Opponents of Oakland coal shipping target governor's pal

By Matier & Ross | July 25, 2015 | Updated: July 25, 2015 4:02pm

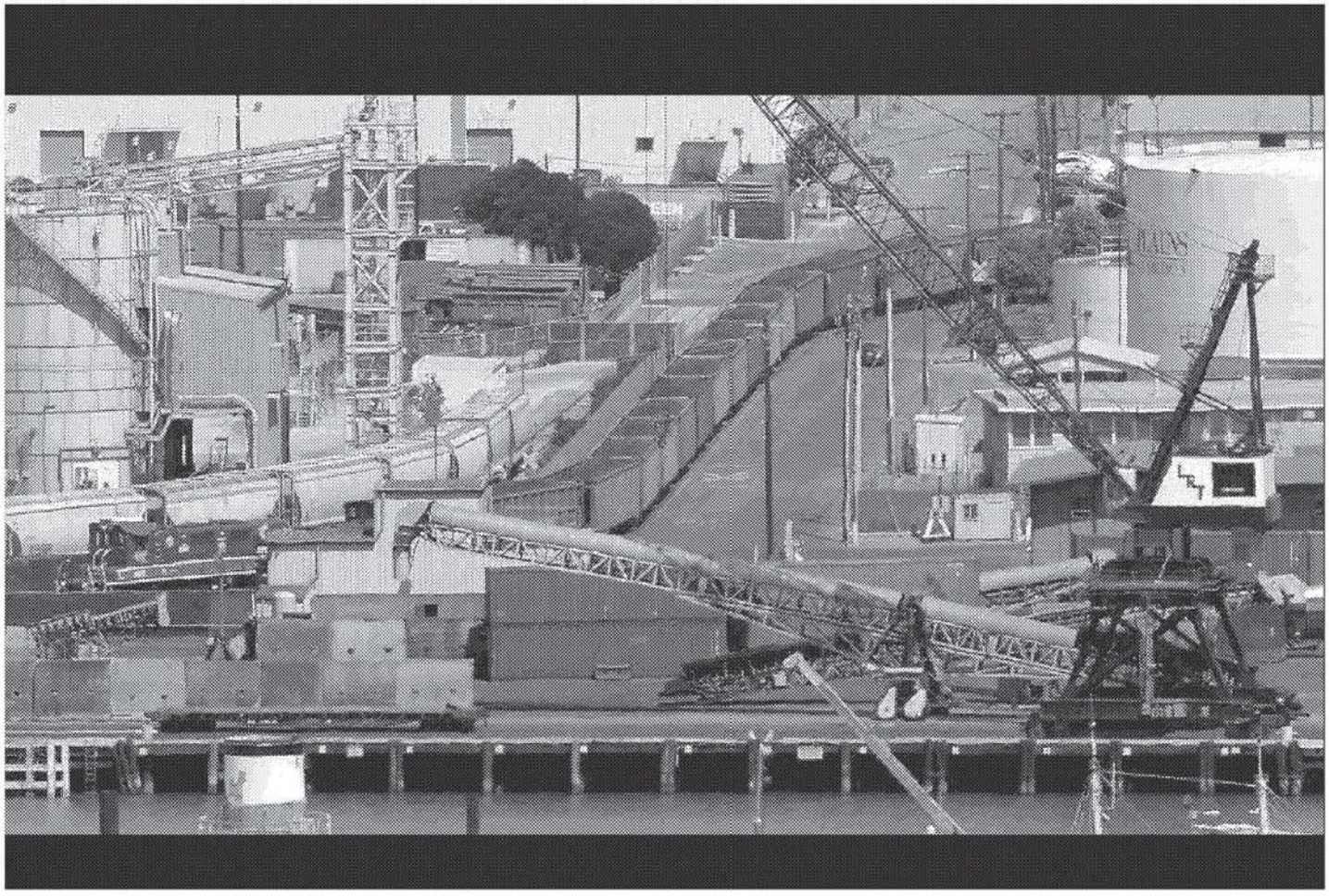

Photo: Carlos Avila Gonzalez, The Chronicle

IMAGE 1 OF 2

A train loaded with coal approaches the Levin-Richmond Terminal in Richmond, Calif., on Thursday, July 23, 2015. A similar plan for a coal exporting operation has been proposed at the old Oakland Army Base by ... more

While Gov. **Jerry Brown** was busy at the Vatican warning of possible human extinction from global warming, his business partner and friend **Phil Tagami** was treading hot water with environmentalists and civic leaders over a plan to ship millions of tons of coal from city docks in Oakland.

At issue: a proposal to ship Utah coal through an $820 million cargo facility that Tagami is building at the old Oakland Army Base — a big chunk of which is being paid for by public money.

"The governor just told the pope that we need to leave 90 percent of the world's coal in the ground or face an environmental catastrophe," said **Jess Dervin-Ackerman,** conservation program coordinator for the San Francisco Bay chapter of the Sierra Club. "If he is serious about doing something, he could and should start with his own hometown and with his own friend."

Coal is the issue where two powerful forces in Oakland run straight into each other. One is the city's longtime dream of turning the old Army base into an economic engine. The other is the desire to adopt an environmentally progressive stance that can change the city's hardscrabble image.

"Stop it immediately," Mayor **Libby Schaaf** said of the proposed coal-export plan in a May 11 e-mail to Tagami that the Sierra Club obtained under a Freedom of Information Act request.

"If you don't do that soon we will all have to spend time and energy in a public battle that no one needs and will distract us from from the important work at hand," Schaaf wrote.

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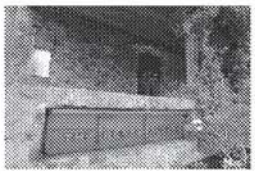

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Schaaf's fear, and the fear of environmentalists and many people who live in West Oakland, is that dust from the coal trains will blow into surrounding areas and cause health problems. There's also the question of pinning Oakland's economic health to transporting an energy source that's a leading contributor to global warming.

The Port Commission, on which Tagami served from 2000 to 2003 while Brown was mayor, has also voiced unanimous opposition to coal being moved through the cargo facility.

However, the old Army base isn't port land — it's owned by the city. So short of blocking coal-loaded trains from crossing their property, port officials have no real say in the matter.

Port officials have also been told by legal staffers that the Army base development deal struck in 2012 between Tagami's California Capital & Investment Group and the city has no provision prohibiting coal handling.

The coal fight is a sharp departure for Tagami, who for years has been known as the quintessential "friend to all" in Oakland politics — especially Brown.

It was Brown who appointed Tagami to the Port Commission. As governor, he named Tagami to the state Lottery Commission.

With Brown's help, Tagami got city funding for the $91 million restoration of the historic Fox Theater in the city's Uptown district — a project that also houses Brown's pet charter School for the Arts.

Brown was married in Tagami's downtown Rotunda Building, which houses Tagami's California Capital & Investment Group.

And Brown's 2014 statement of economic interest lists the governor as an investor in the Edgewood Park Plaza office building, an Oakland property managed by Tagami's investment group.

Brown's office said the governor had no comment regarding Tagami's plan for shipping coal through Oakland.

Funding for the project is coming from a variety of public and private sources, including $242 million authorized in 2012 by the California Transportation Commission.

It was Tagami's company that initially lobbied Utah coal interests to invest $53 million in the Army base bulk cargo facility. Tagami then cut a deal to turn over the operation to a newly formed company, Terminal Logistics Solutions — which is headed by two former Port of Oakland executive directors, **Jerry Bridges** and **Omar Benjamin**.

In a statement, Tagami described the arrangement between his investment group and Terminal Logistics as an "arm's length contractual relationship." He also said that regardless of what was transported — and so far, no one "has committed to the transport of any particular commodity" — any rail cars would be covered and that other measures would be taken "to minimize and potentially eliminate fugitive dust."

The project's website says the terminal — the first piece of a much bigger logistics center — envisions "handling up to 12 50-car trainloads per day."

In an interview, Bridges said it is premature to discuss the coal operation, because no deal has been signed with Utah officials to bring coal to Oakland.

Nonetheless, Bridges said, Terminal Logistics has agreed to sublet the facility from Tagami's group "based on our ability to handle any of the 15,000 bulk commodities handled on the West Coast" — and that includes coal. Bridges noted that coal from out of state is already being shipped overseas from ports in Richmond and Stockton.

And although Bridges promised to pursue the Army base project in an "honorable" and "environmentally friendly" way, he also said, "Our plan is to proceed under the entitlements we think we have."

Meanwhile, the Sierra Club and others are stepping up their opposition, calling on the city to ban the coal exports as a danger to both the environment and the health of West Oakland residents.

"I bet Mr. Tagami would like us to go away," said the Sierra Club's Dervin-Ackerman. "But of course we won't."

San Francisco Chronicle columnists Phillip Matier and Andrew Ross appear Sundays, Mondays and Wednesdays. Matier can be seen on the KPIX TV morning and evening news. He can also be heard on KCBS radio Monday through Friday at 7:50 a.m. and 5:50 p.m. Got a tip? Call (415) 777-8815, or e-mail matierandross@sfchronicle.com. Twitter: @matierandross

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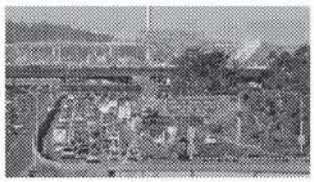

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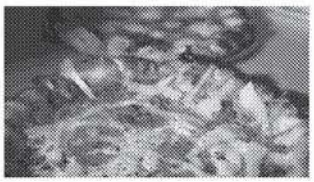

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Oakland Bulk and Oversized Terminal
Air Quality & Human Health and Safety Assessment
of Potential Coal Dust Emissions

prepared for:

California Capital and Investment Group

Prepared by:
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EXECUTIVE SUMMARY

Purpose

HDR's environmental experts in the air quality and risk assessment fields were retained to provide an assessment of potential human health and safety impacts due to transporting and handling of coal as part of the operation of the proposed Oakland Bulk and Oversized Terminal (OBOT) facility to be developed by California Capital & Investment Group (CCIG) and operated by Terminal Logistics Solutions (TLS) at the Port of Oakland. Although we understand that there has been no binding commitment to transport coal or any other given commodity through OBOT to date, this white paper is intended to:

1) assess the potential for coal dust emissions during rail transport of coal to OBOT and handling of coal at the terminal;

2) identify technologies and operating practices to minimize related potential air pollutant emissions, and any impacts, to affected communities; and

3) assess the potential for health and safety impacts from transport of coal to OBOT and handling of coal at the terminal.

Findings

This assessment demonstrates that the amounts of coal dust emissions to the City of Oakland resulting from transport of coal to OBOT and related terminal operations will be negligible, and that impacts from coal dust emissions and deposition will not harm health or the environment, based on planning and design that would utilize best practices to avoid emissions to the ambient air from rail transport and handling of coal at OBOT as further described in this paper.

I. INTRODUCTION

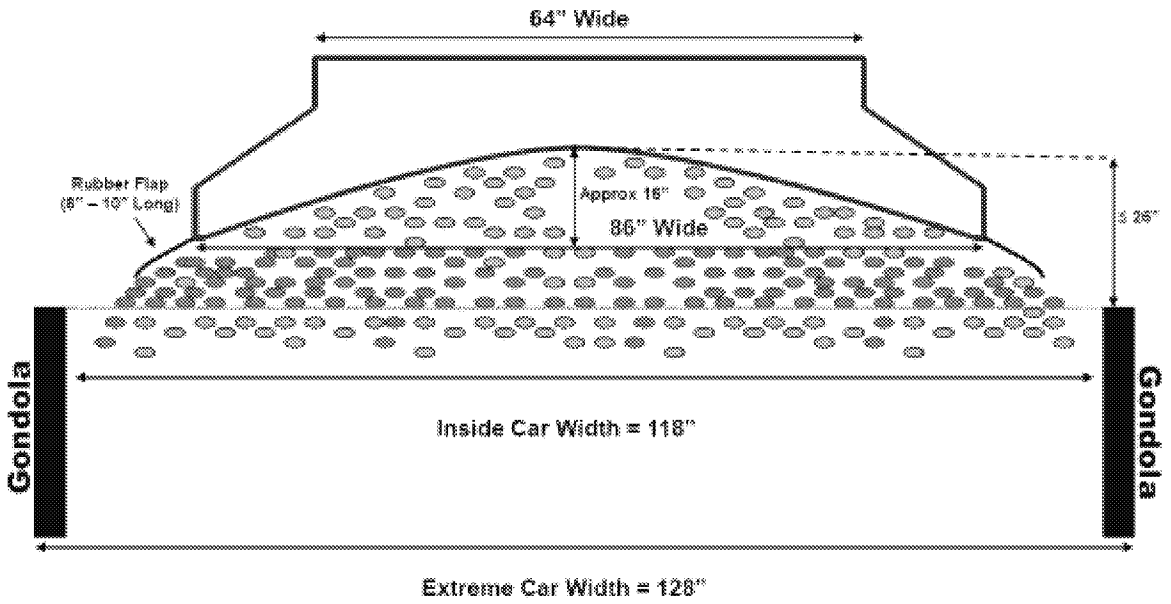
HDR's environmental experts in the air quality and risk assessment fields were retained to provide an assessment of potential human health and safety impacts due to handling of coal as part of the operation of the proposed Oakland Bulk and Oversized Terminal (OBOT) facility to be developed by California Capital & Investment Group (CCIG) and operated by Terminal Logistics Solutions (TLS) at the Port of Oakland. Although we understand that there has been no binding commitment to transport coal or any other given commodity through OBOT to date, this assessment addresses health and safety impacts that could be caused by air pollutant emissions due to coal transport by rail, storage at the terminal, and loading onto ships.

II. MINIMAL COAL DUST EMISSIONS WILL RESULT FROM COAL TRANSPORT/HANDLIING RELATED TO OBOT.

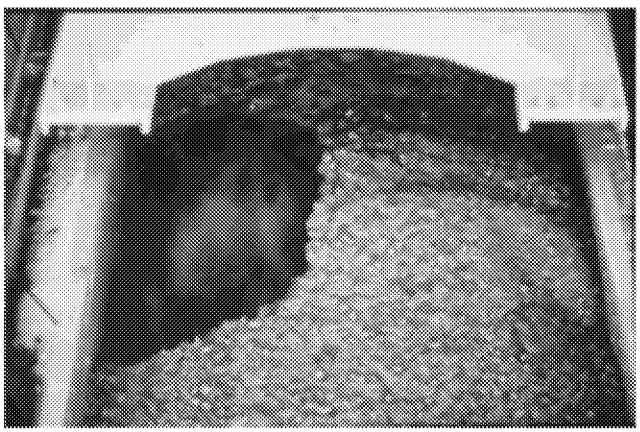
A. Potential Emissions from Rail Cars in the Oakland Area Will Be Negligible.

Moving rail cars would be expected to emit only negligible quantities of coal dust in the Oakland area. As shown in a study by the BNSF and Union Pacific (UP) railroads in the Powder River Basin (http://www.bnsf.com/customers/what-can-i-ship/coal/coal-dust.html#2), and as expected due to basic physics of wind and turbulence, the vast majority of coal dust emissions leave the rail cars as the train accelerates up to cruising speed, falling on the nearby right-of-way. Because coal dust emissions near the point of train origin create a maintenance concern for railroads (affecting track ballast), the railroads in recent years have implemented various measures to substantially reduce the amount of dust escaping the cars. These measures have included profiling the coal pile on the cars to give the coal a more aerodynamic shape, packing the coal in the cars to leave fewer air spaces for wind to dislodge coal particles, and applying various topping agents to bind smaller coal particles to larger chunks of coal. The BNSF's load profiling requirements for coal are illustrated in the figure below.

Load Profile Requirements



And, the photo below illustrates the strong binding / crusting effect of topping agents used when transporting coal by rail. (The photo shows a bottom-dumping car that has just been unloaded, yet the surface crust remains in place bridging across the top of the car.)



The coal dust mitigation methods of load profiling/packing and using topping agents have been effective in greatly reducing emissions of coal dust, by at least 85% (see http://www.bnsf.com/customers/what-can-i-ship/coal/coal-dust.html).[1] In addition, the vast majority of the limited coal dust emissions occurring when using profiling, packing and topping controls will occur during the initial acceleration phase after the train cars are freshly loaded. This is because any erodible coal dust (which will be limited based upon implementation of standardized measures described above) will be blown off the cars near the point of train origin, as the train is accelerating, and not as the train approaches its destination. Once a train attains cruising speed, the erodible dust already has been blown off the cars. At that point, there is little potential for further dust or particle emissions as the train travels to its destination.

The concept that emissions from piles of coal or other mineral aggregates occur only after disturbance of the pile is well recognized by the USEPA in its emissions guidance document known as Publication AP-42. These emissions occur when the wind gets to an erosion threshold and can continue as wind speed increases. If a subsequent wind attains a higher threshold, there will be additional emissions. But once a train attains its maximum speed, such that the relative wind speed on the coal surface is maximized, the wind will remove any erodible dust such that there is little potential for further dust or particle emissions. The finite erosion potential of a coal pile is described in AP-42 as follows:

> *Field testing of coal piles and other exposed materials using a portable wind tunnel has shown that (a) threshold wind speeds exceed 5 meters per second (m/s) (11 miles per hour [mph]) at 15 cm above the surface or 10 m/s (22 mph) at 7 m above the surface, and (b) particulate emission rates tend to decay rapidly (half-life of a few minutes) during an erosion event.* ***In other words, these aggregate material surfaces are characterized by finite availability of erodible material (mass/area) referred to as the erosion potential.*** [Sec. 13.5.2.1 (emphasis added); see http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0205.pdf).

In sum, moving rail cars would emit negligible quantities of coal dust in the Oakland area because (1) load profiling, packing, and topping measures that would be used are

[1] These materials reference the same BNSF and UP study that Earthjustice relies on (in its 9/02/15 letter to the Oakland City Administrator) to support its assertion that rail cars can shed hundreds of pounds of coal dust per car. However, that is only the case if none of the dust-reducing practices discussed above—*i.e.*, profiling, packing, and applying topping agents—are used. Thus, the more important point, which Earthjustice ignores, is that commonly implemented measures dramatically reduce the kind of coal dust emissions asserted by Earthjustice. Furthermore, nearly all of these emissions occur near the mines where the trains are loaded.

effective in minimizing erodible dust emissions, and (2) the limited amount of erodible dust not addressed by these standard mitigation measures would leave the cars early in the trip, hundreds of miles before the cars reach Oakland. Moreover, to ensure that there are no concerns with coal dust emissions from moving rail cars serving OBOT, the port developer will cover the rail cars to prevent any such emissions that could otherwise occur early in the train trips.

B. State-of-the-art Controls will be used for OBOT Terminal Operations to Ensure that Coal Dust Emissions are Negligible.

Within the terminal facility, there is a potential for coal dust emissions from unloading of rail cars, conveying coal to enclosed storage buildings, conveying coal to the dock, and loading it onto ships. While any coal dust emissions from these activities are not expected to harm public health, the environment, or property, the emissions should be controlled properly to eliminate that potential, as well as to avoid posing a significant explosion/fire hazard for workers or port infrastructure or a nuisance to the public. The list below describes the coal dust control measures that HDR recommends employing at the OBOT facility:

1) Rail car unloading buildings should be designed with openings at both ends that are sized to the rail cars and are largely occupied by the bodies of the rail cars adjacent to the car being unloaded. Rails cars should unload via bottom drop (rather than tipping/dumping), and coal dust emissions from the unloading operations should be controlled by water sprays and/or foggers as coal drops into a hopper that connects to the conveying system.

2) Coal conveyed to coal storage buildings or directly to docked ships should be conveyed in totally enclosed systems (including transfer points from one conveyor to another). There should be no openings for emissions to enter the outdoor air, and water sprays should be strategically implemented to minimize dust in the enclosed spaces.

3) Coal not immediately loaded to a ship should be conveyed to piles in the fully enclosed storage buildings via an overhead conveyor and "tripper" system, with water sprays applied as needed to minimize dust.

4) Coal in the storage buildings generally should be reclaimed into the conveying system by dozers (front end loaders) pushing coal into any of several reclaim hoppers in the building floors (rather than via scooping and dumping). In addition,

filtered ventilation should be strategically implemented in the storage buildings as part of the facility's overall air handling design to protect workers.

5) Coal loaded to the ship should be loaded via ship loader with a telescoping chute to minimize drop distance of coal. In addition, water sprays should be applied to the coal to keep it moist so that there are no significant emissions of coal dust during loading.

With implementation of the above design/control features, coal dust emissions at the OBOT facility will be negligible. Further, the Bay Area Air Quality Management District (BAAQMD) will ensure that Best Available Control Technology (BACT) for emissions reduction is applied as required, and will enforce any additional appropriate air permit conditions needed for these specific operations. Additionally, if any of the negligible coal dust emissions are deposited on site, they will be regulated under NPDES permit(s) that require (1) management of the site so as to minimize the prospect of their being captured in storm run-off and (2) monitoring of storm outfalls to determine the effectiveness of the management measures.

It is important to control dust emissions not only to the outdoor air, but also within enclosed spaces, as dust buildup in enclosed spaces can present a fire and explosion hazard under certain circumstances. As explained more fully in Attachment 1, the risk of fire/explosion in the coal handling and storage context is readily manageable, and the following additional best design practices would be employed for indoor dust control to minimize any potential for such hazards:

1. Unloading Process
   - Manage drop distance and dust cloud formation.
   - Use rail cars that unload from the bottom of the car.
2. Limit Dust Accumulation
   - Limit formation of dust where possible.
   - Use dust extraction systems in the hoppers to remove dust from the process.
   - Use misting systems to wet the product as it is unloaded.

3. Mitigate Ignition Sources
   - Eliminate, to the greatest extent reasonably possible, static electricity by grounding all equipment and using materials that will not "encourage" the buildup of static charge.
   - Appropriately protect electrical equipment in protective enclosures as required by the codes and standards.
   - Mitigate tramp metal introduction into the process.
   - Monitor bulk temperature entering the process from the rail cars to the storage piles.
   - Provide spark detection in conveyance equipment.

4. Building Design
   - Use explosion relief vents as required by the codes and standards.
   - Provide suitable separation distances from adjacent buildings and structures to limit the potential for damage to other structures (and limit risk to any offsite facilities).

5. Storage
   - Limit air circulation and additional handling in the piles to prevent oxygen infiltration.
   - Adhere to good industry practice and process for pile shape, packing in layers, and pile height.
   - Regulate monitoring of piles for internal temperatures and gas production.

6. Emergency Management
   - Develop detailed emergency response plan with the local emergency responders.
   - Design the site to provide access and necessary equipment.
   - Properly train and educate emergency responders and facility operators.
   - Regularly maintain and inspect fire protection equipment.

Buildup of dust at the facility (for instance on floors, equipment, vehicles, and other surfaces) is of course anticipated and will be addressed in accordance with proper housekeeping practices and occupational health and safety regulations. Process wastewater will be conveyed to an on-site treatment facility for either recirculation on-site (as process water) or for discharge as appropriate under required local or State

permits, and, pursuant to storm water permitting, the site will be (1) managed site so as to minimize the prospect of deposits being captured in storm run-off and (2) storm outfalls will be monitored to determine the effectiveness of the management measures.

III. EARTHJUSTICE CLAIMS THAT COVERED FACILITIES CAN LEAD TO AIR QUALITY VIOLATIONS ARE BASED ON MISPLACED ASSUMPTIONS.

Because Earthjustice pre-filed comments in its 9/2/2015 letter to the Oakland City Council, HDR also examined the assertion in that letter that even covered coal-handling facilities cannot protect public health and safety. According to Earthjustice, this assertion is based on "air modeling for a proposed 'state of the art' covered coal export facility at the Port of Morrow in Oregon [which] showed major exceedances of particular matter and [NOx] national ambient air quality standards." See page 10 and footnote 12 of the 9/02/15 letter. The link provided refers to an October 2012 report produced by AMI Environmental (AMI) for Sierra Club called *AERMOD Modeling of Air Quality Impacts of the Proposed Morrow Pacific Project*: http://media.oregonlive.com/environment_impact/other/AERMOD_Modeling_Morrow_vfin.pdf.

