

C9. Quality Control Program for Burning Specification Used Oil,
CTGs' Emissions Minimization Plan,
& CTGs' Continuous Compliance Protocol

Greenwood Energy Center's Quality Control Program for Burning Specification Used Oil

EPA's Used Oil Regulations found in 40 CFR Part 279 were intended, in part, to encourage recycling of used oil. One means of recycling used oil is burning for energy recovery. EPA has established a set of specifications, which when met, indicate that on-specification used oil is in product-like condition. According to Part 279.11, "once used oil that is to be burned for energy recovery has been shown not to exceed any specification and the person making that showing complies with 279.72, 279.73, and 279.74(b), the used oil is no longer subject to this part." Greenwood Energy Center (GWEC) will purchase used oil that meets specification levels.

GWEC outlines below a Quality Control Program instituting a mechanism for responsible energy recovery of used oil.

1. Each batch from the used oil vendor must be accompanied by vendor's documentation demonstrating that the used oil meets specification levels shown in 40CFR 279.11. A batch is a quantity of used oil, contained in one storage unit (e.g., a tank) where no more oil is added between time of testing and shipment. The documentation will include vendor certification noting the shipment quantity and analytical data. The certification will provide information similar to that shown in Exhibit 1. Detroit Edison and used oil vendor shall agree to appropriate analytical test methods. Examples of acceptable methods are shown in Exhibit 2

Verification: File containing shipping records for each load received will be kept at GWEC a minimum of 5 years.

2. Each batch of used oil fuel will be tested for Total Halogens prior to off-loading. (Current suggested analytical test method is SW-846, Method #9077 - Chlor-D-Tect Kit.) A Greenwood delegate shall obtain a representative sample according to methods described in EPA publication SW-846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" and test for total halogens.

Sulfur will be tested on the same frequency and method (x-ray fluorescence) as currently employed for the burning of No. 2 and residual oil at the facility.

Verification: Record documenting the Total Halogens test completion will be kept at GWEC a minimum of 5 years.

3. Each calendar year, at least one sample from each used oil vendor will be gathered and tested for all the parameters listed in Exhibit 2. The sample could be obtained either as a split sample from the vendor, line sample from GWEC, or some other practical method. GWEC's test results shall be compared to the vendor's test results to confirm the validity of the documentation accompanying the shipment.

Verification: A file containing both vendor's and GWEC's analytical data for the same shipment will be maintained a minimum of 5 years.

4. If GWEC's analytical data obtained in 2 or 3 above does not reasonably match the vendor's analytical data or simply exceeds used oil specification levels, the used oil vendor will maintain possession of the fuel, as stipulated in their contract, until the discrepancies are resolved.

Verification: Records documenting steps taken to resolve testing discrepancy will be kept at GWEC at least 5 years.

Exhibit 1: Example of Used Oil Vendor Certification

Vendor Name: _____ Shipment Date: _____
 Manifest / Bill of Lading Number: _____ Quantity: _____
 Batch Sample Number: _____ Analytical Report Date: _____

Parameters	Units	Vendor Results	Used Oil Rule Specification Limit	Additional GWEC Limits	MDEQ Liquid Industrial Waste Act Limits(3)
Arsenic (Total)	ppm		≤ 5		< 5
Cadmium (Total)	ppm		≤ 2		< 2
Chromium (Total)	ppm		≤ 10		< 10
Lead (Total)	ppm		≤ 100		< 50
Flash Point	°F		≥ 100	≥ 150°F	> 141
Total Halogens (5)	ppm		≤ 4000 (1)	≤ 4000	< 4000 (1)
PCB	ppm		< 2 (2)		< 1 (2)
Sodium	ppm			≤ 450	
Vanadium	ppm			≤ 40	
Sulfur	Mass % @ 18,000 Btu/lb.			≤ 0.70	< 1
Ash	Mass %			≤ 0.40	< 2 (4)
API Gravity	Degree API			≥ 12 and ≤ 32	
Btu/Gallon	Gross Btu/gal			≥ 135,000	> 140,000
Pour Point	°F			≤ 15	
Beryllium	ppm				< 5
Manganese	ppm				< 10 (4)
Mercury	ppm				< 0.2
Nickel	ppm				< 5 (4)
BS&W	Volume %			≤ 4	< 2.5
Viscosity	SUS @ 100 °F			≥ 38 and ≤ 400	

