Commissioner's notice of deficiencies. In approving any document or other action under this Compliance Schedule, the Commissioner may approve the document or other action as submitted or performed or with such conditions or modifications as the Commissioner deems necessary to carry out the purposes of this section of the permit. Nothing in this paragraph shall excuse noncompliance or delay.

(C) Dates. The date of submission to the Commissioner of any document required by this section of the permit shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three (3) days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" as used in this section of the permit means calendar day. Any document or action which is required by this section of the permit to be submitted, or performed, by a date which falls on, Saturday, Sunday, or a Connecticut or federal holiday, shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or Connecticut or federal holiday.

(D) Notification of noncompliance. In the event that the Permittee becomes aware that it did not or may not comply, or did not or may not comply on time, with any requirement of this section of the permit or of any document required hereunder, the Permittee shall immediately notify the Commissioner and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, minimized to the greatest extent possible. In so notifying the Commissioner, the Permittee shall state in writing the reasons for the noncompliance or delay and propose, for the review and written approval of the Commissioner, dates by which compliance will be achieved, and the Permittee shall comply with any dates, which may be approved in writing by the Commissioner. Notification by the Permittee shall not excuse noncompliance or delay, and the Commissioner's approval of any compliance dates proposed shall not excuse noncompliance or delay unless specifically so stated by the Commissioner in writing.

(E) Notice to Commissioner of changes. Within fifteen (15) days of the date the Permittee becomes aware of a change in any information submitted to the Commissioner under this section of the permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the permittee shall submit the correct or omitted information to the Commissioner.

(F) Submission of documents. Any document, other than a discharge monitoring report, required to be submitted to the Commissioner under this section of the permit shall, unless otherwise specified in writing by the Commissioner, be directed to:

Daniel Grondin, Environmental Analyst
Department of Energy and Environmental Protection
Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division
79 Elm Street
Hartford, CT 06106-5127
daniel.grondin@ct.gov

SECTION 8: COMPLIANCE CONDITIONS

In accordance with 40 CFR 403.8(f)(2)(viii), the Commissioner may provide public notification, in a newspaper of general circulation in the area of the respective POTW or by posting on the Department's public website, of permittees that at any time in the previous twelve (12) months were in significant noncompliance with the provisions of this permit. For the purposes of this provision, a permittee that is a Significant Industrial User is in significant noncompliance if its violation(s) meet(s) one or more of the following criteria:

- **Chronic violations:** Those in which sixty-six (66%) percent or more of all measurements taken for the same pollutant parameter during a six-month period exceed (by any magnitude) the Average Monthly, Maximum Daily, or Maximum Instantaneous Limit(s).

- **Technical Review Criteria violations:** Those in which thirty-three (33%) or more of all of the measurements taken for the same pollutant parameter during a six-month period equal or exceed the Average Monthly, Maximum Daily, or Maximum Instantaneous Limit(s) multiplied by 1.4 for BOD, TSS, fats, oil, and grease, or 1.2 for all other pollutants except pH.

- **Monitoring Reports:** Failure to provide, within forty-five (45) days after the due date, required reports such as DMRs.

- **Compliance Schedule:** Failure to meet within ninety (90) days after the schedule date, a compliance schedule milestone contained in or linked to a respective permit for starting construction, completing construction, or attaining final compliance.

- **Noncompliance Reporting:** Failure to accurately report noncompliance in accordance with provisions identified in Section 6 of this permit.

- **Discretionary:** Any other violation of an effluent limit that the Department determines has caused, alone or in combination with other discharges, a violation of the POTW's NPDES permit, inhibition or disruption of the POTW, its treatment processes or operations, or its sludge processes, use or disposal.

- **Imminent Endangerment:** Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment, or has resulted in the Department's exercise of its emergency authority under 40 CFR 403.8(f)(1)(vi)(B) to halt or prevent such a discharge.

- **BMPs:** Any other violation or group of violations, which may include a violation of Best Management Practices, which the Department determines will adversely affect the operation or implementation of the pretreatment program.

This permit is hereby issued on

DRAFT
Yvonne Bolton
Bureau Chief
Bureau of Materials Management and Compliance Assurance

YB/PB

cc: Town of Putnam POTW

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

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PERMIT

June 9, 2021

Wheelabrator Putnam Inc.
200 Technology Park Drive
Putnam, CT 06260

Attention: Mr. Donald W. Musial

Re: Facility ID: 116-068
Town of Putnam
Quinebaug River Watershed

Wheelabrator Putnam Inc. (hereinafter the Permittee) submitted a permit modification application (Application No. 201903452, received on March 1, 2019) for the discharge to groundwater of leachate and stormwater associated with the current 60.5 acre, and proposed 68-acre expansion, lined solid waste disposal area, located at 344 River Road, Putnam (Wheelabrator Putnam Inc. Landfill). This application, supporting documents, addenda, letters, and plates identified in Appendix A attached to this permit, and supplemental documents have been reviewed by the Connecticut Department of Energy and Environmental Protection.

1. DECISION OF THE COMMISSIONER

(A) The Commissioner has made a final determination and found that the expansion of the existing 60.5 acre double-lined solid waste disposal area (Phases 1 through 6) to include 68 additional acres located at 344 River Road, Putnam, and the system to discharge stormwater runoff associated with this site to groundwater through sedimentation basins will continue to protect the waters of the state from pollution. The proposed expansion (Phases 7 through 11) will be constructed with a double-lined disposal area with leachate collection and leak detections system. Such leachate discharge would occur only if these liner and leachate collection systems fail. The Commissioner's decision is based on Application No. 201903452 for permit modification received on March 1, 2019 and the administrative record established in the processing of that application.

(B) The Commissioner hereby authorizes the Permittee to discharge leachate and stormwater from the site in accordance with the provisions of this permit, the above referenced application, and all approvals issued by the Commissioner or the Commissioner's authorized agent for the discharges and/or activities authorized by, or associated with, this permit.

2. PERMITTED DISCHARGES

(A) Discharge Serial No. 201-1

Description – Sewer discharge comprised of landfill leachate.

Discharge Location – Landfill leachate discharges to the Putnam Publicly Owned Treatment Works (POTW).

(B) Discharge Serial No. 300

Description - Leachate from Resource Recovery Facility Residue and residue from coal-fired power generation facilities, and also as may incidentally occur from any cover material approved pursuant to the operating permit described in Section 6(B) of this Permit (Discharge code 3050020).

Discharge Location - Groundwater in the watershed of the Quinebaug River (Basin Code 3700).

Disposal Area Design Size - 128.5 acres, lined solid waste disposal area.

(C) Discharge Serial No. 301

Description - Stormwater Sedimentation Pond 1. Phases 1-6. Sedimentation and infiltration of stormwater runoff from unused, lined cells and final capped areas of the lined solid waste disposal area. (Discharge Code 3080000).

Discharge Location - Groundwater in the watershed of the Quinebaug River. (Basin Code 3700)

Design size – 100-year, 24-hour storm event.

(D) Discharge Serial No. 302

Description - Stormwater Sedimentation Pond 2. Phases 1-6. Sedimentation and infiltration of stormwater runoff from unused, lined cells and final capped areas of the lined solid waste disposal area. (Discharge Code 3080000).

Discharge Location - Groundwater in the watershed of the Quinebaug River. (Basin Code 3700)

Design size – 100-year, 24-hour storm event.

(E) Discharge Serial No. 303

Description - Stormwater Sedimentation Pond 3. Phases 1-6. Sedimentation and infiltration of stormwater runoff from unused, lined cells and final capped areas of the lined solid waste disposal area. (Discharge Code 3080000).

Discharge Location - Groundwater in the watershed of the Quinebaug River. (Basin Code 3700)

Design size - 100-year, 24-hour storm event.

(F) Discharge Serial No. 304

Description - Stormwater Sedimentation Pond 4. Phases 1-6. Sedimentation and infiltration of stormwater runoff from unused, lined cells and final capped areas of the lined solid waste disposal area. (Discharge Code 3080000).

Discharge Location - Groundwater in the watershed of the Quinebaug River. (Basin Code 3700)

Design size - 100-year, 24-hour storm event.

(G) Discharge Serial No. 305

Description – Stormwater Sedimentation Pond 5. Phases 7-11. Sedimentation and infiltration of stormwater runoff from unused, lined cells and final capped areas of the lined solid waste disposal area. (Discharge Code 3080000)

Discharge Location – Groundwater in the watershed of the Quinebaug River. (Basin Code 3700)

Design size – 100-year, 24-hour storm event.

(H) Discharge Serial No. 306

Description – Stormwater Sedimentation Pond 6. Phases 7-11. Sedimentation and infiltration of stormwater runoff from unused, lined cells and final capped areas of the lined solid waste disposal area. (Discharge Code 3080000)

Discharge Location – Groundwater in the watershed of the Quinebaug River. (Basin Code 3700)

Design size - 100-year, 24-hour storm event.

(I) Discharge Serial No. 307

Description - Stormwater Sedimentation Pond 7. Phases 7-11. Sedimentation and infiltration of stormwater runoff from unused, lined cells and final capped areas of the lined solid waste disposal area. (Discharge Code 3080000)

Discharge Location – Groundwater in the watershed of the Quinebaug River. (Basin Code 3700)

Design size – 100-year, 24-hour storm event.

(J) Groundwater Zone of Influence

The groundwater zone of influence of the discharge from the lined solid waste disposal area which is hereby permitted shall not extend beyond property owned by the Permittee or any groundwater easements under the control of the Permittee. The groundwater zone of influence of the discharge is defined as the soil and groundwater area within which the treatment of leachate by soils and mixing of leachate with groundwater occurs and could reasonably be expected to occur and, therefore, within which some degradation of groundwater quality has occurred or is anticipated to occur.

3. MONITORING REQUIREMENTS

The Permittee shall conduct monitoring in accordance with the requirements of this Section and the Environmental Monitoring Plan (EMP) as defined in Section 6(D) of this permit. In the event of discrepancies between the requirements of this permit and the EMP, the provisions of this permit shall define the monitoring requirements.

(A) Surface Water Quality Monitoring

(i) **Locations**

Surface water quality monitoring shall be conducted at the following locations as specified in the EMP.

(a) Quinebaug River

SW-1: At or in the vicinity of the bridge for the landfill access road leading from Kennedy Drive across the Quinebaug River in Putnam.

Latitude 41° 54' 7" and longitude 71° 54' 11"

SW-2: At or in the vicinity of the former USGS Gauging Station on the Quinebaug River at the bridge on Cotton Bridge Road (also known as Boat House Road).

Latitude 41° 52' 30" and longitude 71° 55' 31"

(b) Carpenter Brook

SW-3: At the mouth of Carpenter brook where is discharges to the Quinebaug River

SW-8: At Carpenter Pond

SW-9: Tributary to Carpenter Pond

(c) Unnamed Perennial Stream to South of Phases 7 through 11

SW-10: At location just downstream of River Road

SW-11: At location downstream in the vicinity of PZ-5

(d) Stormwater Sedimentation Ponds

Phases 1 through 6

SW-4: Pond 1

SW-5: Pond 2

SW-6: Pond 3

SW-7: Pond 4

Phases 7 through 11

SW-12: Pond 5

SW-13: Pond 6

SW-14: Pond 7

(ii) **Parameters**

Each surface water sample collected from monitoring locations designated in paragraphs 3(A)(i) shall be analyzed for the parameters numbered 1-33, below.

Parameter	Reporting Limit
1. Alkalinity	2,000 µg/L
2. Ammonia-N, total	10 µg/L
3. Biochemical Oxygen Demand, 5 day	4,000 µg/L
4. Chloride	50 µg/L
5. Hardness as $CaCO_3$	2 mg/L
6. Kjeldahl-N, total	50 µg/L
7. Nitrate-N, total	10 µg/L
8. Nitrite-N, total	10 µg/L
9. pH	N.A.
10. Phosphorus, total	10 µg/L
11. Specific Conductance	N.A.
12. Total Dissolved Solids	500 µg/L
13. Total Suspended Solids	500 µg/L
14. Aluminum, total	0.01 µg/L
15. Arsenic, total	0.005 µg/L
16. Barium, total	0.01 µg/L
17. Cadmium, total	0.0005 µg/L
18. Calcium **	3,300 µg/L
19. Chromium, total	0.005 µg/L
20. Copper, total	0.005 µg/L
21. Copper, dissolved	0.005 µg/L
22. Iron, total	0.020 µg/L
23. Iron, dissolved	0.020 µg/L
24. Lead, total	0.005 µg/L
25. Lead, dissolved	0.005 µg/L
26. Manganese, total	0.001 µg/L
27. Manganese, dissolved	0.001 µg/L
28. Mercury, total	0.0002 µg/L
29. Nickel, total	0.005 µg/L
30. Silver, total	0.001 µg/L
31. Sodium	30 µg/L
32. Zinc, total	0.01 µg/L
33. Zinc, dissolved	0.01 µg/L

**Only for SW-3, SW-8, and SW-9

(iii) **Schedule**

(a) Each surface water station in the Quinebaug River designated in paragraph 3(A)(i)(a) shall be sampled every nine (9) months in coordination with other monitoring as specified in Section 3(H), and also sampled again during the subsequent quarter in conjunction with sampling for groundwater outlined in Section 3(B), except as provided by paragraph 3(A)(iv)(c).

(b) Each surface water station in Carpenter Brook, Carpenter Pond, the tributary of Carpenter Pond, and the unnamed perennial stream as designated in paragraph 3(A)(i)(b) and 3(A)(i)(c) shall be sampled every nine (9) months, in coordination with other monitoring as specified in Section 3(H), except as provided by paragraph 3(A)(iv)(c).

(c) Each surface water station at each of the active stormwater sedimentation ponds, as identified in paragraph 3(A)(i)(d), shall be sampled twice annually, between March first and December first, during or immediately after a rainfall event of one half-inch or greater that results in collectable runoff water entering the sedimentation basin, except as provided by paragraph 3(A)(iv)(d).

(d) For the scheduled sampling that precedes each ten (10) year anniversary of the issuance of this permit, for each surface water station identified in paragraphs 3(A)(i)(a), 3(A)(i)(b), 3(A)(i)(c) and also for any samples obtained to meet the requirements of paragraph 3(A)(iii)(c) during the year preceding each ten-year permit anniversary, the surface water sampling and analysis shall also include items 3, 5, 6, 11, 15, and 19 listed in paragraph 3(B)(ii) of this permit; and the results of such analyses shall be included in the report required by Section 5(E) of this permit.

(iv) **Sampling Conditions**

(a) The Quinebaug River flows shall be gauged and reported for each day of sample collection.

(b) Time of collection, water clarity, sample depth if a discrete depth sample, total water column depth (distance to river bottom), water and air temperature, pH, specific conductance, and dissolved oxygen shall be measured in the surface water body for each sample collected in accordance with the requirements of Section 3(A). Results of such measurements shall be reported together with the results of laboratory analyses, and for those parameters required to be measured in the field and in the laboratory, both values shall be reported in accordance with Section 5.

(c) During periods when surface water conditions would be unsafe for field personnel (e.g. icing conditions) samples shall be collected as soon as practicable once safe sampling conditions exist.

(d) The requirement to sample in paragraph 3(A)(iii)(d) is waived if no storm exceeding one half inch in precipitation occurs during the specified sampling period, or if field observations document that no storm

exceeding one half inch in precipitation during the specified sampling period results in runoff entering the sedimentation basins during or immediately after the storm event.

(v) **Reporting**

Surface water monitoring shall be reported in accordance with Sections 5(C) and 5(D).

(B) Groundwater Quality Monitoring

(i) **Locations**

Groundwater quality monitoring shall be conducted at the following locations as shown on Figure 3-1, titled "Groundwater, Surface Water, and Sediment Sampling Locations," contained in the EMP.