As an initial matter, the results of that report are directly at odds with the review of that project by the Oregon Department of Environmental Quality (ODEQ), which found no such threat to National Ambient Air Quality Standards (NAAQS) and granted an air permit that allows for coal handling at the terminal.

The Sierra Club's study predicted maximum 1-hour NOx and 24-hour $PM_{2.5}$ impacts of more than 10 times the respective NAAQS for these averaging periods. Yet, there are many open coal piles and coal export facilities in the U.S. and numerous rail yards and rail intermodal freight facilities across this country, many with far greater activity levels for locomotive activity and coal handling (and less aggressive dust controls) than proposed for the Port of Morrow. If the Port of Morrow modeling was in any way credible, local and state air quality regulatory agencies would be measuring massive violations near such facilities nationwide, and the USEPA would be addressing the presumably bad air quality near these facilities as a top priority. Yet, that is not the case.

When a dispersion modeling analysis finds concentrations many times the NAAQS, and far greater than any actual air quality measurements, it signals modeling errors and/or improper modeling assumptions. In modeling jargon this is a matter of "garbage in, garbage out." In the case of the Sierra Club modeling for Port of Morrow, multiple egregious errors or bad assumptions were made, which led to results that grossly over-

predicted the actual impacts of such a facility. We have identified many errors in that modeling effort, including the following major flaws:

1) **Emission rates were erroneous.** Emission rates used in the Sierra Club model were significantly overstated and were assumed to occur continuously for activities that are relatively brief and intermittent throughout the course of a year. For example, wind erosion was assumed to create emissions from the barges and the rail cars every hour of the year, when it is well known that once a wind erosion event occurs, the erodible dust is very quickly depleted (see USEPA AP-42 reference cited earlier) such that there is no more wind erosion potential unless the coal pile is again disturbed after the initial wind erosion event.

2) **Mobile emissions sources were misrepresented.** Emission source activities in the Sierra Club model were artificially concentrated in space. For example, locomotive emissions were treated as if they would occur at a single, geographically-fixed point source when, in fact, locomotives would be moving along a significant length of track during unloading. They should have been treated in the model as an "area source" or "line source," which would result in more dispersed emissions consistent with reality. The model also treated emissions from tugboats used to tow coal barges from the terminal to a ship 200+ miles downriver in the same erroneous manner. Tugboats do not sit in one spot all year at maximum emissions. They are working vessels with almost continuous movement over a large area. Thus, the Sierra Club modeling study greatly inflated the coal dust and NOx emissions from train and barge transport by over-concentrating them.

3) **Wind erosion calculations assumed enclosed storage areas were completely open.** As part of the Port of Morrow operation, barges would carry coal from the port terminal some 200+ miles downriver to the bulk transport vessel. In calculating related wind erosion emissions, the Sierra Club model wrongly assumed that the entire surface of the barges would be open to the atmosphere. In fact, the barges were fully enclosed, except for small hatches in the form of slits through which the loading chute would extend during loading. Little (if any) coal dust would escape a slit during loading because the drop point was well below deck.

4) **Stationary emission points were improperly combined.** Not only were proposed mobile emission points misrepresented as detailed above, but also

improper stationary source stack parameters were used in the Sierra Club model. For example, the site was planned to have 3 coal storage buildings, each with 5 scrubber exhausts. The model erroneously combined these 15 emissions sources into one source. In addition, the modeler arbitrarily placed the height of that exhaust at only one meter above ground (when the stacks were actually designed to be 25 meters above ground), and the model applied a vertical velocity of zero meters per second (when even a modest vertical velocity of five meters per second would enhance dispersion significantly). This greatly exaggerated the calculated concentrations at ground-level.

5) **Receptors (*i.e.*, areas where the public could be located) ignored physical realities.** Receptors or points at which concentrations were calculated by the model were placed too close to the emissions sources, often at points where the public could not have access. In other words, they were placed at locations that would not be considered "ambient air." This is akin to assuming that people in everyday life would be able to place their mouths near the exhaust pipe of an operating vehicle and continuously inhale the exhaust as that vehicle travels. This is not reasonable or accepted practice for receptor siting.

As a result of the above major flaws, the Sierra Club Port of Morrow modeling study offers no value in determining the likelihood of impacts from a working coal terminal. After a technical review of the methods and procedures, one can offer that the modeling study was designed to produce unrealistic results, which bear no resemblance to the real world. By contrast, ODEQ's assessment in the air permit review process determined that the Port of Morrow project does not represent a threat to NAAQS attainment, and ODEQ issued an air permit for that facility.

IV. COAL DUST EMISSIONS FROM TRANSPORTING COAL TO, OR HANDLING COAL AT, OBOT WILL NOT HARM PUBLIC HEALTH OR THE ENVIRONMENT.

Coal from Utah is a naturally-occurring mineral and will not be processed via chemical addition, treatment, burning, or any other means after it is mined and loaded onto rail cars for direct shipment to Oakland. Coal and coal dust in itself is not specifically regulated or defined as a hazardous material by USEPA, and is not included on the State of California's Proposition 65 list of chemicals known to cause cancer or reproductive toxicity (California EPA OEHHA; January 23, 2015 update). Coal dust is regulated by OSHA and the Mine Safety and Health Administration (MSHA) for occupational/mining operations where intense exposures via inhalation are encountered. The California Division of Occupational Safety and Health (Cal/OSHA)

also regulates coal dust. Coal is utilized for the production of granular and powdered activated carbon which is used in numerous industrial and water treatment applications to remove impurities and, in the case of drinking water, organic chemicals and taste and odor precursors (think of activated carbon in store-bought water purifiers).

A. The Surface Transportation Board (STB) Recently Performed the First Quantitative Assessment of Potential Health Risks from Coal Dust by a Federal Agency.

The first study of potential health effects from coal dust emissions related to rail transport was issued in 2014 on behalf of the Surface Transportation Board (STB). That study was done for a proposed 42-mile rail line between Colstrip, Montana and the Ashland and Otter Creek areas of Montana (also known as the Tongue River Rail Project). STB's Office of Environmental Analysis (OEA) determined that the preparation of an Environmental Impact Statement (EIS) was appropriate (http://www.tongueriverеis.com/draft_eis.html). OEA solicited input from the USEPA and other Federal and State agencies on several resource areas.

The Tongue River study contains the first detailed quantitative analysis of coal dust associated with the transport of coal by rail conducted by a Federal agency. Potential air quality and other human health effects were quantitatively modeled and assessed in the DEIS, along with potential ecological impacts from coal dust. Major DEIS assessment items and findings related to OEA's coal dust evaluations are summarized below.

- Estimated traffic on the proposed line would consist of approximately 7.4 trains per day to and from the mine (3.7 trains in each direction). OEA also considered the possibility that other coal mines could be proposed and developed in the area.

- Open top rail cars were assumed with application of a topping agent and use of coal profiling techniques during loading.

- USEPA's AERMOD dispersion model was used in the Tongue River study to assess both air quality (ambient concentrations of particulate matter) and deposition.

    - OEA modeled the concentrations of airborne coal dust from train cars (including PM_{10} and $PM_{2.5}$) and determined that they are expected to be below the standards set in the NAAQS and the Montana Ambient Air Quality Standards (Montana AAQS) to protect human health.

- OEA also analyzed how deposited coal dust from the rail cars could impact human health (via direct contact pathways, considering exposure scenarios for soil, surface water, fish tissue, and sediment media). OEA used a fate and transport modeling approach to predict concentrations of metals in these media, and then compared the modeled concentrations with available USEPA risk-based screening levels developed for human exposures to these media. The DEIS analysis concluded that the modeled concentrations of individual metals in each of these media would be below the respective USEPA risk-based criteria.

Following the analyses presented in the DEIS, OEA is not recommending that the STB impose additional coal dust mitigation measures for rail transport of coal in open cars.

Perhaps most important for purposes of comparing those results to the Port of Oakland, the modeling completed for Tongue River addressed emissions from open rail cars traveling near the mine facility where they were loaded. By contrast, when passing through Oakland, the rail cars delivering coal to OBOT will be covered and will therefore not be a source of dust emissions from wind erosion.

B. *Any Coal Dust Emissions from Delivery to and Handling at OBOT Will Not Harm Public Health or the Environment.*

Bituminous Utah coal has a fixed-carbon content of over 60%. Minerals make-up approximately 10% of the coal, with silica, alumina, lime, sulfur trioxide, and ferric oxide accounting for approximately 94% of the mineral content (http://bowieresources.com/skyline/). Metals found in coal are bound in these and other mineral matrices (unlike in coal ash, where metals are concentrated following the burning of coal).

While the inhalation pathway of exposure is the most relevant, implementation of the rail car covers and recommended controls for OBOT terminal operations will ensure that coal dust emissions are negligible. Furthermore, the terminal facility will require an air permit through BAAQMD, one of the most stringent regulatory agencies in the U.S., and that air permit will impose emissions limits with monitoring, recordkeeping, and reporting requirements to ensure that the facility will not cause or contribute to a violation of air quality standards (which are developed and enforced to be protective of human health and the environment).

Metal constituents and concentrations, based on laboratory extraction and analysis of Utah-based coal, are summarized in the below table (RCRA metals and others that are commonly evaluated as environmental contaminants are tabulated). To provide some perspective on potential direct contact risks from any small amounts of coal dust, we

prepared the chart below that provides (1) trace metal data for Utah-based coal, (2) background concentrations for these metals in California soils; (3) USEPA health-based soil screening levels (RSLs) for these metals in the context of residential land use; and 4) RSLs for these metals in the context of industrial land use. (RSLs are from the USEPA Regional Screening Level Summary Table (June 2015).)

	Uinta Basin Coal [a]			CA Soil Backgd [b]	EPA RSL - Res.	EPA RSL - Ind. Soil
	Average	Max				
Element	Ppm (or mg/kg)	ppm		mg/kg	mg/kg	mg/kg
Sb	0.2	0.9		0.15 - 1.95	39 [c]	580 [c]
As [d]	1	8		0.6 - 11	0.68	3
Cd	0.1	0.2		0.05 - 1.7	71	980
Cr	7	30		23 - 1579	120000 [e]	1800000 [e]
Co	1.2	3		2.7 - 46.9	23	350
Pb	3.6	7.7		12.4 - 97.1	400	800
Hg	0.05	0.38		0.1 - 0.90	23 [f]	350 [f]
Ni	2.8	10		9 - 509	1500 [g]	22000 [g]
Se	1.8	3.4		0.015 - 0.43	390	5800
Th	3.4	7.9		5.3 - 36.2	0.78 [h]	12 [h]
U	0.9	3.1		1.2 - 21.3	230	3500

a Air Toxic Emissions from The Combustion of Coal: Identifying and Quantifying Hazardous Air Pollutants from U.S. Coals, C.B. Spurzner, Argonne Natl. Lab., Pub. ANL/EAIS/TM-83, Sept. 1992.

b Kearney Rpt (1996) on California soil background concentrations (except where noted otherwise). Range of concentrations represents minimum and maximum levels observed in the Kearney study (across all statewide samples)

c Values for antimony pentoxide

d The proposed upper estimate for background arsenic (99th percentile) within undifferentiat urbanized flatland soils is 11 mg/kg - San Francisco Bay Region (California Water Board).

e Chromium III

f mercuric chloride

g nickel soluble salts

h thallium (soluble salts)

The maximum concentrations in Utah coal fall within the ranges of, and in most cases, at the low end of the background level ranges for these metals in California soils, with the exception of selenium. However, selenium is not a concern because its maximum concentration in Utah coal is 100 times less than the RSLs for residential land use. Based on these data, the metals in Utah coal dust are all well within (or below) the

ranges of the background levels found in California soils and/or below risk-based soil screening levels published by USEPA.

V. CONCLUSION

We conclude that negligible coal dust emissions will result from transport of coal to OBOT and handling of coal at the terminal, and that public health and the environment will not be harmed by the limited emissions (and deposition) that do occur, based upon the following primary considerations:

- While studies show rail transport of coal does not result in significant emissions when profiling, packing and topping measures are used, the operator of the terminal is committed to effectively taking the risk of transport emissions out of the equation by using fully enclosed rail cars.

- This white paper outlines specific mitigation measures that would effectively control coal dust emissions and effectively mitigate fire/explosion hazards at the terminal site itself, and it is our understanding that the terminal operator is committed to implementing these measures.

- While only negligible amounts of coal dust would even be emitted from transport or terminal operations, it is important to keep in mind the following where any coal dust emissions are concerned:

    - Operations at OBOT will require an air permit through BAAQMD, one of the most stringent regulatory agencies in the U.S., and that air permit will have emissions limits with monitoring, recordkeeping, and reporting requirements to ensure that the facility will not cause or contribute to a violation of air quality standards (which are developed and enforced to be protective of human health and the environment).

    - Direct human contact with any dust deposited on soils would not harm health because the trace metal levels in the Utah-based coal shipped to OBOT are well within (or below) the background ranges for California soils and/or USEPA soil risk-based screening levels.

    - There will be no deposition of coal dust to waterways from the covered rail cars. Terminal operations may result in negligible coal dust emissions; however, if some of these emissions are deposited on site, they will be

regulated under NPDES permitting that require (1) proper treatment of process waters before discharge, (2) management of the site so as to minimize the prospect of their being captured in storm run-off and (3) monitoring of storm outfalls to determine the effectiveness of those management measures.

- Coal from Utah is a naturally-occurring mineral and will not be processed via chemical addition, treatment, burning, or any other means after it is mined and loaded onto rail cars for direct shipment to Oakland. In addition, coal and coal dust are not specifically regulated or defined as a hazardous material by USEPA, and are not included on the State of California's Proposition 65 list of chemicals known to cause cancer or reproductive toxicity. As for any industrial facility, worker safety will need to be addressed by conforming to Cal/OSHA standards for dusts in general and for coal dust.

HDR Engineering Credentials

Edward J. Liebsch

Sr. Air Quality Scientist

Education
Master of Science, Meteorology, Pennsylvania State University, 1981

Bachelor of Arts, Earth Science/Chemistry, Saint Cloud State University, 1978

Professional Affiliations
Air and Waste Management Association, 1996-2005

HDR Tenure
25 Years

Industry Tenure
34 Years

Training
Minnesota Title V Operating Permits, Minnesota Pollution Control Agency, 1995

MOBILE6 Emissions Model Workshop, FWHA, 2002

Project-Level Transportation Air Quality Analysis Workshop, FHWA, 2005

CALPUFF Dispersion Model, Bowman Environmental, 2005

MOVES Emissions Model Workshop, FWHA, 2008 & 2014

Professional Experience

Mr. Liebsch serves as a senior project manager and HDR's national technical expert for air quality efforts. His capabilities include dispersion modeling of air pollution, preparation of air quality permit (including PSD) applications, development of facility permitting strategies and regulatory evaluations with respect to local, state and federal air pollution regulations and statutes (Clean Air Act), and preparation of air quality analyses under National Environmental Policy Act (NEPA) and state environmental review programs.

Stationary Source Air Quality Project Experience

Mining

Sabine Mining Company, Hallsville, TX. Task leader for development of air emissions estimates and air quality regulatory applicability assessment for an environmental report as part of an Environmental Impact Statement. The EIS was required for expansion of the surface area of an existing lignite surface coal mine in east Texas.

Falkirk Mining Company, Bismarck, ND. Provided regulatory analysis and strategy assistance to Falkirk in assessing North Dakota Title V air emission operating permit requirements for a large surface lignite coal mine.

Inland Steel Mining Company, Virginia, MN. Managed project to assist in preparation of Minnesota Title V air emission operating permit application for taconite mine and ore processing facility.

I-Minerals, Bovill, ID. Air Quality technical lead for permitting and dispersion modeling of a proposed clay and sand mining and processing operation.

Kennecott Utah Copper, Third Party EIS, Magna, UT. As part of an EIS for a tailings basin expansion, provided QC/QC of air quality assessment sections of the draft EIS, including cumulative air quality impacts analysis.

LTV Steel Mining Company, Taconite Harbor, MN. Performed air dispersion modeling for monitor siting and re-permitting for coal-fired power plant and ore loadout facility at Taconite Harbor, Minnesota. Managed meteorological and air quality monitoring programs. Successfully completed Model Evaluation Study to select a site-specific dispersion model. Performed visibility impact modeling of power plant plumes and managed visibility monitoring program. Provided public comment response and negotiations with agencies, resulting in successful permitting outcome. Assisted in negotiating first mercury emission limit for a power plant in Minnesota.

LTV Steel Mining Company, Taconite Harbor, MN. Assisted in preparation of Minnesota Title V air emission operating permit application for taconite loading dock and 225 MW coal-fired power plant.

Confidential Client, ID. Air permitting strategy lead for preconstruction monitoring activities in connection with a prospective gold mining operation. Assisted in development of ambient air and meteorological monitoring plan and review of monitoring vendor proposals.

Reding Gravel and Excavating, Minnesota Registration Permit, Fairmont, MN. Project manager for preparation of a Minnesota registration (construction and operation) permit for a portable aggregate and rock crushing facility.

Industrial and Utility

American Crystal Sugar Company, Drayton & Hillsboro, ND; Crookston, Moorhead and East Grand Fork, MN. Provided regulatory review and permit application (including PSD) assistance for numerous projects at several sugar beet processing plants over 15 years.

Archer Daniels Midland Company, Enderlin, ND. Managed preparation of PSD permit application for addition of wood fuels to an existing biomass stoker boiler at an oil seeds processing facility. Permit application included dispersion modeling of criteria pollutants in comparison to NAAQS and PSD increments, air toxics dispersion modeling for demonstrating compliance with North Dakota's Air Toxics Policy, and Best Available Control Technology (BACT) analysis.

Army Corps of Engineers, 3rd Party EIS for Exxon-Mobile Proposed Gas Cycling Project, AK. HDR was the prime contractor supporting a confidential client and the USACE (Lead Federal Agency) in the preparation of a third party EIS. The EPA, USFWS, and State of Alaska are Cooperating Agencies. The EIS will evaluate the biological, physical, and social impacts associated with the development and operation of this proposed gas cycling project. The assessment will require analysis of complex issues such as proximity to Arctic National Wildlife Refuge, the recent ESA listing of the polar bear, and climate change. Mr. Liebsch provided QC/QC for the air quality and climate change sections of the draft EIS.

Confidential Client, CO. Air permitting lead in securing a minor air emissions construction permit for truck-to-rail crude oil trans-loading terminal in northern Colorado. Provided regulatory applicability evaluation and assessment of permitting options for client. Prepared permit application and provided draft permit review prior to issuance of the permit.

Confidential Client, ND. Air permitting lead in preparation of a minor air emissions construction permit for truck-to-rail crude oil trans-loading terminal in northwestern North Dakota. Provided regulatory applicability evaluation and assessment of permitting options for client. Directed preparation of construction air permit application to USEPA Region 8, which has permitting jurisdiction given project location on tribal land.

Consolidated Edison, New York, NY. Provided technical oversight and QA/QC for preparation of fourteen (14) Title V permit applications for electric generating facilities in New York, with combined capacity of several thousand megawatts. Facilities included oil and gas-fired steam and combustion turbine electric generating plants and equipment.

Department of Sanitation of New York City, Commercial Waste Management Study. New York, NY. Air quality technical leader for multi-facility impact analyses, including both stationary source and mobile source (intersection) dispersion modeling. Impact analyses included criteria pollutants (including $PM_{2.5}$), air toxics pollutants, and odors in accordance with New York City Department of Environmental Protection and New York State Department of Environmental Conservation policies.

Des Moines Water Reclamation Facility, Odor Control Project, Des Moines, IA. Task manager for odor dispersion modeling as part of an odor study and preliminary odor control alternatives design, for a 95 million gallon per day wastewater treatment plant in Des Moines, Iowa. Evaluated odor impacts from sludge digesters and handling activities, clarifiers, trickling filters, and other sources. Also provided consulting services for purchase and installation of an on-site meteorological monitoring tower, to be used in part for odor dispersion assessment.

Great Lakes Gas Transmission Company, Troy, Michigan. Developed and provided a one-day Prevention of Significant Deterioration/New Source Review permitting workshop to GLGT environmental staff.

Great Lakes Gas Transmission Company, Troy, Michigan. Provided dispersion modeling analysis of impacts from potential emergency venting operations for a segment of a large natural gas pipeline.

Hewlett-Packard, Boise, ID. As Air Quality task leader, provided technical oversight and QA/QC for dispersion modeling of criteria pollutant and air toxics emissions from a microelectronics production facility in Boise, Idaho.

Micron Technologies, Boise, ID. Provided technical oversight and QA/QC for air dispersion modeling of emissions from a microelectronics production facility in Boise, Idaho.

Marathon Ashland Petroleum LLC, St. Paul Park, MN. Provided technical guidance and quality assurance for a PSD permit application for addition of backup generators and compressors at a petroleum refinery in Minnesota. Provided PSD and Title V permitting technical guidance.

Monmouth County, New Jersey. Provided air dispersion and deposition (dry and wet) modeling in support of a health risk assessment and Prevention of Significant Deterioration of Air Quality (PSD) permit application for a proposed municipal waste combustor. Also provided QC for PSD pre-construction meteorological and air quality monitoring plans and review of monitoring data.

Municipal Energy Agency of Nebraska, Hastings, NE. Task leader for preparation of PSD air quality permit application, including BACT analysis, MACT evaluation, and dispersion modeling analysis, for addition of 220 MW coal-fired electric generating facility. Completed PM_{10} dispersion modeling analysis of regional sources to show ability to add new unit. Permit was issued in April 2004.

National Renewable Energy Laboratory, Navajo Generating Station Visibility Study, Page AZ. Under subcontract to NREL, for the Department of Interior, Mr. Liebsch managed the air quality and visibility components of an independent impacts study of potential additional NOx emissions controls on the 2250 MW coal-fired NGS. The project involved reviewing the emissions inventory, monitoring, and modeling results with respect to a potential retrofit of the NGS facility to further control NOx emissions. In collaboration with NREL staff, Mr. Liebsch presented the study findings to interested federal agencies in Washington DC.

Nebraska Public Power District, Beatrice, Nebraska. Air permitting technical lead for PSD permitting of 250 MW Combined-Cycle Electric Generation Plant. Provided technical direction for Best Available Control Technology (BACT) analysis and air quality dispersion modeling.

Nebraska Public Power District, Gerald Gentleman Station Units 1&2, Sutherland, NE. Project manager for preparation of BART analysis in accordance with EPA and Nebraska regulatory requirements and guidance, to evaluate technical feasibility of prospective emission control technologies (low-NOx combustion, wet and dry scrubbers, SNCR, SCR), the economic costs and environmental impacts of applying these technologies to the units, and the visibility improvements to be gained for each technically feasible technology (based on CALPUFF modeling of each option).

New England Fertilizer Company, Blue Lake WWTP Biosolids Permitting, Shakopee, MN. Provided technical direction and QA/QC for dispersion modeling of odor emissions from a wastewater sludge/biosolids drying facility located at a wastewater

treatment plant in Minnesota. Also, served same role for preparation of a Title V air emissions operating permit application for the biosolids drying facility.

New England Fertilizer Company, West Palm Beach Biosolids Facility Design and Permitting. Reviewed permit applications prepared by another firm and provided recommendations on permit limits and other conditions for emissions of criteria pollutants and mercury. Also provided review and recommendation of stack design options to demonstrate compliance with air quality standards through dispersion modeling.

Omaha Public Power District, Nebraska Public Power District, City of Grand Island, Hastings Utilities, NE. Managed project to complete CALPUFF dispersion modeling for six coal, oil & gas-fired utility plants in Nebraska, to estimate Class I area visibility impacts, and demonstrate whether each facility was exempt from Best Available Retrofit Technology (BART).

