## Dholakia, Umesh

**From:** Dholakia, Umesh
**Sent:** Thursday, February 21, 2013 9:26 AM
**To:** 'Angel Berrios'
**Cc:** 'beatriz.rivera@essroc.com'; 'Steve Cullen'
**Subject:** RE: Essroc Response to EPA letter December 11, 2012 concerns

Angel:

Thanks. Please justify ESSROC's proposed 35% (70,000 tons/year) limit with Heat Input numbers- MMBtu/year or better. Does ESSROC keep track of the coal, oil, and tire's heat contents? Also, ESSROC proposes to stack test to verify the emission factors used in this non-app demonstration- that is my understanding.

Umesh

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**From:** Angel Berrios [mailto:Angel.Berrios@erm.com]
**Sent:** Friday, February 15, 2013 3:09 PM
**To:** Dholakia, Umesh
**Cc:** beatriz.rivera@essroc.com; Steve Cullen
**Subject:** RE: Essroc Response to EPA letter December 11, 2012 concerns

Umesh,

The following is to response to your request regarding monitoring requirements. The enforceable limit will be established through a limit in the use of alternative fuel.

Since Essroc is planning to continue the use of coal and used oil as a fuel with a production limits of 682,550 ton clinker per year. Alternative fuel (AF) will be co-processed with coal and used oil. Essroc will use the same approach that is included in their permits to demonstrate compliance with the potential emission limits which establish a limit in the fuel consumed during for the production of clinker.

A clinker production of 579,763 tons per year was determined in accordance with the procedures established in the PSD regulations to be below the established PSD threshold for major source review. In order to comply with the production limit established in the non PSD applicability determination Essroc had decided to substitute (co process) up to 35 percent of the current fuel with AF instead of the amount of 100 percent included in our last letter. The 35 percent substitution of the current fuel will maintain the production of clinker below the established limit determined for PSD major modification thresholds.

The Essroc's permit establish a fuel limit of 90,000 tons of coal per year and 69657 tons of used oil per year for clinker production of 682,550 tons per year. If Essroc substitute up to 35 percent of the amount of fuel permitted the total of AF limit can be established to up to 70,000 tons per year without triggering PSD. This number is below the amount of AF needed for the production of 579,763 tons of clinker per year since the quantity of AF needed is nearly 168183 tons per year is we were to substitute the total amount of coal and 201,168 tons per year is we were to substitute the total amount of used oil.

Therefore, with a permit limit of 70,000 tons of AF per year Essroc will not trigger the PSD applicability threshold.

The following are suggestions regarding the recordkeeping and monitoring requirements:

I. Definitions:

**Alternative Fuels** includes the following:

a. Biomass is defined as non-fossilized and biodegradable organic material originating from plants, animals or micro-organisms, including products, by-products, residues and waste from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material.

b. Clean cellulosic biomass is defined as residuals that are akin to traditional cellulosic biomass such as forest-derived biomass ( *e.g.*, green wood, forest thinnings, clean and unadulterated bark, sawdust, trim, and tree harvesting residuals from logging and sawmill materials), corn stover and other biomass crops used specifically for energy production ( *e.g.*, energy cane, other fast growing grasses), bagasse and other crop residues ( *e.g.*, peanut shells), wood collected from forest fire clearance activities, trees and clean wood found in disaster debris, clean biomass from land clearing operations, and clean construction and demolition wood. These fuels are not secondary materials or solid wastes unless discarded. Clean biomass is biomass that does not contain contaminants at concentrations not normally associated with virgin biomass materials.

c. Other Cellulosic biomass is a category that does not comply with the definition of untreated cellulosic biomass. These include discarded consumer products and wood residues from non-primary mill manufacturers, wooden furniture, cabinets, pallets and containers, and scrap lumber.

d. Biosolids: is defined as organic materials sanitized to meet EPA Class A sanitization standards and is derived from treatment processes of public treatment water systems Class A biosolids and comply with the requirements established on 40 CFR Part 503.

II. Emission Unit EU501 (Kiln 3)

A. Monitoring Requirements

1. Essroc shall not burn or permit the use of fuels with a sulfur content not exceeding 0.6% by weight for AF[1][1].

2. Essroc shall not exceed the consumption limit of 70000 tons of biomass per year for unit EU501 for any consecutive 12 month rolling period. The biomass consumption for any consecutive 12 month period shall be calculated by adding the monthly consumption to the total biomass consumption for the previous 11 months.

3. Subject to the alternative fuel acceptance criteria, Essroc is authorized to co-fire authorized fuels.

III. Area of Receiving Alternative Fuel:

A. For alternative received Essroc shall comply with the following requirements.

1. All alternative fuel materials received at the plant shall be in covered trucks and/or enclosed containers. When unloading and handling alternative fuel, Essroc shall take reasonable precautions to prevent fugitive dust emissions.