(a) Upgradient Monitoring Wells:

Phases 1 through 6: Directly upgradient of Phase 1 of the lined disposal area, upgradient of Sedimentation Ponds 1 and 3, and cross-gradient of Sedimentation pond 4.

MW-4S

MW-4D

Phase 7 through 11: Directly upgradient of Phases 7 through 11.

MW-24S

MW-24D

MW-29S

MW-29D

(b) Zone of Influence Extent Confirmation Wells:

Phases 1 through 6

MW-2S: Will be abandoned due to construction of Phases 7 through 11.

MW-2D: Will be abandoned due to construction of Phases 7 through 11.

MW-17S: Upon construction of Phases 7 through 11, well will be sampled as one of the discharge zone monitoring wells for the new cells and will no longer serve as one of the Zone of Influence confirmation extent wells for the monofill.

MW-17M: Upon construction of Phases 7 through 11, well will be sampled as one of the discharge zone monitoring wells for the new cells and will no longer serve as one of the Zone of Influence confirmation extent wells for the monofill.

MW-17D: Upon construction of Phases 7 through 11, well will be sampled as one of the discharge zone monitoring wells for the new cells and will no longer serve as one of the Zone of Influence confirmation extent wells for the monofill.

MW-18S

MW-18D

Phases 7 through 11

MW-28S

MW-28D

MW-30S

(c) Discharge Zone Water Quality Monitoring Wells: Downgradient of the lined disposal area, in the path of theoretical plume of groundwater contamination in the event of a breach of primary and secondary leachate collection systems.

Phases 1 through 6

MW-21S

MW-21D

MW-20S

MW-20M

MW-20D

MW-19S

MW-19D

Phases 7 through 11

MW-14S

MW-14D

MW-17S

MW-17M

MW-17D

MW-23S

MW-23D

MW-27S

MW-27D

(ii) **Parameters**

Each groundwater sample collected from the monitoring wells designated in paragraph 3(B)(i) shall be analyzed for a set of the parameters numbered 1 through 25, below, as specified in paragraphs 3(B) through 3(B)(v).

Parameter	Reporting Limit
1. Alkalinity	5 mg/L
2. Ammonia-N, total	0.05 mg/L
3. Bicarbonate	5 mg/L

Parameter	Reporting Limit
4. Biochemical Oxygen Demand, 5 day	4 mg/L
5. Calcium	3.3 mg/L
6. Carbonate	5 mg/L
7. Chloride	0.5 mg/L
8. Chemical Oxygen Demand	10 mg/L
9. Total Hardness	2 mg/L
10. Iron, total	0.1 mg/L
11. Magnesium	0.5 mg/L
12. Manganese, total	0.01 mg/L
13. Nitrate-N, total	0.2 mg/L
14. pH	NA
15. Potassium, total	1 mg/L
16. Sodium, total	1 mg/L
17. Specific Conductance	NA
18. Sulfate, total	2 mg/L
19. Total Dissolved Solids	10 mg/L
20. Total Suspended Solids	5 mg/L
21. All inorganics identified in Title 40 of the Code of Federal Regulations (40 CPR) Part 258 Appendix I [June 14, 2005; August 1, 2005] using EPA method 6010/6020 as required to meet minimum levels.	
22. Volatile Organic Compounds (VOCs) identified in 40 CPR Part 258 Appendix I [June 14, 2005; August 1, 2005] using EPA method 8260.	
23. All substances which are identified in 40 CPR Part 258 Appendix II [June 14, 2005; August 1, 2005] with the exception of alpha, alpha- Dimethylphenethylamine and 2,3,7,8-TCDD, which were deleted by a rule correction published in the Federal Register, Vol. 72, No. 82, April 30, 2007, on page 23276.	
24. Any additional substances, at specific wells and for specified durations, which are identified in accordance with the requirements of paragraph 3(B)(v)(b) or recommended in a report submitted pursuant to paragraph 5(E)(ii)(e) of this permit and approved by the Commissioner.	
25. Dioxins and Furans	

(iii) **Quarterly Monitoring**

(a) Each groundwater sample collected from the monitoring wells designated in paragraphs 3(B)(i)(a), 3(B)(i)(b), and 3(B)(i)(c) shall be analyzed for the parameters listed in paragraph 3(B)(ii), items 1 through 21.

(b) In addition, samples shall be collected and analyzed for the parameters identified in paragraph 3(B)(ii) item 23 at specific wells as required by paragraphs 3(B)(iv)(c) and for the parameters identified in paragraph 3(B)(ii) item 24 at specific wells as required by paragraph 3(B)(v)(b) of this permit, or as recommended in a report submitted pursuant to paragraph 5(E)(ii)(e) of this permit and approved by the Commissioner.

(c) Schedule - The groundwater quality monitoring locations in paragraph 3(B)(i) shall be monitored four times per year in accordance with the following schedule, except as specified in paragraph 3(B)(iii)(b).

Sampling Periods

January
April
July
October

(iv) **Annual Monitoring**

(a) During each April monitoring event, the groundwater samples collected from all monitoring wells designated in paragraphs 3(B)(i)(a), 3(B)(i)(b), and 3(B)(i)(c) shall also be analyzed for the parameters identified in paragraph 3(B)(ii) item 22.

(b) During each July monitoring event, the groundwater sample collected from the monitoring well designated in paragraph 3(B)(i)(c) as W-4 (MW-20M) shall also be analyzed for the parameters listed in paragraph 3(B)(ii) item 25.

(c) If detections of VOCs or other organic compounds occur as a result of the sampling required by paragraph 3(B)(iv)(a) of this permit, the well(s) where detections occurred, except for wells MW-20S and MW-21S with detections consistent with past results documenting impact from the Putnam closed Municipal Landfill, shall be sampled again for the parameters listed in paragraph 3(B)(ii) item 22 in the subsequent quarter. If detections of VOCs or other organic compounds occur in two consecutive quarters sampling for these parameters and locations shall be conducted quarterly thereafter for the well(s) where the detections occurred, except for wells MW-20S and MW-21S with detections consistent with past results documenting impact from the Putnam Municipal Landfill, until two successive quarters are non-detect, when the annual frequency may be resumed.

(v) **40 CFR Part 258, Appendix II Monitoring**

(a) On or before each ten (10) year anniversary of the date of issuance of this permit the Permittee shall collect groundwater samples from the monitoring wells designated in paragraph 3(B)(i)(c) and shall analyze

such samples for the parameters identified in paragraph 3(B)(ii), item 23. The results of such monitoring shall be reported as provided in Section 5(E).

(b) The detection, pursuant to sampling to meet the requirements of paragraphs 3(B)(v)(a) or 3(B)(vi)(c)(3), of any parameters identified in paragraph 3(B)(ii), item 23 shall result in such parameters being added to the list identified in paragraph 3(B)(ii), item 24 for the next four quarterly monitoring events for the well where such detection occurred. If detections of such substances occur in any of these quarters, sampling for these parameters and locations shall continue quarterly thereafter for the well(s) where the detections occurred, until two successive quarters are non- detect.

(vi) **Discharge Zone Water Quality Evaluation**

(a) On a quarterly basis, beginning with the second full quarter following the effective date of this permit, the Permittee shall evaluate monitoring data for parameters identified in paragraph 3(B)(ii) items 3, 5, 7, 16 and 21 from the wells specified in paragraph 3(B)(i)(c) using the combined Shewhart-CUSUM control chart method as described in the EMP.

(b) On an annual basis, beginning with first April following the effective date of this permit, the Permittee shall evaluate monitoring data for parameters identified in paragraph 3(B)(ii) item 22 from the wells specified in paragraph 3(B)(i)(c) using the combined Shewhart-CUSUM control chart method as described in the EMP.

(c) Reporting and Response

(1) If a concentration for any parameter at any well is above the control concentration in any well the Permittee shall resample such well for such parameter within forty-five (45) days. The Permittee shall assure that the results of all sampling necessary to confirm such results are received from the laboratory no more than 30 days from the date of sample collection. Within seven days of receipt of such resampling results the Permittee shall provide letter notification to the Commissioner of the original and resampling results.

(2) If the resampling required by paragraph 3(B)(vi)(c)(1) confirms occurrence of a constituent above control criteria for a parameter that is sampled annually rather than quarterly, except for wells MW-20S and MW-21S with detections consistent with past results documenting impact from the Putnam closed Municipal Landfill, the well where concentrations were above criteria shall be resampled and evaluated for the parameters identified in paragraph 3(B)(ii) item 22 in each of the following four quarters.

(3) If any parameter is confirmed to be above the control concentration for two of any five consecutive quarters the Permittee shall, not later than 60 days after confirmation of such results, submit to the Commissioner a report evaluating these results in the context of recent monitoring data and site activity

along with a plan and implementation schedule for an assessment of the cause of the groundwater condition. Such plan shall include sampling of the subject well for the parameters listed in paragraph 3(B)(ii) item 23. The Permittee shall implement the groundwater assessment in accordance with the submitted report, or as otherwise directed by the Commissioner.

(vii) **Zone of Influence Extent Evaluation**

(a) On a quarterly basis, beginning with the second full quarter following the effective date of this permit, the Permittee shall evaluate monitoring data for the parameters listed in paragraph 3(B)(ii) items 3, 5, 7, and 16 from the wells specified in paragraph 3(B)(i)(b) using the combined Shewhart-CUSUM control chart method as described in the EMP.

(b) Reporting and Response

(1) If a concentration for any parameter at any well is above the control concentration in any well the Permittee shall resample such well for such parameter within forty-five (45) days. The Permittee shall assure that the results of all sampling necessary to confirm such results are received from the laboratory no more than 30 days from the date of sample collection. Within seven (7) days of receipt of such results the Permittee shall provide letter notification to the Commissioner of the original and resampling results.

(2) If any parameter is confirmed to be above the control concentration for two (2) of any five (5) consecutive quarters the Permittee shall, not later than sixty (60) days after confirmation of such results, submit to the Commissioner a report of the results in the context of recent monitoring data and site activity along with a plan and implementation schedule for an assessment of the cause of the groundwater condition and an evaluation of the extent and degree of such contamination, especially in the area outside the permitted zone of influence. The Permittee shall implement the groundwater assessment in accordance with the submitted report, or as otherwise directed by the Commissioner.

(viii) **Upgradient Monitoring Data Evaluation**

(a) On a quarterly basis, beginning with the first full quarter following the effective date of this permit, the Permittee shall evaluate monitoring data for the parameters identified in paragraph 3(B)(ii) items 3, 5, 7, 16 and 21 from the wells specified in paragraph 3(B)(i)(a) using the combined Shewhart-CUSUM control chart method as described in the EMP.

(b) On an annual basis, beginning with the first April following the effective date of this permit, the Permittee shall evaluate monitoring data for the parameters identified in paragraph 3(B)(ii) item 22 from the wells specified in paragraph 3(B)(i)(a) using the combined Shewhart-CUSUM control chart method as described in the EMP.

(c) Reporting and Response

(1) If a concentration for any parameter at any well is above the control concentration in any well the Permittee shall resample such well for such parameter within forty-five (45) days. The Permittee shall assure that the results of all sampling necessary to confirm such results are received from the laboratory no more than thirty (30) days from the date of sample collection. Within seven (7) days of receipt of such results the Permittee shall provide letter notification to the Commissioner of the original and resampling results.

(2) If the resampling required by paragraph 3(B)(viii)(c)(1) confirms occurrence of a constituent above control criteria for a parameter that is sampled annually rather than quarterly, the well where concentrations were above criteria shall be resampled and evaluated for the parameters identified in paragraph 3(B)(ii) item 22 in each of the following four quarters.

(3) If any parameter is confirmed to be above the control concentration for two of any five consecutive quarters the Permittee shall, not later than sixty (60) days after confirmation of such results, submit to the Commissioner a report of the results in the context of recent monitoring data and site activity along with a plan and implementation schedule for an assessment of the cause of the groundwater condition and its implications for the technical design of the monitoring program. The Permittee shall implement the groundwater assessment in accordance with the submitted report, or as otherwise directed by the Commissioner.

(ix) **Sampling Conditions**

(a) Field measurement of pH, temperature, specific conductance, turbidity, Oxidation Reduction Potential, and water level elevation shall be performed at all groundwater monitoring locations in paragraph 3(B)(i) prior to each sample collection. Results of field measurements shall be reported together with the results of laboratory analyses, and for those parameters required to be measured in the field and in the laboratory, both values shall be reported in accordance with Section 5.

(b) Groundwater potentiometric elevations shall also be determined quarterly at all other usable observation and monitoring wells located on the site or adjacent parcels. The known existing specific wells within Phases 1 through 6 include those numbered: OW-1, OW-2E/D, OW-15S/D, OW-16S/D, MW-1S/D, MW-2S/D, MW-4S/D, MW-15S/D, MW-17S/M/D, MW-18S/D, MW-19S/D, MW-20S/M/D, and MW-21S/D. The specifics wells within Phases 7 through 11 include those numbered: MW-14S/D, MW-22S, MW-23S/D, MW-24S/D, MW-25S/D, MW-26S/M/D, MW-27S/D, MW-29S/D, and MW-30S. Wells MW-22S/D, MW 25S/D, and MW-26S/M/D will be used they are eventually abandoned for future construction of Phases 9 through 10. The Permittee shall not be required to replace a well accidently destroyed but shall not intentionally abandon any wells under their control without approval of the Commissioner.

(x) **Shewhart-CUSUM control chart**

Thirty (30) days after the effective date of this permit the Permittee shall submit to the Commissioner for review and approval a report evaluating temporal trends in monitored parameters and proposed modifications, if any, to the control concentrations used for the combined Shewhart-CUSUM control chart evaluations specified in the EMP. If the Commissioner does not provide written comments within ninety (90) days of receipt of the report, it shall be deemed to be approved.

(xi) **Reporting**

Groundwater monitoring shall be reported in accordance with Sections 5(B) and 5(C).

(C) Precipitation Monitoring

(i) **Data Source**

Precipitation data to be used in preparing precipitation hydrographs shall be obtained from the National Weather Service Willimantic station, and may be supplemented by data from the Department of Energy and Environmental Protection's Flood Alert Center monitoring locations in the area, or data may be obtained from an alternative precipitation monitoring location approved in writing by the Commissioner.

(ii) **Data Evaluation**

The reporting period shall be the calendar year. The data to be reported shall be a precipitation hydrograph (in inches of precipitation per month) for the station identified in paragraph 3(C)(i) above, for the reporting period.

(iii) **Reporting**

The data shall be reported in accordance with paragraph 5(C)(iv) of this permit.

(D) Leachate Monitoring

(i) **Locations**

Leachate quality monitoring shall be conducted at the following location(s) identified on Figure 3-1, titled "Groundwater, Surface Water, Sediment and Leachate Sampling Locations" in the EMP:

(a) *Phases 1 through 6:*

L-1: Sampling port on side-riser chamber on Northern side of Phase 1.

L-2: Sampling port on side-riser chamber on Northern side of Phase 2.

L-3: Sampling port on side-riser chamber on Southeastern side of Phase 3.

L-4: Sampling port on side-riser chamber on Eastern side of Phase 4.

L-5: Sampling port on side-riser chamber on Northeastern side of Phase 5.

L-6: Sampling port on side-riser chamber on Northeastern side of Phase 6

(b) *Phases 7 through 11:*

L-7: Sampling port on side-riser chamber on Eastern side of Phase 7

L-11: Sampling port on side-riser chamber on Southeastern side of Phase 11.

Leachate sampling shall be from the primary leachate collection system active side-riser pipe most representative of active leachate generation; the sampling identification shall include a suffix identifying the specific side riser sampled.

(ii) **Parameters**

Leachate samples shall be analyzed for the parameters numbered 1-23, below, as specified in paragraph 3(D)(iii).

