

Millennium Bulk Terminals- Longview Comment

Introduction

I am a PhD chemist with a legal background and experience in patent law. I wrote this comment as a public service without support or motivation from any group or corporation. I noticed that the current Millennium Bulk Terminal impact statement only included a small footprint around the facility when the transport of the coal to the facility and building of the facility impact on the endangered species of the basin was decidedly weak. I can only imagine that those with the appropriate knowledge in all fields have not become aware of the issue and so, I submit this comment independently. A request for an amended complaint by December 31, 2016 has been made, but this comment is being submitted consistent with the deadline in case of a denial.

I will first provide the background on coal dust and transport practices and how it relates to the regulations, the law, and the cited impact statement. This includes a thorough chemical analysis of surfactants used in transport and their impact on the facility. Next, I will review policy issues and implications. I will conclude with suggestions on how to edit the statement to conform to the lacking information and impact, and list alternatives not mentioned in the published report.

Some of the chemical vocabulary may be difficult at times, but I found it necessary to be correct in order to encourage the proper changes to the report and scope. It also further stresses that the surfactants are scientific products made in a lab, and therefore the market demand caused by this project should be calculated back to their manufacture. Just as if water itself would be used on open coal trucks, and the impact of the water consumed would be a factor, the chemical make-up and impacts need to be included with a such a large on-going project. In the end, the Millennium Bulk Terminal project should be a model for how to align US current policy with countries still adapting to known global risks of dependence on fossil fuels.

Background

Millennium Bulk Terminals (MBT) is a current operator, seeking to increase their business by exporting 44 million metric tons of coal per year to Asian countries with relaxed coal fuel regulations out of a port on Washington state's Columbia River Basin. This comment reviews the Millennium Bulk Terminal Environmental Impact Statement (EIS) and details the following faults or omissions that will be addressed in turn: 1. The proposed scope of the facility does not effectively cover impact area of the coal transported to the facility. 2. Even though the footprint of the facility was approved as the scope of the facility, under NEPA's Cumulative Impact environmental policy, the railways to the source must be included because they include a known significant impact. 3. Coal dust hazards and surfactant composition and environmental impacts are in need of review. Both materials have differing hazards omitted from the MBT EIS, and need to be included to sufficiently cover the impacts of the facility. 4. The building of the terminal should be in line with current US policy to limit fossil fuels and shift to renewable or clean energy sources, by being a model for coal transport. In each area reviewed, additional research and alternatives are suggested. These suggestions are finalized in the concluded remarks and additional alternatives are proposed.

- I. The proposed scope of the facility does not effectively cover impact area of the coal transport.

The Council on Environmental Quality (CEQ) set forth rules that define the standard format for an EIS under NEPA. 40 C.F.R. §1502.10. Two of the four key elements are important to the scope of the project: (1) affected environment and (2) environmental consequences.¹ Accordingly the scope must be set in order to properly address the rules set forth by the CEQ, which is accomplished by consideration of all the relevant impact factors. Scope is defined statutorily and cases that have been brought before the court focused the goals behind the intent. With that in mind, it is clear that the environmental impact statement submitted for MBT have several flaws for NEPA compliance, including scope. NEPA compliance for 40 CFR §1508.25 (Scope) reads:

Scope consists of the range of actions, alternatives, and impacts to be considered in an environmental impact statement. The scope of an individual statement may depend on its relationships to other statements (§§ 1502.20 and 1508.28). To determine the scope of environmental impact statements, agencies shall consider 3 types of actions, 3 types of alternatives, and 3 types of impacts.

The three types of impacts include:

(a) Actions (other than unconnected single actions) which may be:

- (1) Connected actions, which means that they are closely related and therefore should be discussed in the same impact statement. Actions are connected if they:
 - (i) Automatically trigger other actions which may require environmental impact statements.
 - (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously.
 - (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.

- (2) Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.

- (3) Similar actions

Perhaps the most significant case under the scope statute was *Sylvester v. US Army Corps of Engineers* (USACE), which defined the confines of the comprehensive approach set forth under the statute set forth by the CEQ. 882 F. 2d 407 (9th. Cir. 1989). In *Sylvester*, the decision by the federal agency (USACE, as in this project) for approval an aspect of a small portion (golf course) of a larger project (ski resort) did not consider the full project when granting approval. *Id.* at 818-819. In this case, the federal portion requesting approval was only the golf course and the argument was that the golf course would not be built without the resort, so they should be considered a “connected action” under the statute expanding the scope to both the resort and golf

course.¹ The case held that the scope should not be considered beyond the federal portion of the project as long as the federal portion is not the driving part of the project fitting under “connected action”. Therefore, the Army Corps of Engineers own rules seem to contradict the CEQ rules¹ even though the CEQ approved them during the Regan administration (note: the EPA did not approve the Army Corps rules). However, the Sylvester case is markedly different than this case as the argument that the golf course could be built without a resort was compelling, but there is no argument that the Millennium Bulk Terminal project could exist without rail transport, and therefore any known impact of the transport along the transport route deserve to be included in the scope. Further, the MBT is the essential driving force behind the project and therefore consideration of full scope of the action is an obligation under NEPA consistent with the Sylvester decision.

In order to be considered as part of the scope of a project, the CEQ made clear in their regulations that in deciding whether in action significantly affects the environment, the agency must consider the context and intensity or the impact.¹ “Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment.” (40 CFR § 1508.27 (b)(7)). Certain criteria are to be evaluated in every application for a permit:

- (i) The relative extent of the public and private need for the proposed structure or work;
- (ii) Where there are unresolved conflicts as to resource use, the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work; and
- (iii) The extent and permanence of the beneficial and/or detrimental effects which the proposed structure or work is likely to have on the public and private uses to which the area is suited.