Omaha Public Power District, Nebraska City Station Unit 2, Nebraska City, NE . Managed the air emission permitting under Prevention of Significant Deterioration (PSD) rules for the Omaha Public Power Districts new 660 MW coal fired power plant at Nebraska City, Nebraska. Tasks included meteorological and monitoring data assessment, multi-state emission inventory for dispersion modeling purposes, dispersion modeling, Best Available Control Technology (BACT), and additional impact (including visibility) analyses for development of a complete permit application. Prepared a case-by-case Maximum Achievable Control Technology analysis with respect to mercury and other hazardous air pollutant emissions. Negotiated permit conditions and responded to comments made during the public comment period, leading to permit issuance in March 2005. Participated in EPC contract development and review for consistency with air permit requirements.

Omaha Public Power District, Cass County, NE. Managed preparation of Prevention of Significant Deterioration (PSD) permit application for installation of two nominal 173 MW simple-cycle combustion turbines in Nebraska. Application included dispersion modeling, Best Available Control Technology (BACT), and additional impact (including visibility) analyses.

Omaha Public Power District, Sarpy County, NE. Prepared PSD air quality permit applications, including BACT analysis and dispersion modeling analysis, for addition of 200 MW capacity addition (in two phases) to combustion turbine electric generating facility in Nebraska. Evaluated continuous emission monitor (CEM) requirements under CAAA acid rain regulations (Title IV).

Omaha Public Power District, Omaha, NE. Prepared request for policy determination, along with technical arguments, to USEPA regarding non-applicability of PSD/New Source Review rules for an increase in hours of operation at the Jones Street Station oil-fired simple-cycle combustion turbine electric generating facility. Received USEPA agreement on non-applicability of PSD/NSR.

Omaha Public Power District, Nebraska City Station Unit 1, Nebraska City, NE. Project manager for preparation of BART analysis in accordance with EPA and Nebraska regulatory requirements and guidance, to evaluate technical feasibility of prospective emission control technologies (low-NOx combustion, wet and dry scrubbers, SNCR, SCR), the economic costs and environmental impacts of applying these technologies to the unit, and the visibility improvements to be gained for each technically feasible technology (based on CALPUFF modeling of each option).

Pinellas County, Florida, Waste-to-Energy Facility. Provided technical support for construction and operating permitting and compliance activities for a 3000 ton/day waste-to-energy facility, producing approximately 75MW of electrical power.

Sabin Metal Corporation, Williston, ND. Provided project management and technical guidance for an Air Toxic and criteria pollutant analysis, on multiple projects, for a metals recycling facility in North Dakota. Analysis included over 20 metals and organic compounds.

Sauder Woodworking, Archbold, OH. Provided regulatory review, dispersion modeling, and permit application (including PSD) assistance for several projects at a woodworking facility and associated support facilities.

Solid Waste Authority of West Palm Beach, FL. Provided technical direction and QA/QC for revising and updating a Florida Title V permit application (originally submitted by another consultant) for a municipal waste incinerator facility and associated landfill.

Southeastern Industrial Land Services, Emerson, GA. Task leader for an odor study as part of a landfill siting feasibility study. The odor study consisted of estimation of odor emission rates and dispersion modeling to evaluate intensity of potential odor impacts on surrounding land uses.

Spokane Southside Landfill, Spokane, WA. Task leader for air dispersion analysis using EPA's AERMOD model, for converting from a flare to a biofilter as the emission control device for collected landfill gas. Analyzed potential impact of vinyl chloride with respect to Washington air toxics requirements, and hydrogen sulfide emissions, as a surrogate for odor.

Sunflower Electric, Holcomb Station, Kansas. Task leader for CALMET/CALPUFF dispersion modeling analysis of proposed power plant expansion to include either two or three new 700 MW subbituminous coal-fired electric generating units. Directed dispersion modeling analysis to evaluate visibility and pollutant concentration impacts on Class I national parks, wilderness areas and wildlife refuges.

Trigen, District Energy of St. Paul, MN. As a consultant to Trigen, provided technical guidance for Best Available Control Technology (BACT) analysis, regulatory evaluation, and QC for preparation of a PSD permit application for a wood and oat hull-fired cogeneration boiler in downtown St. Paul, Minnesota.

Union County, New Jersey, Waste-to-Energy Facility. Assisted in preparation of a modified PSD permit application, including dispersion modeling, to incorporate malfunction, startup, and shutdown conditions in the permit for a municipal waste combustor.

Western Lake Superior Sanitation District, Duluth, MN. Provided technical guidance and QC for preparation of a major amendment to a Title V air emission operating permit for a wastewater treatment plant in Duluth, Minnesota. Plant included digesters, boilers fed on digester gas, and a combined refuse derived fuel (RDF) and sewage sludge incineration unit.

NEPA & Transportation

Rail & Multimodal

Alaska Railroad Corporation, Ship Creek Intermodal Transportation Center, Anchorage, Alaska. Mr. Liebsch served as Task Leader for analysis of air quality impacts due to construction of a new railroad passenger terminal and parking garage. Mr. Liebsch performed analysis of parking garage emissions and directed air quality analysis of motor vehicle emissions at nearby intersections.

Alaska Department of Transportation and Public Facilities, Environmental Impact Statement for Whittier Highway/Tunnel Project, Whittier, Alaska. Mr. Liebsch

provided estimation and dispersion modeling of vehicle and locomotive emissions from highway links and tunnel openings, using EPA locomotive emission factors, MOBILE5A emissions model, and CALINE4 dispersion model. He prepared an air quality technical report and used MOBILE5A to estimate emissions of pollutants for purposes of ventilation assessment of a 2.5-mile tunnel to be used jointly by trains and motor vehicles.

Amtrak, Los Angeles Union Station Run-Through Tracks PSR, Los Angeles, CA. Mr. Liebsch was responsible for directing the air quality analysis and to providing definition of scope and technical guidance toward completion of the air quality study section of the EIR. Developed alternatives and evaluated the feasibility of extending bi-directional running tracks from the existing stub-end yard configuration at Union Station, across U.S. 101, reconnecting to the existing mainline along the Los Angeles River. Six alternatives were identified, from which a single preferred alignment was selected. The project included preliminary engineering and cost estimating, as well as a Preliminary Environmental Assessment and preparation of a Project Study Report.

BNSF Railway, Kansas City Intermodal Facility, Edgerton, KS. Air quality technical leader for development of air quality related information to support an Environmental Assessment (to be prepared by the Army Corps of Engineers) to evaluate impacts of construction and operation of large freight intermodal facility in the Kansas City metropolitan area. The facility would facilitate transfer of freight between trains operated on BNSF's primary intercontinental corridor and trucks bound for local/regional destinations.

Department of Sanitation of New York City, Solid Waste Management Plan EIS, New York, NY. Provided air quality technical direction for emissions calculations and dispersion modeling of mobile and stationary sources associated with solid waste transfer stations, and shipping container transfer to barges and rail cars. Air quality analysis included assessment of impacts from criteria pollutants, air toxics pollutants, and odorous emissions.

Detroit River Tunnel Partnership, Detroit, MI. Task leader for air quality impact analysis as part of an environmental assessment. Proposed project involved conversion of existing rail tunnel to truck use and construction of a new, double-tube rail tunnel under the Detroit River between Detroit, Michigan and Windsor, Ontario. Oversaw estimation of locomotive and truck in-tunnel emissions and use in dispersion modeling analysis using ISCST3 model. Also oversaw use of MOBILE5 emissions estimates and CAL3QHCR dispersion estimates to evaluate carbon monoxide impacts from highway intersections.

IBI Group, California High-Speed Rail EIR/EIS, Los Angeles, CA, San Diego, CA. Mr. Liebsch was responsible for providing air quality technical direction and quality control review for the analysis of pollutant emissions associated with locomotive traffic. HDR provided environmental, general engineering and technical support for a proposed high-speed rail (HSR) system within Southern California that would be a part of a proposed statewide HSR network stretching between the northern and southern portions of the state.

New York City Economic Development Corporation, Staten Island Transfer Station Rail Access, New York, NY. Air quality task leader for railroad vs. truck transport emissions analysis of solid waste to be collected at a transfer station. Directed analysis to compare truck and rail-related emissions from transporting solid waste from transfer station to distant disposal facilities, in support of an application to obtain federal funding under the Congestion Mitigation of Air Quality (CMAQ) program for development of rail infrastructure.

San Jacinto Rail, Limited/BNSF, Bayport Industrial Build-In, Pasadena, TX. Air quality technical leader for development of air quality related information to support an Environmental Impact Statement (prepared by the Surface Transportation Board) to evaluate impacts of construction and operation of a 12-mile rail line to serve an industrial area southeast of Houston, Texas. Assessed estimated air emissions increases in comparison to General Conformity thresholds due to ozone NAAQS non-attainment status of Houston area.

Surface Transportation Board, CN - EJ&E Acquisition EIS. Air quality and climate change task leader for environmental analysis, under Surface Transportation Board and NEPA regulations, of major railroad acquisition project in Chicago metropolitan area. Quantitative air quality analyses included dispersion modeling, using the MOBILE6.2 emission model and the CAL3QHC and AERMOD dispersion models, to estimate air quality impact of traffic at rail-highway at grade crossings, moving locomotives and idling locomotives. In addition, the analysis included an estimate of region-wide net emissions changes for the proposed action.

Surface Transportation Board, Conrail Acquisition Environmental Impact Statement, Washington, D.C. Air quality task leader for environmental analysis, under Surface Transportation Board and NEPA regulations, of major railroad merger proposal involving railroad facilities in 24 states. Used MOBILE5A model for estimation of CO, NOx, and HC emissions from vehicles. Oversaw emissions netting analyses in over 100 non-attainment and maintenance area counties in the eastern US. Directed analyses of air quality impacts from locomotive and motor vehicle (intersection) emissions scenarios.

Washington State Department of Transportation, Rail Office, Kelso-Martin Bluff Rail Corridor. Air quality task leader for Environmental Impact Statement to add a third rail to an existing 20-mile existing rail corridor serving both freight and passenger rail transportation needs. Estimated emissions from construction activities based on EPA emission factors, and for construction-related truck traffic, using EPA MOBILE5b emissions model.

Washington State Department of Transportation, Rail Office, Vancouver Rail Yard Bypass, Vancouver, WA. Air quality task leader for analysis of impacts due to re-configuration of an existing rail yard, as part of an Environmental Impact Statement. Directed analysis to estimate impacts at nearby residential areas due to emissions of particulate matter below 2.5 microns in diameter ($PM_{2.5}$) from locomotives that would travel on a yard bypass rail segment.

Washington State Department of Transportation, Rail Office, Point Defiance Bypass, WA. Provided air quality technical direction for preparation of an Air Quality Technical Report in support of an Environmental Assessment (EA). The EA was required to all federal approval of funding for a combined freight and commuter rail corridor to improve public transit in the southern portion of the Seattle-Tacoma metropolitan area.

Highway

Ada County Highway Department, Locust Grove Road, Boise, ID. As air quality technical leader, performed MOBILE5b emissions modeling analysis for major arterial, with overpass on I-84 west of Boise, Idaho. Provided technical oversight and QA/QC for dispersion modeling analysis to evaluate carbon monoxide (CO) impacts from two signalized intersections on Locust Grove Road.

Alaska Department of Transportation and Public Facilities, East Anchorage Corridor Study. Performed carbon monoxide (CO) emissions analysis of over two dozen transportation corridor alternatives for eastern Anchorage, based on output of TransCAD software, combined with MOBILE5b (COLD-CO Version) emission factors.

Alaska Department of Transportation and Public Facilities, Abbott Road Project Environmental Assessment, Anchorage, AK. Task leader for transportation air quality conformity analysis. Pursuant to State Implementation Plan (SIP) and NEPA requirements, performed MOBILE5A emissions modeling, QA/QC review of CAL3QHC dispersion modeling, and preparation of air quality report.

Arizona Department of Transportation, Pima Freeway Project, Segment 9B, Phoenix, AZ. Task leader for air quality impact analysis as part of an Environmental Impact Statement. Performed MOBILE5A emissions modeling, QA/QC review of CAL3QHC dispersion modeling and preparation of air quality technical report. Provided expert witness testimony in 2001 regarding air quality impacts on behalf of ADOT, after project implementation, contributing to jury decision in favor of ADOT, with no damages awarded to plaintiff.

Arizona Department of Transportation, 202L/US60 Traffic Interchange, Phoenix, AZ. Task leader for air quality impact analysis of a major flyover interchange on the Red Mountain Freeway. Performed MOBILE5B emissions modeling, QA/QC review of CAL3QHC dispersion modeling and preparation of air quality technical report.

Boise International Airport, Terminal Redevelopment and Roadway Improvement Project, Boise, ID. Project technical leader for transportation and general conformity air quality analyses as required under federal air quality rules and NEPA.

Department of Sanitation of New York City, Commercial Waste Management Study. New York, NY. Air quality technical leader for multi-facility impact analyses, including both stationary source and mobile source (intersection) dispersion modeling. Impact analyses included criteria pollutants (including $PM_{2.5}$) and toxic air pollutant analysis in accordance with New York City Department of Environmental Protection and New York State Department of Environmental Conservation policies.

Minnesota DOT, Cayuga and Maryland Avenue Bridge Replacement. Provided technical direction and QA/QC for the Mobile Source Air Toxics (MSAT) air quality analysis following Federal Highway Administration guidance. Emission factors for multiple MSATs were generated using MOBILE6.2 emission factor model by speed and vehicle type for comparison of MSAT emissions from traffic for future (2030) Build and No-Build conditions. The emissions analysis was conducted for the highway network covering all counties in the greater Minneapolis-St. Paul metropolitan area.

New York City DOT, Nostrand and Rogers Avenues, Bus Rapid Transit, NY. Air quality task leader for analysis of BRT project impacts on several intersections in Brooklyn, NY. Analysis used EPA's MOBILE6.2 emissions model and CAL3QHC dispersion model to estimate carbon monoxide (CO) emissions impacts.

New York City DOT, 1st and 2nd Avenue Manhattan, Bus Rapid Transit, NY. Air quality task leader for analysis of BRT project impacts on several intersections in Manhattan, NY. Analysis used EPA's MOBILE6.2 emissions model and CAL3QHC dispersion model to estimate carbon monoxide (CO) emissions impacts.

Utah Department of Transportation, Southern Corridor EIS, St. George, UT. Performed MOBILE5b emissions modeling, CAL3QHC dispersion modeling, preparation of air quality technical report, and preparation of EIS sections relating to air quality impact for a proposed new freeway corridor.

West Virginia Department of Transportation, West Virginia Route 2 Widening, I-77 to SR31, Parkersburg, WV. Task leader for air quality impact analysis. Performed MOBILE5A emissions modeling, QA/QC review of CAL3QHC dispersion modeling and preparation of air quality technical report.

Professional Endeavors

HDR Engineering, Inc.
Vice President, Senior Air Quality Scientist
July 1990 – present

Charter Senior Professional Associate

Recognizing that professionalism, superior technical development, and individual accomplishments are essential to its success, HDR grants this title to extraordinary professional staff who, through their creative efforts and dedicated commitment to personal excellence, have attained exceptional levels of technical and professional achievement.

St. Cloud State University
Adjunct Professor of Meteorology
September 1992 - May 1998 (part-time)

Martin Marietta Energy Systems, Inc.
Oak Ridge National Laboratory
Associate Scientist
November 1987 - June 1990

North Dakota Department of Health
Meteorologist & Environmental Scientist
March 1981 - October 1987

Selected Publications & Presentations

Liebsch, E. J. and M. G. Roberts 2013. Status of Air Quality and Solid Waste Rules Affecting Utilities. Presented at Rocky Mountain Electrical League, Power Supply Planning and Operations Conference, Denver, Colorado, March 7, 2013.

Liebsch, E., J. 2012. Major and Area Source Boiler Rules and Energy Assessments, Presented to DoD Air Managers Roundtable, Atlanta, GA, May 2-3, 2012.

Liebsch, E., J. 2011. Air Regulatory Impacts on the Coal Industry. Presented to American Coal Council, Coal Market Strategies Conference "Navigating the Bull & Bear of Today's Coal Industry," Colorado Springs, CO, August 22-24, 2011.

Liebsch, E. J. and M. L. Wollschlager 2011. Regulatory Update on Air Quality and Solid Waste Issues Affecting Utilities. Presented at Rocky Mountain Electrical League, Power Supply Planning and Operations Conference, March 3-4, 2011, Denver, CO.

Liebsch, E. J., S. P. Zilka, and J. F. Henz 2009. Potential Impacts of Climate Change on US Utility Infrastructure and Electricity Demand. Electric Utilities Environmental Conference, Feb. 1-4, 2009, Phoenix, AZ.

Liebsch, E. J. 2009. Air Emissions Regulatory Update for Utilities. Presented at Rocky Mountain Electrical League, Generation Conference, Denver, Colorado, June 10, 2009.

Liebsch, E. J., J. Morton, and David Seep 2007. Project Implementation and Air Quality Conformity Issues for Nonattainment Status Transitions. Presented at Railroad Environmental Conference, University of Illinois, Urbana-Champaign, IL. Oct. 23.

Liebsch, E. J., E. A. Grimm, and S. P. Zilka 2007. CALPUFF Analysis of Regional Haze Retrofit Options. Paper No. 561. Presented at 100th Annual Meeting of Air & Waste Management Association, Pittsburgh, PA, June 25-28.

Liebsch, E., J. 2007. Potential Climate Change Impacts on Upper-Midwest Utilities. Presented to Rural Electric Management Association, Duluth, Minnesota, September 27, 2007.

Liebsch, E. J. and M. K. Dunbar 2005. Clean Air Mercury Rule (CAMR): Implications for Utility Units Firing Powder River Basin Coal. Electric Energy, Issue 2, published by the Rocky Mountain Electrical League.

Liebsch, E. J. and E. A. Grimm 2005. Comparison of ISCST3 and AERMOD Results for Fugitive Dust Sources. Paper No. 625. Presented at 98th Annual Meeting of Air & Waste Management Association, Minneapolis, Minnesota, June 21-24.

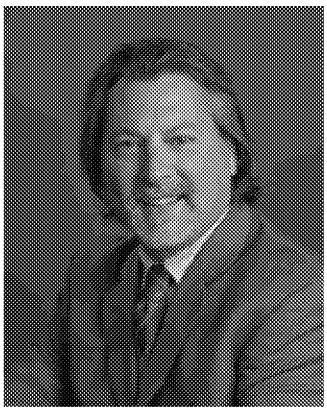
Liebsch, E. J. and D. Grennan 2005. Update on New Source Review and Equipment Replacement. Presented at Rocky Mountain Electrical League, Generation Conference, Power Plant Improvements and New Source Review, Denver, Colorado, January 27, 2005.

Liebsch, E., J. 2004. Clear Skies Update, presented at 55th Annual Generation Conference, Association of Rural Electric Generating Cooperatives, St. Paul, Minnesota, June 13-16.

Liebsch, E. J. and S. P. Zilka 2001. Evaluation of AERMOD in a Complex-Terrain, Shoreline Environment. Paper No. 321. Presented at 94th Annual Meeting of Air & Waste Management Association, Orlando, Florida, June 25-28.

Liebsch, E. J. 2000. Best Available Control Technology (BACT) Implementation Issues. Paper No. 00-360. Presented at 93rd Annual Meeting of Air & Waste Management Association, Salt Lake City, Utah, June 18-22.

Campbell, S. A., K. Jones, E. Liebsch, K. Winges, and K. Richmond 1992. Improved Methods for Wet Deposition Modeling for Waste Combustion Risk Assessment. Paper No. 92-84.11. Presented at 85th Annual Mtg. of Air & Waste Mgmt. Assoc., Kansas City, MO, June 21-26.



Michael Musso

Project Manager

MIke Musso is a Senior Project Engineer with over 20 years of experience in environmental engineering, consulting, and regulatory compliance. He has had hands-on experience with managing site investigations, human health risk and exposure assessments, and remedial design projects, including those with chemical and hazardous and solid waste management operations at industrial facilities. Mike has conducted several remedial investigation/feasibility studies (RI/FSs, including risk assessments; CERCLA and NYSDEC guidance) for soil, sediment, surface water, air, and groundwater investigations and remediation projects which have entailed the identification, screening, and detailed cost estimating of viable alternatives. He has developed detailed conceptual designs and project life cost evaluations for numerous projects.

As part of his technical responsibilities at HDR, Mike has performed baseline human health risk assessments and exposure pathway analyses for industrial, landfill, and proposed re-development sites. His expertise relating to exposure pathway analyses and conceptual site models are often utilized at the inception of many types of projects, and his input is sought in helping determine possible remedial requirements and associated costs/timeframes. He has reviewed and statistically analyzed data from several environmental media, including soil, groundwater, sediment, surface water, air, and soil gas. Portions of risk assessments on which MIke has worked have included the evaluation of vapor intrusion potential using Johnson & Ettinger (EPA) modeling and risk-based corrective action (RBCA) approaches. In addition, he has researched and summarized toxicological profiles (carcinogenic and noncarcinogenic effects of multiple contaminants including VOCs, SVOCs/PAHs, metals, pesticides/PCBs), and is familiar with "equivalence factors" used in assessing PAHs and dioxin. Depending on the level of effort required and contemplated end use of properties, MIke conducts qualitative or quantitative exposure assessments for different future use scenarios at various sites. He has developed site-specific risk-based screening levels and action levels for remediation at several sites based on the acceptable hazard index and carcinogenic risk ($1x10^{-4}$ to $1x10^{-6}$).

Mike has a working knowledge of toxicological and public health aspects of chemical development and use, along with an understanding of applicable state and Federal regulations. He is very familiar with the development and oversight of health and safety programs, and he has much knowledge in field procedures and environmental monitoring activities. He has collected soil, groundwater, and air samples at numerous sites and assembled soil boring, test pit, and monitoring well logs. Mike has prepared sampling methodologies, site characterization reports, and remedial action work plans (including Voluntary Cleanup and BCP projects in New York State, and Act 2 Land Recycling Program sites in Pennsylvania), and has been involved with the preparation of remedial design specifications and contract documents. Mike has also conducted Phase I environmental site assessments at numerous sites in New York and New Jersey. He is very familiar with the development and oversight of health and safety programs, and he has much knowledge in the theory and field procedures associated with industrial hygiene and environmental monitoring activities.

EDUCATION
Master of Science, Public Health, Columbia University, 2007

Master of Science, Environmental Engineering, Rutgers University New Brunswick, 1996

Bachelor of Engineering, Civil Engineering, Villanova University, 1991

ACKNOWLEDGEMENTS
HDR Professional Associate

REGISTRATIONS
Professional Engineer: New York

TRAINING
40-hr OSHA Training for Hazardous Materials Waste Activities;
8-hr Health and Safety Supervisor Training;
RBCA for Petroleum and Non-Petroleum Chemicals (3-day course at ASTM Headquarters);
NJDEP Subsurface Evaluation Certification for Underground Storage Tanks (USTs);
5-day Short Course: Hierarchical/Multi-objective Approach in Water Resources Planning and Management (University of Virginia); Program on Addressing Mold and IAQ Problems (1-day short course);
MCACES, 2nd Generation

(MII) Basic Training (3-Day course given by Project Time & Cost, Inc.); November 2008
Ecological Risk Assessment: Practice and Protocols (April 2008), Rutgers University (2-day course)

INDUSTRY TENURE
23 years

HDR TENURE
16 years

LECTURE EXPERINECE
NYWEA: Persistent, Bioaccumulative, and Toxic Compounds (PBTs). December 12, 2001.

NYWEA/AWWA: Human Health
Aspects of Pathogenic Protozoans Emphasizing *Cryptosporidium*. February 28, 2001.

Rockland County Municipal Planning Federation. *Cell Tower symposium*. November 26, 2007.

2009 Conference on Design and Construction Issues at Hazardous Waste Sites. *Overcoming Project Cost Uncertainties through Risk Analysis and Management Tools*. April 14, 2009.