Parameter	Reporting Limit
1. Alkalinity	5 mg/L
2. Ammonia-N, total	0.1 mg/L
3. Bicarbonate	5 mg/L
4. Biochemical Oxygen Demand, 5 day	4 mg/L
5. Calcium	0.5 mg/L
6. Carbonate	5 mg/L
7. Chloride	0.5 mg/L
8. Chemical Oxygen Demand	10 mg/L
9. Total Hardness	3.3 mg/L
10. Iron, total	0.1 mg/L
11. Magnesium	0.5 mg/L
12. Manganese, total	0.01 mg/L
13. Nitrate-N, total	0.05 mg/L
14. pH	NA
15. Potassium, total	1 mg/L
16. Sodium, total	1 mg/L
17. Specific Conductance	NA
18. Sulfate, total	2 mg/L
19. Total Dissolved Solids	10 mg/L
20. Total Suspended Solids	5 mg/L
21. All inorganics identified in Title 40 of the Code of	

Parameter	Reporting Limit

Federal Regulations (40 CPR) Part 258 Appendix I [June 14, 2005; August 1, 2005] using EPA method 6010/6020 as required to meet minimum levels.

22. Volatile Organic Compounds (VOCs) identified in 40 CPR Part 258 Appendix I [June 14, 2005; August 1, 2005] using EPA method 8260.

23. All substances which are identified in 40 CPR Part 258 Appendix II [June 14, 2005; August 1, 2005] with the exception of alpha, alpha- Dimethylphenethylamine and 2,3,7,8-TCDD, which were deleted by a rule correction published in the Federal Register, Vol. 72, No. 82, April 30, 2007, on page 23276.

(iii) **Schedule**

(a) Leachate samples shall be collected and analyzed for the parameters listed in paragraph 3(D)(ii), items 1 through 21 on a quarterly frequency, in January, April, July, and October.

(b) Leachate samples shall be collected and analyzed for the parameters listed in paragraph 3(D)(ii) item 22 annually in April.

(c) On or before each ten (10) year anniversary of the date of issuance of this permit the Permittee shall collect a leachate sample from the primary leachate collection system active side-riser pipe most representative of active leachate generation and shall analyze such sample for the parameters identified in paragraph 3(D)(ii), item 23. The results of such monitoring shall be reported as provided in Section 5(E).

(iv) **Leachate Discharge Monitoring**

The leachate discharge shall be monitored monthly for the total discharge volume from all leachate collection points, separately for the primary and secondary collection systems; and for specific conductance, at the location(s) identified in paragraph 3(D)(i). Secondary collection system leachate volumes shall be separately determined for each disposal area cell to the extent the systems allow collection of such discrete data.

(v) **Reporting**

The monitoring results shall be reported in accordance with Sections 5(B) and 5(C).

(E) Leachate Seep Monitoring

(i) **Monitoring**

On a quarterly basis the Permittee shall conduct an inspection of the perimeter and side slopes of the landfill, and the banks of surface waters adjacent to the landfill to identify the presence of any leachate seeps or iron oxide precipitation.

All persistent leachate seeps identified shall be sampled and analyzed for the parameters identified in paragraph 3(B)(ii), items 1 through 21. Persistent leachate seeps are defined as active discharges which have been identified at any one location in two consecutive inspection periods.

(ii) **Reporting and Response**

(a) Leachate seep monitoring shall be reported in accordance with paragraph 5(B)(iv).

(b) If persistent leachate seeps are identified, the Permittee shall, not later than thirty (30) days after such identification, submit to the Commissioner a report which includes a map drawn to a scale of one inch equal to 200 feet showing the presence and location of all persistent leachate seeps or iron oxide precipitation, describes their chemical composition, any sampling results, and the discharge rate, and which includes a plan for the remediation of such seeps or iron oxide precipitation and a schedule for carrying out the remediation plan. The Permittee shall conduct the remediation plan in accordance with the submitted report, or as otherwise directed by the Commissioner.

(F) Sediment Monitoring

(i) **Locations**

Samples for physical and chemical characterization of sediment quality shall be collected at the following locations as shown on Figure 3-2 titled "Quinebaug River Sample Locations", contained in the EMP.

S-1: At the mouth of Carpenter Brook

S-2: From a tributary to Carpenter Pond

S-3: From the Quinebaug River upstream from the site, at or near the location of surface water sample SW-I

S-4: From the Quinebaug River at a location that is downstream of the site, and at or near the southerly edge of the zone of influence

S-5: From the Quinebaug River downstream from the site, at or near the location of surface water sample SW-2

Samples of sediment from the Quinebaug River sample locations shall be acquired as multiple discrete samples using the transect approach as defined by the latest promulgated EMP.

(ii) **Parameters**

Sediment samples shall be analyzed (on a dry weight basis) for the parameters numbered 1s-11s, below.

	Parameter
1s	Percent Moisture
2s	Grain Size Fractionation (including fines)
3s	Total Carbon

4s Total Inorganic Carbon(by difference of parameters 3s and 5s)

5s Total Organic Carbon

6s Copper, total

7s Lead, total

8s Zinc, total

9s Acid Volatile Sulfides, and SEMs by trace-ICP

10s Polynuclear Aromatic Hydrocarbons

11s Polychlorinated Biphenyls

Analyses for total carbon (3s) and total organic carbon (5s) shall be by the Lloyk-Kahn method or any other method approved by the Commissioner. Analyses for total copper (6s) and total lead (7s) may be by Graphite Furnace Atomic Absorption Spectroscopy (GFAA) or Inductively Coupled Plasma analysis/Mass Spectroscopy (ICP/MS). Analyses for total zinc (8s) may be by Inductively Coupled Plasma analysis (ICP) or ICP/MS. Results of analyses for 6s, 7s, and 8s shall be reported together with the SEM results for these same metals (9s).

(iii) **Schedule**

Physical and chemical characterization of sediment quality shall be conducted, in coordination with other monitoring as specified in Section 3(H), in accordance with the following requirements:

(a) Each sediment sample from sample locations designated in paragraph 3(F)(i) shall be collected and analyzed for the parameters identified in paragraph 3(F)(ii), items 1s through 11s on the same nine (9) month cycle as the surface water and habitat monitoring.

(b) On or before each ten (10) year anniversary of the date of issuance of this permit the Permittee shall collect sediment samples from sample locations designated in paragraph 3(F)(i) and shall analyze such samples for the parameters identified in paragraph 3(F)(ii) items 1s through 11s.

(c) The Permittee shall collect sediment samples from the sample locations in the Quinebaug River (S-3, S-4, and S-5) and analyze them as proposed in any assessment plan submitted to meet the requirements of paragraphs 3(B)(vi)(c)(3) or 3(B)(vii)(b)(2) of this permit, or as directed by the Commissioner pursuant to such paragraphs.

(iv) **Reporting**

The monitoring results shall be reported in accordance with Section 5(D).

(G) Habitat Monitoring

(i) Qualitative habitat characterizations of the area in which the Wheelabrator Putnam Inc. Landfill is situated shall be conducted every nine (9) months in coordination with other monitoring as specified in Section 3(H). The habitat monitoring shall describe, in particular, the entire area in the vicinity of the Quinebaug River and Carpenter Brook as defined in paragraph 3(G)(ii), below. A descriptive report of upland areas at a minimum shall note changes from the last

event particularly as they contribute to the ecology of the surface water system, and a description of nearby influences shall be included.

(ii) The habitat characterization and detailed site map shall cover an area within the 100-year flood zone along the Quinebaug River, Carpenter Brook, Carpenter Pond, and the unnamed perennial stream south of Phases 7 through 11 (once disposal operations in that area have commenced). The area shall extend along the Quinebaug River one-half mile upstream and one-half mile downstream from the existing limits of the town landfill property (Map 20, Block 6, Lot 00). The area shall also include Carpenter Brook up to and including Carpenter Pond.

(iii) A detailed site map of the area in which the Wheelabrator Putnam Inc. Landfill is situated, at a scale of 1 inch equals 200 feet, shall be prepared to depict and identify the Quinebaug River and the Carpenter Brook Wetlands Corridor (the wetland corridors for the unnamed perennial stream south of Phases 7 through 11 will be added once disposal operations in that area have commenced), flood boundaries, wetlands, anthropogenic structures (e.g. roads, dams, bridges, rail lines, sewer crossings), existing and potential pollutant sources (e.g. sewage treatment plants, gravel mining operations, existing and abandoned or closed landfills, highway garages, storm drainage, etc.). The map shall also depict all available current and historical surface water, sediment, and biological monitoring locations, habitat assessment plots, groundwater monitoring locations, groundwater flow direction, and is concentration contours for any identified groundwater plume. The map shall identify and partition major habitats, identify sediment type and locations where submerged aquatic vegetation is present in the Quinebaug River, as determined by a visual survey conducted in a boat. Permittee may refer to, and incorporate supporting information including, but not limited to, aerial photographs, local wetlands maps, sewer and highway department plans.

(iv) **Reporting**

Results of each habitat characterization shall be submitted in accordance with the requirements of Section 5(D).

(H) Coordination of Monitoring

(i) Surface water monitoring (excluding stormwater sedimentation ponds), and habitat monitoring, and sediment monitoring when required by paragraph 3(F)(iii) of this permit, shall be conducted concurrently, on the same nine (9) month cycle in continuance of the original permit schedule.

(ii) Monitoring may be conducted jointly with any monitoring program implemented for the adjacent Putnam Municipal Landfill.

(I) Residential Well Monitoring

(i) **Locations**

Due to the presence of three upgradient private residential water supply wells located at residences that abut the area of Phases 7 through 11, groundwater may be collected from the residential wells identified in Section 9.3.2 of the February 2021 revision of the EMP.

414 River Road: Located near upgradient monitoring wells MW-24S and MW-24D

428 River Road: Located near upgradient monitoring wells MW-29S and MW-29D

450 River Road: Located near upgradient monitoring wells MW-29S and MW-29D

(ii) **Monitoring**

The plan shall include the sampling and analysis of the residential wells designated in 3(I)(i) for the parameters in paragraph 3(B)(ii) item 23 for groundwater collected from the residential wells located near any affected upgradient monitoring wells.

The Permittee has deeded agreements with the owners of these residences listed in 3(I)(i) which contains provisions for conducting environmental sampling.

(a) Reporting and Response

The sampling results from the residential water supply wells will be part of the evaluation of the groundwater condition at the upgradient location. The need for additional sampling of the residential water supply wells will be dependent on whether it is shown that either the groundwater condition is potentially being caused by the Landfill, or the groundwater condition has not dissipated.

4. SAMPLE ANALYSIS

(A) All sample analyses required by this permit shall be performed by a laboratory certified for such analyses by the Connecticut Department of Public Health or approved in writing for monitoring at this facility by the Connecticut Department of Energy and Environmental Protection.

(B) Analytical results for each parameter shall be reported together with the actual method detection limits achieved during the analysis. The value of each parameter shall be reported to the maximum level of accuracy and precision possible. Failure to submit data in accordance with the procedures and protocols set forth in this permit shall constitute a permit violation.

(C) Chemical analyses for surface water, groundwater, leachate, and sediment shall be performed using methods approved pursuant to the Code of Federal Regulations, Part 136 of Title 40, except where otherwise specified in paragraphs 3(A)(ii), 3(B)(ii), 3(D)(ii), and 3(F)(ii) or unless an alternative method has been specifically approved in writing by the Commissioner for monitoring at this facility. Failure to use approved methods shall constitute a permit violation.

(D) Analyses required by Sections 3(A) and 3(B) shall be conducted to achieve the reporting limits for each of those parameters for which reporting limits are identified in 3(A)(ii) and 3(B)(ii) unless an alternative method that is capable of achieving the reporting limits has been specifically approved in writing by the Commissioner.

(E) The reporting limits specified in paragraph 3(A) and 3(B) represent the concentration at which quantification must be achieved and verified during the chemical analyses for these compounds. Analyses for these compounds must include calibration points at least as low as the specified reporting limit. Check standards within ten (10) percent of the specified reporting limit may be used in lieu of a calibration point equal to the reporting limit.

(F) If any water sample analysis indicates that quantification for a particular parameter cannot be verified at or below the specified reporting limit, a second sample shall be collected and analyzed for that parameter according to the above specified methodology as soon as practicable. The results of the first and subsequent sample analyses shall be submitted to the Commissioner verifying that the appropriate methodology was employed, the reporting limit was achieved for quality-control samples and that failure to quantify the parameter at or below the reporting limit specified for the analysis was a result of matrix effects which could not be compensated for as part of sample analysis allowed pursuant to 40 CPR Part 136.

(G) If any three (3) water samples collected in a twelve-month period indicate that the specified reporting limit was not achieved for a particular parameter when using the specified test methodology, the Permittee shall submit a report to the Commissioner which justifies and defines the matrix effect upon analyses for that parameter, identifies the level at which quantification can be verified for those specific test conditions, and recommends modification to the method or an alternative method that is sufficiently sensitive and free of the identified matrix effect. The Permittee shall use the recommended method modifications or alternative method for future analyses unless otherwise directed by the Commissioner.

5. REPORTING

(A) Schedule

The results of all sampling and analyses required by this permit, unless otherwise specified or approved in writing by the Commissioner, shall be reported to the Commissioner in accordance with the following schedule:

Sampling Periods	Reporting Dates
January	March 21
April	June 21
July	September 21
October	December 21

(B) Quarterly Reports

(i) Beginning with the first full quarter following permit re-issuance, and quarterly thereafter as specified in Section 5(A), a summary report for the most recent quarterly monitoring and inspection program results required by this permit shall be submitted to the Commissioner.

(ii) The report shall be a letter report describing the activities conducted and a brief discussion of significant results from, and any statistical evaluations of, the data collected that quarter. The report shall also include summary tables of

groundwater and leachate monitoring results and a groundwater potentiometric map for the shallow aquifer. The report shall also note any findings of significance resulting from sampling of surface water or sediment that occurred during the quarter.

(iii) Copies of laboratory reports and field data notes shall not be included in the quarterly summary report.

(iv) The quarterly report shall include a summary of the leachate seep inspection required by Section 3(E) and, in the event any seeps are identified, a map showing the location of such seeps and a description of their physical nature.

(C) Annual Reports

(i) Beginning on the first March following permit re-issuance, and annually on or before that date thereafter, a summary report for the preceding calendar year period of the monitoring and inspection programs required by this permit shall be submitted for the review and approval of the Commissioner. If the Commissioner does not provide written comments within ninety (90) days of receipt of the report, it shall be deemed to be approved, except for any content that modifies the provisions of this permit. If the report incorporates proposed modifications to the provisions of this permit a written approval or a written permit modification is required before such modifications may be implemented.

(ii) The report shall include an executive summary identifying new or changed report content or findings in comparison to prior reports, and also include, but not be limited to: (a) an evaluation of leachate quality and quantity, including graphical representation of monitoring results, and a determination of whether there is any leakage from the primary liner; (b) an evaluation of the condition of all observation and monitoring wells on the site and the need for repair or replacement of any wells, and an action plan and schedule to address identified deficiencies; (c) an evaluation of the extent and potential extent of the groundwater zone of influence and how it relates to the Permittee's control of the groundwater zone of influence, including graphical presentation of all potentiometric data collected during that year; (d) an evaluation of surface water monitoring results collected during the year, groundwater monitoring results, and potentiometric data to determine whether any impact on the surface water quality of the Quinebaug River, Carpenter Brook, or stormwater sedimentation ponds, or any other surface waters was detected or could reasonably be expected to occur, (e) an evaluation of sediment sampling data collected during the year and determination of whether any impact on sediment quality in Carpenter Brook has or could reasonably be expected to occur, (f) a detailed site map of the area in which the Wheelabrator Putnam Inc. Landfill is situated, at a scale of 1 inch equals 200 feet, showing current activities occurring on the site, (g) a qualitative evaluation of the monitoring data relative to the conceptual site model for the site; and (h) a summary of the statistical evaluations required pursuant to paragraphs 3(B)(vi), 3(B)(vii) and 3(B)(viii) of this permit and assessment investigations triggered by such evaluations; and (i) for alternate years commencing with the report due March 1, 2020, evaluation of temporal trends in monitored parameters and proposed modifications, if any, to the control concentrations used for the combined Shewhart-CUSUM control chart evaluations specified in the EMP.