33 C.F.R. § 320.4(a)(2). In addition, certain factors, such as conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, etc., are to be considered and evaluated based upon their relative importance to the project at hand. 33 C.F.R. § 320.4(a)(3). Finally, in all cases, the scope of analysis used for analyzing both impacts and alternatives should be the same scope of analysis used for analyzing the benefits of a proposal. 33 C.F.R. Pt. 325, App. B § 7.b(3).

Scope in the MBT EIS is limited to the site itself, however it should include railways as coal dust will be scattered by tons along railways and at the Columbia River Basin according to the currently proposed plans. In is certain that the known losses of coal along the railways will impact general environmental concerns under 33 C.F.R. § 320.4(a)(3). Further, the report clearly identifies benefits in all the states of the rail transport citing job creation and economic benefits, therefore under 33 C.F.R. Pt. 325, App. B § 7.b(3), the EIS must evaluate impacts under the very same scope.

The Millennium Bulk Terminal’s submitted EIS lacks any environmental impact by rail transport. This is most likely not an oversight, rather an indication of the facility’s knowledge that rail transport of coal is not considered a “point source” of pollution (not able to be tied directly to an injury in fact) and therefore, could be legally *ignored* as it contains no liability to the operator. *Sierra Club v. BNSF Railway Company*, 2016 WL 6217108 (W.D. Wash. 2016).

Sierra Club brought this recent suit against BNSF after the railway's own reports discussed the known issues of 3% coal dust lost in transport, citing violations of the Clean Water Act and Clean Air Act with these known "discharges." However, the court held that without an identifiable point source for the discharges and linked effect, the court cannot rule that there was factually a violation of the federal regulations. *Id.* at 4-6. This inability for the language of the current Clean Water and Clean Air Act to address regular, known scattered pollution via railway transport should not be an opportunity for mass pollution in any incremental amount, and should be addressed in the EIS.

The current EIS lists the lost coal projected annually in the footprint alone to be 11 tons, but the use of transport by rail would increase that number by 120,000 times. Burlington Northern Santa Fe (BNSF) (one of the railway companies sharing the workload in the proposed EIS) reports coal cars ranging from 102-121 tons of coal per car. That means that 363,636 to 431,372 cars (depending on car capacities given) will be utilized annually (based on the projected annual volume of 44 million tons of coal) to reach the Millennium Bulk Terminal in Washington. BNSF reports that without surfactants coal cars lose about 3% of the coal per car along the travel (<http://www.bnsf.com/customers/what-can-i-ship/coal/coal-dust.html>, <http://www.opb.org/news/blog/ecotrope/10753/>). This works out to *over 1.3 million tons* of coal lost in transport over lands and waters in the US *each year*. Under the current rules and regulations for the Reynolds lines, there is no cover or surfactants, and this would be the expected losses of coal and coal dust along the line.¹ As discussed above, a court would certainly find that a sudden discharge of millions of tons of coal would be a violation under the CWA, however an incremental dusting will be impossible to address under the statutory language.

BNSF instituted a new practice to address the loss of coal in transport on the railways by use of surfactants. The surfactants, which are reviewed in section III below, are said to reduce the loss of coal by 85%. This would reduce the lost coal on the line from over 1.3 million tons per year, to just under 200,000 tons per year. This is still a massive amount of coal dust known to be expected to be discharged annually and includes the addition of chemical surfactants, yet neither impact is covered within the scope of the MBT EIS.

Any method of transport to the MBT requires more research and accurate reporting to satisfy the scope requirement under NEPA 40 CFR §1508.25. Millennium Bulk Terminal's current EIS lists just 11 tons of lost coal dust a year. This is off by a factor of 18,000 with the use of surfactants sprayed on the coal cars for transport, and off by a factor of 200,000 with the standard method used by UP and Reynolds. Further, the chemical surfactants are simply cited as a partial solution to the coal dust problem without any evaluation on their composition or environmental impact. For a solution to be just, it must have a clear benefit to the problem.

¹ Note: Because the project is shared between UP and BNSF (and to a lighter extent Reynolds), the projected number here would be split based on the method of transport and volume for each line. Further calculations should weigh the factors to limit the loss across both lines comparing various methods. However, as written the EIS for the Millennium Bulk Terminal fully ignores this coal dust pollution across the United States, and limits their calculations to the 190 acres facility itself. Alternatively, the railroad companies could submit EIS for handling this amount of additional coal transport including these numbers.

Coal dust in transport should be added to the footprint to the footprint of the facility all along the railways proposed for transport in the EIS. At the current time, there is no mention of the coal dust lost by rail cars in the transport of coal because the Corps of Engineers approved the footprint as the facility alone, however the impact of the coal lost in transport to the facility should be considered as it is: 1) known to have a significant environmental impact which requires consideration under 40 CFR § 1508.27 (b)(7) 2) known to be an effect of the connected actions of the MBT which is the essential driving force behind the project essential under *Sylvester* 3) will not be capable of address during or after discharges under *Sierra Club v. BNSF Railway Company*, 2016 WL 6217108 and 4) are incorrect excluded as the benefit scope given in the EIS must mirror the environmental impact scope under 33 C.F.R. Pt. 325, App. B § 7.b(3)

- II. Even though the footprint of the facility was approved as the scope of the facility, under the law and Cumulative Impact environmental policy, the railways to the source must be included.

Environmental impact statements submitted by Millennium have several flaws for NEPA compliance, including cumulative impact. NEPA compliance for 40 CFR §1508.7 §102 (2)(C)(v) Cumulative impact is statutorily defined as:

Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

As seen above, the railway impact of an additional 1.3 million tons of coal spilled into the United States land and water will happen as a known incremental action. This impact was not given in the report and needs to be added for compliance and completion of the EIS report.