2010 Green Remediation Conference (Amherst, MA). *Transparency in Selection of Sustainable Remedies*. June 17, 2010.

ACADEMIA
Adjunct Instructor, Columbia University (2009 – present): Mailman School of Public Health; School of International and Public Affairs. *Risk Assessment & Toxicology*

Topics: Arsenic (cost-benefit of treatment and

RELEVANT EXPERIENCE

Site 32 HHRA – Treasure Island
San Francisco, CA
Mike performed baseline human health risk assessments and exposure pathway analyses for this former U.S. Navy site in compliance with Navy, State (OEPA) and USEPA requirements (RAGS). The work was conducted on behalf of the U.S. Navy for an approximate 4.5 acre parcel ("Site 32") on Treasure Island (former Naval Base located in San Francisco, California). Mike evaluated exposure scenarios for adult and child residents along with commercial/industrial workers and construction workers for different environmental media. He characterized levels of cancer/non-cancer risks for all identified human receptors in current and future land use scenarios. Dermal, ingestion, and inhalation pathways were evaluated. Inhalation pathway assessments including the implementation of vapor intrusion and open trench volatilization models. Mike also conducted the overall uncertainty analysis for this HHRA. The TI Site 32 risk assessment work will be used in the ultimate remedy selection process for appropriate risk management at the site.

Grand Traverse Overall Supply site (GTOS) HHRA – Michigan, USEPA Region 5
Mike performed QA/QC reviews on several aspects of the Sullivan risk assessment. He assisted Sullivan with confirming exposure pathways to be included in HHRA. He formulated questions and clarifications to USEPA Case Manager. Mike reviewed portions of HHRA report text and tables for accuracy and presentation. He helped develop risk models for surface water ingestion (recreators) and human fish ingestion.

NYCDEP, Water Quality Risk Assessments for Kensico Action Plan
Mike scoped and conducted four (4) water quality risk assessments for land uses in the Kensico watershed. The studies were conducted on behalf of NYCDEP to support filtration avoidance determinations. Focused assessments included: Westchester County Airport (general audit of environmental practices, chemical uses, and stormwater runoff); Turf Management practices in a specific sub-basin (administer residential chemical use survey, interpret data, coordinate conservative model for the herbicide 2,4-D); and an office park in the watershed (audit of operations and compliance).

Lehigh Valley Industrial Park (LVIP)
MIke supported site re-development activities at the LVIP campus by interpreting environmental data, and completing land use reviews and human health exposure assessments. If required, quantitative analyses were provided. The re-development proposals were reviewed by PADEP under the Act 2 Land Recycling Program and USEPA Region 3.

USEPA Region 2 RAC – Gowanus Canal RI/FS
Brooklyn, NY
Mike served as HDR's project manager for the Remedial Investigation/Feasibility Study (RI/FS) for the Gowanus Canal Proposed Superfund Site under the Region 2 Remedial Action Contract. The Gowanus Canal is a 1.8 mile controlled waterway that has been the receiving water of centuries of industrial, stormwater, and combined sewer overflow (CSO) pollution. As part of the RI activities, the following field investigations were conducted:

- Bathymetric survey

risk reduction). 2001, 2002; 2010.

Risk Assessment Course: Overview of Risk-Based Corrective Action (RBCA) 2000.

- Sediment sampling (to support risk assessment and remedy screening)
- Surface water sampling
- Air sampling
- Fish and crab sampling
- Sediment core sampling
- Sampling at CSOs and other outfalls
- Groundwater sampling and water level measurements

USEPA Region 2 RAC – Peninsula Boulevard RI/FS

Nassau County, NY

Mike served as the project manager for the Peninsula Boulevard Groundwater Plume Superfund Site in Nassau County, NY. Aspects of the project have involved human health risk assessment, screening-level ecological risk assessment (SLERA), community involvement, and coordination/review of field activities. Mike reviewed alternate groundwater sampling approaches, such as multilevel wells and continuous multi-channel tubing (CMT) wells.

Shenandoah Road Superfund Site – Risk Assessment

HDR worked closely with Groundwater Sciences Corp. (GSC) to complete human health and ecological risk assessments for the client. MIke was the lead on the baseline human health risk assessment (BHHRA) deliverable, and also assisted with the Screening-Level Ecological Risk Assessment (SLERA) for the site. The BHHRA included statistical analysis of data; identification of COPCs; establishment of exposure parameters; evaluation of toxicological parameters for COPCs (including mutagens); risk characterization; and uncertainty analysis. HDR completed sediment and surface water sampling and data interpretation for an area downgradient of the source, where groundwater was noted to be daylighting. Mike participated in project meetings with the USEPA, NYSDEC, and the Client, and prepared data summaries against established human health and ecological benchmarks.Mike also performed community outreach by meeting with homeowners to discuss technical information on the site.

New Cassel Industrial Area (NCIA) – Human Health Risk Assessment for Off-Site Groundwater

Mike conducted a human health risk assessment on behalf of a work assignment from the USACE to evaluate off-site (downgradient) groundwater and justify remedial action. As part of the HHRA, groundwater data was evaluated in terms of aquifer and sampling methods, and statistical evaluation was performed to identify target COPCs (ProUCL software). Multiple exposure pathways were evaluated, including direct ingestion, dermal contact, and inhalation (via showering / bathing, and qualitatively via a potential vapor intrusion pathway). The HHRA was completed in accordance with USEPA guidance.

Ace Insurance – Claim Reviews

MIke is managing the tracking and technical review of environmental claims submitted by a retail gasoline company that includes more than 150 gasoline station sites in the Northeastern United States. Claim reviews include assessment of the nature and timing of spills/releases; review of investigatory and re-medial costs in terms of reasonableness and appropriateness; and verification of State agency directives in terms of remedial programs for USTs and remedial impacts.

The Related Companies
Staten Island, NY
Mike performed human health exposure assessments for baseline condition (abandoned oil refinery) and future use scenarios (NASCAR Raceway, Open Space park, Retail, and Warehousing). Identification of contaminates of concern in soil, groundwater, and soil gas, using project-specific standards and guidance (soil: NYSDEC RSCOs, EPA RBCs, EPA draft Vapor Intrusion Guidance; groundwater: NYS Class GA standards, EPA draft Vapor Intrusion Guidance; soil gas: EPA draft Vapor Intrusion Guidance and modeling based on J&E, actual geology, and anticipated attenuation factors given different end uses). Mike conducted and reviewed statistical calculations of soil background levels while identifying potential contaminants of concern (PCOCs) for the project. He assessed exposure frequencies and durations on on-site workers (field, office), spectators and other recreators (based on contemplated race events), and retail customers. Literature, raceway statistics, and EPA Exposure Factors handbooks were consulted to develop mean exposure scenarios.

The findings from the exposure assessments were presented to NYSDEC Region 2 and used to prescribe hot-spot soil remediation, vapor control in buildings, and to evaluate final ground cover options. Mike was involved in the conceptual design and costing of methane control alternatives along with VOC vapor intrusion options (vapor barriers, active/passive sub-slab venting).

Environmental Services including Operation, Maintenance and Monitoring (OM&M) of on-site water treatments system (Private Client; Active Private School Site, NYC – Ongoing)
New York, NY
As part of a voluntary cleanup project (NYSDEC Region 2), Mike has managed all environmental items during property transfer and construction of a new private school in Manhattan. He collected split samples and performed oversight of the PRP agents, and evaluated the need for vapor intrusion control due to residual contaminant levels in the subsurface. He was also asked to participate at school board meetings and community board meetings in Manhattan on behalf of the project. As part of on-going activities since the school construction was completed, Mike has provided design and OM&M services to an active water treatment unit at the site. He has obtained all necessary NYC discharge permits on behalf of the client and actively manages OM&M activities. Environmental auditing and exposure assessment continue at the school (indoor air testing with Summa canisters [TO-15 analysis]; HVAC reviews), under the Site Management Plan developed by Mike.

New York City School Construction Authority (NYCSCA) Environmental Services Term Contract
New York, NY
Mike served as program manager for the NYCSCA Environmental Services term contract. As part of his responsibilities, he coordinated over 20 projects throughout the New York City Boroughs, ranging from Phase I/II due diligence and property assessments, to vapor intrusion studies, contractor specification reviews, conceptual design and screening of remediation options, remedial action review and oversight, and public participation/risk communication. Mike was responsible for all staffing and scheduling, and created project scopes and budgets. He also participated at public hearings on behalf of NYCSCA.

Mirant, Lovett Power Generating Facility Decommissioning Project
Stony Point, NY
Mike is serving as the project manager for numerous "on-call" tasks to support environmental review and compliance during the 2.5-year demolition project. He is working closely with the client representatives, demolition contractor, and the NYSDEC. Tasks on which Mike has directed or been involved with have included: RCRA inventory of hazardous materials (pre-demo); Army Corps of Engineers permit applications for in-water work; sampling of tiles to support Beneficial Reuse of demolition materials as fill (obtained approval from NYSDEC); reviewed existing environmental data and prepared range of remedial options and associated costs; WWTP decommissioning; preparation of stormwater pollution prevention plan (SWPPP), including updates an modifications based on evolving site conditions and evaluation of SWPPP measures; prepare Site Characterization Work Plan and investigatory approaches to assess subsurface contamination.

Mirant, Bowline Unit 3 SWPPP
Haverstraw, NY
Since 2004, Mike has served as the engineer of record for the inspection work associated with the stormwater pollution prevention plan (SWPPP) notice of intent (NOI) filed for construction of Unit 3. He has reviewed and documented changes in site conditions, and approved / organized inspection reports in accordance with NYS regulations for stormwater management.

Dynegy, Acute Effluent Toxicity Testing (Danskammer Facility)
Newburgh, NY
As per the SPDES permit requirements for the Danskammer facility, Mike is managing an 12-month acute toxicity monitoring program. The program includes the assessment of potential impacts of specific effluent flows on two species: Ceriodaphnia dubia and Pimephales promelus. Mike has coordinated field sampling methods and laboratory analysis of acute toxicity. He has also reviewed site treatment processes, outfall flows, and storage of the flows of interest (coal pile runoff, metals wastes, and leachate from a solid waste management area). Mike is also interpreting results and will prepare a detailed report for NYSDEC.

United Water, Environmental Impact Statement for Proposed Desalination Plant along Hudson River
Haverstraw, NY
Mike has been involved in creating and reviewing chapters of the EIS for the proposed facility, alternate site, and "No Action" scenarios. His focus area for the EIS is the topic of Public Health, and how the implementation, construction, and long-term maintenance can impact various human health receptors.

NYSDEC New Cassel Industrial Area
Long Island, NY
Mike prepared qualitative human health exposure pathway analyses under NYSDEC review. These analyses consisted of identifying site-specific contaminants of concern and potential exposure points for human receptors (direct contact, drinking water). Mike developed remedial investigation/feasibility studies (RI/FSs), including conceptual designs of soil, dry well, and groundwater remediation systems, cost estimates, data analyses, and reports. Remedial alternatives that were identified and assessed (based on feasibility, cost, and other CERCLA parameters) included: Soils- excavation + off-site disposal; soil vapor extraction (SVE); monitored natural attenuation (MNA); Groundwater – air stripping/soil vapor

extraction (AS/SVE); In-Well circulation/vapor stripping systems (emerging technology); pump and treat with activated carbon, and MNA.

NYSDEC Multi-Site Preliminary Assessments
As project manager for eight Preliminary Site Assessment (PSA) sites under a NYSDEC work order, Mike managed all field activities, personnel, and subcontractors related to the work. Sites included a mix of industrial facilities with various histories of chemical uses and discharges, including freons, PCE/TCE (solvents and dry cleaning fluids), pesticides (from on-site manufacturing), metal plating, and illegal solid waste disposal. Mike maintained close contact with the NYSDEC case manager, coordinated site access for field work, and prepared the final PSA decision-making forms and reports detailing the findings, conclusions, and recommendations.

Standby State Superfund Contract (D006129) - Inspection and Monitoring (I&M) of Subslab Depressurization (SSD) Systems
Statewide, NY
Mike is the project manager for this statewide SSD System I&M program that consists of inspecting and monitoring over 370 systems across the State. He is responsible for managing major subtasks, including work plan development, routine I&M, non-routine maintenance, annual reporting, and assistance with NYSDEC data transfer and databasing. He coordinates and manages public communication, subcontractor procurement and management, staff training, and detailed financial tracking. The work includes tracking and reporting success rates of I&M tasks (e.g., success rates of obtaining access to homes; completion of recovery system repairs), and on program financials.Mike prepares periodic program updates to NYSDEC. The total project cost is $500K.

Standby State Superfund Contract (D006129) - Feasibility Study: Former Raeco Products Site,
Rochester, NY
Mike is currently managing the feasibility study for the former Raeco Products site. The project has entailed a detailed review and interpretation of all pre-existing environmental data; identification of major areas of concern (AOCs) for VOC, SVOC, and metals contaminants in surface soil, subsurface soil, soil gas / indoor air, and groundwater; identification and screening of viable remedial alternatives for the contaminants and media of concern; development of conceptual costs for remedial alternatives; assistance with Proposed Remedial Action Plan (PRAP) development. The total project cost is $50K.

NYSDOT Mineola Property Assessment and Remediation
Long Island, NY
Mike's responsibilities on this project involved supervision of the subsurface investigation (geophysical surveys plus soil and groundwater sampling at an active commercial facility) and subsequent data interpretation. He prepared budget estimates and managed field activities, HDR staff, and subcontractors during site investigation and UST removal activities. Mike also completed a human health exposure assessment that was integral to spill closure from NYSDEC Region 1. Potential impacts to groundwater were a key issue, as site over the local sole source aquifer.

NYSDOT Bronx River Greenway and UST Removal Evaluation
New York, NY
Mike's responsibilities in these projects involved supervision of the subsurface investigations and subsequent data interpretations of several properties. He prepared budget estimates and managed field activities, personnel, and subcontractors. He also coordinated with various stakeholders such as property owners and NYC government agencies.

NYSDOT Annsville Circle Assessment and Remediation
Westchester County, NY
For this investigation and remediation at a future NYSOPRHP kayak launch facility in Westchester County, Mike coordinated geophysical surveys and subsurface investigations. Based on data interpretations and meetings with project stakeholders, Mike prepared remediation specifications and bid documents which entailed source removal, soil erosion and sediment control, transportation and disposal of contaminated soil, oxygen releasing compound (ORC®) application, and site restoration. He managed field activities, personnel, and the remediation contractor.

Former Salina Landfill Human Health Risk Assessment
Salina, NY
Mike performed the baseline human health risk assessments and exposure pathway analyses. As part of this effort, he reviewed and analyzed data from several environmental media; researched the toxicological profiles (carcinogenic and noncarcinogenic effects) for numerous contaminants; evaluated the exposure scenarios for different environmental media; and characterized levels of risks for various human receptors in current and future land use scenarios. Mike also coordinated with the ecological risk assessor for this project, by sharing data interpretations and reviewing EPA methodologies.

NJDEP – Hudson County Chromate Waste State Superfund Project
Hudson County, NJ
For this NJDEP Superfund project that consisted of 23 individual sites, Mike conducted in-depth file reviews, initial investigations (audits), and historical reviews and assembled Background Investigation Reports for NJDEP. He developed Site Specific Work Plans for the characterization of chromate waste contamination in soil and groundwater; conducted detailed building inspections and completed findings reports; and developed site conceptual models, indicating potential paths of chromate waste transport and possible human risk/ecological risk.

Wireless Telecommunication Facility Reviews
Ongoing, Multiple NYS Municipal Clients, NY
Mike serves as the HDR program manager for wireless telecommunications facility siting projects on behalf of several NYS municipalities. He has been project manager for wireless facility siting efforts for the villages of Rye Brook, Port Chester, Scarsdale, Haverstraw, Goshen, and Sleepy Hollow, the City of Mount Vernon, and the Towns of Greenburgh, Somers, Newburgh, and Marlborough in NY. Responsibilities have included the technical reviews of applications for completeness (FCC, local codes); assessment of coverage and capacity information; analysis of health and safety criteria relating to non-ionizing electromagnetic radiation; coordination of field surveys and visual impact analyses; and participation at public meetings. Mike has reviewed wireless telecommunication facilities (code/ordinance items, analysis of decommissioning procedures, inventory

and inspection of sites) and developed and managed a wireless locational plan study for the Village of Sleepy Hollow. A key issue with wireless telecommunication facility projects involves the real and perceived issues of radio frequency emissions at base stations (cell towers, roof top installations). Mike completed a three-day training course (Narda) in health & safety and assisted with reviewing emission calculations and field measurements.

Ikea Retail Site
Brooklyn, NY
As part of the work HDR performed on behalf of an attorney for Ikea, Mike evaluated soil and sediment data and assisted with the preparation of a Work Plan and Clean-up Agreement under the NYSDEC's Brownfields Clean-up program. Data interpretations included statistical review and correlation of on-site soil data and near-shore sediment data from the Hudson estuary. Areas of Concern (AOCs) were identified to address soil and groundwater contamination.

Remediation of Soils impacted by Mercury, Confidential Multiple Client
Westchester County, NY
Mike managed follow-on assessment and clean-up of residual mercury contamination at a former battery manufacturing facility. Geoprobe delineation sampling was conducted around two hot-spot areas, and in-situ stabilization / solidification was selected as the viable remedy for the contamination. Mike coordinated pilot testing of stabilization mixes, and coordinated the contractor during field operations that included stabilization / solidification of one of the hot-spots and excavation with off-site disposal for the second hot-spot. He was also involved in the planning of site re-development, and provided input on potential health and safety issues for the re-development contractors.

USACE Kansas City District/USEPA Region II, Indefinite Delivery Architect-Engineer Service Contract
Mike is responsible for the review and costing analysis for investigatory services performed by Subcontractor. He is overseeing Investigation activities that were assessed include: initial groundwater assessment; additional soil and groundwater sampling; installation of shallow and deep overburden monitoring wells and rock wells; establishment of long-term groundwater monitoring plan; and data management. Mike performed independent costing analyses to assess proposed Subcontractor efforts. Remedial Design cost is $1.8M.

Jones Sanitation Superfund Site Remedial Design and Construction Management
Hyde Park, NY
Mike conducted technical reviews of historic site information and activities that led to the impact of environmental media with chlorinated solvents (VOCs) and metals. He reviewed HTRW field investigation methods and corresponding data including groundwater, surface water, soils, leachate, solid waste and air. Mike assisted with the identification and screening of remedial options/costs used in the FS. Engineering services Project costs were $1.3M.

Attachment 1

JENSEN HUGHES

Technical Memorandum with respect to the potential bulk transfer of coal at the proposed Oakland Bulk and Oversized Terminal Project

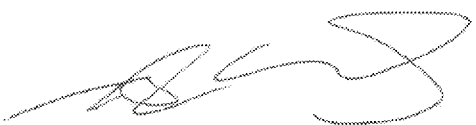
Our File Number: FV152422
Date of Report: September 15, 2015

Prepared for: California Capital & Investment Group

Prepared by: JENSEN HUGHES

Peter L. Senez, M.Eng.

Reviewed by:



Andrew Coles, M.Eng., P.E. (FP 1650)

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Table of Contents

1.0 INTRODUCTION

The following provides a qualitative assessment relative to the potential risks associated with the potential distribution of coal at the Oakland Bulk and Oversized Terminal (OBOT) Project. It is our understanding that no commitment has been made to include or exclude any particular commodity at OBOT, were it to transport coal. OBOT would receive coal in rail cars and then convey it from the rail cars to enclosed temporary storage buildings. When the product is ready for shipping, it would be conveyed from the storage buildings to ocean vessels for transport.

Coal is a chemically stable material that has typical risks associated with the handling of bulk commodities such as sugar, grain, wood chips, sulphur or other materials. Proper operation, storage and handling allows for the control and mitigation of potential fires and explosions during the transfer process. These hazards are well understood by industry.

Designers are required to follow relevant fire codes and applicable design standards that address the potential fire risks. This possible use at OBOT does not present a disproportionate hazard compared to other commodities, all of which have a strong safety track record and infrequent event occurrence. The fire and life safety risks associated with the movement of the goods is readily addressed using good, standard fire protection engineering practices.

The location and scale of the site correspond with the opportunity to transfer coal at this location in a safe and reliable manner when using proper engineering controls and mitigation procedures.

2.0 COAL AND COAL DUST PROPERTIES

The hazards associated with coal have been extensively studied and are well understood. Coal is primarily carbon, and an industry-established quality (or rank)[1] defines the amount of carbon. The coal that potentially would be transported to the facility would primarily be Utah bituminous coal, which is considered a high rank coal and is less likely to pose a hazard than lower ranking coal.

The coal would be transported from the mine in a post-production state approximately the size of golf balls (1-2" diameter). As the coal is handled during transfer (loading and unloading), coal particulate breaks away producing "fines." It is the production of fines that may create dust that requires management. During transfer operations, the fines may become airborne, creating a dust cloud within the process and requires controls and mitigation measures to limit contact with ignition sources to prevent the potential for a dust cloud explosion.

These issues with regard to material handling of coal are reflected in industry design standards and best engineering practice documents.[2,3,4,5] Under atmospheric conditions coal dust is stable, and it requires a combination of numerous factors occurring at the same time (e.g., moisture content, temperature, humidity, dust particle size, dust concentration and an ignition source) to be considered dangerous. Fire

[1] https://www.uky.edu/KGS/coal/coalkinds.htm

[2] NFPA 68: Standard on Explosion Protection by Deflagration Venting, 2013 Edition National Fire Protection Association, Quincy, Massachusetts, USA

[3] NFPA 704 Standard System for the Identification of the Hazards of Materials for Emergency Response, 2012 Edition, National Fire Protection Association, Quincy, Massachusetts, USA

[4] Approved Code of Practice for the Prevention of Sulphur Fires and Explosions, Occupational Safety and Health Service, Department of Labour, Wellington New Zealand, June 1993

[5] NFPA 120, Standard for Fire Prevention and Control in Coal Mines, 2015 Edition, National Fire Protection Association, Quincy, Massachusetts, USA

protection engineers incorporate design features in the material handling of the product to limit this hazard, which will be considered in the design of the OBOT facility. Coal is comparable in relative risk of explosion to many regular household commodities such as powdered milk, soy flour, and sugar and other products such as sulphur.[6]

With respect to fire, coal is an ordinary combustible that requires the input of energy in order to ignite. Oxidation of the coal can lead to an ignition process known as spontaneous combustion – whereby internal self-heating occurs eventually leading to ignition. Many materials are recognized for this potential including hay, canola meal, wood chips, all of which are prone to spontaneously ignite when stored for extended periods. Extended storage is not anticipated at OBOT given that it is primarily a transfer terminal. Further, it is anticipated that only higher ranked coal (which is less likely to spontaneously combust) would be received and temporarily stored at OBOT.

Any concerns with the potential risk of spontaneous combustion can readily be addressed through safe design and handling practices to detect the early development of heating within the coal piles, and thereby offset the potential for ignition in advance of the reaction reaching the combustion stage. Means to reduce the risk of spontaneous combustion include monitoring and trending of combustible gases and pile temperature, and potentially controlling the oxygen within the storage building to limit combustion potential. The design of the facility will therefore have the benefit of a modern understanding of risks and the implementation of current industry guidelines on management of storage piles. These risks can be limited through good design, and monitored using detection equipment to identify when potential conditions are developing in piles, and allowing for appropriate response.

Therefore, controlling fines during the material handling (dumping and processing) and managing storage (monitoring gas and temperatures, moisture content and pile management) will provide a safe operating environment. However, should a fire or explosion event occur, there will be protection measures that address potential incidents by suppressing or containing it to a localized, manageable event.

3.0 FACILITY DESIGN

Based on the risks identified above related to transport, handling and storage of coal, the following features will need to be taken into consideration in the design of the facility.

1. Dumping Process
    - Manage drop distance and dust cloud formation.
    - Use rail cars that dump from the bottom of the car.
2. Limit Dust Accumulation
    - Limit formation of dust where possible.
    - Use dust extraction systems in the dumping hopper to remove dust from the process.
    - Use misting systems to wet the product as it is dumped.
3. Mitigate Ignition Sources
    - Eliminate, to the greatest extent reasonably possible, static electricity by grounding all equipment and using materials that will not "encourage" the buildup of static charge.

[6] See Footnote 2.

- Appropriately protect electrical equipment in protective enclosures as required by codes and standards.
- Mitigate tramp metal introduction into the process.
- Monitor bulk temperature entering the process from the rail cars to the storage piles.
- Provide spark detection in conveyance equipment.