(iii) Copies of laboratory reports and field data notes for data supporting the evaluations required by paragraph 5(C)(ii), including supporting documentation for data previously summarized in quarterly reports submitted as required by Section 5(B), shall be appended to the annual report.

(iv) For the leachate discharge, additional annual reporting shall be performed. The additional reporting shall consist of preparing two graphs: one of leachate specific conductance and discharge volume versus time, and one of leachate discharge volume and precipitation hydrograph versus time. The graphs shall be constructed by plotting all values for leachate discharge volume along the Y - axis, time along the X-axis, and the leachate specific conductance or precipitation hydrograph along a second Y-axis. Data to be used for constructing the precipitation hydrograph shall be that required in Section 3(C). Leachate specific conductance and discharge volume data shall be that required in paragraph 3(D)(iv).

(D) Habitat Monitoring Reports

(i) A discrete Habitat Monitoring Report shall be submitted to the Commissioner for review and approval not later than ninety (90) days after the completion of each habitat monitoring round. If the Commissioner does not provide written comments within ninety (90) days of receipt of the report, it shall be deemed to be approved.

(ii) The report shall include an executive summary identifying new or changed report content or findings in comparison to prior reports and also include, but not be limited to: habitat characterization results including field and, when applicable, laboratory data sheets, and an updated version of the map(s) required by Section 3(G) if applicable; summaries of the data collected for surface water monitoring as required by Section 3(A) and sediment monitoring as required by Section 3(F); up to date information from the DEEP Natural Diversity Data Base; the annual Q99 stream flow, estimated using methods developed by the United States Geological Survey, for the river adjacent to the site and the calculated groundwater discharge volume from the site; and a summary of groundwater monitoring data and leachate volume data required by Sections 3(B). The report shall also include an evaluation of the environmental data in specific relation to the habitat monitoring results, a comparison of groundwater and surface water data to the chronic criteria in the Connecticut Water Quality Standards, and a comparison of any sediment data to the threshold effect concentration (TEC) criteria in MacDonald, et. al, 2000.

(iii) A summary habitat monitoring report shall be submitted to the Commissioner as an appendix to the periodic review reports required by Section 5(E) of this permit. It shall include, in addition to the content specified in paragraph 5(D)(i), a ten (10) year critical review of the information submitted in prior habitat monitoring reports, an identification of any trends in reported habitat character or quality, and an evaluation of surface and groundwater monitoring data ten (10) year 95% upper confidence limits, and sediment monitoring results required by Section 3(F), using the approach specified for discrete monitoring rounds in paragraph 5(D)(i) of this permit.

(E) Periodic Review Reports

(i) On or before each ten (10) year anniversary of the date of issuance of this permit the Permittee shall submit for the Commissioner's review and approval a comprehensive report for the preceding nominal ten (10) year period.

(ii) The report shall include but not be limited to (a) an executive summary identifying significant issues in the report; (b) a summary and critical evaluation of trends during the covered ten (10) year period including, at a minimum, trend evaluation of water levels, groundwater analytical results, statistical evaluations, leachate production and quality, leachate seep occurrences, and surface water and sediment monitoring; (c) an updated evaluation of the surface-groundwater system at the site, including both hydrogeologic and hydrochemical aspects; (d) a critical review of the data to identify any updates or deficiencies in the conceptual model for the site, along with a recommendation for any supplemental investigations needed to resolve any such deficiencies and a schedule for their implementation; (e) an evaluation of groundwater and leachate analyses for 40 CFR 258 Appendix II constituents, in comparison to any environmental analyses for such constituents conducted over the covered ten (10) year period, and a recommendation for an updated list of parameters to be added to the list identified in paragraph 3(B)(ii) item 24 of this permit for four quarters of confirmatory monitoring, and wells at which they will be monitored; (f) a cumulative evaluation of habitat monitoring in conjunction with other environmental data, as specified in paragraph 5(D)(ii); (g) recommendations for modifications to the EMP that do not affect the specifications within this permit, and, optionally; (h) a successor EMP submitted pursuant to the provisions of paragraph 6(D)(iii) of this permit.

(iii) The report may provide supporting data for, and be accompanied by, a request for permit modification, for approval pursuant to the applicable requirements for permit modification.

(F) Report Submittal

(i) If an electronic system is available for any submission identified in subdivisions 5(B), 5(C), and 5(E) of this Section, such submittal shall be made pursuant to the instructions prescribed by the Commissioner for the use of such electronic system.

(ii) If no electronic system is available, reports submitted to the Commissioner shall be in paper format, copied on two sides if practical, and appendices may have multiple pages, reduced by up to 50% of the original size, on a single report page. All paper copies shall be submitted to the following addressee:

REMEDIATION DIVISION
BUREAU OF WATER PROTECTION AND LAND REUSE
CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CONNECTICUT 06106-5127:

(iii) The report required by Section 5(D) and a copy of the report required by Section 5(E) of this permit shall, unless otherwise specified in writing by the Commissioner, be submitted to the following address:

WATER PLANNING AND MANAGEMENT DIVISION
BUREAU OF WATER PROTECTION AND LAND REUSE
CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CONNECTICUT 06106-5127

(iv) Copies of the reports required by Sections 5(B) through 5(E) of this permit shall also be provided to the Town of Putnam, 126 Church Street, Putnam, CT 06260 and Chief of Environmental Health Services, Northeast District Department of Health, 69 South Main Street, Unit 4, Brooklyn, Connecticut 06234.

6. SPECIFIC CONDITIONS

(A) The Permittee shall operate and maintain the lined solid waste disposal area in accordance with the permit to construct a solid waste disposal area No. SW1160391 issued on March 19, 1998, amended on June 1, 1999, modified May 21, 2002, and further modified on December 19, 2017, and in accordance with plans and specifications associated with such permit, as revised and approved by the Commissioner pursuant to the provisions of such permit.

(B) The Permittee shall operate and maintain the lined solid waste disposal area in accordance with the permit to operate a solid waste disposal area No. SW1160430-PO issued on May 6, 1999, amended on October 24, 2000, modified May 21, 2002, and further modified on December 19, 2017, and in accordance with plans and specifications associated with such permit, as revised and approved by the Commissioner from time to time pursuant to the provisions of such permit.

(C) The Permittee shall maintain the stormwater sedimentation ponds by mowing to maintain grass cover and prevent the growth of perennial shrubs and trees; removing grass clippings, leaves, and debris; and removing the accumulated sediment when the sediment depth exceeds one foot.

(D) <u>Environmental Monitoring Plan</u>

(i) The Permittee shall conduct environmental monitoring as required by this permit and, unless specified otherwise in this permit, the sampling details and methodologies, analytical parameters and methods, and data evaluation methodologies and reporting requirements shall be in accordance with the EMP, which, as of the effective date of this permit shall be:

(a) Appendix A: Environmental Monitoring Plan, Application for Permit Renewal, Groundwater Discharge Permit, Pretreatment Permit, Putnam Ash Residue Landfill, Putnam, Connecticut, November 2008, prepared for Wheelabrator Putnam Inc. by Brown and Caldwell;

(b) As modified by the Response to Connecticut Department of Environmental Protection Information Request, Putnam Ash Residue Landfill, Putnam, Connecticut, January 27, 2010, prepared by Brown and Caldwell;

(c) Appendix I: Environmental Monitoring Plan, Application for Permit Modification, Groundwater Discharge Permit, Putnam Ash Residue

Landfill, Putnam, Connecticut, February 11, 2021, prepared for Wheelabrator Putnam Inc. by Brown and Caldwell.

(ii) The EMP may be further modified by changes approved pursuant to Sections 5(C) or 5(E) of this permit or pursuant to any approved modification of this permit,

(iii) On or before every five (5) year anniversary of this permit, a successor EMP consolidating and integrating all incremental changes as authorized pursuant to this permit or by approved modifications to this permit may be submitted by the Permittee, or requested by the Commissioner, for review and approval by the Commissioner. If the Commissioner does not provide written comments within ninety (90) days of receipt of the successor EMP, it shall be deemed to be approved, except for any content that unilaterally modifies the provisions of this permit. If the successor EMP incorporates proposed modifications to the provisions of this permit a written approval or a written permit modification is required before such modifications may be implemented.

7. GENERAL PROVISIONS

(A) The Commissioner reserves the right to make appropriate revisions to this permit in order to incorporate consideration of site operational modifications, including authorized changes in daily cover material, that may affect the predicted groundwater discharge quantity or quality; to establish any appropriate effluent limitations or schedules of compliance; or include other provisions which may be authorized under federal or state law. This permit as modified or reissued under this Section may also contain any other requirements of federal or state law then applicable.

(B) The Permittee, shall comply with all conditions of this permit including the following Sections of the Regulations of Connecticut State Agencies (RCSA), as applicable, which have been adopted pursuant to Section 22a-430 of the Connecticut General Statutes (CGS) and are hereby incorporated into this permit.

Section 22a-430-3 General Conditions

(a) Definitions
(b) General
(c) Inspection and Entry
(d) Effect of a Permit
(e) Duty
(f) Proper Operation and Maintenance
(g) Sludge Disposal
(h) Duty to Mitigate
(i) Facility Modifications; Notification
(j) Monitoring, Records and Reporting Requirements
(k) Bypass
(l) Conditions Applicable to POTWs
(m) Effluent Limitation Violations (Upsets)

(n) Enforcement

(o) Resource Conservation

(p) Spill Prevention and Control

(q) Instrumentation, Alarms, Flow Recorders

(r) Equalization

Section 22a-430-4 Procedures and Criteria

(a) Duty to Apply

(b) Duty to Reapply

(c) Application Requirements

(d) Preliminary Review

(e) Tentative Determination

(f) Draft Permits, Fact Sheets

(g) Public Notice, Notice of Hearing

(h) Public Comments

(i) Final Determination

(j) Public Hearings

(k) Submission of Plans and Specifications. Approval.

(l) Establishing Effluent Limitations and Conditions

(m) Case by Case Determinations

(n) Permit issuance or renewal

(o) Permit Transfer

(p) Permit revocation, denial or modification

(q) Variances

(r) Secondary Treatment Requirements

(s) Treatment Requirements for Metals and Cyanide

(t) Discharges to POTWs - Prohibitions

(C) Violations of any of the terms, conditions, or limitations contained in this permit may subject the Permittee to enforcement action, including but not limited to, seeking penalties, injunctions and/or forfeitures pursuant to applicable Sections of the Connecticut General Statutes and the Regulations of Connecticut State Agencies.

(D) Any false statement in any information submitted pursuant to this permit may be punishable as a criminal offense under Section 22a-438 or 22a-131a of the Connecticut General Statutes or in accordance with Section 22a-6, under Section 53a-157 of the Connecticut General Statutes.

(E) No provision of this permit and no action or inaction by the Commissioner shall be construed to constitute an assurance by the Commissioner that the actions taken by the Permittee pursuant to this permit will result in compliance or prevent or abate pollution.

(F) The authorization to discharge under this permit may not be transferred without prior written approval of the Commissioner. To request such approval, the Permittee and proposed transferee shall register such proposed transfer with the Commissioner, at least thirty (30) days prior to the transferee becoming legally responsible for creating or maintaining any discharge which is the subject of the permit transfer. Failure, by the transferee, to obtain the Commissioner's approval prior to commencing such discharge(s) may subject the transferee to enforcement action for discharging without a permit pursuant to applicable Sections of the CGS and RCSA.

(G) Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.

(H) An annual fee shall be paid for each year this permit is in effect as set forth in the RCSA, including but not limited to Section 22a-430-7.

This permit is reissued, with modifications, in accordance with Section 1421 of the Federal Safe Drinking Water Act 42 USC 300h et. seq. and Section 22a-430 of Chapter 446k, CGS, and RCSA adopted thereunder, as amended, and shall expire thirty (30) years from the date of issuance.

Date

Betsey Wingfield
Deputy Commissioner

Application No. 201903452 [modification]
Permit No. LF0000055

APPENDIX A

LIST OF APPLICATION SUBMITTALS

Wheelabrator Putnam Inc. Landfill Permit No. LF0000055

DOCUMENTS RELATED TO RENEWAL

Application for Permit Renewal, Groundwater Discharge Permit, Pretreatment Permit, Putnam Ash Residue Landfill, Putnam, Connecticut, November 2008, prepared for Wheelabrator Putnam Inc. by Brown and Caldwell.

Response to Connecticut Department of Environmental Protection Information Request, Putnam Ash Residue Landfill, Putnam, Connecticut, January 27, 2010, prepared by Brown and Caldwell.

Application for Permit Renewal, Groundwater Discharge Permit, Putnam Ash Residue Landfill, Putnam, Connecticut, August 30, 2018, prepared by Brown and Caldwell.

MODIFICATIONS OF ORIGINAL PERMIT

Permit Modification issued for permit No. LF0000055 by DEP on May 21, 2002

Minor Permit Modification issued for permit No. LF0000055 by DEP on April 30, 2008

Permit Modification issued for permit No. LF0000055 by DEP on December 9, 2008·

Permit Modification issued for permit No. LF0000055 by DEEP on August 30, 2018

DOCUMENTS RELATED TO PERMIT MODIFICATIONS

Application for Modifications, Groundwater Discharge Permit, Putnam Ash Residue Landfill, Putnam, Connecticut, March 2006, prepared for Wheelabrator Putnam Inc. by Shaw Environmental, Inc and Watermark Environmental, Inc.

Letter to William Warzecha, Bureau of Water Management, PERD, from John O'Rourke, Plant Manager, Wheelabrator Putnam Inc., dated February 6, 2007, providing supplemental information for updated MBLs.

DOCUMENTS RELATED TO ORIGINAL PERMIT

"Volume I, Permit Application, Putnam Ash Residue Landfill, Putnam, Connecticut," May 31, 1996, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

"Volume 2, Hydrogeological Investigation, Putnam Ash Residue Landfill, Putnam, Connecticut," May 31, 1996, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

"Volume 3, Leachate Impact Analysis and Engineering Report, Putnam Ash Residue Landfill, Putnam, Connecticut," May 31, 1996, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

"Volume 4, Facility Permit Plans, Putnam Ash Residue Landfill, Putnam, Connecticut (Sheet Nos. Hl through H21 and El through E26)," May 31, 1996, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

Letter to Sidney J. Holbrook, Commissioner, CTDEP, from D. Gary Heathcock, EMCON, Re: Proposed Putnam Ash Residue Landfill - Amendment to Reclassify Groundwater to GC, dated May 31, 1996, as

revised by the letter and attachments dated December 20, 1996. (Initial request contained in Volume 1, Permit Application, Putnam Ash Residue Landfill, Putnam, Connecticut.)

Drawing No. 1, "Limit of Disturbance, Wheelabrator Putnam Inc., Putnam Ash Residue Landfill, River Road, Putnam, CT," August 14, 1996, prepared for Wheelabrator Putnam, Inc., prepared byEMCON.

Drawing No. 1, "Water Table Surface, September 4, 1996, Wheelabrator Putnam Inc., Putnam Ash Residue Landfill, River Road, Putnam, Connecticut," September 24, 1996, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

Drawing No. 2, "Deep Overburden Potentiometric Surface, September 4, 1996, Wheelabrator Putnam Inc., Putnam Ash Residue Landfill, River Road, Putnam, Connecticut," September 25, 1996, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

Drawing No. 3, "Cross Section E-E', Wheelabrator Putnam Inc., Putnam Ash Residue Landfill, River Road, Putnam, Connecticut," September 24, 1996, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

Memorandum to Oswald Inglese, Jr., P.E., CTDEP, from D. Gary Heathcock, EMCON, Re: Wheelabrator Putnam, Putnam Ash Residue Landfill, Leachate Impact Analysis, dated October 22, 1996.