As noted above, the Clean Water (CWA) and Clean Air (CAA) Acts do not statutorily cover these kinds of incremental discharges into the environment, but they are no less significant than an annual dumping of 1.3 million tons of coal into a centralized location in the US, except the mitigation effort would be so much easier. The fact that it is not addressed in the MBT EIS is not an oversight, as much as it is a legal opportunity to avoid the Acts due to a loophole not covering the “incremental” losses along a railway given in the recent decision in *Sierra Club v. BNSF Railway Company*, 2016 WL 6217108.

The legal issue here is that railway discharge of coal dust into the environment is not a “point source discharge” under the CWA, and therefore these known and expected discharges cannot later be addressed. *Sierra Club v. BNSF Railway Company*, 2016 WL 6217108. Unless the plaintiff can show with researched evidence a discharge was made which had an injury in fact, the only place that the known effects of the coal dust lost is in the EIS. *Id.* at 2. Until Congress would rectify this oversight or this district case is overturned, the EIS must cover all known impacts under the cumulative impact language of NEPA in order to satisfy the goals of the CWA. As shown in section I, the known amount of coal to be spilled along the railway

annually according to the current plans of the Millennium Bulk Terminal is between 200,000 and 1.3 million tons.

However, it is notable that the placement of the facility along the bay does open it to liability for coal spilled on the conveyor line or in transport to the ships. *Alaska Community Action on Toxics v. Aurora Energy Services, LLC*. 765 F.3d 1169 (9th Cir. 2014.) A recently overturned ruling in the 9th circuit Court of Appeals, held that plain terms of National Pollutant Discharge Elimination System (NPDES) permit prohibited non-storm water discharge of coal. This means that the facility proposed in Washington faces tremendous liability for any spills occurring at the bay.

Additionally, twelve specific populations, or evolutionarily significant units, of four species of Columbia River Basin salmon and steelhead, and two resident species, bull trout and Kootenai River white sturgeon, have been listed for protection under the ESA since 1991. The twelve Columbia River Basin salmon and steelhead populations were added to the ESA as such:

Snake River Sockeye, November 1991
Snake River fall Chinook and combined spring/summer Chinook, April 1992
Lower Columbia River Chinook, March 1999
Upper Willamette River Chinook, March 1999
Upper Columbia River Chinook, March 1999
Columbia River chum salmon, March 1999
Upper Columbia River steelhead, August 1997
Snake River Basin steelhead, August 1997
Lower Columbia River steelhead, March 1999
Upper Willamette River steelhead, March 1999
Middle Columbia River steelhead, March 1999
(<http://www.nwcouncil.org/history/endangeredspeciesact>)

Under the current law, Millennium Bulk Terminal would be liable for coal dust lost into the mouth of the basin at the harbor, and any damage to these endangered species may not be able to be rectified.

Insurance can cover clean-up costs, but this poses the more important issues of planning around regular suits of coal dust lost during the transfer from land to sea vessels. Although not covered in this report, it is suggested that the facility examine their plans for the facility for a more limited liability design. Perhaps the most obvious solution would be a lock for ship loading with its own sealed water source, that is contained and cleaned by the facility. As a ship comes into the port, it would be loaded into the lock and the water would be removed as the ship is placed back into the harbor. Alternatively, the ships could pull into the lock and the lock could drain until the coal movement into the ship has ceased. Or another alternative would be to transfer the coal on land, avoiding the inherent liability of damaging the harbor. This is not the author of this comment's background, but one can see the alternative designs are necessary for the safety of all (the endangered species, wildlife, human, and the facility's liability under the NPDES limitations at a bay).

This EIS should needs to address these numbers as part of the cumulative impact and research ways to limit the coal spillage along the transport routes, and calculated the additional costs to the coal and environment in a supplemental EIS. Suggested independent tests would compare the various methods of transport: coal with surfactants, open cars, and covered cars. Covered car testing should not be limited the original covered coal cars that empty from the bottom, but also newly designed tarp covered cars manufactured for this purpose which still works with the rotary dumping unit in the proposed facility. Further designs should be required to limit liability at the harbor to the operator and the environment included secluded locks with separate water sources.

III. Coal dust hazards and surfactant details are in need of review.

A. Coal Dust Hazards

As calculated in section I of this comment, the transport of coal to the Millennium Bulk Terminal will increase coal spilled throughout the route of transport from over 200,000-1.3 million tons per year. In order to understand the impact of the the coal dust, the effects are given from journal review articles here.

In order to appropriately address the impact of 1.3 million tons of coal dust lost in transport along the railways to the Millennium Bulk Terminal, the risks of inhalation must be addressed. Chronic inhalation of coal dust can cause several lung disorders including lung disease, progressive massive fibrosis, chronic bronchitis, lung function loss, and emphysema.² Occupational diseases of workers exposed to coal dust extend this list to coal workers' pneumoconiosis.^{2,3} Further, coal dust is a particulate matter with additional risks.³ Particulate matter of any kind is associated elevated total, cardiovascular, and infant mortality.^{3,4} Those affected with other respiratory diseases or diabetes are especially effected to additional stress from airborne particulates.⁴ The term "pneumoconiosis" is used to describe the the dust overload and accumulation disease in the lungs and the tissue's reaction to the presence of coal dust in particular.⁴ The reactions of the the lungs to inhaled minerals and organic dusts common to coal cause alterations in the structure of the tissue which is different from other causes lung damage for asthma, bronchitis, and emphysema.^{3,4} In conclusion, coal dust provides two routes for damage to human lungs which has been thoroughly studied in literature: 1) the inhalation of the particulate dust as a physical compound and 2) the inorganic minerals and organic components of coal dust as a reactive component as inhaled.^{3,4}