4. Building Design
   - Use explosion relief vents as required by the codes and standards.
   - Provide suitable separation distances from adjacent buildings and structures to limit the potential for damage to other structures and limit risk to any offsite facilities.
5. Storage
   - Limit air circulation and additional handling in the pile to prevent oxygen infiltration.
   - Adhere to good industry practice and process for pile shape, packing in layers, and pile height.
   - Regulate monitoring of piles for internal temperatures and gas production
6. Emergency Management
   - Develop detailed emergency response plan with the local emergency responders.
   - Design the site to provide access and necessary equipment.
   - Properly train and educate emergency responders and facility operators.
   - Regularly maintain and inspect fire protection equipment.

4.0 CONCLUSION

In conclusion, the risks of fire and explosion occurrences in coal handling and storage are well understood and can be readily managed. If an event did occur, there would be systems in place to limit the risk to life and property. The design of the facility will follow well-established industry guidelines and will implement the measures identified above to mitigate, to the greatest extent reasonably possible, the risk of fire or explosions.

Appendix A

JENSEN HUGHES

CV of Peter Senez

JENSEN HUGHES

PETER L. SENEZ, P.Eng.

Executive Vice-President – Canadian Operations

Experience: 22 Years
With Sereca, a JENSEN HUGHES Company: 12 Years

Education

B.Eng., Mechanical Engineering
Concordia University, 1993

M.Eng., Fire Protection Engineering
University of British Columbia,
1997

Ph.D. Mechanical Engineering (Fire)
in progress
University of Waterloo
2013 - present

Registered P.Eng.

- Alberta
- British Columbia
- Manitoba
- Ontario
- Saskatchewan

Registered FSE

- Singapore

Associations

Member, Society of Fire Protection Engineers (SFPE)

Member, International Association of Arson Investigators

Member, NFPA

Member, International Association of Fire Safety Science

Member, Institution of Fire Engineers

Contact

(604) 295-3420
psenez@sereca.com

Peter Senez is an experienced and well-respected authority in the field of fire engineering. Active in the fire industry for over 20 years, Mr. Senez has diverse and unique industry experience with expertise in fire engineering, building and fire code consulting, fire testing, risk and failure relative to fires and explosions. Relative to fire investigation, he has investigated and analyzed fires in vehicles, structures, heavy equipment, aircraft, boats, forests, marine complexes, commercial buildings and large industrial facilities. Peter practices internationally in both forensics and fire protection engineering design and includes work in the US, Canada, Hong Kong, Singapore, Malaysia, UAE, Saudi Arabia and Trinidad. He has testified as an expert in fire investigation, fire code compliance, and fire engineering and has completed over 1,000 fire investigations. He has also chaired and managed numerous significant and high profile large losses and is familiar with the complexities of analyzing sites, evaluating systems, and identifying modes of failure or potential mechanisms for causation.

PROFESSIONAL HIGHLIGHTS

Vice President, Canadian Operations, JENSEN HUGHES (formerly Sereca Consulting), Vancouver, BC, 2003–present. Responsible for Canadian operations, Peter is leading the expansion of the company to establish an unparalleled reach through Canada and internationally. Formerly the CEO of Sereca, which merged with JENSEN HUGHES in 2015, Peter has provided leadership in the growth and development of fire and forensic services and leads many large projects and forensic analyses.

Throughout his career he has focused on technically challenging and complex fire engineering problems servicing architects, insurers, developers, lawyers, owners, and manufacturers. He provides leadership in professional engineering services on large infrastructure and complex building projects and is often imbedded as the leader of the fire protection and life safety team. With a combined engineering and practical fire background, expertise has been developed in many aspects of mechanical and fire engineering, including mechanical systems, fire behavior, heat transfer, fire growth, combustion dynamics, sources of ignition, ventilation tenability, risk assessment and explosion dynamics.

Specific to the process industry, Peter has been involved in analyzing event causation, mitigation and risk assessments for a range of products and hazardous material processes, including wood processing, coal mining, lithium batteries, sulfur, gasoline, manufacturing, hydrogen, LPG, LNG, wheat and canola storage, sugar, and other materials and products that require safe handling practices and storage arrangements.

Senior Engineer, Fire Group, MacInnis Engineering Associates Ltd, Vancouver, BC, 1999-2003. Senior Engineer responsible for the technical investigation of fire and explosion incidents. Conducted fire and explosion investigations, including scene investigations, evaluation of fire spread mechanisms, establishment of causation, assessment of building design and the preparation of expert reports. Coordinated a series of full-scale fire tests on dwellings to evaluate different modes of fire behaviour with and without ignitable liquids. Used computer fire modeling to evaluate fire and smoke behaviour in buildings, and predict burn patterns and smoke detector response.

Fire Protection Engineer, Locke MacKinnon Domingo Gibson & Associates Ltd., Vancouver, BC, 1993-1999. Provided building and fire code consulting services to architects, engineers, developers, and legal firms. This included the evaluation of industrial manufacturing facilities and analysis of specialized fire protection systems and hazardous materials. Fire testing options and standards were reviewed for manufacturing clients, including room fire tests, fire-resistance tests, and small-scale testing procedures. Fire testing was coordinated with laboratories and the test results were analyzed to engineer product variations. Equivalencies were developed based on industry research and testing to meet the intent of prescriptive building and fire code requirements. Acceptance of equivalencies with authorities having jurisdiction was coordinated.

Fire Protection/Mechanical Consultant, Public Works Canada - Architectural & Engineering Services, Vancouver, BC, July–September 1993. Evaluated building plans for compliance with applicable codes and fire safety standards. Reviewed pier and wharf construction for small craft harbours and performed marine inspections. Developed a building upgrading plan. Conducted engineering work on strain gauges, non-destructive test methods, pumps, hydraulic calculations, and specification preparation.

Sergeant/Fire Inspector and Fire Fighter, Town of Otterburn Park, QC, Otterburn, Quebec, 1988-1993. Responded to fires, accidents, and other emergencies. Developed and implemented a fire prevention program for commercial establishments. Analyzed the water distribution network and made recommendations to improve its effectiveness.

PUBLICATIONS

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Senez P, Calder K, Milford A., Coles A. Response of Structures Under Extreme Loading, Protect 2015, Lansing, MI, USA, Jun 28-30, 2015

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Engineering Evidence in Civil Litigation, The Continuing Legal Education Society of British Columbia, January 2014

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Fire Chiefs' Association of British Columbia, June 2012

Fire Investigation – from Art to Science
National Justice Institute Science Seminar, Vancouver, BC, March 2012

Differences in Fire Behaviour where Accelerants are Used
Canadian Bar Association Hot Topics in Civil Litigation and Insurance Law , Banff, AB, October 2009

Integrated Risk
Red River Valley Mutual Insurance, Altona, MB, April 2008

Reverse Engineering – Applying Fire Science to the Analysis of Real Fires
Canadian Insurance Claims Managers Association Annual Seminar, Winnipeg, MB, April 2008

30-Storey Residential Care Facility Canadian Case Study
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Redefining Concepts of Flashover Theory
Fire Prevention Officers' Association of BC, Annual Seminar, May 11, 2006

Applying Fire Theory to Burn Pattern Analysis and Origin Determination
Fire Prevention Officers' Association of BC, Annual Seminar, May 11, 2006

Flashover at 600°C – maybe but probably not!
Society of Fire Protection Engineers BC Chapter, May 30, 2005

Mock Trial: Expert Fire Cause and Origin Testimony
Singleton Urquhart Fire Litigation Group and the I.A.A.I B.C. Chapter 15, November 13, 2003

Fire Analysis for Insurance Claims
Huston Grant Adjusters, Kamloops BC, September 17, 2003

Methodology and Investigation Tools for Fire Analysis
The International Association of Arson Investigators, Saskatchewan Chapter, Regina, SK, September 10, 2003

Research in Fire Analysis & Computer Modelling
Society of Fire Protection Engineers, St. Laurent Chapter, Montreal, QC, June 14, 2002

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Alberta Association of Special Investigators, Red Deer, AB, May 23, 2002

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Society of Fire Protection Engineers, BC Chapter, Vancouver, BC, March 5, 2002

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Singleton Urquhart Fire Seminar, Vancouver, BC, March 2001

Forensic Fire Engineering
Canadian Insurance Claims Managers Association, Monthly Meeting, Vancouver, BC, January 2001

Commissioning of Fire and Life Safety Systems
Building Officials Association of British Columbia, Education Seminar, Richmond, BC, December 1999

A Forensic Look at the Future
Forensic Fire Engineering Seminar Presentation sponsored by Shumka Craig & Moore Adjusters Canada Ltd. and Lindsay Kenney, Barristers & Solicitors, Vancouver, BC, November 1999

A Forensic Analysis of a Montreal Building Fire
Third International Conference in Fire Research and Engineering, Chicago, IL, October 1999

Full-Scale Fire Test Method to Evaluate Materials and Fire Safety Systems
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Assessing the Fire-Resistance Rating of Tile-Spaced Concrete Floor Assemblies in the former Woodward's Department Store
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Society of Fire Protection Engineers, BC Chapter, Vancouver, BC, March 1998

EARTHJUSTICE

ALASKA CALIFORNIA FLORIDA MID-PACIFIC NORTHEAST NORTHERN ROCKIES
NORTHWEST ROCKY MOUNTAIN WASHINGTON, D.C. INTERNATIONAL

September 21, 2015

Via Electronic Mail

Oakland City Council
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Oakland, CA 94612
(510) 238-2386
cityclerk@oaklandnet.com

Re: Proposed Oakland Coal Export Terminal

To the Oakland City Council:

I am writing on behalf of the Sierra Club, West Oakland Environmental Indicators Project ("WOEIP"), San Francisco Baykeeper, and Communities for a Better Environment, to provide a response to the September 8, 2015 letter sent by Stice & Block LLP and attachments on behalf of the Oakland Bulk and Oversized Terminal, LLC ("OBOT"). The Sierra Club, WOEIP and other groups are dedicated to protecting community health and promoting environmental justice, and have many members who live, work, and recreate in and around the former Oakland Army Base. Due to the numerous health and safety risks posed by the transportation and storage of coal in the West Oakland community, they strongly oppose the development of a coal terminal at the former base and urge Oakland City Council to act to prevent this dangerous commodity from being part of OBOT.

The Stice & Block letter raises various points which are not supported and which require further clarification to ensure that the City Council has accurate information on which it can base its decision regarding development of the proposed coal export terminal. It is notable that nowhere in the Stice & Block letter do they argue that coal was ever discussed in <u>any</u> environmental review or funding application for the Oakland Army Base Redevelopment project—the simple answer is that it was not.

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This letter sets forth clarification on these key points:

1. **Jobs Development**

The Sierra Club, WOEIP and other groups support development of the former Army Base, including the development of a bulk terminal at the site, and the additional economic opportunities that such development will bring to the City. If anything, bringing coal into the equation will put this project at risk because the international coal markets are in a state of collapse and the broad consensus is that coal is a bad investment. That risk associated with coal will also put project jobs at risk. The Stice & Block letter suggests that quashing the proposed coal terminal will result in the loss of thousands of construction and waterfront jobs. (*See* p. 1.) This is inaccurate – a non-coal bulk terminal project will still result in the creation of numerous construction and waterfront jobs, and indeed could result in better quality and safer jobs than a coal terminal which will bring a small handful of low-quality and dangerous jobs to city residents.[1]

2. **Project Entitlements and California Environmental Quality Act**

The Stice & Block letter notes that environmental review for the Army Base development was conducted pursuant to the California Environmental Quality Act ("CEQA"). What the letter does not note is that neither the Environmental Impact Report ("EIR") completed in 2002, or the Initial Study/Addendum completed in 2012, mentions the possibility of shipping coal through the bulk terminal or analyzes the many hazardous effects of shipping, handling, transporting and burning coal. As set forth in the Sierra Club, WOEIP's and other groups' letter of September 1, 2015, as well in the expert testimony submitted to the City Council on September 21, 2015[2], shipping coal carries unique hazards and poses great risks to the surrounding community.

The complete absence of environmental review for the proposed coal terminal, coupled with new information concerning the developer's commitment to ship Utah coal, requires further CEQA review of the effects of the proposed coal terminal. (*See* Pub. Res. Section 21166; CEQA Guidelines section 15162.) As shown by the attachments to the Sierra Club, WOEIP and other groups' comment letter of September 14, 2015

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[1] *See* September 1, 2015 Letter of Sierra Club, WOEIP, *et. al.* and the September 21, 2015 Expert Report of Tom Sanzillo for additional information on the poor job creation potential of a coal export terminal, **attached hereto as Exh. A.**

[2] *See e.g.*, September 21, 2015 Expert Reports of Dr. Phyllis Fox and Dr. Deb Niemaier, **attached hereto as Exhs. B** and **C**.

proposed coal terminals in the Pacific Northwest have undergone extensive environmental review. The same rigorous standards for environmental review should be applied here.

Prior to this year, there was no opportunity for the City or community members to request this additional environmental review. Indeed, until very recently, project developers stated that the Army Base development would not involve coal shipment – for example, in a 2013 newsletter, project developer Phil Tagami stated that: "CCIG is publicly on record as having no interest or involvement in the pursuit of coal-related operations at the former Oakland Army Base."[3]

The Stice & Block letter does not cite to any documents showing that the City and the developer actually discussed the prospect of shipping coal through Oakland prior to conducting environmental review. The standard for environmental review is not, as Stice & Block suggests, that the City or community should have guessed about the aim of a project. The Stice & Block letter cites only to a Freight Transportation Forecast and a Proposal by the Tioga Group, Inc. – none of which show that a dedicated coal terminal was actually part of pre-agreement discussions between the City and developer or the environmental review for the project. Here, new information regarding the developer's commitments to ship Utah coal requires further environmental review.

3. **Health Impacts of Coal Terminal**

The Stice & Block letter sets forth various inaccurate and/or misleading statements in asserting that the proposed coal terminal will not have adverse health impacts on the community. (*See* pp. 4-5.) As set forth in the Sierra Club, WOEIP's and other groups' letters from September 1, 2015 and September 14, 2015, development of the coal terminal will create numerous health and safety risks, which add to the already serious health hazards present in the West Oakland neighborhood. Various other groups and commenters will provide the City with additional information about the health and safety risks associated with coal transportation at the September 21, 2015 hearing. As set forth in these sources, given the unique hazards of coal, constructing and operating a coal terminal will add to the existing pollution burdens in the community, rather than diminishing the pollution burdens placed on the community.

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[3] *See Oakland Mayor, Port Developer in Dispute over Plan to Ship Coal,* KQED July 22, 2015 quoting CCIG's December 2013 newsletter. http://ww2.kqed.org/news/2015/07/06/oakland-mayor-port-developer-in-dispute-over-plan-to-ship-coal

The tentative terminal plans posted by the developer just last week in September 2015 do not provide adequate assurances that the public will be kept safe from risk. This last minute ad hoc disclosure of terminal design plans underscores how the public has been kept in the dark about the proposed coal terminal and the design for such terminal. As set forth in the expert reports of Phyllis Fox and Deb Niemaier, submitted on September 21, 2015, **attached hereto as Exh. B** and **C,** there are still significant risks associated with the proposed terminal design. In addition, as acknowledged by the developer, these plans are still subject to change and therefore do not provide information about the final design or mitigations that will be used at the terminal.

The Stice & Block letter also suggests that the project is in "full compliance to date with the City-imposed mitigation obligations of the project that have led to enhanced air monitoring." (p. 4.) However, given that the City and the community only learned about the developer's commitment to ship coal this year, there are no enforceable mitigations in place that account for the particular and unique public health and safety risks of coal transportation and storage. Thus, "full compliance" with the current mitigation measures contained in the development agreements provides no actual protection from coal risks. None of the serious problems raised in Dr. Phyllis Fox's report are addressed by any of these existing mitigation conditions. Further, Stice & Block cannot point to any specific measures among the supposed "myriad federal, state, regional, and local laws and regulations" which apply to the terminal and would provide protection from coal risks.

4. **Coal Trains and Dust**

As the attached report of Dr. Fox extensively details, coal trains lose dust in massive amounts – 500 pounds to a ton of coal can escape from a single loaded coal car, which amounts to 68.300 tons of coal dust (136,600,000 lbs) that could be emitted from the three trains/day serving the proposed coal terminal at OBOT. As set forth in this group's prior letters and in the testimony from the September 21, 2015 public hearing, this dust poses a significant health and safety risk to Oakland in terms of air and water pollution, potential for train derailments, and a myriad of other impacts.

While Exhibit B to the Stice & Block letter shows pictures of an uncovered coal train on one day in Oakland and claims that since there have been no complaints to date and that such trains must have no negative impact, this argument has no support. To set the record straight, coal trains do not regularly move through Oakland. The Port of

Oakland itself neither imports nor exports any coal.[4] Coal trains heading to the private Levin-Richmond terminal in Richmond do not regularly move through Oakland because the shorter rail route is one that enters from the North. The Union Pacific rail lines serving the Levin-Richmond terminal move coal from Utah to Richmond via a Northern route through towns like Reno, Auburn, Roseville, Sacramento, and then Davis, Fairfield, San Pablo, the community of Parchester Village, and Richmond.[5] There is a southern route via Las Vegas and the Central Valley cities of Fresno and Stockton that could theoretically be used that would pass through Oakland en route to Richmond, but given that the mileage is longer and more expensive for coal shippers, it is not the preferred route. It is our understanding that occasional overflow rail traffic may necessitate the rare coal train sitting in Oakland.

In other words, coal trains moving through Oakland right now are a rare occurrence. If Oakland were to build a coal terminal, however, there would be a massive increase in regular coal train traffic--at least 3-4 unit coal trains/day or more (unit trains usually contain 100 rail cars or more). *The volume of coal that is proposed to be shipped through Oakland is* ***ten times*** *the amount currently moving through the private Levin-Richmond facility.* The community of Richmond currently complains about the dust it experiences from a regular, but lower volume of coal traffic for a terminal that ships around 1 million tons of coal/year.[6]

If the Oakland City Council acts to eliminate coal from the OBOT, it may not see any coal trains since it is not even clear that coal will continue to be exported from the Levin -Richmond terminal after the end of 2015.[7]

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[4] *See* Email to Commissioner Gordon from Port of Oakland, August 6, 2015 and Report of Tom Sanzillo.

[5] Or the route from the North could move from Sacramento to Stockton, Pittsburg/Antioch, Concord, Martinez, then San Pablo, Parchester Village and Richmond. *See e.g.*, Union Pacific Coal Rail Routes, https://www.up.com/customers/coal/mines/index.htm and https://www.up.com/customers/coal/ports-docks/index.htm.

[6] Coal Train Dust Worries Richmond Residents, KQED, June 22, 2015, http://ww2.kqed.org/science/2015/06/22/coal-train-dust-worries-richmond-residents/.

[7] According to a SEC filing made as part of an initial public offering by the Utah coal company that proposed to ship coal through Oakland, Bowie Resource Partners, their contract with Levin-Richmond is expiring at the end of 2015. *See* Bowie Resource Partners LLC S-1 at 39, *available at:* http://www.sec.gov/Archives/edgar/data/1631790/000104746915005595/a2225124zs-1.htm.

5. **Federal Preemption**

The Stice & Block letter, along with the attachment from Venable LLP, claim that any efforts by the city to regulate its own terminal and the associated rail traffic are preempted by federal law, which is wrong in two ways. First, the City's ability to regulate the terminal itself is clearly not preempted by federal rail law. *See CFNR Operating Co. v. City of American Canyon*, 282 F. Supp. 2d 1114 (N.D. Cal. 2003). Second, the City does retain police powers to protect the community health and safety, even over rail operations. *See Flynn v. Burlington Northern Santa Fe Corp.*, 98 F. Supp. 2d 1186 (E.D. Wash. 2000).

The federal statute that regulates rail lines and rail traffic, the Interstate Commerce Commission Termination Act (ICCTA), does preempt many state and local laws with regards to rail traffic. However, as the Court noted in *CFNR Operating Co. v. City of American Canyon*, that preemption "does not reach local regulation of activities not integrally related to rail service." 282 F. Supp. 2d at 1118; *Flynn v. Burlington Northern Santa Fe Corporation*, 98 F.Supp.2d 1186, 1189-90 (E.D.Wash.2000) (noting that "ancillary railroad operations" such as "truck transfer facilities" are not subject to federal preemption) (*citing Borough of Riverdale—Petition for Declaratory Order— The New York Susquehanna & Western Railway Corp.*, 1999 WL 715272, STB Finance Docket No. 33466 at 10 (9/9/99). Further, the City still retains police powers over rail, such as the ability to enforce local building, fire, and electrical codes. *Borough of Riverdale, Petition for Declaratory Order The New York Susquehanna & Western Railway Corp.*, 1999 WL 715272, STB Finance Docket No. 33466 at 8-9 (9/9/99).

OBOT's counsel suggests that it would assert federal preemption as a defense to City efforts to regulate its operations. As noted above, the City has some limited regulatory powers in this arena. Further, to the extent that federal rail preemption does apply, this should serve as a major red flag for the City of Oakland about how dangerous this project truly is. Indeed, OBOT, CCIG and TLS's argument outlines the fact that there are currently no regulations—local, state, or federal—that force OBOT to use covered rail cars or do anything else to prevent fugitive dust escaping from coal cars, including using other dust control measures like surfactants or load profiling.[8]

[8] The only federal Surface Transportation Board rules on loading practices for coal like surfactants and load profiling pertain to loads originating in Montana and Wyoming, not Utah.

The best way for Oakland to ensure that it does not have the dangers associated with coal trains is to make sure that it utilizes its powers to prevent coal from being shipped from the proposed bulk terminal. Simply put, if other commodities are shipped from the bulk terminal—like corn, wind turbines, and the like--there is no reason for rail lines located in Oakland or within the Army Base to ship coal.

6. **Vested Rights and The Development Agreement**

Contrary to Stice & Block's assertions, there is nothing in the development agreements or associated documents that creates a vested right to export "coal." (see pp. 6-7.) The 2012 Development Agreement describes the bulk terminal development as "a ship-to-rail terminal designed for the export of non-containerized bulk goods and import of oversized or overweight cargo."[9] Similarly, in the Transportation Corridor Improvement Funds ("TCIF") application for the project, the bulk terminal is described as "for movement of commodities such as iron ore, corn and other products brought into the terminal by rail...[t]he terminal would also accommodate project cargo such as windmills, steel coils and oversized goods."[10] As discussed above, as recently as 2013, the developer for the project plainly stated that the Army Base development would not involve facilities for the shipment of coal. The prospect of shipping coal out of the Army Base development was not something contemplated by the parties at the time the development agreements were finalized, and is only a recent change on the developer's part. There can be no vested right arising out of the agreement if the purported right to ship coal was never agreed to by the parties. (*See,* Civ. Code section 1636, "a contract must be so interpreted as to give effect to the mutual intention of the parties as existed at the time of contracting"; *TRB Investments, Inc. v. Fireman's Fund Ins. Co.* (2006) 40 Cal.4th 19, 27).

Further, pursuant to the explicit terms of the development agreements, the vested rights provided by the such agreements will always be subject to modification by City regulation, provided that such regulation is: "(a) otherwise permissible pursuant to Laws…, and (b) City determines based on substantial evidence and after a public hearing that a failure to do so would place existing or future occupants or users of the

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[9] LDDA, Attachment 7 – Scope of Development for the Private Improvements, Section C.1.

[10] *See* Amended TCIF Baseline Agreement, August 22, 2012, at p. 31. *Available at*: http://www2.oaklandnet.com/Government/o/CityAdministration/d/NeighborhoodInvestment/OAK038485

Project, adjacent neighbors, or any portion thereof, or all them, in a condition substantially dangerous to their health or safety."[11]

Both prongs of this test are met here. First, as set forth in the Sierra Club, WOEIP, *et. al's* September 1, 2015 letter, City regulation in this instance is permissible under long-standing authority authorizing municipalities to use their zoning and police powers to prevent the occurrence of dangerous activities within municipal borders.[12] Further, as set forth above, there is no conflict with federal laws. Second, based on the undersigned parties' submissions of September 1, September 14, and at the September 21 hearing, as well as the submissions made by other parties at the September 21 hearing, the City has the substantial evidence it needs to make a finding as to the health and safety risks of the proposed coal terminal. Thus, the City's regulation to protect public health and safety is consistent with the terms of the governing agreements as well as applicable laws.