Memorandum to Oswald Inglese, Jr., P.E., CTDEP, from D. Gary Heathcock, EMCON, Re: Wheelabrator Putnam Inc., Putnam Ash Residue Landfill, Meteorological (Met) Station, dated October 23, 1996.

"Volume 5, Permit Application Supplements, Putnam Ash Residue Landfill, Putnam, Connecticut," January 1997, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

"Volume 6, Vol. 4 Revised Engineering Plans - Sept. 1996 and Supplemental Permit Plans, Putnam Ash Residue Landfill, Putnam, Connecticut," Januaiy 1997, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

Letter to Oswald Inglese, Jr., P.E., CTDEP, from D. Gary Heathcock and Donald W. Podsen, EMCON, Re: Revised Groundwater, Leachate, Surface Water, and Sediment Sampling Plan, dated January 29, 1997 (With attachments).

Letter to Oswald Inglese, Jr., P.E., CTDEP, from D. Gary Heathcock, EMCON, Re: Permit Application for Wastewater Discharges - Supplemental Submittal dated January 29, 1997 (with attachments).

Letter to James Fitting, CTDEP from Donald W. Podsen and John Monaco, Jr., P.E., EMCON, Re: revision to January 29, 1997 Groundwater, Leachate, Surface Water, and Sediment Sampling Plan, dated March 11, 1999 (with attachment).

Letter to James Fitting, CTDEP from Donald W. Podsen and John Monaco, Jr., P.E., EMCON, Re: monitoring well boring logs, dated April 22, 1999 (with attachments).

Letter to James Fitting, CTDEP from Donald W. Podsen and John Monaco, Jr., P.E., EMCON, Re: monitoring well development logs and pump installation details. (With attachments).

Connecticut Department of
ENERGY &
ENVIRONMENTAL
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PERMIT

September 29, 2021

Wheelabrator Putnam Inc.
200 Technology Park Drive
Putnam, CT 06260

Attention: Mr. Donald W. Musial

Re: Facility ID: 116-068
Town of Putnam
Quinebaug River Watershed

Wheelabrator Putnam Inc. (hereinafter the Permittee) submitted a permit modification application (Application No. 201903452, received on March 1, 2019) for the discharge to groundwater of leachate and stormwater associated with the current 60.5 acre, and proposed 68-acre expansion, lined solid waste disposal area, located at 344 River Road, Putnam (Wheelabrator Putnam Inc. Landfill). This application, supporting documents, addenda, letters, and plates identified in Appendix A attached to this permit, and supplemental documents have been reviewed by the Connecticut Department of Energy and Environmental Protection.

1. DECISION OF THE COMMISSIONER

(A) The Commissioner has made a final determination and found that the expansion of the existing 60.5 acre double-lined solid waste disposal area (Phases 1 through 6) to include 68 additional acres located at 344 River Road, Putnam, and the system to discharge stormwater runoff associated with this site to groundwater through sedimentation basins will continue to protect the waters of the state from pollution. The proposed expansion (Phases 7 through 11) will be constructed with a double-lined disposal area with leachate collection and leak detections system. Such leachate discharge would occur only if these liner and leachate collection systems fail. The Commissioner's decision is based on Application No. 201903452 for permit modification received on March 1, 2019 and the administrative record established in the processing of that application.

(B) The Commissioner hereby authorizes the Permittee to discharge leachate and stormwater from the site in accordance with the provisions of this permit, the above referenced application, and all approvals issued by the Commissioner or the Commissioner's authorized agent for the discharges and/or activities authorized by, or associated with, this permit.

2. PERMITTED DISCHARGES

(A) Discharge Serial No. 201-1

Description – Sewer discharge comprised of landfill leachate.

Discharge Location – Landfill leachate discharges to the Putnam Publicly Owned Treatment Works (POTW).

(B) Discharge Serial No. 300

Description - Leachate from Resource Recovery Facility Residue and residue from coal-fired power generation facilities, and also as may incidentally occur from any cover material approved pursuant to the operating permit described in Section 6(B) of this Permit (Discharge code 3050020).

Discharge Location - Groundwater in the watershed of the Quinebaug River (Basin Code 3700).

Disposal Area Design Size - 128.5 acres, lined solid waste disposal area.

(C) Discharge Serial No. 301

Description - Stormwater Sedimentation Pond 1. Phases 1-6. Sedimentation and infiltration of stormwater runoff from unused, lined cells and final capped areas of the lined solid waste disposal area. (Discharge Code 3080000).

Discharge Location - Groundwater in the watershed of the Quinebaug River. (Basin Code 3700)

Design size – 100-year, 24-hour storm event.

(D) Discharge Serial No. 302

Description - Stormwater Sedimentation Pond 2. Phases 1-6. Sedimentation and infiltration of stormwater runoff from unused, lined cells and final capped areas of the lined solid waste disposal area. (Discharge Code 3080000).

Discharge Location - Groundwater in the watershed of the Quinebaug River. (Basin Code 3700)

Design size – 100-year, 24-hour storm event.

(E) Discharge Serial No. 303

Description - Stormwater Sedimentation Pond 3. Phases 1-6. Sedimentation and infiltration of stormwater runoff from unused, lined cells and final capped areas of the lined solid waste disposal area. (Discharge Code 3080000).

Discharge Location - Groundwater in the watershed of the Quinebaug River. (Basin Code 3700)

Design size - 100-year, 24-hour storm event.

(F) Discharge Serial No. 304

Description - Stormwater Sedimentation Pond 4. Phases 1-6. Sedimentation and infiltration of stormwater runoff from unused, lined cells and final capped areas of the lined solid waste disposal area. (Discharge Code 3080000).

Discharge Location - Groundwater in the watershed of the Quinebaug River. (Basin Code 3700)

Design size - 100-year, 24-hour storm event.

(G) Discharge Serial No. 305

Description – Stormwater Sedimentation Pond 5. Phases 7-11. Sedimentation and infiltration of stormwater runoff from unused, lined cells and final capped areas of the lined solid waste disposal area. (Discharge Code 3080000)

Discharge Location – Groundwater in the watershed of the Quinebaug River. (Basin Code 3700)

Design size – 100-year, 24-hour storm event.

(H) Discharge Serial No. 306

Description – Stormwater Sedimentation Pond 6. Phases 7-11. Sedimentation and infiltration of stormwater runoff from unused, lined cells and final capped areas of the lined solid waste disposal area. (Discharge Code 3080000)

Discharge Location – Groundwater in the watershed of the Quinebaug River. (Basin Code 3700)

Design size - 100-year, 24-hour storm event.

(I) Discharge Serial No. 307

Description - Stormwater Sedimentation Pond 7. Phases 7-11. Sedimentation and infiltration of stormwater runoff from unused, lined cells and final capped areas of the lined solid waste disposal area. (Discharge Code 3080000)

Discharge Location – Groundwater in the watershed of the Quinebaug River. (Basin Code 3700)

Design size – 100-year, 24-hour storm event.

(J) Groundwater Zone of Influence

The groundwater zone of influence of the discharge from the lined solid waste disposal area which is hereby permitted shall not extend beyond property owned by the Permittee or any groundwater easements under the control of the Permittee. The groundwater zone of influence of the discharge is defined as the soil and groundwater area within which the treatment of leachate by soils and mixing of leachate with groundwater occurs and could reasonably be expected to occur and, therefore, within which some degradation of groundwater quality has occurred or is anticipated to occur.

3. MONITORING REQUIREMENTS

The Permittee shall conduct monitoring in accordance with the requirements of this Section and the Environmental Monitoring Plan (EMP) as defined in Section 6(D) of this permit. In the event of discrepancies between the requirements of this permit and the EMP, the provisions of this permit shall define the monitoring requirements.

(A) Surface Water Quality Monitoring

(i) **Locations**

Surface water quality monitoring shall be conducted at the following locations as specified in the EMP.

(a) Quinebaug River

SW-1: At or in the vicinity of the bridge for the landfill access road leading from Kennedy Drive across the Quinebaug River in Putnam.

Latitude 41° 54' 7" and longitude 71° 54' 11"

SW-2: At or in the vicinity of the former USGS Gauging Station on the Quinebaug River at the bridge on Cotton Bridge Road (also known as Boat House Road).

Latitude 41° 52' 30" and longitude 71° 55' 31"

(b) Carpenter Brook

SW-3: At the mouth of Carpenter brook where is discharges to the Quinebaug River

SW-8: At Carpenter Pond

SW-9: Tributary to Carpenter Pond

(c) Unnamed Perennial Stream to South of Phases 7 through 11

SW-10: At location just downstream of River Road

SW-11: At location downstream in the vicinity of PZ-5

(d) Stormwater Sedimentation Ponds

Phases 1 through 6

SW-4: Pond 1

SW-5: Pond 2

SW-6: Pond 3

SW-7: Pond 4

Phases 7 through 11

SW-12: Pond 5

SW-13: Pond 6

SW-14: Pond 7

(ii) **Parameters**

Each surface water sample collected from monitoring locations designated in paragraphs 3(A)(i) shall be analyzed for the parameters numbered 1-33, below.

Parameter	Reporting Limit
1. Alkalinity	2,000 µg/L
2. Ammonia-N, total	75 µg/L
3. Biochemical Oxygen Demand, 5 day	4,000 µg/L
4. Chloride	50 µg/L
5. Hardness as $CaCO_3$	2,000 µg/L
6. Kjeldahl-N, total	50 µg/L
7. Nitrate-N, total	≤50 µg/L
8. Nitrite-N, total	≤50 µg/L
9. pH	N.A.
10. Phosphorus, total	10 µg/L
11. Specific Conductance	N.A.
12. Total Dissolved Solids	10,000 µg/L
13. Total Suspended Solids	5,000 µg/L
14. Aluminum, total	240 µg/L
15. Arsenic, total	5 µg/L
16. Barium, total	10 µg/L
17. Cadmium, total	5 µg/L
18. Calcium **	3,300 µg/L
19. Chromium, total	5 µg/L
20. Copper, total	5 µg/L
21. Copper, dissolved	5 µg/L
22. Iron, total	50 µg/L
23. Iron, dissolved	50 µg/L
24. Lead, total	5 µg/L
25. Lead, dissolved	5 µg/L
26. Manganese, total	1 µg/L
27. Manganese, dissolved	1 µg/L
28. Mercury, total	0.2 µg/L
29. Nickel, total	5 µg/L
30. Silver, total	1 µg/L
31. Sodium	30 µg/L
32. Zinc, total	10 µg/L
33. Zinc, dissolved	10 µg/L

**Only for SW-3, SW-8, and SW-9

(iii) **Schedule**

(a) Each surface water station in the Quinebaug River designated in paragraph 3(A)(i)(a) shall be sampled every nine (9) months in coordination with other monitoring as specified in Section 3(H), and also sampled again during the subsequent quarter in conjunction with sampling for groundwater outlined in Section 3(B), except as provided by paragraph 3(A)(iv)(c).

(b) Each surface water station in Carpenter Brook, Carpenter Pond, the tributary of Carpenter Pond, and the unnamed perennial stream as designated in paragraph 3(A)(i)(b) and 3(A)(i)(c) shall be sampled every nine (9) months, in coordination with other monitoring as specified in Section 3(H), except as provided by paragraph 3(A)(iv)(c).

(c) Each surface water station at each of the active stormwater sedimentation ponds, as identified in paragraph 3(A)(i)(d), shall be sampled twice annually, between March first and December first, during or immediately after a rainfall event of one half-inch or greater that results in collectable runoff water entering the sedimentation basin, except as provided by paragraph 3(A)(iv)(d).

(d) For the scheduled sampling that precedes each ten (10) year anniversary of the issuance of this permit, for each surface water station identified in paragraphs 3(A)(i)(a), 3(A)(i)(b), 3(A)(i)(c) and also for any samples obtained to meet the requirements of paragraph 3(A)(iii)(c) during the year preceding each ten-year permit anniversary, the surface water sampling and analysis shall also include items 3, 5, 6, 11, 15, and 19 listed in paragraph 3(B)(ii) of this permit; and the results of such analyses shall be included in the report required by Section 5(E) of this permit.

(iv) **Sampling Conditions**

(a) The Quinebaug River flows shall be gauged and reported for each day of sample collection.

(b) Time of collection, water clarity, sample depth if a discrete depth sample, total water column depth (distance to river bottom), water and air temperature, pH, specific conductance, and dissolved oxygen shall be measured in the surface water body for each sample collected in accordance with the requirements of Section 3(A). Results of such measurements shall be reported together with the results of laboratory analyses, and for those parameters required to be measured in the field and in the laboratory, both values shall be reported in accordance with Section 5.

(c) During periods when surface water conditions would be unsafe for field personnel (e.g. icing conditions) samples shall be collected as soon as practicable once safe sampling conditions exist.

(d) The requirement to sample in paragraph 3(A)(iii)(d) is waived if no storm exceeding one half inch in precipitation occurs during the specified sampling period, or if field observations document that no storm

exceeding one half inch in precipitation during the specified sampling period results in runoff entering the sedimentation basins during or immediately after the storm event.

(v) **Reporting**

Surface water monitoring shall be reported in accordance with Sections 5(C) and 5(D).

(B) Groundwater Quality Monitoring

(i) **Locations**

Groundwater quality monitoring shall be conducted at the following locations as shown on Figure 3-1, titled "Groundwater, Surface Water, and Sediment Sampling Locations," contained in the EMP.

(a) Upgradient Monitoring Wells:

Phases 1 through 6: Directly upgradient of Phase 1 of the lined disposal area, upgradient of Sedimentation Ponds 1 and 3, and cross-gradient of Sedimentation pond 4.

MW-4S

MW-4D

Phase 7 through 11: Directly upgradient of Phases 7 through 11.

MW-24S

MW-24D

MW-29S

MW-29D

(b) Zone of Influence Extent Confirmation Wells:

Phases 1 through 6

MW-2S: Will be abandoned due to construction of Phases 7 through 11.

MW-2D: Will be abandoned due to construction of Phases 7 through 11.

MW-17S: Upon construction of Phases 7 through 11, well will be sampled as one of the discharge zone monitoring wells for the new cells and will no longer serve as one of the Zone of Influence confirmation extent wells for the monofill.

MW-17M: Upon construction of Phases 7 through 11, well will be sampled as one of the discharge zone monitoring wells for the new cells and will no longer serve as one of the Zone of Influence confirmation extent wells for the monofill.

MW-17D: Upon construction of Phases 7 through 11, well will be sampled as one of the discharge zone monitoring wells for the new cells and will no longer serve as one of the Zone of Influence confirmation extent wells for the monofill.

MW-18S

MW-18D

Phases 7 through 11

MW-28S

MW-28D

MW-30S

(c) Discharge Zone Water Quality Monitoring Wells: Downgradient of the lined disposal area, in the path of theoretical plume of groundwater contamination in the event of a breach of primary and secondary leachate collection systems.

Phases 1 through 6

MW-21S

MW-21D

MW-20S

MW-20M

MW-20D

MW-19S

MW-19D

Phases 7 through 11

MW-14S

MW-14D

MW-17S

MW-17M

MW-17D

MW-23S

MW-23D

MW-27S

MW-27D

(ii) **Parameters**

Each groundwater sample collected from the monitoring wells designated in paragraph 3(B)(i) shall be analyzed for a set of the parameters numbered 1 through 25, below, as specified in paragraphs 3(B) through 3(B)(v).