Interestingly, particulate matter as inhaled is damaging no matter the composition.³ Even low-toxicity dusts, therefore, produce a response by the lungs causing chronic obstructive pulmonary disease and other nonmalignant respiratory diseases.^{3,4} The biological response to a physical dust is therefore, capable of causing lung disease.^{3,4} This is why those exposed to the 911 tragedy have suffered lung disease regardless of the composition of the dusts. The recommended levels below 2.5 mg m^{-3} for inhalable dust and 1 mg m^{-3} respirable dust.³

The toxic composition of inorganic minerals and organic components of coal dust are a reactive component as inhaled, and are further detrimental to lung function when combined with

non-toxic dust materials as is the case with coal dust.^{3,4} Coal dust toxicity results from not just the physical blocking caused by particulates caught inside and trapped in the lungs forever, but also from the reactions of the components with normal bio-reactions and processes.^{2,3} In-depth studies showed coal dusts increased the up-regulation of important leukocyte recruiting factors including those which induce inflammation (LTB4), regulate cell activity and are characteristic of cancer (PDGF), brain inflammation (MCP-1), and immune responses (TNF-alpha) which are characteristic of Alzheimer's disease, cancer, inflammatory bowel disease, among others.² Coal dust attacks reactive oxygen species and related antioxidant protection mechanisms along with cytokines, growth factors, and related proteins.² All of these diseases would be expected to increase around the area of the coal transport, given in Figure 1.

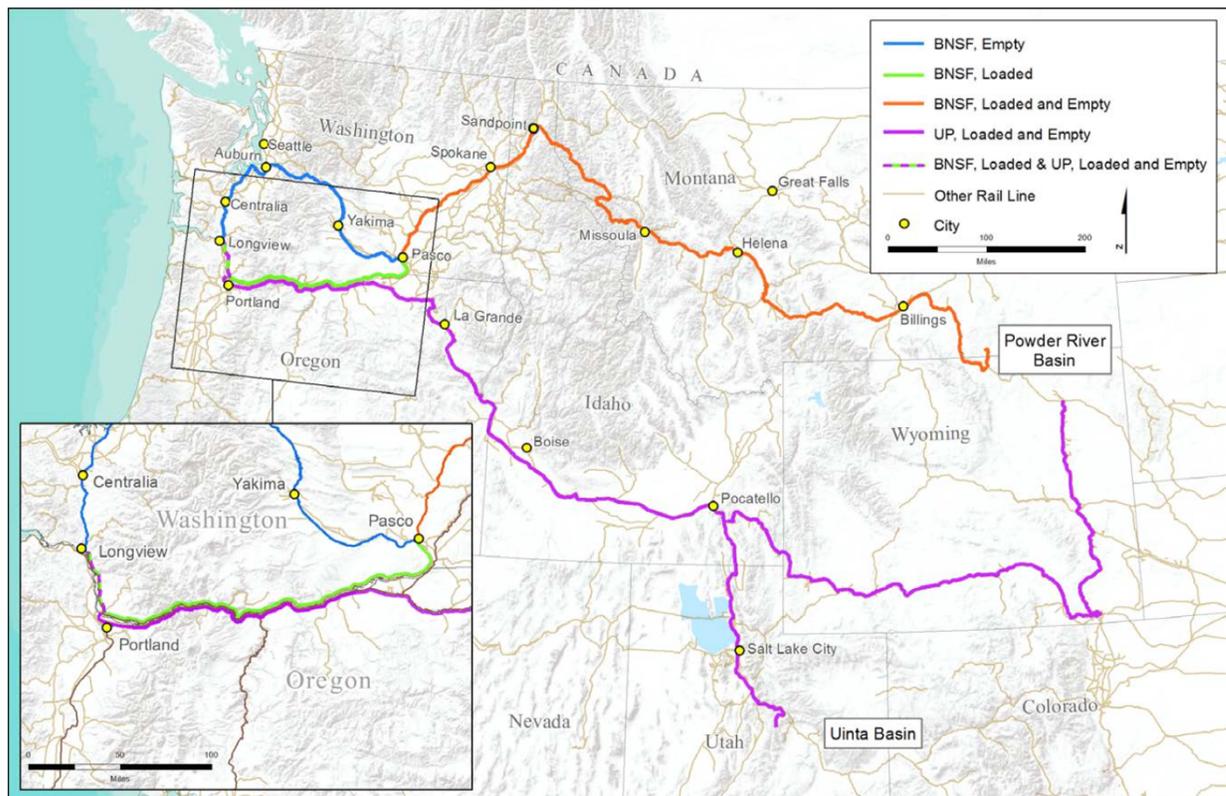


Figure 1. BNSF and UP Railways used for the Millennium Bulk Terminal project.

For the purposes of Millennium Bulk Terminal's EIS report, measurements along the rail should be taken to ensure that no one is within the problem zone of the the physical complications of coal dust. In the case of the animals inhaling the coal dust, including those endangered species, fencing or other limiting barriers must be considered to keep them from the area of the coal. Although not discussed here, but some of the 200,000-1.3 million tons of coal lost in the transport will inevitably end up in water sources along the railway and be carried further than the toxic dust discharges from the cars themselves. More research is suggested for the implications of coal dust in the water supply in a supplemental EIS.

B. Surfactant toxicology for Coal dust

Surfactants used to decrease the loss of coal dust in transport is significant, however 200,000 tons of toxic coal dust will still be spread across the U.S. annually even with the use of surfactants, and the Millennium Bulk Terminal EIS should address the impact of the dust and the surfactants. Surfactants definitely can provide a savings of over a million tons of coal spread over the U.S. annually linked to this proposal, however the impact of surfactants is not mentioned in the report, so it is reviewed here.