Finally, even if an operator is already operating a facility (which is not the case here—in fact, TLS only has an option agreement at this juncture), such activity does not create a "vested right" immunizing that facility from complying with regulations designed to ensure public health and safety. (*See e.g., Standard Oil Co. v. Feldstein* (1980) 105 Cal.App.3d 590; *Hardesty v. Sacramento Metropolitan Air Quality Management Dist.* (2011) 202 Cal.App.4th 404.)

* * *

[11] Development Agreement at Section 3.4.2; *available at https://oakland.legistar.com/LegislationDetail.aspx?ID=1427119&GUID=9122B74A-273F-4343-B954-F848BC668685*

[12] *See Marblehead Land Co. v. City of Los Angeles*, 47 F.2d 528, 531 (9th Cir. 1931)(upholding city authority to use zoning ordinance to protect residents from fire hazard and noxious gases resulting from oil drilling operations); *Friel v. Los Angeles County*, 172 Cal.App.2d 142, 157 (1959); *Hermosa Beach Stop Oil Coalition v. City of Hermosa Beach*, 86 Cal.App.4th 534, 555 (2001).

Thank you for your consideration of these comments. As you are aware, while community groups whole-heartedly support the economic revitalization of Oakland, they are greatly concerned about the serious health and safety consequences of allowing coal exports to pass through Oakland. The City of Oakland has the chance to act as a local and national leader in committing to protect its residents from a dangerous fossil fuel and should act now to prevent the development of the proposed coal export terminal.

Sincerely,

Irene Gutierrez, Earthjustice Attorney
On behalf of:
Sierra Club, West Oakland Environmental Indicators Project, Communities For A Better Environment, San Francisco Baykeeper

cc: Honorable Mayor Libby Schaaf
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EXHIBIT A

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City of Oakland

City Council Public Hearing

September 21, 2015

Executive Summary of testimony by Tom Sanzillo

Coal is a risky investment for Oakland and will not yield the export activity predicted by the developer.

Domestic coal demand is declining, and many coal companies are in dire financial straits. Several U.S. coal companies have filed recently for bankruptcy.

Thermal coal markets are in a state of collapse. The broad consensus among investment houses globally is against investment in coal mines, ports or the coal trade.

Foreign coal demand is also declining, especially in China and India, and coal prices are at historic lows.

Bowie Resource Partners, the mining company behind the Utah-sponsored coal portion of this project, has an eroding domestic market share and would make a weak partner for a port deal.

Coal is not currently part of the commodity mix that has built the Port of Oakland, and it does not need to be part of the Army Base Terminal project. In fact, a commitment to coal will work to undermine the financial viability of the project. The promised benefits of coal exports through the terminal are unlikely to materialize (that includes the 2,300 permanent jobs identified by the operator.

Accepting the proposed investment from the State of Utah will create risks for the public financing for the larger Army Base development. The Utah financing may not meet its own program's rules and obligations. The Utah investment in itself is a red flag; it suggests that private financiers are avoiding major coal investments. The failure of the coal portion of the project would ultimately require a public bailout. The risks associated with the proposal are not worth it.

What is your name and background?

My name is Thomas Sanzillo and I am Finance Director for the Institute for Energy Economics and Financial Analysis (IEEFA). I have served in this capacity since May 2012, but have been involved in fossil-fuel finance matters since September 2007. At IEEFA, I research, prepare, and supervise studies, memos and testimony and speak publicly on a range of fossil-fuel issues. Topics on which I have authored, co-authored or provided related research include: U.S. domestic coal markets and plant finances, U.S. coal-producer and mine finance and financial regulation, federal coal leasing in the Powder River Basin (PRB), federal coal subsidies, federal/state mine reclamation, coal ports and coal exports, utility finance, and public power financials (including those of municipal power systems, rural cooperatives and state power agencies). My work has involved energy and coal issues in at least 25 states. I have testified before three Public Service Commissions (Minnesota, Wisconsin and Colorado) and submitted affidavits in three coal-related federal proceedings as well as before an administrative proceeding at the Export-Import Bank.

My work also includes analysis of global economic trends, coal markets and the global seaborne thermal coal trading market. I have co-authored a number of international coal-market studies related to India and Australia (with our office in Sydney) and to the Norwegian pension fund, and provided oversight, research and direction on a global analysis of coal markets with Carbon Tracker Institute. In addition I have published a number of reports related to coal export matters on the U.S. West Coast and Gulf of Mexico.

Prior to my work with IEEFA, I served for 17 years (1990-2007) in various senior management positions in New York City and New York State government finance. My last position was First Deputy Comptroller for New York State (and I served for a short period as the State Comptroller due to an early resignation). The New York State Comptroller serves as the sole trustee of a $156 billion, globally invested public pension fund, and as chief accountant, procurement officer, and chief auditor for state finances and agencies and local governments. Duties include reviewing and approving most public debt.[1] Of particular relevance to this proceeding are the several dozen audits, reviews and reports that I authored or supervised during those years on economic development incentives, public authority finance and governance and job creation.

Who are you representing?

I represent the Institute for Energy Economics and Financial Analysis, which has been invited by the Sierra Cub to present testimony.

[1] Thomas Sanzillo, *The New York State Comptroller's Office*, The Oxford Handbook of New York State Government and Politics, Oxford University Press, 2012.

What is the scope of your testimony?

I have been asked to:

1. Provide basic background on the status of U.S. and global coal markets as they pertain to the potential for exports out of the Oakland Army Base Redevelopment project.
2. Provide comment on the financial risks of the introduction of coal into the commodity mix for the Oakland Army Base Redevelopment project.

What is the main point of your testimony?

The Oakland Army Base[2] developer is taking a major financial risk by relying on coal to provide 49 percent of the commodity mix for expansion of the terminal. This reliance on coal will jeopardize what should otherwise be a successful project. A worldwide consensus of investment banks and powerful financial indicators points to the fact that global coal markets are in a state of collapse and there is little likelihood of a turnaround in the foreseeable future. The project has a high likelihood of default.

Bowie Resources, the coal company associated with this project, is a weak financial partner. In addition to being subject to the pressures of the global market downturn, the company is under extreme pressure in its domestic coal business, as coal plants currently buying coal from its mines have announced retirements. IEEFA's careful review of the company's proposal finds it unrealistic and very likely to fail.

The State of Utah's pledge of financial assistance to the Oakland Army Base project is a red flag that warns of financial distress and underscores the lack of private financial investment in the coal industry today. Even the parent company of Bowie Resources, Trafigura, a large international firm with a $36 billion asset base, is unwilling to risk additional capital for this highly speculative export project.

Utah's financial participation in this deal presents risks both to the State of Utah and the City of Oakland. From the Utah side, the deal is unprecedented in size. Whether Bowie Resources can commit to a 30-year deal is highly questionable. In addition, a series of program-integrity questions have been raised, and the transaction, if approved, would require the waiver of significant existing program rules.

From the City of Oakland's point of view, the ultimate likelihood of being unable to move coal through the port will simply mean the City and the Oakland Army Base will fail to meet their revenue targets. With so many public dollars committed already to this project, the failure of the coal portion of the enterprise would require additional public commitments to fix a problem that is avoidable.

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[2] The Oakland Army Base Redevelopment is owned in part by the City of Oakland and in part by the Port of Oakland. The coal proposal is for the city side of the project. The Army Base project is now known as Oakland Global. The Oakland Army Base or Army Base Redevelopment will be used to refer to this project.

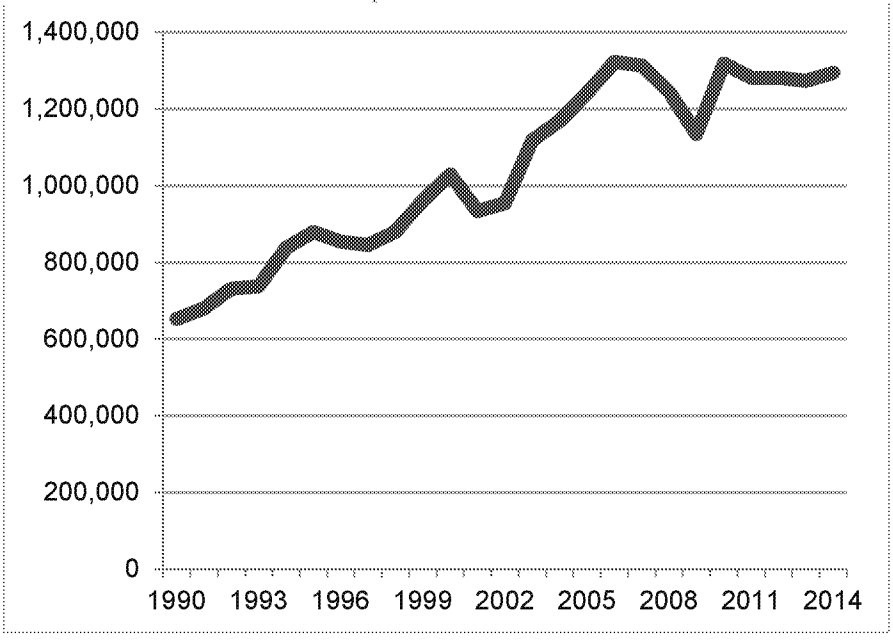
COAL MARKETS AND THE PLAN TO MOVE COAL THROUGH THE OAKLAND ARMY BASE REDEVELOPMENT

What is the current commodity mix at the Port Oakland, and is the Port growing?

The Port of Oakland has grown into a strong diversified-commodity business despite a challenging and complex array of labor and global cross pressures.[3]

The Port of Oakland is the fifth largest container port in the U.S. In 2014, nearly 2.4 million intermodal containers (TEUs) passed through the port. Since 2000, container-shipping exports out of the Port of Oakland have increased 26 percent, though levels have been approximately constant since 2008. The value of goods passing through the port totals $40 billion annually.

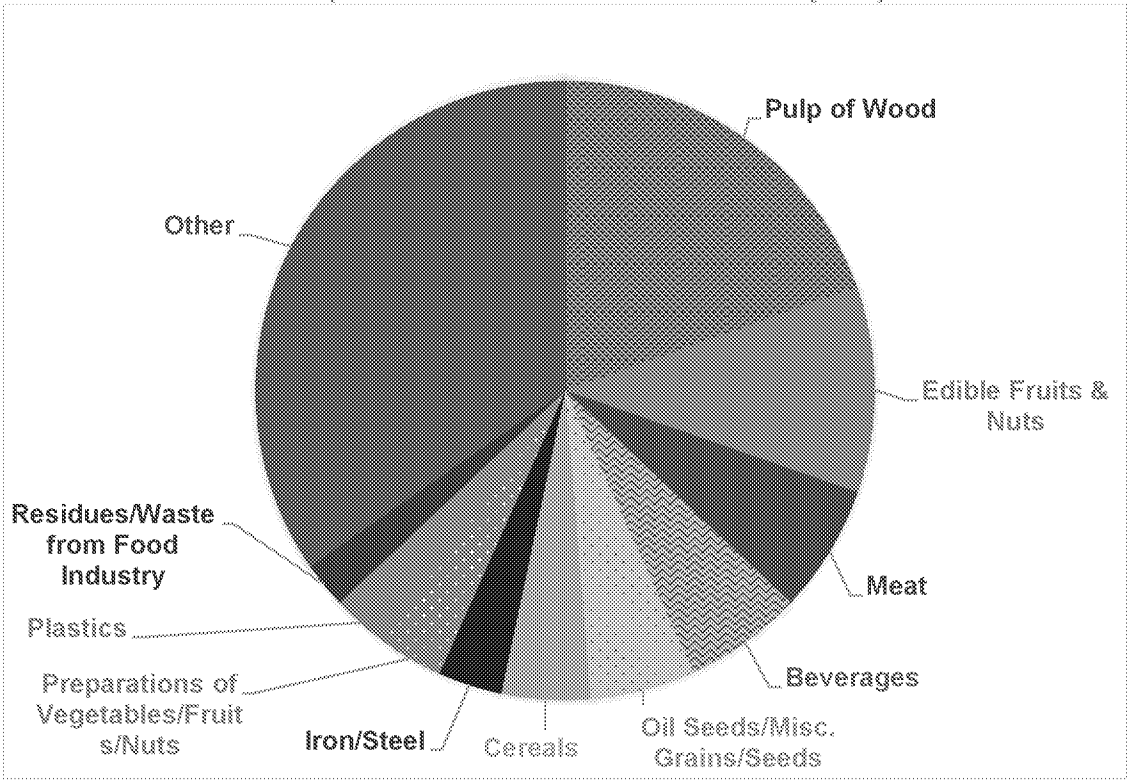
Table I: Container Exports From Port of Oakland



The chart below shows the diversity of commodities exported from the Port of Oakland. In 2014, the largest exports by tonnage were wood pulp, edible fruits and nuts, and meat. The port's success is tied to its commitment to commodity diversification.

[3] http://www.wsj.com/articles/u-s-west-coast-ports-lost-cargo-shipping-share-in-july-1441314829

Table II: Commodities Exported from Port of Oakland 2014 (tons)



Coal is not currently exported from Oakland. Adding coal to the commodity mix for the new Oakland Army Base Redevelopment project will undermine the project's financial strength.

Why is coal being added to the commodity mix at this time?

The thesis of the expansion project developer, California Capital Investment Group (CCIG), and operator Terminal Logistics Solutions LLC (TLS), is that the Army Base Redevelopment project's financial structure will be strengthened as a whole if any commodity, coal included, can be shipped through the port.[4] Under normal circumstances, and from a strictly financial view, there might be a case to add coal to this mix. However, these are not normal circumstances, and there is no financial case to be made for coal exports through the Oakland Army Base.

The coal company involved in the deal, Bowie Resources, seeks to export coal as part of a last-chance bailout strategy for an industry that is in a state of permanent, structural decline.

The U.S. coal industry is rapidly losing market share for electricity generation within the U.S. During the 1990s and early 2000s the U.S. coal industry claimed a 50 percent market share[5] and produced 1 billion tons of coal per year for electricity. In 2015, coal will supply 34 percent of

[4] http://ww2.kqed.org/news/2015/07/06/oakland-mayor-port-developer-in-dispute-over-plan-to-ship-coal
[5] The last time coal's share of the electricity market exceeded 50% was in 2003. See: http://www.eia.gov/electricity/monthly/current_year/december2013.pdf, Table 1.1 Net Generation by Energy Source

market share and the coal industry is projected to produce 800 million tons of coal.[6] A recent report by UBS projects that by 2030 coal's share of the electricity-generation market will shrink to 18 percent.[7]

Competition from natural gas, renewables and energy-efficiency programs have eroded coal's claim to being the least-cost option for electricity in the U.S. Growing public concern, evidenced by increased regulatory enforcement and other forms of public opposition, have prevented new coal plants from being built. The coal industry has dropped plans to build 180 new coal-fired plants over the past 15 years and is now hobbled by retiring, aging coal plants. Forty-two U.S. coal producers have declared bankruptcy since 2012.[8] The leading U.S. coal producers—Arch Coal, Peabody Energy, and Alpha Natural Resources— have all lost in excess of 90 percent of their share value over the past five years, a time in which the Dow Jones Industrial Average has risen by 53 percent. This means that while the U.S. economy is growing, the coal industry is not. Recently, Kevin Crutchfeld, the CEO of Alpha Natural Resources, put it this way: "Even as the United States has enjoyed modest annual gross domestic product growth during the past five years, demand for coal along with coal prices have fallen sharply over the past four years, reaching a 10-year low during the summer of 2015."[9]

During the late 2010s, as the industry began to recognize that its market share in the U.S. was in decline, it embarked on a strategy that was akin to an "export or die" scenario. Buoyed by growing coal demand and high prices in Asia (circa 2008-2011), coal producers in western state invested in new ventures to increase imports off the West Coast, and numerous coal ports were proposed.[10] In the ensuing months and years, however, global coal demand and prices have collapsed, compounding the problems of U.S. domestic coal producers. Many U.S. coal producers, including Bowie Resources,[11] the producer that seeks shipping capacity through the Oakland Army Base, are continuing to press a failing exports agenda.

What was once seen by the U.S. coal industry as a panacea for its financial future has now become another set of failures and liabilities in the form of broken port deals, sunk costs, canceled ports and growing public opposition.

The financial health of the Oakland Army Base Redevelopment project rests in part on the diversity of commodity shipments from growing industries. The Port of Oakland does well with this strategy, and it does well without coal in its portfolio. There is no reason for the Army Base Redevelopment to include coal as part of its business strategy.

The City of Oakland can look to what is happening in other locations on the West Coast where coal export terminals have been proposed in the past. Some of these coal export terminals have been shelved due to a weak market for coal (see below). Some have been scuttled in favor of other viable development choices. Washington State, for example, in cancelling several proposed coal export terminals, has made clear that it can find economic partners whose future is stronger and less risky than that of the coal industry. The State of Washington AFL-CIO has recently pointed out that the Washington economy is robust and has created

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[6] Amanda Luhavalja, *Residential power sales slip 1.7% during 1st half of year,* SNL, September 9, 2015

[7] Julien Dumoulin-Smith, UBS Analyst, Pondering the Future Fuel Mix (revised), U.S. Electric Utilities and IPP's. Global Research, UBS, September 14, 2015

[8] Taylor Kuykendall, *Roster of U.S. Coal companies turning to bankruptcy continues to swell,* SNL, June 4, 2015.

[9] Molly Christian and Aira Fawad, *Falling coal prices pinch U.S. producers sales margins despite cost cuts,* SNL, September 11, 2015.

[10] http://www.opb.org/news/article/coal-score-card/

[11] http://www.richfieldreaper.com/news/local/article_e13121f0-dd67-11e4-b956-3ff480cc1929.html

economic-development choices.[12] Washington has many port-proposal choices from many industries. Since coal is a financial laggard and its future is clouded by climate and environmental risks, organized labor has shied away from coal proposals, noting that coal is a weak partner both financially and environmentally.

Transport Logistics Services (TLS), the designated terminal operator says the terminal, once up and running, will support 2,335 permanent jobs.[13] Permanent jobs require a steady stream of product moving through the terminal, product that generates revenue to pay employees. It is unlikely the coal demand from Asia will materialize. Intermittent employment is more likely, reflecting at best the irregular deal flow that some coal producers have established in Asian markets. Washington labor organizations are more supportive of projects from industries other than coal because they prefer partnerships with industries that produce regular deal flow, steady work and regular payrolls.

How can you be so certain that the coal industry's current financial problems are permanent? Don't most industries go through cyclical downturns and then come back?

Independent investment analysts overwhelmingly project severe retrenchment in the global thermal coal market. These perspectives have been well known for several years. Four major investment firms (Bernstein Research, Citibank, Goldman Sachs, and J.P Morgan) released perspectives in June, July, September and October 2013, respectively that provide qualitative support for the argument that the export market for U.S. coal is under severe stress and is likely to remain so for the foreseeable future.

Both the research and the investment actions taken by these institutions reflect the consensus that the international coal market is oversupplied and that global coal producers will continue to face unsustainably low prices and tight margins. Bernstein Research pointed to the structural nature of the changes, stating that the trend is not likely to reverse itself. Citibank concluded that the end of the coal "supercycle" is here. Goldman Sachs said capital shifts from larger mining concerns suggest a significant move away from coal. J.P. Morgan concluded it is no longer economical to export coal at present.

These trends will most likely continue as China's need for coal imports diminishes. Each of these analyses uses as a backdrop the dramatic rise of Chinese thermal imports over the past decade—and the recent slowdown in this trend. The worldwide market for seaborne coal was approximately 858 million tons in 2013.[14] When China buys less coal on the global market it drives down worldwide demand and price. Chinese import market peaked in 2013 at 330

[12] Molly Christian, *Stronger Labor market dims support for Washington State coal terminals,* SNL, September 2, 2015.
[13] http://tlsoakland.com/faq/
[14] Euracoal, Euracoal Market Report: World Coal Market Developments (1/2014) – World Coal Production and Seaborne Trade, May 2014.

million tons per annum (mtpa). In 2014, China's coal imports declined to 289 mtpa.[15] As discussed below, China is expected to reduce imports further in 2015 to 200 mtpa.

Bernstein Research concluded in the spring of 2013:

> Globally, Chinese demand for coal has been the primary driver or the backstop behind every new investment in coal mining over the last decade; the "global coal market" ended with the collapse in price in 2012: regional miners will see almost zero demand in China from 2015.
>
> Once Chinese coal demand starts to fall there is no robust growth for seaborne thermal coal anywhere; developed market demand is weak due to gas, environmental concerns or industrial activity; that leaves just one large structural growth market for seaborne coal: India.[16]

The Bernstein analysis concluded that global thermal coal market will never recover.[17]

Similarly, Goldman Sachs in 2013 cast a profile of a weak and declining market in thermal coal:

> Earning a return on incremental investment in thermal coal mining and infrastructure capacity is becoming increasingly difficult. In the short term, a sharp deceleration in seaborne demand (we expect average annual growth to decline to 1% in 2013-17 from 7% in 2007-12) has moved the market into oversupply and caused a downward shift in the cost curve; we downgrade our price forecasts to US$83/t in 2014 and US$85/t in 2015 (down 13% and 11% respectively) and maintain a relatively flat outlook for the rest of our forecast period to 2017.
>
> Mines are long-lived assets with a long payback period, and investment decisions today are sensitive not just to prices and margins today, but also to projections going well into the next decade. We believe that thermal coal's current position atop the fuel mix for global power generation will be gradually eroded by the following structural trends: 1) environmental regulations that discourage coal-fired generation, 2) strong competition from gas and renewable energy and 3) improvements in energy efficiency. The prospect of weaker demand growth (we believe seaborne demand could peak in 2020) and seaborne prices near marginal production costs suggest that most thermal coal growth projects will struggle to earn a positive return for their owners; in our view, this is reflected in the way diversified mining companies are reallocating their capital towards more attractive sectors[18]

Goldman Sachs' price downgrade in 2013 was followed by actual price declines far greater than estimated. Goldman anticipated a price of $83 per ton in 2014. The average price for 2014

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[15] Kalayano Teodoro, *Global shipping index falls to record low as China cuts coal imports*, February 11, 2015.
[16] Bernstein Research, *Asian Coal and Power: less, Less, Less…The Beginning of the End of Coal*, Cover Page, June 2013. (Bernstein)
[17] Bernstein, *Executive Summary*
[18] Goldman Sachs, *The window for thermal coal investment is closing,* Rocks and Ores, July 24, 2013, p.1.

was $70 per ton.[19] (A recent compilation of futures-market contracts for Newcastle Coal places the range of prices from 2015 to 2021 in the mid $50-per-ton range.)[20] In January 2014, Goldman Sachs sold its stake in a coal port greenfield project in Bellingham, Washington, a joint venture with SSA Marine Terminals (40+ million ton per year capacity).[21]

In October 2013, J.P. Morgan analysts questioned the ability of U.S. coal producers to access the global thermal coal market:

> While the outlook for ILB [Illinois Basin] coal appears stronger than other basins, the region is not immune from the challenged coal market." Further, "Export markets have been crucial in balancing supply-demand in the US; however, depressed international prices appear to have closed the door on new export contracts and could create domestic oversupply.[22]

In 2014, J.P. Morgan forecast a decline of U.S. thermal coal exports through 2016 from 49 mtpa to 36 mtpa.

> It's not economic to export US coal at present, and while some sales are continuing, probably driven by take or pay commitments, we doubt new sales will be signed outside longstanding relationships.
>
> U.S. coal exports are falling more quickly now, but with other countries apparently concluding it's easier to drop costs rather than production, seaborne prices are reaching new lows. [23]
>
> In September 2013 Citibank[24] said changes in Chinese GDP, pollution and energy policy, internal country improvements, and the rising influence of renewables and other energy sources meant that coal producers looking to enter the export market were going to find it very difficult to succeed.
>
> Because the range of forecasts for Chinese coal demand is wide, we believe investors should price in higher probabilities of lower coal demand. Optimistic long-dated coal prices may be unsupported. Although lower prices may spur demand growth elsewhere, the demand slowdown in China should more than offset such gains, in our view. Coal-exporting countries that have been counting on strong future coal demand could be most at risk. The end of the coal supercycle should weigh on both the mining and equipment sectors. But sectors that excel at renewable integration, distributed generation, transmission could benefit the most.