2. Essroc shall record the amount the category, type and amount of each alternative fuel received.

3. Each alternative fuel material received shall be sampled and analyzed in a manner consistently with industry standards for quality assurance and quality control to ensure that representative data is collected. Essroc shall obtain the analytical results of a representative sample of the alternative fuel prior to the initial delivery, quarterly for the first year, and if the analysis meets permit requirements the frequency of sampling and analysis shall be annual every January thereafter, if that material is present. All records and results of the analysis will be maintained at the facility as required for currently permitted fuels.

4. Fuel Analyses Parameters: The following information shall be included when reporting the analytical results for an AF: higher heating value (Btu/lb) of AF; moisture, ash, volatiles, fixed carbon, sulfur and chlorine content (percent by weight); arsenic, beryllium, cadmium, chromium, lead, and mercury contents (ppm). All concentrations are on a dry basis.

B. The alternative fuel shall be stored:

1. Under cover or in covered trailers, containers or buildings;
2. On top of a paved or compacted clay surface; and

3. By Best Management Practices to promote containment and prevent contamination of air, water and soil.

IV. Sampling and Analysis

A. Sampling Criteria:

1. Each alternative fuel material received shall be sampled and analyzed in a manner consistent with industry standards for quality assurance and quality control to ensure that representative data is collected. At a minimum, the frequency of sampling and analysis shall be consistent with the frequency of sampling and analysis of coal. All records and results of the analysis shall be maintained at the facility as required for currently permitted fuels.

2. Essroc shall use the following analytical methods to determine the composition of the AF.

| Parameter | Analytical Methods |
|---|---|
| Moisture, Volatiles, Ash and Fixed Carbon | Proximate Analysis appropriate for given fuel |
| Carbon, Hydrogen, Nitrogen Sulfur and Oxygen | Ultimate Analysis appropriate for given fuel |
| Heating Value | ASTM E711 - 87(2004) Standard Test Method for Gross Calorific Value of |

| | |
|---|---|
| | Refuse-Derived Fuel by the Bomb Calorimeter, or<br>ASTM D5468 - 02(2007) Standard Test Method for Gross Calorific and Ash Value of Waste Materials, or |
| Proximate Analysis appropriate for given fuel | |
| Chlorine | EPA SW-846 or EPA Method 9056 |
| Mercury | EPA 7470A/7471A |
| Other Metals | EPA SW-846 or EPA Method 6010B |

V. Performance Requirements

A. Operation: Alternative fuels shall only be fired once the kiln has achieved normal operation, temperatures and production (i.e., when raw materials are introduced).

B. Alternative Fuels shall be introduced only in the high-temperature combustion zones of the main kiln burner.

C. Essroc shall make every effort during the shakedown and assessment periods to promote efficient combustion and minimize emissions impacts.

D. Essroc shall discontinue firing alternative fuel if one of the CEMS, COMS or other continuous monitors indicates a non-compliance issue related to alternative fuels.

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If you have any question or need additional information please contact me.

Have a nice weekend.

Angel

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**From:** Dholakia.Umesh@epamail.epa.gov [Dholakia.Umesh@epamail.epa.gov]
**Sent:** Monday, February 11, 2013 7:24 AM
**To:** Angel Berrios
**Subject:** RE: Essroc Response to EPA letter December 11, 2012 concerns

Thanks. Please note that I will have to run those conditions by the Enforcement Division and the Regional Counsel so it will take time and they may or may not approve. FYI.

From: Angel Berrios <Angel.Berrios@erm.com>
To: Umesh Dholakia/R2/USEPA/US@EPA
Date: 02/08/2013 03:41 PM
Subject: RE: Essroc Response to EPA letter December 11, 2012 concerns

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Umesh,
It is taking me more time than I expected to write the enforceable conditions for the scenarios. Hopefully I will have them for next week.
Have a nice weekend.
Angel

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**From:** Dholakia.Umesh@epamail.epa.gov [Dholakia.Umesh@epamail.epa.gov]
**Sent:** Thursday, January 31, 2013 3:27 PM
**To:** Angel Berrios
**Subject:** RE: Essroc Response to EPA letter December 11, 2012 concerns

That's fine. When a source prefers to get a permit for more than one scenario- the permitting people need to ensure that the terms are practically enforceable and the source should be able to implement those terms....it becomes complicated- as you know.

From: Angel Berrios <Angel.Berrios@erm.com>
To: Umesh Dholakia/R2/USEPA/US@EPA
Cc: "beatriz.rivera@essroc.com" <beatriz.rivera@essroc.com>, Jose Hernandez <Jose.Hernandez@erm.com>, Steve Cullen <Steve.Cullen@erm.com>
Date: 01/31/2013 02:27 PM
Subject: RE: Essroc Response to EPA letter December 11, 2012 concerns

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Umesh,
Just to let you now that I received your message and I am working to provide you the information requested. I will have the information early next week. To answer one of your questions regarding the use of biomass yes it will be co-processed with carbon and oil and gradulally substitute the fossil fuel with the biomass.