Firstly, as already mentioned it is important to reiterate that the two major railway companies mentioned to handle the 44 million tons of coal to MBT annually are Union Pacific (UP), BNSF, and to a lighter extent Reynolds), which have reportedly different procedures for transporting coal. UP and Reynolds currently have no listed treatment for coal transport and is assumed to be shipping coal untreated, uncovered, and would be spreading its portion of the 1.3 million tons of coal dust lost annually (based on the 44 million tons annual volume given by the proposal). BNSF lists a procedure for treatment on coal by spraying each car with a four-inch layer of a surfactant that limits the coal dust lost by 85%, or down to 200,000 tons of toxic coal dust lost in transport on the rail lines to the MBT.

Ideally, the two methods should be compared rather than grouped as one single method with the same environmental impact. The UP/Reynolds EIS would include the larger amount of toxic coal dust lost to the environment (1.3 million tons divided by their projected volume percentage of the 44 million tons), health and wildlife impacts, fouling of the track ballast, and subsequent bioremediation leading to coal in the surrounding soil and water. In contrast, the BNSF method requires an EIS that includes 200,000 tons of coal dust annually released to the environment with the above-mentioned effects along with the impact of the surfactants used in the program. Also important is the fact that the Reynolds line is the line handling the end transport, closest to the bay which has added liability for the toxic coal dust discharges.

After BNSF reported 3% loss of coal in transport per open car, they implemented the use of surfactants which are reported to cut back on coal losses by 85%. BNSF reports that a 4 inch layer of a surfactant is sprayed on each car prior to transport, so the impact of the use of the surfactants should be included with the MBT EIS. Based on the amount of surfactant used per car and the estimated number of cars required (363636-431372), roughly 240000 – 860000 gallons of surfactant will be required annually (See Table 1). Obviously, the contents and environmental toxicity of these surfactants are important as they constitute such a large annual amount to be generated and used.

Table 1. BNSF Table of Surfactants

Acceptable Topper Agent and Application Rates		
Topper Agents ⁽¹⁾	Concentration Rate per Railcar ⁽²⁾	Total Solution Applied per Railcar ⁽³⁾
Nalco Dustbind Plus	2.0 gal	20 gal
Midwest SoilSement ⁽⁴⁾	1.25 gal	18.75 gal
Midwest SoilSement CCT-Cm	0.65 gal	11.65 gal
AKJ CTS-100 ⁽⁵⁾	1.36 gal	15 gal
AKJ DustLock ⁽⁶⁾	1.14 gal	12.5 gal
Rantech Capture 3000	2.5 lbs	20 gal
MinTech Min Topper S+0150	1.1 gal	20 gal

(1) For topper application only.

(2) The amount of topper agent mixed into a solution for each Railcar. These concentration rates were established during testing.

(3) The amount of topper agent solution (agent and water) applied to each Railcar.

(4) Midwest SoilSement may be produced by diluting Midwest SoilSement CCT-C with water 1:1.9 (water to agent).

(5) AKJ CTS-100 may be produced by diluting AKJ CTS-100C with water 10:1 (water to agent).

(6) AKJ DustLock may be produced by diluting AKJ DustLock C with water 10:1 (water to agent).

*This table was retrieved from BNSF documents on Surfactants used.

The surfactant Rantec Capture 3000 was reported to be “no longer available for market” from their safety department, however an old MSDS was located and is attached (unanalyzed). AKJ did not provide a MSDS for their “AKJ Dustlock” product. Their AKJ CTS-100 was found online, and is attached with the remaining surfactant MSDS. Each of the listed surfactant materials will be reviewed according to the corresponding MSDS. Findings are summarized in Table 2.

Nalco Dustbind MSDS is attached. Within the contents of the MSDS is a proprietary formulation which discloses 30-60% of an unidentified alcohol and nothing more. Disclosure of proprietary information is not required; however environmental testing must occur if the composition is unknown. According to the MSDS, exposure guidelines have not been established for this product. Carbon Oxides are listed as hazardous decomposition products. Toxicity to algae or daphnia has not been conducted. Toxicity to fish has been conducted for one species, the flathead minnow (LD50). According to the MSDS, 50% of the minnows died in 96 hours after exposure to 5.49 grams per liter of this product. No data is given for exposure to the endangered species present in the Columbia river basin or along the rail route.

AKJ did not respond to requests for MSDS, however their CTS-100 product MSDS was available online and is attached and reviewed. Hazardous thermal decomposition products are listed as vinyl acetate, carbon monoxide, nitrous oxides, water, and hydrocarbon. Concerning

about this statement is that these decomposition products can occur simply from exposure to higher temperatures, which are common in the sun during coal transport. The MSDS states that CTS-100 has not been tested as a whole for toxicology and provides no data for ecotoxicity or environmental fate. The SDS for AKJ's CTS-100 is not sufficient to analyze any environmental impact, so a full environmental data report should be requested prior to use in the MBT project.

Midwest Soilsement products were issued together on their SDS and environmental data sheet. This is common in products which contain physical changes or amounts, and it is an exemplary disclosure for what is required prior to authorization of transport across the rail. This product contained a helpful environmental data sheet. Even though the SDS listed only water and a "non-hazardous" polymer, the environmental data sheet admits the product also contains: Mercury, toluene, chromium, Barium, Aluminum, Iron, Nickel, Zinc. Acute and chronic toxicity was studied for the Midwest product. The acute toxicity (LD50) for the flathead minnow was greater than 1000 mg/L, however 50% of the rainbow trout were dead at 320 mg/L or 0.32 g/L. This further indicates that the use of surfactants is not "impact free" and each surfactant needs to be fully studied for use in the environment, especially at the large volumes required by the MBT project.