- (1) If greater than 1,000 ppm Total Halogens, report must include analytical data confirming that no RCRA halogenated solvent listed in 40 CFR Part 261 Appendix VIII is present at greater than 100 ppm using SW-846, 8260.
- (2) Used Oil for energy recovery is presumed to contain quantifiable levels (greater than or equal to 2 ppm) PCB unless the marketer obtains analyses that the used oil fuel does not contain quantifiable levels of PCB and marketer assures no source stream at 50 ppm or greater PCB was added to batch per 40 CFR 761.20(e)(2).
- (3) The MDEQ Liquid Industrial Waste Act limits must be met unless the transporter is a licensed liquid industrial waste hauler and uses a MI manifest.
- (4) These are proposed, not actual, limits and are included for information gathering purposes only.
- (5) Perform total halogens using either ASTM D 5384 Method B or SW-846, 9077 Method C (Chlor-D-Tect 4000, report the higher of the two results).

Halogenated Solvents Listed in 40 CFR Part 261 Appendix VIII

Regulatory Name	CAS Number	Synonyms	Result
Carbon Tetrachloride (F001)	56-23-5	Tetrachloromethane	ppm
Chlorobenzene (F002)	108-90-7		ppm
1,2 Dichlorobenzene (F002)	95-50-1	O-Dichlorobenzene	ppm
1,3 Dichlorobenzene (F002)	541-73-1	M-Dichlorobenzene	ppm
1,4 Dichlorobenzene (F002)	106-46-7	P-Dichlorobenzene	ppm
Dichlorodifluoromethane (F001)	75-71-8		ppm
Methylene Chloride (F001,F002)	75-09-2	Dichloromethane	ppm
Tetrachloroethylene (F001,F002)	127-18-4	Tetrachloroethane, Perchloroethylene	ppm
1,1,1 Trichloroethane (F001,F002)	71-55-6	Methyl Chloroform	ppm
1,1,2 Trichloroethane (F002)	79-00-5		ppm
1,1,2 Trichloro-1,2,2 Trifluoroethane (F002)	76-13-1		ppm
Trichloroethylene (F001,F002)	79-01-6	TCE, Trichloroethene	ppm
Trichlorofluoromethane (F002)	75-69-4	Trichloromonofluoromethane	ppm

I certify that the above noted shipment of used oil fuel meets all RCRA and Act 451 Part 111 criteria for “specification” used oil. If I am not a licensed liquid industrial waste hauler and/or not using a manifest, then I also certify that this shipment meets the MDEQ criteria for “Used oil for Energy Recovery.” Further, I certify that the above noted shipment of used oil does not contain quantifiable levels of PCB in accordance with 40 CFR 761.20(e)(2).

Signature of Responsible Vendor Representative
 Printed Name of Responsible Vendor Representative
 Date

Exhibit 2: Example of Analytical Test Methods

<u>Constituent</u>	<u>Contract Limits</u>	<u>Test Methods</u>
Flash Point	> or equal to 150° F (Closed Cup)	D 93

<u>Constituent</u>	<u>Regulatory Limits</u>	<u>Test Methods</u>
Total Lead	< or equal to 100 ppm	SW-846, 6020
Total Cadmium	< or equal to 2 ppm	SW-846, 6020
Total Chromium	< or equal to 10 ppm	SW-846, 6020
Total Arsenic	< or equal to 5 ppm	SW-846, 6020
Total Halogens ⁽¹⁾	< or equal to 4,000 ppm	SW 846, #9077
PCB ⁽²⁾	< 2 ppm	SW-846, 8082

⁽¹⁾ If greater than 1,000 ppm, an analysis (for example, gas chromatogram) demonstrating 100 ppm or less of any halogenated compound listed in Appendix VIII of 40CFR261 will be conducted. (Analysis shall be for totals and not extract.)

⁽²⁾ Used Oil for energy recovery is presumed to contain quantifiable levels (greater than or equal to 2 ppm) PCB unless the marketer obtains analyses that the used oil fuel does not contain quantifiable levels of PCB and marketer assures no source stream at 50 ppm or greater PCB was added to batch per requirements shown in 40CFR761.20(e)(2).