In October 2014, several major U.S. investment banks announced they would not provide financing to support a large coal mining and export infrastructure in Australia, one of the largest

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[19] http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1111002388669/829392-1420582283771/Pnk_0115.pdf
[20] http://quotes.esignal.com/esignalprod/quote.action?symbol=NCFQ-ICE,
[21] http://www.reuters.com/article/2014/01/08/goldman-port-sale-idUSL2N0KI00U20140108
[22] Darren Epps, *Analyst: Illinois Basin stable but not immune to coal market weaknesses*, SNL, October 8, 2013.
[23] http://pg.jrj.com.cn/acc/Res/CN_RES/INDUS/2014/6/29/37603388-1ecd-419e-8cbd-bd7d51fc5902.pdf
[24] http://www.macrobusiness.com.au/2013/09/peak-coal-in-china/

proposed mining initiatives in the world (100 million tons per year).[25] These announcements were followed by similar ones from European and Australian. This is a sign of weakness in the global coal markets —the same markets targeted by the developers of the Oakland Army Base coal project.[26]

What are the current trends in China and India and how are U.S. coal producers faring in that respect?

As described above, the market for imported coal in China—and the global coal market generally—cooled, and global prices have continued to hit new bottoms.[27] Most financial-analyst projections have evolved into a clear consensus: as China reduces its import needs, existing Pacific Rim coal producers (Australia, South Africa, Indonesia and Russia) have sufficient capacity to meet the needs of the remaining import countries, including India. U.S. coal producers will fill a niche market but one not much larger than what exists today. Carbon Tracker Institute and the Institute for Energy Economics and Financial Analysis[28,29] reached the same conclusion in an extensively researched report in September 2014. Wood Mackenzie (WM), a coal-industry consultant that Bowie Resources uses, has altered its once-optimistic position on the export potential of PRB and coal from western states. The company published a broad analysis of domestic and global coal markets and export potential out of the U.S. in March 2012, when it said U.S. exports would increase to 500 mtpa by 2030.[30] In February 2015, however, WM[31] reversed its outlook on Asian demand for U.S. coal exports, citing a number of factors at play in China, including a slowing Chinese economy, a growing divergence between commodity price and market growth versus GDP growth, a change in economic priorities and new policy directions due to air pollution. WM saw short- and medium-term problems in particular for U.S. coal producers[32] looking to export. WM projected that the global thermal market will stay in a condition of oversupply through 2021, plus or minus how many new mine projects are actually delayed.[33]

Actual import trends in China are bearing out these predictions. In 2013, China imported 329 million tons of coal. In 2014, that number dropped to 290 million tons. Through July 2015, China is

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[25] http://www.ieefa.org/wp-content/uploads/2014/10/IEEFA-briefing-Galilee-Financiers.pdf
[26] Rohan Somanwashi, *Report: U.S. Banks will not fund Australia coal terminal expansion,* SNL, October 28, 2014. http://www.theguardian.com/business/2015/apr/08/galilee-basin-coalmines-australian-banks-under-pressure-after-french-lenders-rule-out-funding; http://www.abc.net.au/news/2015-09-03/nab-rules-out-funding-adanis-16bn-carmichael-coal-mine/6747298
[27] http://www.theguardian.com/environment/2014/oct/22/chinas-coal-use-falls-for-first-time-this-century-analysis-suggests
[28] http://www.carbontracker.org/wp-content/uploads/2014/09/Coal-Demand-IEEFA-complete.pdf
[29] http://www.carbontracker.org/wp-content/uploads/2014/09/Coal-Financial-Trends-ETA.pdf
[30] Wood Mackenzie, *Changing Supply/Demand Fundamentals allow the U.S. to Reduce Dependence on Foreign Energy and Emerge as Important Energy Player, (Press Release),* March 7, 2012.
[31] http://energyasia.com/blog/china-energy-demand-decoupled-significantly-gdp-says-wood-mackenzie-economist/ http://www.rigzone.com/news/oil_gas/a/136981/Wood_Mackenzie_Chinas_Energy_Demand_Needs_Review_Amid_Economic_Changes/?all=HG2
[32] http://www.woodmac.com/public/media-centre/12526159
[33] Rohan Somwanshi, *Analyst: Sporadic coal mine closures to not enough to rebalance oversupplied market,* SNL, February 17, 2015. (Somwanshi-SNL-Global)

on course to import 200 million tons per year.[34] A very recent analysis,[35] published in September 2015 by UBS,[36] sees China as a future exporter of coal.

Many coal producers, particularly in the U.S., are looking to India as a potential new customer for coal markets.[37] Many large international coal investors, however, are quite skeptical of any successful foreign investment in India or long-term import strategies.[38] Although the Government of India is still importing significant amounts of coal— upward of 200 mtpa—it has announced a policy aimed at decreasing its imports to zero in the coming years.[39] U.S. coal producers exported 1.1 million tons of thermal coal to India (largely from Northern Appalachian mines)[40] in 2014.[41]

If China and India are successful in cutting only half of their import demand, they would collectively reduce worldwide coal demand by 260 mtpa, or almost one third of current demand. The current global oversupply under such circumstances would continue as major supplier countries—Australia, South Africa, Indonesia, Russia, Colombia and perhaps China—all will be competing for much smaller markets in Japan, Korea, Malaysia and Vietnam.

In 2012, U.S. coal producers exported 125 million tons of coal, a recent peak. On September 9, 2015, the United States Energy Information Administration estimated that U.S. coal exports in 2015 would total 79.5 million tons and that in 2016 the figure would decline further to 72.3 million tons.[42]

How are prices responding to these general declines in demand and what indication does that give to U.S. coal producers?

The import trends described above are having a deep impact on the price of coal traded on the global markets, leading to a worldwide price collapse. [43] The market price for global thermal coal—the price that would apply to coal that would be shipped through the port of Oakland to unspecified Asian ports—has plummeted. The UBS September 2015 price chart, below, shows that prices on the global spot market for Newcastle coal have dropped from a high of $140 per ton in 2011 to $30 per ton in August 2015. (Newcastle coal is typically the benchmark used for the global price of coal and refers to coal mined in Australia. The other coal types identified on the chart are Kalimantan from Indonesia and Richards Bay from South

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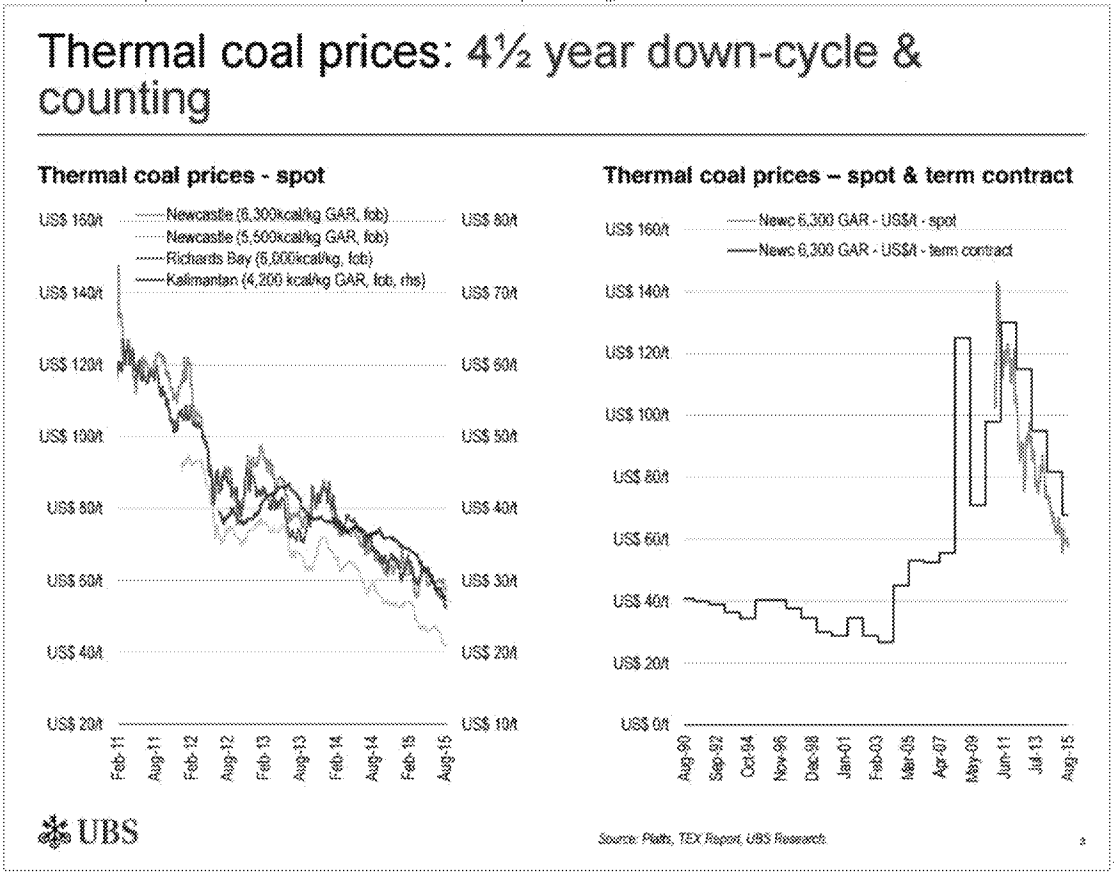
[34] http://www.ihsmaritime360.com/article/18931/china-s-coal-imports-down-33-8-y-y
[35] http://www.carbontracker.org/in-the-media/the-tide-is-turning-against-the-thermal-coal-industry-high-cost-new-mines-dont-make-sense-for-investors/
[36] UBS September 2015.
[37] http://www.peabodyenergy.com/content/508/peabody-in-india
[38] http://in.reuters.com/article/2015/02/02/india-coal-investment-idINKBN0L626B20150202
[39] http://www.bloomberg.com/news/articles/2015-08-12/coal-revival-seen-fading-as-india-s-rising-output-trims-imports
[40] http://www.indiatradedata.com/import-data/thermal-coal.html
[41] http://www.eia.gov/coal/production/quarterly/pdf/0121144q.pdf
[42] Everett Wheeler, *U.S. government chops coal export outlook,* SNL, September 9, 2015.
[43] http://www.wsj.com/articles/as-coal-prices-fall-miners-cut-output-1433269071; http://www.bloomberg.com/news/articles/2015-01-21/global-coal-market-seen-in-bad-shape-as-supply-glut-expands; http://www.reuters.com/article/2013/05/09/energy-coal-idUSL6N0DQ0UU20130509

Africa.) The second chart from UBS—spot and term contract prices from 'Newcastle coal only'— shows that the basic contract price for coal has similarly collapsed.

Table III: September 2015 UBS Price Reporting Global Thermal Coal Trade



[44]

Peabody Energy[45] and Arch Coal[46] in late 2010 and early 2011, respectively, provided their investors with analyses of the Chinese coal markets, using price points in the $90 per ton range. That is, each company was informing its investors that it required $90 per ton on the global market to profit from U.S. coal shipped through West Coast ports. At the time, Arch and Peabody appeared confident that this price target was achievable as a permanent long-term goal (In 2012 China imported over 300 million tons of coal, up from 200 million tons in 2011,[47] and coal producers worldwide were predicting longer-term growth from this source).[48] Each company was also predicting net back profit margins (the amount of profit received by the U.S. coal producer from the $90 per ton international market price of coal minus transport and

[44] Lachian Shaw, *Thermal Coal Markets: Opportunity for Japan,* UBS, September 2015, (UBS – September 2015)
[45] Peter Gartrell and John Miller, *Peabody projections show lucrative Chinese market for PRB coal* Platts Coal Trader December 6, 2010
[46] Peter Gartrell, Arch CEO sees $20 range for PRB coal to Asia, Platts Coal Trader1/31/11
[47] http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=1&pid=1&aid=3
[48] Dan Lowrey, *Woodmac sees half of US coal production exported by 2030*, SNL, March 7, 2012.

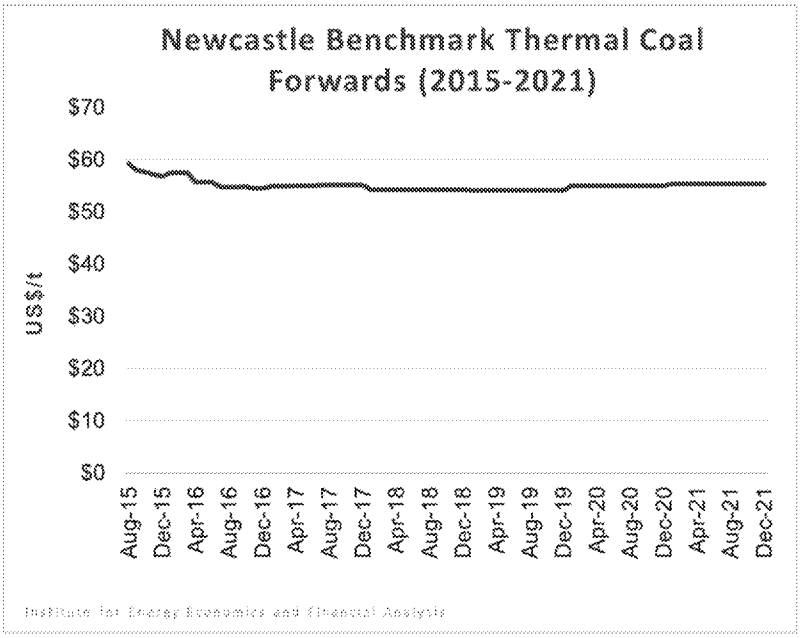
logistics costs) of $20 per ton. More recently Cloud Peak Energy stated it would require a market price of between $80 and $90 per ton.[49]

Most of the proposals for new coal export terminals on the West Coast were made when prices were high—in early 2008, and then again when prices spiked in 2011. As shown in Table III, these spikes were short lived. During the 25-year period covered in the charts, only three or four years were actually periods in which the global price exceeded $80 per ton. These volatile and ultimately weak long-term prices (along with public opposition in Oregon and Washington and the fact that the communities have other choices from more stable business partners) go a long way toward explaining why U.S. coal producers have never established a strong, permanent, long-term set of relationships with coal-burning consumers in Asia.

Are there any reliable longer term price indicators that support your case?

Yes. The import trends for China and India suggest a continued slowdown in the global thermal seaborne coal trade. As noted above, both countries have internal reasons for adopting policies that reduce or eliminate the level of imported coal into their countries. The Newcastle forward future prices are in the high $50 per ton range through December 2021. This weak pricing is causing the cancellation of projects and pullback of capital spending from coal companies around the world.[50]

Table IV: Newcastle Benchmark Thermal Coal Futures Coal Prices[51]



The coal industry has acknowledged that markets are oversupplied in every region of the world with an active coal market: the CEO of Alpha Natural Resources, a major player in the global

[49] http://seekingalpha.com/article/2175763-cloud-peak-energys-ceo-discusses-q1-2014-results-earnings-call-transcript?part=single
[50] UBS-September 2015, p. 8.
[51] http://www.barchart.com/commodityfutures/ICE_NewCastle_Coal_Futures/LQ

metallurgical market (and a thermal coal exporter), has acknowledged that coal markets are in more than a cyclical downturn.[52] Glencore, a global mining concern, has announced cuts in production, staff and dividends[53] in the wake of persistent low prices.[54] BHP has issued investor warnings about long-term oversupply issues.[55] Teck Resources in Canada has cut back plans for new mines in the wake of weak markets.[56] Indonesian coal producers are looking at new strategies to address the drop in prices and shrinking markets.[57] And South African companies are reporting cutbacks due to oversupply in the markets.[58]

Are these structural trends harming Bowie Resources plans to ship coal through the Oakland Army Base Redevelopment?

Yes. Although Bowie Resources continues to search for more throughput capacity, the company does so as market indicators are showing less demand for coal off the U.S. West Coast.

Bowie Resources recently filed an Initial Public Offering (IPO)[59] with the United States Securities and Exchange Commission (SEC). Ironically, the IPO itself contains information that undermines the case for the Oakland Army Base Coal Port. The IPO document says Bowie Resources currently has 5.7 million tons[60] of throughput capacity at the Port of Stockton (Bowie Resources owns three mines in Utah—Sufco, Skyline and Dugout, which, according to published reports,[61] would be the source of the coal that would flow through the Port of Oakland). The document[62] also cites statements by Bowie Resources' coal-industry consultant Wood Mackenzie projecting a maximum export demand in 2035 for Utah coal of only 4.7 million tons per year.

In its SEC filing, Bowie claims its sponsor (Trafigura) will ship only 1 million tons of coal through California ports in 2015.[63] For Bowie to fulfill even its current throughput agreements at the Port of Stockton, it would need to increase export tonnage by almost sixfold from current, actual export levels. Officials at the Port of Stockton are reporting that they expect revenues to lag over the next year due to declining coal export activity.[64]

Bowie Resources' plans are highly speculative and its numbers are not consistent with current or projected market demand for coal. The addition of 4.2 million tons per year in coal exports from

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[52] http://trib.com/opinion/columns/crutchfield-alpha-is-restructuring-for-the-future/article_a47d5d8b-d599-5a78-a7af-22ad44173cbc.html
[53] http://www.wsj.com/articles/glencore-scraps-final-dividend-raises-cash-to-cut-debt-1441607323
[54] http://www.marketwatch.com/story/glencore-may-cut-coal-output-more-to-combat-glut-2015-06-04
[55] http://www.mineweb.com/news/iron-and-steel/bhp-warns-oversupply-to-keep-metal-prices-lower-for-much-longer/
[56] http://business.financialpost.com/news/mining/teck-resources-ltd-suspends-coal-production-at-six-canadian-mines-as-demand-and-prices-plunge
[57] http://www.indonesia-investments.com/news/todays-headlines/earnings-indonesian-coal-miners-down-on-weak-global-coal-prices/item5384
[58] http://www.heraldlive.co.za/coal-oversupply-cuts-back-profits/
[59] http://www.sec.gov/Archives/edgar/data/1631790/000104746915005595/a2225124zs-1.htm
[60] http://www.sec.gov/Archives/edgar/data/1631790/000104746915005595/a2225124zs-1.htm, p. 7.
[61] http://www.eastbayexpress.com/oakland/banking-on-coal-in-oakland/Content?oid=4463888&showFullText=true#LogIn
[62] http://www.sec.gov/Archives/edgar/data/1631790/000104746915005595/a2225124zs-1.htm, p. 161.
[63] http://www.sec.gov/Archives/edgar/data/1631790/000104746915005595/a2225124zs-1.htm, p. 3.
[64] http://www.recordnet.com/article/20150629/NEWS/150629684

Bowie through the Oakland Army Base would require an almost tenfold increase in export demand for Bowie's coal products from current actual levels.

This magnitude of increase is not supported by the estimates being made by the United States Energy Information Administration. According to EIA, total U.S. coal exports to Asia are expected to rise from 8 million tons in 2015 to 19.9 million tons in 2035.[65] This would mean an increase of less than 1 million new tons per year to meet the demand. This means also that Bowie Resources is estimating that is product alone would capture 80 percent of the market in new Asian coal demand exported through West Coast ports. Bowie is predicting apparently that virtually all of its existing and future competitors will fail. These competitors include other companies that also plan to export coal from Utah—like Rhino Energy (with explicit plans to export Utah coal),[66] and Murray Energy (with a global platform)—along with Powder River Basin coal producers that include the Signal Peak mine (owned by the Gunvor Group, an international competitor of Trafigura, with a track record of sales from its Montana mines), similarly-situated Cloud Peak Energy, and Peabody Energy, Arch Coal and Westmoreland Coal.[67]

Government officials and others examining Bowie Resources' proposals clearly need to undertake additional due diligence to determine where Bowie Resources has contracts to sell this coal. The market is too weak to skip this essential diligence step.

Does Bowie Resources face the same pressure to export as above?

Yes. The domestic market for coal from Utah is fragile. In December 2014, Seth Schwartz, president of Energy Ventures Associates, a widely regarded coal consultant, testified at the Idaho Public Utility Commission[68] and provided a detailed view of the Utah coal market.

Mr. Schwartz makes several important points:

- First, Utah coal production has been on the decline, dropping from 26 million tons in 2006 to 16.6 million tons by 2013.[69]
- Second, this decline in part came from the elimination of coal demand from coal plants in the East, and a number of the key coal plants that are currently using Utah coal have announced plans for retirement:

> The demand for Utah coal will decline at other local power plants because most of these plants have announced dates when they will close. The Reid Gardner power plant will close units 1-3 at the end of 2014 and the remaining unit at the end of 2017. PacifiCorp will close the Carbon power plant in 2015. NV Energy's most recent Integrated Resource Plan, filed in 2013, reflects retirement dates for the

[65] http://www.eia.gov/beta/aeo/#/?id=96-AEO2015&cases=ref2015
[66] http://www.sec.gov/Archives/edgar/data/1490630/000110465911059426/a11-28829_1ex99d1.htm, p.21
[67] Rohan Somanwanshi, *Global production cuts reach 141 million tonnes but supply still coming,* SNL, April 6, 2015.
[68] http://www.puc.idaho.gov/fileroom/cases/elec/PAC/PACE1410/company/20141215SCHWARTZ%20DIRECT.PDF, Mr. Schwartz's discussion of the Utah coal market starts on Page 19 of the testimony.
[69] http://www.puc.idaho.gov/fileroom/cases/elec/PAC/PACE1410/company/20141215SCHWARTZ%20DIRECT.PDF, p. 19

North Valmy units in 2021 and 2025. All of the plants in California have announced they will stop burning coal by the end of 2015. Finally, IPP has announced it will stop burning coal after its contracts with the California participants expire in 2027. At that point PacifiCorp is likely to be the only consumer of Utah coal in power plants, along with the industrial customers and the export market.

- Third, the Utah market is oversupplied. Although the remaining coal plants using Utah coal require 7.3 million tons of coal, the remaining mines in the near term will produce between 13 and 15 million tons.[70]

In February 2015, Robert Murray, the CEO of Murray Energy, a coal producer with significant holdings in the Illinois Basin and Northern Appalachia and with a presence in the Uinta Basin including Utah, stated that market conditions in the Uinta Basin were a "virtual disaster."[71] While Murray pointed to over regulation as the larger cause of coal's downturn, his view of market realities should not be overlooked.

PUBLIC FINANCE RISKS OF MOVING COAL THROUGH THE OAKLAND ARMY BASE

What is the scope of the bulk terminal project and how is it financed?

The proposed development budget for the Outer Harbor Intermodal Terminal (OHIT) covers remediation of the Army Base, improved rail access, a recycling facility and a bulk cargo marine terminal. The financing relies upon a series of commitments by the State of California, the City and Port of Oakland, the State of Utah and the developer. The public finance portion, which is coming largely from the federal government and California state and local governments, constitutes the largest portion of the budget. Introducing coal into the commodity mix will be the weak financial link in the overall package and will expose public and private funds to various financial, legal and political risks.

The overall budget for the OHIT project is set at $499.2 million. The budget calls for $327.3 million in various public funds from the City of Oakland, the Port, the State of California (through TCIF (the Trade Corridor Improvement Fund)), and the federal government (through TIGER, the Transportation Investment Generating Economic Recovery grant program). The budget also lists $171.9 million in unspecified private funds. The line item for the City Trade and Logistic Facilities includes the costs for the terminal build-out and is listed at $99.4 million from private funds (a portion of the $171.9 million).

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[70] http://www.puc.idaho.gov/fileroom/cases/elec/PAC/PACE1410/company/20141215SCHWARTZ%20DIRECT.PDF, p. 22-23, lines 10-21.

[71] Darren Epps, *Against the ropes coal industry CEO's come out swinging at conference,* SNL, February 5, 2015.