Parameter	Reporting Limit
1. Alkalinity	5 mg/L
2. Ammonia-N, total	0.05 mg/L
3. Bicarbonate	5 mg/L

Parameter	Reporting Limit
4. Biochemical Oxygen Demand, 5 day	4 mg/L
5. Calcium	3.3 mg/L
6. Carbonate	5 mg/L
7. Chloride	0.5 mg/L
8. Chemical Oxygen Demand	20 mg/L
9. Total Hardness	2 mg/L
10. Iron, total	0.1 mg/L
11. Magnesium	0.5 mg/L
12. Manganese, total	0.01 mg/L
13. Nitrate-N, total	0.2 mg/L
14. pH	NA
15. Potassium, total	1 mg/L
16. Sodium, total	1 mg/L
17. Specific Conductance	NA
18. Sulfate, total	2 mg/L
19. Total Dissolved Solids	10 mg/L
20. Total Suspended Solids	5 mg/L

21. All inorganics identified in Title 40 of the Code of Federal Regulations (40 CFR) Part 258 Appendix I [June 14, 2005; August 1, 2005] using EPA method 6010/6020 as required to meet minimum levels.

22. Volatile Organic Compounds (VOCs) identified in 40 CFR Part 258 Appendix I [June 14, 2005; August 1, 2005] using EPA method 8260.

23. All substances which are identified in 40 CFR Part 258 Appendix II [June 14, 2005; August 1, 2005] with the exception of alpha, alpha-Dimethylphenethylamine and 2,3,7,8-TCDD, which were deleted by a rule correction published in the Federal Register, Vol. 72, No. 82, April 30, 2007, on page 23276.

24. Any additional substances, at specific wells and for specified durations, which are identified in accordance with the requirements of paragraph 3(B)(v)(b) or recommended in a report submitted pursuant to paragraph 5(E)(ii)(e) of this permit and approved by the Commissioner.

25. Dioxins and Furans

(iii) **Quarterly Monitoring**

(a) Each groundwater sample collected from the monitoring wells designated in paragraphs 3(B)(i)(a), 3(B)(i)(b), and 3(B)(i)(c) shall be analyzed for the parameters listed in paragraph 3(B)(ii), items 1 through 21.

(b) In addition, samples shall be collected and analyzed for the parameters identified in paragraph 3(B)(ii) item 23 at specific wells as required by paragraphs 3(B)(iv)(c) and for the parameters identified in paragraph 3(B)(ii) item 24 at specific wells as required by paragraph 3(B)(v)(b) of this permit, or as recommended in a report submitted pursuant to paragraph 5(E)(ii)(e) of this permit and approved by the Commissioner.

(c) Schedule - The groundwater quality monitoring locations in paragraph 3(B)(i) shall be monitored four times per year in accordance with the following schedule, except as specified in paragraph 3(B)(iii)(b).

Sampling Periods

January
April
July
October

(iv) **Annual Monitoring**

(a) During each April monitoring event, the groundwater samples collected from all monitoring wells designated in paragraphs 3(B)(i)(a), 3(B)(i)(b), and 3(B)(i)(c) shall also be analyzed for the parameters identified in paragraph 3(B)(ii) item 22.

(b) During each July monitoring event, the groundwater sample collected from the monitoring well designated in paragraph 3(B)(i)(c) as MW-20M shall also be analyzed for the parameters listed in paragraph 3(B)(ii) item 25.

(c) If detections of VOCs or other organic compounds occur as a result of the sampling required by paragraph 3(B)(iv)(a) of this permit, the well(s) where detections occurred, except for wells MW-20S and MW-21S with detections consistent with past results documenting impact from the Putnam closed Municipal Landfill, shall be sampled again for the parameters listed in paragraph 3(B)(ii) item 22 in the subsequent quarter. If detections of VOCs or other organic compounds occur in two consecutive quarters sampling for these parameters and locations shall be conducted quarterly thereafter for the well(s) where the detections occurred, except for wells MW-20S and MW-21S, with detections consistent with past results documenting impact from the Putnam Municipal Landfill, until two successive quarters are non-detect, when the annual frequency may be resumed.

(v) **40 CFR Part 258, Appendix II Monitoring**

(a) On or before each ten (10) year anniversary of the date of issuance of this permit the Permittee shall collect groundwater samples from the monitoring wells designated in paragraph 3(B)(i)(c) and shall analyze such samples for the parameters identified in paragraph 3(B)(ii), item 23. The results of such monitoring shall be reported as provided in Section 5(E).

(b) The detection, pursuant to sampling to meet the requirements of paragraphs 3(B)(v)(a) or 3(B)(vi)(c)(3), of any parameters identified in paragraph 3(B)(ii), item 23 shall result in such parameters being added to the list identified in paragraph 3(B)(ii), item 24 for the next four quarterly monitoring events for the well where such detection occurred. If detections of such substances occur in any of these quarters, sampling for these parameters and locations shall continue quarterly thereafter for the well(s) where the detections occurred, until two successive quarters are non- detect.

(vi) **Discharge Zone Water Quality Evaluation**

(a) On a quarterly basis, beginning with the second full quarter following the effective date of this permit, the Permittee shall evaluate monitoring data for parameters identified in paragraph 3(B)(ii) items 3, 5, 7, 16 and 21 from the wells specified in paragraph 3(B)(i)(c) using the combined Shewhart-CUSUM control chart method as described in the EMP.

(b) On an annual basis, beginning with first April following the effective date of this permit, the Permittee shall evaluate monitoring data for parameters identified in paragraph 3(B)(ii) item 22 from the wells specified in paragraph 3(B)(i)(c) using the combined Shewhart-CUSUM control chart method as described in the EMP.

(c) Reporting and Response

(1) If a concentration for any parameter at any well is above the control concentration in any well the Permittee shall resample such well for such parameter within forty-five (45) days. The Permittee shall assure that the results of all sampling necessary to confirm such results are received from the laboratory no more than 30 days from the date of sample collection. Within seven days of receipt of such resampling results the Permittee shall provide letter notification to the Commissioner of the original and resampling results.

(2) If the resampling required by paragraph 3(B)(vi)(c)(1) confirms occurrence of a constituent above control criteria for a parameter that is sampled annually rather than quarterly, except for wells MW-20S and MW-21S with detections consistent with past results documenting impact from the Putnam closed Municipal Landfill, the well where concentrations were above criteria shall be resampled and evaluated for the parameters identified in paragraph 3(B)(ii) item 22 in each of the following four quarters.

(3) If any parameter is shown to have statistically significant verified results (fail the initial sample and two verification resamples), the Permittee shall, not later than 60 days after confirmation of such results, submit to the Commissioner a report evaluating these results in the context of recent monitoring data and site activity along with a plan and implementation schedule for an assessment of the cause of the groundwater condition. Such plan shall include sampling of the subject well for the parameters listed in paragraph 3(B)(ii) item 23. The

Permittee shall implement the groundwater assessment in accordance with the submitted report, or as otherwise directed by the Commissioner.

(vii) **Zone of Influence Extent Evaluation**

(a) On a quarterly basis, beginning with the second full quarter following the effective date of this permit, the Permittee shall evaluate monitoring data for the parameters listed in paragraph 3(B)(ii) items 3, 5, 7, and 16 from the wells specified in paragraph 3(B)(i)(b) using the combined Shewhart-CUSUM control chart method as described in the EMP.

(b) Reporting and Response

(1) If a concentration for any parameter at any well is above the control concentration in any well the Permittee shall resample such well for such parameter within forty-five (45) days. The Permittee shall assure that the results of all sampling necessary to confirm such results are received from the laboratory no more than 30 days from the date of sample collection. Within seven (7) days of receipt of such results the Permittee shall provide letter notification to the Commissioner of the original and resampling results.

(2) If any parameter is shown to have statistically significant verified results (fail the initial sample and two verification resamples) the Permittee shall, not later than sixty (60) days after confirmation of such results, submit to the Commissioner a report of the results in the context of recent monitoring data and site activity along with a plan and implementation schedule for an assessment of the cause of the groundwater condition and an evaluation of the extent and degree of such contamination, especially in the area outside the permitted zone of influence. The Permittee shall implement the groundwater assessment in accordance with the submitted report, or as otherwise directed by the Commissioner.

(viii) **Upgradient Monitoring Data Evaluation**

(a) On a quarterly basis, beginning with the first full quarter following the effective date of this permit, the Permittee shall evaluate monitoring data for the parameters identified in paragraph 3(B)(ii) items 3, 5, 7, 16 and 21 from the wells specified in paragraph 3(B)(i)(a) using the combined Shewhart-CUSUM control chart method as described in the EMP.

(b) On an annual basis, beginning with the first April following the effective date of this permit, the Permittee shall evaluate monitoring data for the parameters identified in paragraph 3(B)(ii) item 22 from the wells specified in paragraph 3(B)(i)(a) using the combined Shewhart-CUSUM control chart method as described in the EMP.

(c) Reporting and Response

(1) If a concentration for any parameter at any well is above the control concentration in any well the Permittee shall resample

such well for such parameter within forty-five (45) days. The Permittee shall assure that the results of all sampling necessary to confirm such results are received from the laboratory no more than thirty (30) days from the date of sample collection. Within seven (7) days of receipt of such results the Permittee shall provide letter notification to the Commissioner of the original and resampling results.

(2) If the resampling required by paragraph 3(B)(viii)(c)(1) confirms occurrence of a constituent above control criteria for a parameter that is sampled annually rather than quarterly, the well where concentrations were above criteria shall be resampled and evaluated for the parameters identified in paragraph 3(B)(ii) item 22 in each of the following four quarters.

(3) If any parameter is shown to have statistically significant verified results (fail the initial sample and two verification resamples) the Permittee shall, not later than sixty (60) days after confirmation of such results, submit to the Commissioner a report of the results in the context of recent monitoring data and site activity along with a plan and implementation schedule for an assessment of the cause of the groundwater condition and its implications for the technical design of the monitoring program. The Permittee shall implement the groundwater assessment in accordance with the submitted report, or as otherwise directed by the Commissioner.

(ix) **Sampling Conditions**

(a) Field measurement of pH, temperature, specific conductance, turbidity, Oxidation Reduction Potential, and water level elevation shall be performed at all groundwater monitoring locations in paragraph 3(B)(i) prior to each sample collection. Results of field measurements shall be reported together with the results of laboratory analyses, and for those parameters required to be measured in the field and in the laboratory, both values shall be reported in accordance with Section 5.

(b) Groundwater potentiometric elevations shall also be determined quarterly at all other usable observation and monitoring wells located on the site or adjacent parcels. The known existing specific wells within Phases 1 through 6 include those numbered: OW-1, OW-2E/D, OW-15S/D, OW-16S/D, MW-1S/D, MW-2S/D, MW-4S/D, MW-15S/D, MW-17S/M/D, MW-18S/D, MW-19S/D, MW-20S/M/D, and MW-21S/D. The specifics wells within Phases 7 through 11 include those numbered: MW-14S/D, MW-22S, MW-23S/D, MW-24S/D, MW-25S/D, MW-26S/M/D, MW-27S/D, MW-29S/D, and MW-30S. Wells MW-22S/D, MW 25S/D, and MW-26S/M/D will be used until they are eventually abandoned for future construction of Phases 9 through 10. The Permittee shall not be required to replace a well accidently destroyed but shall not intentionally abandon any wells under their control without approval of the Commissioner.

(x) **Shewhart-CUSUM control chart**

The Permittee shall submit to the Commissioner for review and approval, with the annual report, temporal trends in monitored parameters and proposed modifications, if any, to the control concentrations used for the combined Shewhart-CUSUM control chart evaluations specified in the EMP. If the Commissioner does not provide written comments within ninety (90) days of receipt of the report, it shall be deemed to be approved.

(xi) **Reporting**

Groundwater monitoring shall be reported in accordance with Sections 5(B) and 5(C).

(C) Precipitation Monitoring

(i) **Data Source**

Precipitation data to be used in preparing precipitation hydrographs shall be obtained from the National Weather Service Willimantic station, and may be supplemented by data from the Department of Energy and Environmental Protection's Flood Alert Center monitoring locations in the area, or data may be obtained from an alternative precipitation monitoring location approved in writing by the Commissioner.

(ii) **Data Evaluation**

The reporting period shall be the calendar year. The data to be reported shall be a precipitation hydrograph (in inches of precipitation per month) for the station identified in paragraph 3(C)(i) above, for the reporting period.

(iii) **Reporting**

The data shall be reported in accordance with paragraph 5(C)(iv) of this permit.

(D) Leachate Monitoring

(i) **Locations**

Leachate quality monitoring shall be conducted at the following location(s) identified on Figure 3-1, titled "Groundwater, Surface Water, Sediment and Leachate Sampling Locations" in the EMP:

(a) *Phases 1 through 6:*

L-1: Sampling port on side-riser chamber on Northern side of Phase 1.

L-2: Sampling port on side-riser chamber on Northern side of Phase 2.

L-3: Sampling port on side-riser chamber on Southeastern side of Phase 3.

L-4: Sampling port on side-riser chamber on Eastern side of Phase 4.

L-5: Sampling port on side-riser chamber on Northeastern side of Phase 5.

L-6: Sampling port on side-riser chamber on Northeastern side of Phase 6

(b) *Phases 7 through 11:*

L-7: Sampling port on side-riser chamber on Eastern side of Phase 7

L-11: Sampling port on side-riser chamber on Southeastern side of Phase 11.

Leachate sampling shall be from the primary leachate collection system active side-riser pipe most representative of active leachate generation; the sampling identification shall include a suffix identifying the specific side riser sampled.

(ii) **Parameters**

Leachate samples shall be analyzed for the parameters numbered 1-23, below, as specified in paragraph 3(D)(iii).

Parameter	Reporting Limit
1. Alkalinity	5 mg/L
2. Ammonia-N, total	0.1 mg/L
3. Bicarbonate	5 mg/L
4. Biochemical Oxygen Demand, 5 day	4 mg/L
5. Calcium	0.5 mg/L
6. Carbonate	5 mg/L
7. Chloride	0.5 mg/L
8. Chemical Oxygen Demand	20 mg/L
9. Total Hardness	3.3 mg/L
10. Iron, total	0.1 mg/L
11. Magnesium	0.5 mg/L
12. Manganese, total	0.01 mg/L
13. Nitrate-N, total	0.05 mg/L
14. pH	NA
15. Potassium, total	1 mg/L
16. Sodium, total	1 mg/L
17. Specific Conductance	NA
18. Sulfate, total	2 mg/L
19. Total Dissolved Solids	10 mg/L
20. Total Suspended Solids	5 mg/L

21. All inorganics identified in Title 40 of the Code of Federal Regulations (40 CFR) Part 258 Appendix I [June 14, 2005; August 1, 2005] using EPA method 6010/6020 as required to meet minimum levels.

22. Volatile Organic Compounds (VOCs) identified in 40 CFR Part 258

Parameter	Reporting Limit

Appendix I [June 14, 2005; August 1, 2005] using EPA method 8260.

23. All substances which are identified in 40 CFR Part 258 Appendix II [June 14, 2005; August 1, 2005] with the exception of alpha, alpha-Dimethylphenethylamine and 2,3,7,8-TCDD, which were deleted by a rule correction published in the Federal Register, Vol. 72, No. 82, April 30, 2007, on page 23276.

(iii) **Schedule**

(a) Leachate samples shall be collected and analyzed for the parameters listed in paragraph 3(D)(ii), items 1 through 21 on a quarterly frequency, in January, April, July, and October.

(b) Leachate samples shall be collected and analyzed for the parameters listed in paragraph 3(D)(ii) item 22 annually in April.

(c) On or before each ten (10) year anniversary of the date of issuance of this permit the Permittee shall collect a leachate sample from the primary leachate collection system active side-riser pipe most representative of active leachate generation and shall analyze such sample for the parameters identified in paragraph 3(D)(ii), item 23. The results of such monitoring shall be reported as provided in Section 5(E).