The attached SDS for MinTech's Min topper S+0150 contains no composition or environmental toxicity information. A proprietary alkyl alcohol is mentioned in the SDS, which has an exposure guideline of 10 mg/m³. A statement under ecotoxicity reads:

This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

The SDS for MinTech's Min topper S+0150 is not sufficient to analyze any environmental impact, so a full environmental data report should be requested prior to use in the MBT project.

From the table, around 2-3 pounds of duct suppressant will be used for each car (500,000-1 million pounds/annually) for chosen surfactants. These wastes aren't separated along the the route, or at the Millennium Bulk Terminal, 3 routes of potential exposure should be considered: 1. Spilling into waters and during the spraying process. Because the Army Corps framed the impact on the facility footprint alone, the impact of the of a million pounds of chemicals being sprayed onto the coal for transport has not been included. 2. The chemical make-up of these materials includes mercury, toluene, and chromium (valency is not mentioned, so toxicity is unknown). For at least one product that discloses the Mercury content, this required the extraction and then burning (with the coal) to conform with the Mercury and Air Toxics Standard under section 112 of the Clean Air Act. All chemicals added to the coal and burned on the end, should be added to the analysis of the impact. 3. Several of the materials in the table are no longer produced or have "no data" for LD50 toxicity for trout or other marine life. To use these products without any testing on their affects greatly limits the scope. Review of the safety data sheets for the BNSF surfactants are summarized in Table 2.

Table 2. Surfactant Reported Toxicity

Topper Agent	MSDS Available	Components Named	Hazardous Decomposition Products	Ecotoxicity Results	Toxicity to Fish
Nalco DustBind	Yes	30-60% Identified Alcohol	Carbon Oxides	No	5.49 g/L (LD 50/minnow)
Midwest SoilSement	Yes	Water, Unidentified Polymer, Mercury, toluene, chromium, Barium, Aluminum, Iron, Nickel, Zinc	Carbon Oxides and Water	No	0.32 g/L (LD 50/trout)
Midwest SoilSement CCT-Cm	Yes	Water, Unidentified Polymer, Mercury, toluene, chromium, Barium, Aluminum, Iron, Nickel, Zinc	Carbon Oxides and Water	No	0.32 g/L (LD 50/trout)
AKJ CTS-100	Yes	water (85-98%), polyvinyl acetate (2-15%), and 2% Unidentified contents	vinyl acetate, carbon monoxide, nitrous oxides, water, and hydrocarbon	No	No Testing done
AKJ Dustlock	No	N/A	N/A	N/A	N/A
Rantech Capture 3000	Yes/product no longer available	N/A	N/A	N/A	N/A
MinTech Min Topper S+0150	Yes	Unidentified alcohol and unidentified components	None given	"An environmental hazard cannot be excluded in the event of unprofessional handling or disposal"	No testing done

As shown in Table 2, the surfactant treatment of coal is under-researched for implementation. It is suspected that since it will save 1.1 million tons of toxic coal dust a year from exposure along the route, that surfactants are a viable option however, the MSDS or SDS of each material listed on the BNSF public documents show that marine or environmental testing is lacking, some of the known constituents which are going to be required by this additional market are toxic, and some of the products are no longer available. If the Millennium Bulk Terminal is looking for long-term solutions to the movement of 44 million tons of coal a year through the US, they should have a preselected and well-tested set of surfactants for these purposes. Alternatively, they should have considered the costs and benefits of covered coal cars.

In conclusion, the footprint for the Millennium Bulk Terminal is lacking because it does not satisfy NEPA compliance for Scope under 40 CFR §1508.25 and Cumulative Impact under 40 CFR §1508.7 §102 (2)(C)(v). Cumulative impact includes any impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. As discussed above, the use of railway transport will have an impact of an additional 1.3 million tons of coal spilled into the United States' land and water annually with the proposed project. Additionally, surfactants listed as solutions to suppress this the known impact of coal dust have insufficient or concerning toxicity data for the environment and wildlife. These details should be added to the MBT EIS for compliance to NEPA 40 CFR §1508.25 and 40 CFR §1508.7 §102 (2)(C)(v).

- IV. The building of the terminal should be in line with current US policy to limit fossil fuels and shift to renewable or clean energy sources, by being a model for coal transport.

At this juncture, the United States has presented a path to clean energy and targeted coal for de-implementation action. The Mercury and Air Toxics Standard was already mentioned for an expected violation of the Clean Air Act with the use of some surfactants. Clean Air Act, § 112, 42 U.S.C.A. § 7412. U.S. policy on carbon pollution emission guidelines were established by the EPA in the Clean Power Plan. 40 CFR part 60, *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, 2014 WL 2735965 (2014). Further, the goals of the Environmental Protection Agency were forth under 40 CFR § 52.21 are set to achieve qualitative significance for public health and welfare. Additionally, the Clean Power Plan, which mandates a shift to renewable energy away from fossil fuels, had enormous support from President Obama.

The President understands that we have a moral obligation to future generations to leave our land, water, and wildlife better than we found it. From standing up homegrown renewable energy and transmission infrastructure, to reducing methane emissions while supporting safe and responsible energy development, to making lands and waters more resilient in the face of climate change, the Interior Department is committed to being a strong partner in cutting carbon pollution and creating American jobs. The common sense steps being taken by the Environmental Protection Agency will protect public health while providing states with the flexibility they need to make informed decisions about the mix of energy sources that works best for them.