Angel

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**From:** Dholakia.Umesh@epamail.epa.gov [Dholakia.Umesh@epamail.epa.gov]
**Sent:** Wednesday, January 30, 2013 9:23 AM
**To:** Angel Berrios
**Cc:** beatriz.rivera@essroc.com; Jose Hernandez; Steve Cullen

**Subject:** RE: Essroc Response to EPA letter December 11, 2012 concerns

Angel:

GM!

Please describe how ESSROC will comply with the ANNUAL production limits for two fuel use scenarios by monitoring the production and fuel heat input on a daily basis. ESSROC also proposes to use 100% biomass - does not restrict biomass use to an annual fuel use (in MMBtu) to say 20% or 30%...etc. Further, it is not clear if ESSROC will mix biomass with coal/oil or will use entirely biomass or entirely coal+oil on a given day or given week....I am nearly sure that biomass will be mixed with coal and/or waste oil- but ESSROC will need to confirm it. Thanks.

Umesh

From: Angel Berrios <Angel.Berrios@erm.com>
To: Umesh Dholakia/R2/USEPA/US@EPA
Cc: "beatriz.rivera@essroc.com" <beatriz.rivera@essroc.com>, Jose Hernandez <Jose.Hernandez@erm.com>, Steve Cullen <Steve.Cullen@erm.com>
Date: 01/30/2013 08:42 AM
Subject: RE: Essroc Response to EPA letter December 11, 2012 concerns

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Umesh,
Good Morning!!!

Essroc would want to maintain the higher permitted production limit of 682,550 clinker burning only coal or fuel oil in a given year; and just use the 579,763 limit if burning alternative fuels. The following are recommendations for monitoring, recordkeeping and reporting.

Monitoring:

- Daily Clinker production while burning coal or fuel oil (calculated from feed, unless clinker production is monitored)
- Daily Clinker production while burning alternative fuels (calculated from feed, unless clinker production is monitored)
- Daily Heat input from each type of fuel burned

Recordkeeping:

- Monthly Clinker production while burning coal or fuel oil (calculated from feed, unless clinker production is monitored)
- Monthly Clinker production while burning alternative fuels (calculated from feed, unless clinker production is monitored)
- Monthly Heat input from each type of fuel burned

Reporting:

- Quarterly Clinker production while burning coal or fuel oil (calculated from feed, unless clinker production is monitored)
- Quarterly Clinker production while burning alternative fuels (calculated from feed, unless clinker production is monitored)

If you have any comments or need more information you can contact me.

Angel

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**From:** Dholakia.Umesh@epamail.epa.gov [Dholakia.Umesh@epamail.epa.gov]
**Sent:** Tuesday, January 29, 2013 10:25 AM
**To:** Angel Berrios
**Cc:** beatriz.rivera@essroc.com; Jose Hernandez; Steve Cullen
**Subject:** Re: Essroc Response to EPA letter December 11, 2012 concerns

Angel:

The footnote 1 on Page 1 of ESSROC's letter states: "The clinker production will be maintained at 682,550 tons/year using coal and used oil as fuel as stated in the current permit". Please clarify the relationship to this statement with the 579,763 t/y clinker limit.....If there will be two distinct production limits- please provide associated M/R/R requirements that ESSROC would like to comply with. Thanks.

Umesh

From: Angel Berrios <Angel.Berrios@erm.com>
To: Umesh Dholakia/R2/USEPA/US@EPA
Cc: "beatriz.rivera@essroc.com" <beatriz.rivera@essroc.com>, Steve Cullen <Steve.Cullen@erm.com>, Jose Hernandez <Jose.Hernandez@erm.com>
Date: 01/21/2013 11:22 AM
Subject: Essroc Response to EPA letter December 11, 2012 concerns

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Umesh,
In response to your December 11, 2012 letter attached please find an advance copy of the letter answering to your concerns regarding the use of alternative fuel at Essroc facility. The letter will be mailed to your office. If you have any questions do not hesitate to contact me.

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cel.: 787-383-2696 [attachment "0171815 Response to EPA Region 2 Comments Essroc Alternative Fuel.pdf" deleted by Umesh Dholakia/R2/USEPA/US]

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[1][1] Note: The sulfur content of biomass varies from 0.07 percent to 0.59 percent by weight, on a dry basis; see M. C. Freeman, W. J. O'Dowd, S. I. Plasinsky, and G. F. Walbert, *Proceedings of the 5th International Biomass Conference of the Americas*, Session 25, "Biomass Cofiring R&D and Demonstration Results for Handling, Combustion, Heat Transfer, and Emissions Issues for Coal-Fired Boilers," web site www.bioproducts-bioenergy.gov/pdfs/bcota/default.html.

Biomass generally contains less than 0.1% sulfur by weight compared to even the lowest-sulfur coal with 0.5 - 4% sulfur. *(International Council for Local Environmental Initiatives)*