(iv) **Leachate Discharge Monitoring**

The leachate discharge shall be monitored monthly for the total discharge volume from all leachate collection points, separately for the primary and secondary collection systems; and for specific conductance, at the location(s) identified in paragraph 3(D)(i). Secondary collection system leachate volumes shall be separately determined for each disposal area cell to the extent the systems allow collection of such discrete data.

(v) **Reporting**

The monitoring results shall be reported in accordance with Sections 5(B) and 5(C).

(E) Leachate Seep Monitoring

(i) **Monitoring**

On a quarterly basis the Permittee shall conduct an inspection of the perimeter and side slopes of the landfill, and the banks of surface waters adjacent to the landfill to identify the presence of any leachate seeps or iron oxide precipitation. All persistent leachate seeps identified shall be sampled and analyzed for the parameters identified in paragraph 3(B)(ii), items 1 through 21. Persistent leachate seeps are defined as active discharges which have been identified at any one location in two consecutive inspection periods.

(ii) **Reporting and Response**

(a) Leachate seep monitoring shall be reported in accordance with paragraph 5(B)(iv).

(b) If persistent leachate seeps are identified, the Permittee shall, not later than thirty (30) days after such identification, submit to the Commissioner a report which includes a map drawn to a scale of one inch equal to 200 feet showing the presence and location of all persistent leachate seeps or iron oxide precipitation, describes their chemical composition, any sampling results, and the discharge rate, and which includes a plan for the remediation of such seeps or iron oxide precipitation and a schedule for carrying out the remediation plan. The Permittee shall conduct the remediation plan in accordance with the submitted report, or as otherwise directed by the Commissioner.

(F) Sediment Monitoring

(i) **Locations**

Samples for physical and chemical characterization of sediment quality shall be collected at the following locations as shown on Figure 3-2 titled "Quinebaug River Sample Locations", contained in the EMP.

S-1: At the mouth of Carpenter Brook

S-2: From a tributary to Carpenter Pond

S-3: From the Quinebaug River upstream from the site, at or near the location of surface water sample SW-I

S-4: From the Quinebaug River at a location that is downstream of the site, and at or near the southerly edge of the zone of influence

S-5: From the Quinebaug River downstream from the site, at or near the location of surface water sample SW-2

Samples of sediment from the Quinebaug River sample locations shall be acquired as multiple discrete samples using the transect approach as defined by the latest promulgated EMP.

(ii) **Parameters**

Sediment samples shall be analyzed (on a dry weight basis) for the parameters numbered 1s-11s, below.

	Parameter
1s	Percent Moisture
2s	Grain Size Fractionation (including fines)
3s	Total Carbon
4s	Total Inorganic Carbon (by difference of parameters 3s and 5s)
5s	Total Organic Carbon
6s	Copper, total
7s	Lead, total
8s	Zinc, total

9s Acid Volatile Sulfides, and SEMs by trace-ICP

10s Polynuclear Aromatic Hydrocarbons

11s Polychlorinated Biphenyls

Analyses for total carbon (3s) and total organic carbon (5s) shall be by the Lloyd-Kahn method or any other method approved by the Commissioner. Analyses for total copper (6s) and total lead (7s) may be by Graphite Furnace Atomic Absorption Spectroscopy (GFAA) or Inductively Coupled Plasma analysis/Mass Spectroscopy (ICP/MS). Analyses for total zinc (8s) may be by Inductively Coupled Plasma analysis (ICP) or ICP/MS. Results of analyses for 6s, 7s, and 8s shall be reported together with the SEM results for these same metals (9s).

(iii) **Schedule**

Physical and chemical characterization of sediment quality shall be conducted, in coordination with other monitoring as specified in Section 3(H), in accordance with the following requirements:

(a) Each sediment sample from sample locations designated in paragraph 3(F)(i) shall be collected and analyzed for the parameters identified in paragraph 3(F)(ii), items 1s through 11s on the same nine (9) month cycle as the surface water and habitat monitoring.

(b) On or before each ten (10) year anniversary of the date of issuance of this permit the Permittee shall collect sediment samples from sample locations designated in paragraph 3(F)(i) and shall analyze such samples for the parameters identified in paragraph 3(F)(ii) items 1s through 11s.

(c) The Permittee shall collect sediment samples from the sample locations in the Quinebaug River (S-3, S-4, and S-5) and analyze them as proposed in any assessment plan submitted to meet the requirements of paragraphs 3(B)(vi)(c)(3) or 3(B)(vii)(b)(2) of this permit, or as directed by the Commissioner pursuant to such paragraphs.

(iv) **Reporting**

The monitoring results shall be reported in accordance with Section 5(D).

(G) Habitat Monitoring

(i) Qualitative habitat characterizations of the area in which the Wheelabrator Putnam Inc. Landfill is situated shall be conducted every nine (9) months in coordination with other monitoring as specified in Section 3(H). The habitat monitoring shall describe, in particular, the entire area in the vicinity of the Quinebaug River and Carpenter Brook as defined in paragraph 3(G)(ii), below. A descriptive report of upland areas at a minimum shall note changes from the last event particularly as they contribute to the ecology of the surface water system, and a description of nearby influences shall be included.

(ii) The habitat characterization and detailed site map shall cover an area within the 100-year flood zone along the Quinebaug River, Carpenter Brook, Carpenter Pond, and the unnamed perennial stream south of Phases 7 through 11 (once disposal operations in that area have commenced). The area shall extend along

the Quinebaug River one-half mile upstream and one-half mile downstream from the existing limits of the town landfill property (Map 20, Block 6, Lot 00). The area shall also include Carpenter Brook up to and including Carpenter Pond.

(iii) A detailed site map of the area in which the Wheelabrator Putnam Inc. Landfill is situated, at a scale of 1 inch equals 200 feet, shall be prepared to depict and identify the Quinebaug River and the Carpenter Brook Wetlands Corridor (the wetland corridors for the unnamed perennial stream south of Phases 7 through 11 will be added once disposal operations in that area have commenced), flood boundaries, wetlands, anthropogenic structures (e.g. roads, dams, bridges, rail lines, sewer crossings), existing and potential pollutant sources (e.g. sewage treatment plants, gravel mining operations, existing and abandoned or closed landfills, highway garages, storm drainage, etc.). The map shall also depict all available current and historical surface water, sediment, and biological monitoring locations, habitat assessment plots, groundwater monitoring locations, groundwater flow direction, and is concentration contours for any identified groundwater plume. The map shall identify and partition major habitats, identify sediment type and locations where submerged aquatic vegetation is present in the Quinebaug River, as determined by a visual survey conducted in a boat. Permittee may refer to, and incorporate supporting information including, but not limited to, aerial photographs, local wetlands maps, sewer and highway department plans.

(iv) **Reporting**

Results of each habitat characterization shall be submitted in accordance with the requirements of Section 5(D).

(H) Coordination of Monitoring

(i) Surface water monitoring (excluding stormwater sedimentation ponds), and habitat monitoring, and sediment monitoring when required by paragraph 3(F)(iii) of this permit, shall be conducted concurrently, on the same nine (9) month cycle in continuance of the original permit schedule.

(ii) Monitoring may be conducted jointly with any monitoring program implemented for the adjacent Putnam Municipal Landfill.

(I) Residential Well Monitoring

(i) **Locations**

Due to the presence of three upgradient private residential water supply wells located at residences that abut the area of Phases 7 through 11, groundwater may be collected from the residential wells identified in Section 9.3.2 of the February 2021 revision of the EMP.

414 River Road: Located near upgradient monitoring wells MW-24S and MW-24D

428 River Road: Located near upgradient monitoring wells MW-29S and MW-29D

450 River Road: Located near upgradient monitoring wells MW-29S and MW-29D

(ii) **Monitoring**

The plan shall include the sampling and analysis of the residential wells designated in 3(I)(i) for the parameters in paragraph 3(B)(ii) item 23 for groundwater collected from the residential wells located near any affected upgradient monitoring wells.

The Permittee has deeded agreements with the owners of these residences listed in 3(I)(i) which contains provisions for conducting environmental sampling.

(a) Reporting and Response

The sampling results from the residential water supply wells will be part of the evaluation of the groundwater condition at the upgradient location. The need for additional sampling of the residential water supply wells will be dependent on whether it is shown that either the groundwater condition is potentially being caused by the Landfill, or the groundwater condition has not dissipated.

4. SAMPLE ANALYSIS

(A) All sample analyses required by this permit shall be performed by a laboratory certified for such analyses by the Connecticut Department of Public Health or approved in writing for monitoring at this facility by the Connecticut Department of Energy and Environmental Protection.

(B) Analytical results for each parameter shall be reported together with the actual method detection limits achieved during the analysis. The value of each parameter shall be reported to the maximum level of accuracy and precision possible. Failure to submit data in accordance with the procedures and protocols set forth in this permit shall constitute a permit violation.

(C) Chemical analyses for surface water, groundwater, leachate, and sediment shall be performed using methods approved pursuant to the Code of Federal Regulations, Part 136 of Title 40, except where otherwise specified in paragraphs 3(A)(ii), 3(B)(ii), 3(D)(ii), and 3(F)(ii) or unless an alternative method has been specifically approved in writing by the Commissioner for monitoring at this facility. Failure to use approved methods shall constitute a permit violation.

(D) Analyses required by Sections 3(A) and 3(B) shall be conducted to achieve the reporting limits for each of those parameters for which reporting limits are identified in 3(A)(ii) and 3(B)(ii) unless an alternative method that is capable of achieving the reporting limits has been specifically approved in writing by the Commissioner.

(E) The reporting limits specified in paragraph 3(A) and 3(B) represent the concentration at which quantification must be achieved and verified during the chemical analyses for these compounds. Analyses for these compounds must include calibration points at least as low as the specified reporting limit. Check standards within ten (10) percent of the specified reporting limit may be used in lieu of a calibration point equal to the reporting limit.

(F) If any water sample analysis indicates that quantification for a particular parameter cannot be verified at or below the specified reporting limit, a second sample shall be collected and analyzed for that parameter according to the above specified methodology as soon as practicable. The results of the first and subsequent sample analyses shall be submitted to the Commissioner verifying that the appropriate methodology was employed, the reporting limit was achieved for quality-control samples and that failure to quantify the parameter at or below the reporting limit specified for the analysis was a result of matrix effects which could not be compensated for as part of sample analysis allowed pursuant to 40 CFR Part 136.

(G) If any three (3) water samples collected in a twelve-month period indicate that the specified reporting limit was not achieved for a particular parameter when using the specified test methodology, the Permittee shall submit a report to the Commissioner which justifies and defines the matrix effect upon analyses for that parameter, identifies the level at which quantification can be verified for those specific test conditions, and recommends modification to the method or an alternative method that is sufficiently sensitive and free of the identified matrix effect. The Permittee shall use the recommended method modifications or alternative method for future analyses unless otherwise directed by the Commissioner.

5. REPORTING

(A) Schedule

The results of all sampling and analyses required by this permit, unless otherwise specified or approved in writing by the Commissioner, shall be reported to the Commissioner in accordance with the following schedule:

Sampling Periods	Reporting Dates
January	March 21
April	June 21
July	September 21
October	December 21

(B) Quarterly Reports

(i) Beginning with the first full quarter following permit re-issuance, and quarterly thereafter as specified in Section 5(A), a summary report for the most recent quarterly monitoring and inspection program results required by this permit shall be submitted to the Commissioner.

(ii) The report shall be a letter report describing the activities conducted and a brief discussion of significant results from, and any statistical evaluations of, the data collected that quarter. The report shall also include summary tables of groundwater and leachate monitoring results and a groundwater potentiometric map for the shallow aquifer. The report shall also note any findings of significance resulting from sampling of surface water or sediment that occurred during the quarter.

(iii) Copies of laboratory reports and field data notes shall not be included in the quarterly summary report.

(iv) The quarterly report shall include a summary of the leachate seep inspection required by Section 3(E) and, in the event any seeps are identified, a map showing the location of such seeps and a description of their physical nature.

(C) Annual Reports

(i) Beginning on the first March following permit re-issuance, and annually on or before that date thereafter, a summary report for the preceding calendar year period of the monitoring and inspection programs required by this permit shall be submitted for the review and approval of the Commissioner. If the Commissioner does not provide written comments within ninety (90) days of receipt of the report, it shall be deemed to be approved, except for any content that modifies the provisions of this permit. If the report incorporates proposed modifications to the provisions of this permit a written approval or a written permit modification is required before such modifications may be implemented.

(ii) The report shall include an executive summary identifying new or changed report content or findings in comparison to prior reports, and also include, but not be limited to: (a) an evaluation of leachate quality and quantity, including graphical representation of monitoring results, and a determination of whether there is any leakage from the primary liner; (b) an evaluation of the condition of all observation and monitoring wells on the site and the need for repair or replacement of any wells, and an action plan and schedule to address identified deficiencies; (c) an evaluation of the extent and potential extent of the groundwater zone of influence and how it relates to the Permittee's control of the groundwater zone of influence, including graphical presentation of all potentiometric data collected during that year; (d) an evaluation of surface water monitoring results collected during the year, groundwater monitoring results, and potentiometric data to determine whether any impact on the surface water quality of the Quinebaug River, Carpenter Brook, or stormwater sedimentation ponds, or any other surface waters was detected or could reasonably be expected to occur, (e) an evaluation of sediment sampling data collected during the year and determination of whether any impact on sediment quality in Carpenter Brook has or could reasonably be expected to occur, (f) a detailed site map of the area in which the Wheelabrator Putnam Inc. Landfill is situated, at a scale of 1 inch equals 200 feet, showing current activities occurring on the site, (g) a qualitative evaluation of the monitoring data relative to the conceptual site model for the site; and (h) a summary of the statistical evaluations required pursuant to paragraphs 3(B)(vi), 3(B)(vii) and 3(B)(viii) of this permit and assessment investigations triggered by such evaluations; and (i) for alternate years commencing with the report due March 1, 2020, evaluation of temporal trends in monitored parameters and proposed modifications, if any, to the control concentrations used for the combined Shewhart-CUSUM control chart evaluations specified in the EMP.

(iii) Copies of laboratory reports and field data notes for data supporting the evaluations required by paragraph 5(C)(ii), including supporting documentation for data previously summarized in quarterly reports submitted as required by Section 5(B), shall be appended to the annual report.

(iv) For the leachate discharge, additional annual reporting shall be performed. The additional reporting shall consist of preparing two graphs: one of leachate specific conductance and discharge volume versus time, and one of leachate discharge volume and precipitation hydrograph versus time. The graphs shall be

constructed by plotting all values for leachate discharge volume along the Y - axis, time along the X-axis, and the leachate specific conductance or precipitation hydrograph along a second Y-axis. Data to be used for constructing the precipitation hydrograph shall be that required in Section 3(C). Leachate specific conductance and discharge volume data shall be that required in paragraph 3(D)(iv).

(D) Habitat Monitoring Reports

(i) A discrete Habitat Monitoring Report shall be submitted to the Commissioner for review and approval not later than ninety (90) days after the completion of each habitat monitoring round. If the Commissioner does not provide written comments within ninety (90) days of receipt of the report, it shall be deemed to be approved.

(ii) The report shall include an executive summary identifying new or changed report content or findings in comparison to prior reports and also include, but not be limited to: habitat characterization results including field and, when applicable, laboratory data sheets, and an updated version of the map(s) required by Section 3(G) if applicable; summaries of the data collected for surface water monitoring as required by Section 3(A) and sediment monitoring as required by Section 3(F); up to date information from the DEEP Natural Diversity Data Base; the annual Q99 stream flow, estimated using methods developed by the United States Geological Survey, for the river adjacent to the site and the calculated groundwater discharge volume from the site; and a summary of groundwater monitoring data and leachate volume data required by Sections 3(B). The report shall also include an evaluation of the environmental data in specific relation to the habitat monitoring results, a comparison of groundwater and surface water data to the chronic criteria in the Connecticut Water Quality Standards, and a comparison of any sediment data to the threshold effect concentration (TEC) criteria in MacDonald, et. al, 2000.