Secretary Jewel Statement on EPA Clean Power Plan Proposal, 2014 WL 2446109 (2014). Even though the Supreme Court has temporarily issued a stay for the new regulations of the Clean Power Plan while the case is pending the White House has noted that the Environmental Protection Agency will continue to work with states that want to cooperate and that it will continue to take "aggressive steps" to reduce carbon emissions. <https://www.whitehouse.gov/the-press-office/2016/02/09/press-secretary-josh-earnest-supreme-courts-decision-stay-clean-power>. The plan was designed to lower carbon emissions from U.S. power plants by 2030 to 32 percent below 2005 levels. *Id.* It is the main tool for the United States to meet the emissions reduction target it pledged at U.N. climate talks in Paris in December 2015, and was finalized in September 2016 as the United States and China formally joined the Paris Agreement. <https://www.whitehouse.gov/the-press-office/2016/10/05/remarks-president-paris-agreement>.

The plans set forth by the U.S. and China to limit carbon emissions should be reflected in the plans of the MBT. Firstly, the ongoing nature of the project is at direct conflict with the goals of the Paris Agreement and should be examined for long-term applicability. If the general policy in the U.S. is to cut back on coal to limit the effects on the environment globally, that should extend as a policy when marketing carbon emission products outside of the boarder.

The MBT EIS is limited in the discussion of alternatives in that only alternative locations are discussed. No alternative is given to avoid supplying countries with regulation in environmental action with coal. Consider the case that the projected terminus delivered the coal

in Canada or Mexico, where the burning of the coal would have an immediate effect on the air quality in the U.S. In that case, the burning of this excess 44 million tons of coal which would have not been burned in the U.S. under their environmental policy programs should have been included in the EIS since it would have a direct impact on the environment of the U.S. However, because this coal will not be burned directly over the U.S. border, the MBT EIS ignores the increased burning on the global environment.

Another policy issue not mentioned in the report are the effects of out-of-state transport on in-state benefit programs for coal. The Power Plus Plan announced last year offered billions in grants to states to aide in the transfer in communities formerly dependent on coal. https://www.whitehouse.gov/sites/default/files/omb/budget/fy2016/assets/fact_sheets/investing-in-coal-communities-workers-and-technology-the-power-plan.pdf A budget of 15 million was presented to 12 states, including Washington, which now stands to reinvest in coal from the MBT. Washington and any other states benefiting from the MBT project should refund any grants that were set to support the loss of coal related jobs and infrastructure as their plans have decidedly changed and more coal-related jobs are increasing in states supplying the MBT project. Finally, the effects of those repayments should be discussed alongside the economic benefits for the states mentioned in the MBT EIS.

V. Conclusions and Required Addition in MBT Plans

The impact statement as written, is not entirely defect. It encompasses a lot of concerns and has some well-engineered points. For instance, the transfer method listed to the ships is quite sufficient. “Shiploaders located on the docks would consist of a traveling structural steel portal, shuttle, and boom and would be fed coal by a dedicated conveyor. Shiploaders would be rail-mounted to allow movement along the dock.” MBT EIS 3-16. This organizes the dumping of the cars over the water along the dock. Watching videos of these loaders shows only the slightest dust on the ship themselves, meaning the largest impact of the coal at the basin is likely to be related to the installation (pylons) and ship traffic, unless there is a spill.

A. Required extension of Millennium Bulk Terminal’s Footprint

This paper has shown the toxic coal dust coming to the MBT is 200,000 times a larger factor than the dust spilled inside the confines of the facility (1.3 million tons annually versus the EIS’s reported 11 tons). The facility “active” footprint is therefore, insufficient for the impact along the railways and surrounding environment. The fact that it is not addressed in the report is not an oversight, as much as it is a legal opportunity to avoid the compliance with the Clean Air Act and Clean water act due to a loophole not covering the “incremental” losses along a railway. *Sierra Club v. BNSF Railway Company*, 2016 WL 6217108. Finally, the purpose of the Clean Power Plan, Clean Air Act, and the Clean Water Act’s §404 and §401 aligned goals to conserve the environment was greatly disregarded by ignoring the knowledge of 200,000- 1.3 million tons of coal lost in the proposed MBT project.

The surfactants are reported to be necessary to reduce coal loss from open car transport, however the surfactants were not calculated into the impact statement in any way even though the expected demand for this project is to be nearly a million pounds per year. Surfactants are not made from waste products but generating a market for more chemical production. Further, the safety of the materials to the environment is largely unknown and unreported. Those that are known have reported toxic chemicals (such as mercury) and reported toxicity levels for fish populations should be research for impact across the U.S. and inside the Longview harbor. Surfactant manufacture should therefore be reviewed as well as studied for the impact on the environment as used for the MBT project.

The implication of the facility's location along the water is not fully covered in the report. Twelve specific populations listed for protection under the ESA since 1991 and sharing the habitat of the Columbia River, were completely unaddressed in the MBT EIS for impacts caused by either the toxic coal dust or the surfactants themselves. Known damage to trout populations expected from environmental toxicity reports given for the most studied surfactant-group were not addressed in the original EIS, and need to be included to comply with NEPA regulations.

In conclusion, as written the MBT EIS facility footprint needs to be extended to include: 1) two different railways with two different surfactant programs and therefore, two different coal dust or surfactant programs. 2) surfactant manufacture, demands, and hazards fully reported, and; 3) the impact of the 200,000-1.3 million tons of toxic coal dust projected to be lost on the path and through the waters including the impact to the Columbia River Basin's endangered populations and habitat disturbances.

B. Planning Reflective of Current U.S. Policy

This facility will increase the market for American coal, however is in conflict with the provisions of the the Clean Power Plan, Clean Air Act, and the Clean Water Act. Even though the coal is shipped outside of our country it is known that the burning of the coal will globally damage the air and ozone. The impact of the 200,000-1.3 million tons of coal dust lost in U.S. waters and lands is not addressed in the MBT EIS, even though the projected losses constitute a cumulative effect of significance under NEPA.

Unfortunately, the Clean Water Act does not consider this amount of tons of coal lost annually to be available for liability as a "point source" once it is spread out and not able to be pinpointed, measured, and linked to an injury. *Sierra Club v. BNSF Railway Company*, 2016 WL 6217108. However, this does not skirt the liability at the harbor given in *Alaska Community Action* or NEPA compliance which should properly consider solutions ahead of the projected, regular, incremental pollution of the target areas with toxic coal dust. 765 F.3d 1169.

Finally, the policy issue not mentioned in the report which need redress include the effects of out-of-state transport on in-state benefit programs for coal. Washington and any other states benefiting from the MBT project which would need to return these benefits should be discussed alongside the economic benefits for the states mentioned in the MBT EIS.

VI. Alternatives for Consideration

In addition to the recommended changes to the Millennium Bulk Terminal's current EIS, alternatives not addressed in that report may be considered. The bulk of this comment focuses on the long-term impact of toxic coal dust lost in transport and the surfactant safety used in the suppression of coal dust. Therefore, it would be helpful to compare an alternative method of transport without surfactant use. The currently available alternative is covered coal cars which empty from the bottom. This method was generally abandoned resulting in coal mining designs that worked with open cars. Therefore, a second method is proposed which covers in open car with a removable cover for transport.

- A. The MBT facility uses the one coal car dumping mechanism, however examined alternatives should include a coal car dumping mechanism that functions with covered coal cars.

The Millennium Bulk Terminal design allows for one method of emptying full coal cars, a standard rotary dumper, but no alternatives are given. Due to the known expected impact of coal dust lost along the route, the EIS should consider an alternative in which cover cars can be utilized and therefore, the rotary dumper could not be utilized. This would allow for the elimination of the surfactant and coal dust impact analysis, and when placed alongside the numbers of annual coal dust spilled, should be a compelling consideration. Some covered cars have been manufactured in the past such as: GGPX 1602-1731(Freight Car America 2005). TILX 42565-42684 (Trinity Industries 2006), and SBTX 33001-33245 (Freight Car America).

- B. The MBT facility has been designed to use a standard rotary dumping mechanism for coal cars, however this mechanism could be utilized with open coal cars that are simply covered for transport.

The standard rotary dumping mechanism for coal cars is widely excepted in the industry for fastidious emptying of the coal cars at the terminal or destination. However, this only allows for open coal cars to be utilized in the transport of the coal, which will lead to 1.3 million tons of coal dust scatted in the U.S. in each along the project lines. To work with the rotary dumper and current open coal car inventory, an alternative is proposed in which a locking or snap down tarp is attached to every coal car for transport. These tarps need to be designed for quick-release for use in the rotary dumper, but would avoid the necessary calculations for surfactant use and therefore, may be an easier solution to the coal dust in transport problem associated with the MBT EIS project.

- C. In light of the presented analysis of coal dust and surfactant impact, the cumulative impact and scope is not sufficient for the wildlife of the Columbia River Basin.

The wildlife of the Columbia River Basin includes 12 species protected under the Endangered Species Act and a large trout population. As written, the MBT EIS should included testing of these populations with coal dust and surfactants expected for use in coal transport. If the coal

dust transport issue is tackled with covered cars, the impact study on these populations could be limited to habitat disturbances associated with the project.

The effect on trout and the endangered species of the basin is not the expertise of the writer of this comment, so it is not examined in detail here however, the addition of concrete pylons and increased ship traffic should be examined by groups focused on this type of information for comment.

D. Profits should be adjusted for these additional costs.

It is unknown by the writer of this comment if covered cars are a more expensive alternative to surfactant treatment, and therefore any added costs associated with the redesign of the facility, coal processing, environmental safety, and coal transport would need to be calculated into the cost of coal. The current proposal identifies the market for U.S. as dependent on the lower coast versus coal from Australia, and realistic costs described herein may effect that market demand. Australia has been a forerunner on environmental issues, and the higher cost of their coal may be the result of these more environmentally conscious methods for transport.

E. Additional taxes may be imposed in order to reflect the current U.S. Clean Power Policy.

As a policy initiative and consistent with the goal for the U.S. to limit its dependence on fossil fuels, taxes and regulations described herein were instituted to drive the energy market into the long-term targets for renewable and clean energy, and further the combined efforts under the Paris Agreement. In order to model that approach, the MBT facility should be taxed on the volume of coal exported in order to generate federal funds which can be utilized to build government-owned solar and wind farms for poorer parts of the nation and in China. This approach would act to offset the damage encouraged by shipping cheaper coal to countries with relaxed approaches to the environmental problems of today.

Bibliography for Non-legal Citations

(Note: legal citations cited within text).

1. Squillace, Mark. Environmental Decision Making for the 21st Century. Carolina Academic Press, 2016.
2. Schins, Roel P.F. and Borm, Paul J.A. Mechanisms and Mediators in Coal Dust Induced Toxicity: A Review. *Ann. Occ. Hyg.*, Vol. 43, No. 1, pp. 7-33, 1999.
3. Cherrie, John W., Brosseau, Lisa M., Hay, Alastair, and Donaldson, Kenneth. Low-Toxicity Dusts: Current Exposure Guidelines Are Not Sufficiently Protective. *Ann. Occup. Hyg.*, Vol. 57, No. 6, pp 685-691, 2013.
4. Huang, Xi, Gordon, Terry, Rom, William N., and Finkelman, Robert B. Interaction of Iron and Calcium Minerals in Coals and their Roles in Coal Dust-Induced Health and Environmental Problems. *Reviews in Mineralogy & Geochemistry*. Vol. 64 pp. 153-178, 2006.

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