(iii) A summary habitat monitoring report shall be submitted to the Commissioner as an appendix to the periodic review reports required by Section 5(E) of this permit. It shall include, in addition to the content specified in paragraph 5(D)(i), a ten (10) year critical review of the information submitted in prior habitat monitoring reports, an identification of any trends in reported habitat character or quality, and an evaluation of surface and groundwater monitoring data ten (10) year 95% upper confidence limits, and sediment monitoring results required by Section 3(F), using the approach specified for discrete monitoring rounds in paragraph 5(D)(i) of this permit.

(E) Periodic Review Reports

(i) On or before each ten (10) year anniversary of the date of issuance of this permit the Permittee shall submit for the Commissioner's review and approval a comprehensive report for the preceding nominal ten (10) year period.

(ii) The report shall include but not be limited to (a) an executive summary identifying significant issues in the report; (b) a summary and critical evaluation of trends during the covered ten (10) year period including, at a minimum, trend evaluation of water levels, groundwater analytical results, statistical evaluations, leachate production and quality, leachate seep occurrences, and surface water and sediment monitoring; (c) an updated evaluation of the surface-groundwater

system at the site, including both hydrogeologic and hydrochemical aspects; (d) a critical review of the data to identify any updates or deficiencies in the conceptual model for the site, along with a recommendation for any supplemental investigations needed to resolve any such deficiencies and a schedule for their implementation; (e) an evaluation of groundwater and leachate analyses for 40 CFR 258 Appendix II constituents, in comparison to any environmental analyses for such constituents conducted over the covered ten (10) year period, and a recommendation for an updated list of parameters to be added to the list identified in paragraph 3(B)(ii) item 24 of this permit for four quarters of confirmatory monitoring, and wells at which they will be monitored; (f) a cumulative evaluation of habitat monitoring in conjunction with other environmental data, as specified in paragraph 5(D)(ii); (g) recommendations for modifications to the EMP that do not affect the specifications within this permit, and, optionally; (h) a successor EMP submitted pursuant to the provisions of paragraph 6(D)(iii) of this permit.

(iii) The report may provide supporting data for, and be accompanied by, a request for permit modification, for approval pursuant to the applicable requirements for permit modification.

(F) Report Submittal

(i) If an electronic system is available for any submission identified in subdivisions 5(B), 5(C), and 5(E) of this Section, such submittal shall be made pursuant to the instructions prescribed by the Commissioner for the use of such electronic system.

(ii) If no electronic system is available, reports submitted to the Commissioner shall be in paper format, copied on two sides if practical, and appendices may have multiple pages, reduced by up to 50% of the original size, on a single report page. All paper copies shall be submitted to the following addressee:

REMEDIATION DIVISION
BUREAU OF WATER PROTECTION AND LAND REUSE
CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CONNECTICUT 06106-5127:

(iii) The report required by Section 5(D) and a copy of the report required by Section 5(E) of this permit shall, unless otherwise specified in writing by the Commissioner, be submitted to the following address:

WATER PLANNING AND MANAGEMENT DIVISION
BUREAU OF WATER PROTECTION AND LAND REUSE
CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CONNECTICUT 06106-5127

(iv) Copies of the reports required by Sections 5(B) through 5(E) of this permit shall also be provided to the Town of Putnam, 126 Church Street, Putnam, CT 06260 and Chief of Environmental Health Services, Northeast District Department of Health, 69 South Main Street, Unit 4, Brooklyn, Connecticut 06234.

6. SPECIFIC CONDITIONS

(A) The Permittee shall operate and maintain the lined solid waste disposal area in accordance with the permit to construct a solid waste disposal area No. SW1160391 issued on March 19, 1998, amended on June 1, 1999, modified May 21, 2002, and further modified on December 19, 2017, and in accordance with plans and specifications associated with such permit, as revised and approved by the Commissioner pursuant to the provisions of such permit.

(B) The Permittee shall operate and maintain the lined solid waste disposal area in accordance with the permit to operate a solid waste disposal area No. SW1160430-PO issued on May 6, 1999, amended on October 24, 2000, modified May 21, 2002, and further modified on December 19, 2017, and in accordance with plans and specifications associated with such permit, as revised and approved by the Commissioner from time to time pursuant to the provisions of such permit.

(C) The Permittee shall maintain the stormwater sedimentation ponds by mowing to maintain grass cover and prevent the growth of perennial shrubs and trees; removing grass clippings, leaves, and debris; and removing the accumulated sediment when the sediment depth exceeds one foot.

(D) <u>Environmental Monitoring Plan</u>

(i) The Permittee shall conduct environmental monitoring as required by this permit and, unless specified otherwise in this permit, the sampling details and methodologies, analytical parameters and methods, and data evaluation methodologies and reporting requirements shall be in accordance with the EMP, which, as of the effective date of this permit shall be:

(a) Appendix A: Environmental Monitoring Plan, Application for Permit Renewal, Groundwater Discharge Permit, Pretreatment Permit, Putnam Ash Residue Landfill, Putnam, Connecticut, November 2008, prepared for Wheelabrator Putnam Inc. by Brown and Caldwell;

(b) As modified by the Response to Connecticut Department of Environmental Protection Information Request, Putnam Ash Residue Landfill, Putnam, Connecticut, January 27, 2010, prepared by Brown and Caldwell;

(c) Appendix I: Environmental Monitoring Plan, Application for Permit Modification, Groundwater Discharge Permit, Putnam Ash Residue Landfill, Putnam, Connecticut, February 11, 2021, prepared for Wheelabrator Putnam Inc. by Brown and Caldwell.

(ii) The EMP may be further modified by changes approved pursuant to Sections 5(C) or 5(E) of this permit or pursuant to any approved modification of this permit,

(iii) On or before every five (5) year anniversary of this permit, a successor EMP consolidating and integrating all incremental changes as authorized pursuant to this permit or by approved modifications to this permit may be submitted by the Permittee, or requested by the Commissioner, for review and approval by the Commissioner. If the Commissioner does not provide written comments within ninety (90) days of receipt of the successor EMP, it shall be deemed to be

approved, except for any content that unilaterally modifies the provisions of this permit. If the successor EMP incorporates proposed modifications to the provisions of this permit a written approval or a written permit modification is required before such modifications may be implemented.

7. GENERAL PROVISIONS

(A) The Commissioner reserves the right to make appropriate revisions to this permit in order to incorporate consideration of site operational modifications, including authorized changes in daily cover material, that may affect the predicted groundwater discharge quantity or quality; to establish any appropriate effluent limitations or schedules of compliance; or include other provisions which may be authorized under federal or state law. This permit as modified or reissued under this Section may also contain any other requirements of federal or state law then applicable.

(B) The Permittee, shall comply with all conditions of this permit including the following Sections of the Regulations of Connecticut State Agencies (RCSA), as applicable, which have been adopted pursuant to Section 22a-430 of the Connecticut General Statutes (CGS) and are hereby incorporated into this permit.

Section 22a-430-3 General Conditions

(a) Definitions
(b) General
(c) Inspection and Entry
(d) Effect of a Permit
(e) Duty
(f) Proper Operation and Maintenance
(g) Sludge Disposal
(h) Duty to Mitigate
(i) Facility Modifications; Notification
(j) Monitoring, Records and Reporting Requirements
(k) Bypass
(l) Conditions Applicable to POTWs
(m) Effluent Limitation Violations (Upsets)
(n) Enforcement
(o) Resource Conservation
(p) Spill Prevention and Control
(q) Instrumentation, Alarms, Flow Recorders
(r) Equalization

Section 22a-430-4 Procedures and Criteria

(a) Duty to Apply

(b) Duty to Reapply

(c) Application Requirements

(d) Preliminary Review

(e) Tentative Determination

(f) Draft Permits, Fact Sheets

(g) Public Notice, Notice of Hearing

(h) Public Comments

(i) Final Determination

(j) Public Hearings

(k) Submission of Plans and Specifications. Approval.

(l) Establishing Effluent Limitations and Conditions

(m) Case by Case Determinations

(n) Permit issuance or renewal

(o) Permit Transfer

(p) Permit revocation, denial or modification

(q) Variances

(r) Secondary Treatment Requirements

(s) Treatment Requirements for Metals and Cyanide

(t) Discharges to POTWs - Prohibitions

(C) Violations of any of the terms, conditions, or limitations contained in this permit may subject the Permittee to enforcement action, including but not limited to, seeking penalties, injunctions and/or forfeitures pursuant to applicable Sections of the Connecticut General Statutes and the Regulations of Connecticut State Agencies.

(D) Any false statement in any information submitted pursuant to this permit may be punishable as a criminal offense under Section 22a-438 or 22a-131a of the Connecticut General Statutes or in accordance with Section 22a-6, under Section 53a-157 of the Connecticut General Statutes.

(E) No provision of this permit and no action or inaction by the Commissioner shall be construed to constitute an assurance by the Commissioner that the actions taken by the Permittee pursuant to this permit will result in compliance or prevent or abate pollution.

(F) The authorization to discharge under this permit may not be transferred without prior written approval of the Commissioner. To request such approval, the Permittee and proposed transferee shall register such proposed transfer with the Commissioner, at least thirty (30) days prior to the transferee becoming legally responsible for creating or maintaining any discharge which is the subject of the permit transfer. Failure, by the transferee, to obtain the Commissioner's approval prior to commencing such discharge(s) may subject the transferee to enforcement action for discharging without a permit pursuant to applicable Sections of the CGS and RCSA.

(G) Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.

(H) An annual fee shall be paid for each year this permit is in effect as set forth in the RCSA, including but not limited to Section 22a-430-7.

This permit is reissued, with modifications, in accordance with Section 1421 of the Federal Safe Drinking Water Act 42 USC 300h et. seq. and Section 22a-430 of Chapter 446k, CGS, and RCSA adopted thereunder, as amended, and shall expire thirty (30) years from the date of issuance.

Date

Betsey Wingfield
Deputy Commissioner

Application No. 201903452 [modification]
Permit No. LF0000055

APPENDIX A

LIST OF APPLICATION SUBMITTALS

Wheelabrator Putnam Inc. Landfill Permit No. LF0000055

DOCUMENTS RELATED TO RENEWAL

Application for Permit Renewal, Groundwater Discharge Permit, Pretreatment Permit, Putnam Ash Residue Landfill, Putnam, Connecticut, November 2008, prepared for Wheelabrator Putnam Inc. by Brown and Caldwell.

Response to Connecticut Department of Environmental Protection Information Request, Putnam Ash Residue Landfill, Putnam, Connecticut, January 27, 2010, prepared by Brown and Caldwell.

Application for Permit Renewal, Groundwater Discharge Permit, Putnam Ash Residue Landfill, Putnam, Connecticut, August 30, 2018, prepared by Brown and Caldwell.

MODIFICATIONS OF ORIGINAL PERMIT

Permit Modification issued for permit No. LF0000055 by DEP on May 21, 2002

Minor Permit Modification issued for permit No. LF0000055 by DEP on April 30, 2008

Permit Modification issued for permit No. LF0000055 by DEP on December 9, 2008·

Permit Modification issued for permit No. LF0000055 by DEEP on August 30, 2018

DOCUMENTS RELATED TO PERMIT MODIFICATIONS

Application for Modifications, Groundwater Discharge Permit, Putnam Ash Residue Landfill, Putnam, Connecticut, March 2006, prepared for Wheelabrator Putnam Inc. by Shaw Environmental, Inc and Watermark Environmental, Inc.

Letter to William Warzecha, Bureau of Water Management, PERD, from John O'Rourke, Plant Manager, Wheelabrator Putnam Inc., dated February 6, 2007, providing supplemental information for updated MBLs.

DOCUMENTS RELATED TO ORIGINAL PERMIT

"Volume I, Permit Application, Putnam Ash Residue Landfill, Putnam, Connecticut," May 31, 1996, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

"Volume 2, Hydrogeological Investigation, Putnam Ash Residue Landfill, Putnam, Connecticut," May 31, 1996, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

"Volume 3, Leachate Impact Analysis and Engineering Report, Putnam Ash Residue Landfill, Putnam, Connecticut," May 31, 1996, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

"Volume 4, Facility Permit Plans, Putnam Ash Residue Landfill, Putnam, Connecticut (Sheet Nos. Hl through H21 and El through E26)," May 31, 1996, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

Letter to Sidney J. Holbrook, Commissioner, CTDEP, from D. Gary Heathcock, EMCON, Re: Proposed Putnam Ash Residue Landfill - Amendment to Reclassify Groundwater to GC, dated May 31, 1996, as

revised by the letter and attachments dated December 20, 1996. (Initial request contained in Volume 1, Permit Application, Putnam Ash Residue Landfill, Putnam, Connecticut.)

Drawing No. 1, "Limit of Disturbance, Wheelabrator Putnam Inc., Putnam Ash Residue Landfill, River Road, Putnam, CT," August 14, 1996, prepared for Wheelabrator Putnam, Inc., prepared byEMCON.

Drawing No. 1, "Water Table Surface, September 4, 1996, Wheelabrator Putnam Inc., Putnam Ash Residue Landfill, River Road, Putnam, Connecticut," September 24, 1996, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

Drawing No. 2, "Deep Overburden Potentiometric Surface, September 4, 1996, Wheelabrator Putnam Inc., Putnam Ash Residue Landfill, River Road, Putnam, Connecticut," September 25, 1996, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

Drawing No. 3, "Cross Section E-E', Wheelabrator Putnam Inc., Putnam Ash Residue Landfill, River Road, Putnam, Connecticut," September 24, 1996, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

Memorandum to Oswald Inglese, Jr., P.E., CTDEP, from D. Gary Heathcock, EMCON, Re: Wheelabrator Putnam, Putnam Ash Residue Landfill, Leachate Impact Analysis, dated October 22, 1996.

Memorandum to Oswald Inglese, Jr., P.E., CTDEP, from D. Gary Heathcock, EMCON, Re: Wheelabrator Putnam Inc., Putnam Ash Residue Landfill, Meteorological (Met) Station, dated October 23, 1996.

"Volume 5, Permit Application Supplements, Putnam Ash Residue Landfill, Putnam, Connecticut," January 1997, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

"Volume 6, Vol. 4 Revised Engineering Plans - Sept. 1996 and Supplemental Permit Plans, Putnam Ash Residue Landfill, Putnam, Connecticut," Januaiy 1997, prepared for Wheelabrator Putnam, Inc., prepared by EMCON.

Letter to Oswald Inglese, Jr., P.E., CTDEP, from D. Gary Heathcock and Donald W. Podsen, EMCON, Re: Revised Groundwater, Leachate, Surface Water, and Sediment Sampling Plan, dated January 29, 1997 (With attachments).

Letter to Oswald Inglese, Jr., P.E., CTDEP, from D. Gary Heathcock, EMCON, Re: Permit Application for Wastewater Discharges - Supplemental Submittal dated January 29, 1997 (with attachments).

Letter to James Fitting, CTDEP from Donald W. Podsen and John Monaco, Jr., P.E., EMCON, Re: revision to January 29, 1997 Groundwater, Leachate, Surface Water, and Sediment Sampling Plan, dated March 11, 1999 (with attachment).

Letter to James Fitting, CTDEP from Donald W. Podsen and John Monaco, Jr., P.E., EMCON, Re: monitoring well boring logs, dated April 22, 1999 (with attachments).

Letter to James Fitting, CTDEP from Donald W. Podsen and John Monaco, Jr., P.E., EMCON, Re: monitoring well development logs and pump installation details. (With attachments).

SERVICE LIST

In the matter of Wheelabrator Putnam, Inc.

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