Table V: OHIT Development Budget[72]

Description	Total Cost	Port	City	Private	TIGER	TCIF
Remediation	$11,400	$5,700	$5,700	$ -	$ -	$ -
Rail Access Improvements and Manifest Yard	$74,600	$5,000	$3,800	$ -	$ -	$65,800
City Site Prep and Backbone Infrastructure	$247,241	$ -	$45,000	$25,900	$ -	$176,341
Recycling Facilities	$46,600	$ -	$ -	$46,600	$ -	$ -
City Trade & Logistics Facilities	$99,400	$ -	$ -	$99,400	$ -	$ -
Unit Train Support Yard	$20,000	$5,000	$ -	$ -	$15,000	$ -
TOTAL (costs in thousands)	**$499,241**	**$15,700**	**$54,500**	**$171,900**	**$15,000**	**$242,141**

The OHIT Baseline Agreement describes the bulk cargo marine terminal as follows:

> On the City's West Gateway site, berth 7 would be converted to a modern bulk cargo marine terminal for movement of commodities such as iron ore, corn and other products brought in to the terminal by rail. 80,000 DWT Panamax vessels would be filled with cargo brought in by rail, unloaded on site and moved by conveyor into the ship's cargo holds. The terminal would also accommodate project cargo such as windmills, steel coils and oversized goods. The proposed improvements include new rail tracks from the Unit Train Support Yard to this marine terminal, as would improvements to the wharf structure including new piles and protection of existing plies, construction of new purpose-built cargo handling facilities such as a bulk railcar unloading pit, bulk material storage building, ship loader, and conveyor belts between the unloading pit, storage building and ship loader[73]

In addition to the money that would be provided by public sources in California, the State of Utah in April 2015 conditionally approved[74] an application for a $53 million, 30-year loan at 2 percent interest to support "Terminal Logistics, Oakland Bulk and Oversized Terminal at the Oakland Global Trade and Logistics Port." The joint application is by four Utah counties: Sevier, Carbon, Emery and Sanpete. The application and the supporting materials cited these budget numbers:

> The cost of the Bulk Terminal Facility will be $275 million, $25 million of which will come from the funds shown here. CCIG will finish the design of the Terminal, and will construct the terminal. The Terminal should be complete and in operation by mid-2017. The Counties have proposed that they fund $50 million of the terminal cost in return for throughput allocation at the terminal along with an annual return on their principal investment. The remaining $200 million required to complete the terminal will come from

[72] http://www2.oaklandnet.com/oakca1/groups/ceda/documents/report/oak038475.pdf, Exhibit 20. A subsequent amendment to the budget dated july 2012 specifically lists the City Trade and Logistics Faciliites as inclusive of the Bulk and Oversized Terminal. http://www.portofoakland.com/pdf/maritime/oab/rfq_oab_tcifAmendt.pdf

[73] http://www2.oaklandnet.com/oakca1/groups/ceda/documents/report/oak038475.pdf, Exhibit 17.

[74] https://jobs.utah.gov/housing/cib/documents/040215cibminutes.pdf, Request for Special Consideration, pdf 9.

third-party lenders, likely one or more North American pension funds. The Project group is working toward a financial close in June of this year.[75]

The figures provided by the Oakland Army Base published in the 2012 development budget (Table V) and posted on its website currently are at variance with the presentation made to the State of Utah in April 2015. It appears that the Oakland Army Base numbers state that the terminal will cost $99.4 million while the State of Utah places the cost for the terminal at $275 million. The published minutes of the meeting and the application itself in Utah do not describe the specific use of the dollars or the specific commodities to be shipped through the port. However, published reports and emails provided in response to a Sierra Club Utah Government Records Access and Management Act (GRAMA)[76] indicate that the project is designed[77] to ship coal mined in Utah through the port to overseas users. Once finished, the coal portion of the project would have a throughput capacity of 4-5 million tons of coal[78] per year, out of a total project shipping capacity of over 9 million tons. The published minutes and public records do not provide details regarding the actual legal structure of the transaction, including how the funds would be transferred from the State of Utah or its counties to the Oakland Army Base, City of Oakland, Port of Oakland, the developer (CCIG) or any other party. Apparently the State of Utah funds would be deemed "private dollars" to back a portion of the overall project budget in Oakland.

What are the risks to the public entities involved with the financing of this project?

Some of these risks are already known and acknowledged; all are fundamental in nature.

First, as described in detail above, the economic fundamentals related to the coal portion of this project (the general industry and specific mining, sale and company financials) are exceedingly weak. The coal portion of this project is expected to produce at least half of the total tonnage shipped through the newly expanded cargo bulk terminal. Therefore, the project has a very high likelihood of default and failure. When the coal shipments fail to materialize, the investments made by the State of Utah, California government entities, the Port and other private and public sources will be at risk (or will be diverted to other uses at the port, meaning the public entities will not be receiving promised services for the expenditures made).

This project is heavily financed with public-sector dollars (even some of the so-called "private" amount of $99.4 million appear to be backed, for now, by $53 million in public funds from the State of Utah and its counties). In the event of financial failure, additional public funds will be

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[75] CIB Presentation April 2, 2015 – MASOB, *Request for Carbon, Sevier, Sonepete and Emery Counties for $53,000,000.00 for Throughput Allocations in a Multi-Commodity Bulk Terminal at the site of the Former Oakland Army Base.* There is no crosswalk explanation that reconciles the $275 million figure in the Utah data with the line item in the Port development budget of $99.4 million.

[76] Amanda B. McPeck, Information Disclosure Officer, General Counsel, State of Utah, Department of Public Workforce Services to David Abell, Sierra Club, Environmental Law Program, August 12, 2015. (McPeck-FOIA)

[77] https://jobs.utah.gov/housing/cib/documents/040215cibminutes.pdf, Request for Special Consideration, pdf 9.

[78] http://www.deseretnews.com/article/865627254/Utah-invests-53-million-in-California-port-for-coal-other-exports.html?pg=all

needed to pay for whatever costs are associated with the assignment, transfer or other requirements to bring in new business.

Failed coal-shipping agreements are commonplace in the industry today. Cloud Peak Energy, a company with a track record of exporting Montana coal, has failed to meet its export targets in 2015 and is expected to miss them again in 2016 as weak pricing persists.[79] Ambre Energy failed[80] and was unable to complete its export plans through Washington State and sold its interests to a private equity investor. Arch Coal dropped out of a multi-year deal with Ridley Terminal in Canada,[81] which serves U.S. and Canadian coal producers and is facing financial stress in 2015.[82] Historically, west coast coal ports have seen some high profile failures in the past.[83]

Second, the private-sector portion of the project may pose risks to the public dollars involved. It is unclear which pension funds or other institutional funders have made commitments for the project (presumably these funds or funders constitute the "private dollars" listed in the budget), or what the requirements for those investments may be. The disclosure to the State of Utah calls for a closing on the remaining $200 million by June 2015. This deadline appears to have slipped.

It is also useful to examine the one recent example of indirect pension fund investment in Northwest coal ports. In that case, Goldman Sachs GS Infrastructure Partners participated in the proposed Gateway Pacific Port in Bellingham, Washington, but then pulled its investment. (Goldman manages pension fund assets.) It is similarly unclear how any future pension fund would participate and how the ownership interests and funds would be integrated into the larger development budget shown in Table V above.[84]

Third, this allocation of public funds in Utah side raises a series of risks. Utah officials have expressed several reservations regarding the $53 million loan, including unspecified legal concerns, the large size of the allocation, the need for greater specificity on use of funds, the Attorney General's sign-off, and contingent dollar commitments.[85] Materials provided by the State of Utah to the Sierra Club in a public records request response dated August 12, 2015, contain the following statement: "Please note that while the CIB [Permanent Community Impact Fund Board] has set aside money for the potential use of this project, no funding of this project by CIB has occurred. The project is still under legal review."[86]

The Community Impact Fund has specific rules requiring that the facility that is funded be used for intended purposes. A change of use must receive permission from the Fund:

> A recipient of PCIFB grant funds may not, for a period of ten years from the approval of funding by the Board, change or alter the use, intended use, ownership or scope of a project without the prior approval of the Board. A recipient of PCIFB loan funds may not,

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[79] http://investor.cloudpeakenergy.com/press-release/earnings/cloud-peak-energy-inc-announces-results-second-quarter-and-first-six-months-5

[80] http://www.theaustralian.com.au/business/mining-energy/miner-ambre-energy-reduced-to-a-shell-in-coal-crisis/story-e6frg9df-1227305463280

[81] http://www.platts.com/latest-news/coal/houston/westmoreland-coal-trafigura-deal-positive-for-21685132

[82] http://daily.sightline.org/2015/06/05/ridleys-coal-exports-a-terminal-illness/

[83] http://daily.sightline.org/2011/09/12/gambling-on-coal-and-losing/

[84] A check of the Port of Oakland's website page on September 15, 2015 showed there were no updates regarding the budget or new financial commitments on the City Trade and Logistics Facilities page http://www.portofoakland.com/maritime/oab_funding.aspx

[85] https://jobs.utah.gov/housing/cib/documents/040215cibminutes.pdf, Request for Special Consideration, pdf, p 9.

[86] McPeck-FOIA

for the term of the loan, change or alter the use, intended use, ownership or scope of a project without the prior approval of the Board.[87]

In a typical multi-purpose port project, if one commodity falters and others prove more lucrative, a shift can take place to the more profitable commodity. However, despite the steps that have been taken in this case to make this project appear to be a multi-commodity project, its primary purpose is to support coal mining and transport. When the coal deals fail to materialize, there may be little recourse short of retooling the facility. It remains to be seen what entities will be responsible for ultimate liabilities.

Fourth, the use of the Utah funds on this project should be a red-flag warning to Oakland officials that the project is fundamentally weak. The coal industry is working through a massive wave of bankruptcies,[88] new business and finance models[89] and is searching for ways to take expenses offline. With private investors in short supply, some state governments are looking to step up and absorb direct financial risk for particular coal companies. For example, Wyoming and Montana have proposed new legislation to authorize bonds[90] to support construction of coal ports due to the sagging fortunes of coal companies.[91] Now, the State of Utah is looking to alter the use of a longstanding state infrastructure program by supporting Bowie Resources in its effort to ship coal through the Oakland Army Base.

The reason for these extraordinary state and local government measures is that traditional private investors have pulled out of coal port financing. Goldman Sachs, the blue-chip investment house that pulled out of the Gateway Pacific port deal in Washington. Goldman's replacement was a more speculative investor.[92] Kinder Morgan, another blue-chip investor, pulled the plug its investment in a Coos Bay deal in Oregon.

In the Oakland case, Trafigura and its private equity subsidiary Galena have invested in Bowie but are relying on public financing to provide the needed capital to fund this speculative coal export project. By contrast, in the case of the Burnside coal port Terminal in Louisiana, Trafigura used its own credit and borrowed several hundred million to finance the project.[93] The Utah CIB public financing underwrites one part of the speculative aspects of the Oakland export logistics deal. A pension fund presumably would underwrite some other portion. These are all tactics by Trafigura—a company that had revenues of $127 billion and assets of $37 billion in 2013[94] —to limit its own financial exposure to Bowie should the export scenario fail and to instead leave taxpayers with the financial risk.

Fifth, the Oakland Army Base coal export project, City or the developer may be exposed to additional terms and conditions on the Utah funding, to litigation or political risk. The financial risk to the City is likely to take the form of the need for future concessions to the developer in the event of Fund revocation or an adverse change in the terms and conditions of the transaction.

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[87] http://www.rules.utah.gov/publicat/code/r990/r990-008.htm#T1
[88] Darren Epps, *Bankruptcies continue to rock coal companies in '13*, but hope for survivors, SNL, December 5, 2013.
[89] Darren Epps, *Slumping coal sector MLP structure offers producers attractive outlet,* October 31, 2014.
[90] http://www.bellinghamherald.com/news/local/article22280340.html
[91] http://union-bulletin.com/news/2015/feb/19/wyoming-bill-would-help-finance-coal-ports-northwe/
[92] http://www.upi.com/Business_News/Energy-Industry/2014/01/10/Goldman-Sachs-pulls-out-from-Pacific-coal-export-project/36051389388016/
[93] http://theadvocate.com/news/business/6242434-123/trafigura-using-bonds-to-improve
[94] http://www.trafigura.com/media/1990/2014-trafigura-annual-report.pdf

For example, the rules[95] governing the Utah Permanent Community Impact Fund raise the following caveats:

- According to published reports, the applicants for the funds are four Utah counties, operating in a joint project. But are these counties the true applicants or is Bowie Resources the true applicant? This project appears to be geared to assist the company to mine coal at its various facilities and to market it overseas.[96] According to program rules, applicants must demonstrate that the proposed funding is "not merely a device to pass along low interest government financing to the private sector" (R 990-8-2 Eligibility).

- Bowie Resources has access to other forms of private capital to invest in the port project. Both Trafigura and its subsidiary Galena Asset Management invest in companies and projects in the oil, petroleum, minerals and mining sectors across the globe. Bowie Resources and CCIG/TLS have devised a financial scenario where neither Bowie nor Trafigura nor Galena need take much if any investment risks in the Oakland Army Base coal export project. The States of California and Utah (and the four counties) bear the risk for a long-term project with an industry and a specific company that is plagued by short-, medium- and long-term fundamental problems. Although comparative financing scenarios have not been made public it is not too far a stretch to suggest that 2 percent financing for 30 years by the State of Utah is a better deal than Bowie would receive from either Trafigura or Galena. The sole purpose of the funding is to provide a troubled company cheap and flexible financing.

- The program rules generally limit projects to $5 million. Agency minutes indicate that other projects with greater than $5 million have been approved in the past, but those projects were located within the borders of the State and served multiple counties with long term capital assets. None of those conditions seem apparent from the information on the record to date regarding the Oakland Army Base coal project.

- Program rules offer a clear set of financial accountability standards. Certain assumptions about ownership and future uses here would apply only to the model typically used in Utah for in-state projects. In the case of the Oakland Army Base coal export project, some new business arrangements might be necessary and new measures of State accountability adopted.

  All applicants must demonstrate that any arrangement with a lessee of the proposed project will constitute a true lease, and not a disguised financing arrangement. The lessee must be required to pay a reasonable market rental for the use of the facility. In addition, the applicant shall have no arrangement with the lessee to sell the facility to the lessee, unless fair market value is received. (R 990-8-3, K Applicant Requirements)

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[95] http://www.rules.utah.gov/publicat/code/r990/r990-008.htm#T1

[96] The application from the four counties states that the loan will be guaranteed by throughput contracts with unspecified parties. See: Permanent Community Impact Fund Board Application Form, Project Title: Bulk- Commodity Marine Terminal located in Oakland, California, Part B, Project Funding, Section 2.5 Type of Funds Requested, Other. In one email on April 8, 2015 sent by Mr. Holt, BMO, Subject: Press to several county representatives, state and banking officials he reminds them that the operation of the facility is not Bowie, but is in fact TLS. "The terminal operator is TLS, not Bowie. Bowie is known for coal. TLS is a bulk operator." The counties are arguably only a pass through for the financing and appear to be only vaguely aware of the parties to the development team.

CONCLUSION

The proposal for a new coal export terminal in Oakland, aimed at shipping coal to Asia, comes at a time when global thermal coal markets are in a state of collapse. A broad consensus of the world's leading investment houses warns strongly against investing in coal mines, coal ports or the global coal trade. The seaborne global coal market is not going to recover. Import demand is down in China, a major driver of world coal markets, and India is headed in the same direction. Prices are at historic lows and likely to remain so for the foreseeable future. Low prices keep U.S. coal producers from competing in the global market. Bowie Resources, a company already suffering from a substantial erosion of its domestic market, is a weak financial partner for a port deal.

Investments of public dollars from California, Utah, and the federal government will be in jeopardy if this project moves forward. In fact, the pledge of assistance from the State of Utah should be a red flag warning to the State of California and to City and Port of Oakland officials because it is a sign of financial weakness in the coal industry. Some Utah officials are questioning it as well.

More important, the underlying economic weakness of the coal industry, and the flaws in its plans to export coal to Asia in particular, pose risks to the Oakland Army Base project, and thus City of Oakland. This project will not produce coal for export at sufficiently robust levels to meet financial targets. From Day One, the coal component of this project will be a financial drain on the City of Oakland as a whole, and will remain so for the foreseeable future. It is not a risk worth taking.

EXHIBIT B

ENVIRONMENTAL, HEALTH AND SAFETY IMPACTS

OF THE

PROPOSED

OAKLAND BULK AND OVERSIZED TERMINAL

Prepared
for
Sierra Club

September 21, 2015

by

Phyllis Fox, Ph.D., PE
Consulting Engineer

INTRODUCTION

The California Capital Investment Group (CCIG) has entered into a 60-year lease with the City of Oakland to redevelop the Oakland Army Base. As part of this larger project, located within the Port Authority Outer Harbor in Oakland in the West Gateway Complex, there is a proposed terminal called the Oakland Bulk and Oversize Terminal (OBOT or Terminal).[1] The leasable area consists of 12.45 acres of land area and 7.86 acres of wharf. CCIG currently has an exclusive option agreement with Terminal Logistics Solutions (TLS) to develop the OBOT.[2] Thus, CCIG is the long-term lease holder and TLS is the tenant of CCIG.

The only publicly available design information on this Terminal is a July 15, 2015 Basis of Design (BOD) report (7/16/15 BOD)[3] and a series of "DRAFT" "conceptual drawings" showing the possible layout for a two commodity bulk terminal.[4] The information in these sources could change significantly as design proceeds, as funding is firmed up for the project, and during acquisition of the many permits that will be required. My comments in this report are based on the 7/16/15 BOD, conceptual drawings, and various news reports. Thus, they are subject to revision as the Terminal design is finalized. My conclusions reached in this report from reviewing this material are as follows:

- **Terminal Design:** The recently posted Basis of Design plans are conceptual, meaning they can change at any time. More specific plans will be needed to obtain permits such as air quality permits from BAAQMD. There are no enforceable conditions requiring any of the potential controls outlined in these materials, e.g., covered rail cars, enclosed storage piles and conveyors, etc.

- **Design Drawings**: The design drawings indicate that the material handling equipment – storage domes and sheds, conveyors, loaders, etc. -- will not be located in an enclosed structure. Thus, there will be emissions of PM, PM10, and PM2.5 from all of the material handling equipment. Without more specific plans, it is not possible to quantify emissions.

- **Water Usage and Pollution:** This project will be a major user of California's scarce water if it handles coal or other dusty material. Water is required to control dust during rail car unloading, at storage piles within enclosures, at drop points, and during ship loading. Based on experience at other terminals, and assuming throughput of 9.9 million tons per year of coal, 79.2 million gallons of water would be required every year to control dust. Per capita water use in Oakland is only 71.7 gallons per person per day.

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[1] http://www.oaklandglobal.com/index.php/project/about/project-overview.

[2] *See* FAQ, http://tlsoakland.com/faq/.

[3] FDR, Basis of Design, Oakland Bulk and Oversized Terminal, California Capital Investment Group, Preliminary Engineering, July 16, 2015, http://tlsoakland.com/pdf/4.pdf.

[4] Conceptual Drawings, http://tlsoakland.com/pdf/19.pdf.

Thus, the water required to control dust at the proposed Terminal could supply over 3,000 Oakland residents every year. In the middle of a record-setting state drought, which exporting and burning coal will further exacerbate, this is not an appropriate use of Oakland's limited water supply. Further, the design plans have no information on how wastewater containing coal dust will be disposed. If discharged into San Francisco Bay, it could have many detrimental impacts on water quality and aquatic organisms.

- **Coal Dust:** As CCIG's[5] and TLS's[6] recent submissions seem to indicate, the coal rail cars will most likely be uncovered. The coal loss from an uncovered bottom unloading car during a typical 400 mile trip is 45 lb from the bottom and 600 lb from the top, for a total of 645 lb per car.[7] Up to 3% of the coal loaded into a coal car can be lost in transit, which for a coal car carrying 121 tons would be 3.63 tons/car or more than 7000 lbs/car. Assuming 3 trains/day, up to 68,500 tons/yr of coal dust could be emitted from trains carrying coal from Utah to the Terminal. Assuming entry at Donner Pass, the shortest route, at least 200 miles of this route are in California. Thus, about 27% of the coal dust or about 18,300 tons/yr could be released within the state in communities like Sacramento, Davis, Richmond, Berkeley, Emeryville, and Oakland. Coal dust includes fine particles, both PM10 and PM2.5,[8] which are directly linked to health problems, including premature death, heart attacks, asthma and other problems. Coal dust can also contaminate air, water and soil, and adjacent homes, schools, and other buildings.

- **Diesel Particulate Matter:** The unit trains importing coal will be powered by up to five locomotives, which emit diesel particulate matter, a potent carcinogen that will pose significant public health risks in communities along the rail lines and adjacent to the Terminal.

- **Traffic, Noise, Vibration, Visual Impact:** The unit trains importing coal and the Terminal itself would also result in significant traffic, noise, and vibration impacts.

- **Mitigation:** None of the impacts that I discuss in this report were anticipated in the CEQA review of this Project. Further, none of the mitigation measures attached in the Sept. 8, 2015 Stice & Block Letter from the project's CEQA review[9] would address these impacts. Rail car coal dust, for example, is not regulated by any of the permits that the Terminal must obtain.

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[5] Letter from David C. Smith, Stice & Block, LLP, to Sabrina Landreth, City of Oakland, Re: September 21, 2015, Oakland City Council Public Hearing, September 8, 2015 plus attachments (Sept. 8, 2015 Stice & Block Letter).

[6] Edward J. Liebsch and Michael Musso, HDR Engineering, Oakland Bulk and Oversized Terminal Air Quality & Human Health and Safety Assessment of Potential Coal Dust Emissions, September 2015 (Sept. 2015 HDR Report).

[7] Minutes, Rail Energy Transportation Advisory Committee, September 10, 2009, http://www.scribd.com/doc/129350651/Surface-TransMinutes-9-10-09-1.

[8] Daniel Jaffe and others, Diesel Particulate Matter and Coal Dust from Trains in the Columbia River Gorge, Washington State, USA, Accepted for publication in Atmospheric Pollution Research, April 23, 2015.

[9] Sept. 8, 2015 Stice & Block, Ex. A.

My resume is included in Exhibit 1 to these comments. I have over 40 years of experience in the field of environmental engineering, including air emissions and air pollution control; greenhouse gas emission inventory and control; air quality management; water quality and water supply investigations; hazardous waste investigations; hazard investigations; risk of upset modeling; environmental permitting; nuisance investigations (odor, noise); environmental impact reports/statements, including California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documentation; risk assessments; and litigation support.

I have M.S. and Ph.D. degrees in environmental engineering from the University of California at Berkeley with minors in Hydrology and Mathematics. I am a licensed professional engineer (chemical, environmental) in five states, including California; a Board Certified Environmental Engineer, certified in Air Pollution Control by the American Academy of Environmental Engineers; and a Qualified Environmental Professional, certified by the Institute of Professional Environmental Practice.

FACILITY DESIGN

The design capacity of the Terminal is reported in the 7/16/15 BOD as 9.9 million tons/yr (MT/yr), with a stabilized throughput of 75% of design or 6.9 MT/yr for two commodities, designated Commodity A and B.[10] Prior information posted on the applicant's website suggested a significantly higher throughput, 26.3 MT/yr.[11]

The commodities will be shipped in Handymax, Panamax, and Capesize[12] vessels. No dredging is anticipated to accommodate these vessels, assuming the Capesize vessels are lightly loaded to 143,000 tons.[13] The rail cars will have a net capacity of 121 tons and are described as "North American Covered Hopper Cars equipped with removable, fiberglass covers".[14] The current design plans suggest that most conveyors will be enclosed, with the possible exception of pipe conveyors connecting the railcar dumper to storage. Commodity A will be stored in a series of longitudinal stockpiles located within a "storage building"[15]. Commodity B will be stored in top-filled, concrete storage domes vented to a dust collection system.

The design calls for trains of 104 railcars each (referred to as "unit trains" in this report) to import these commodities. The analysis below indicates that two to three unit trains of 104 railcars each, potentially all carrying coal, will visit the Terminal every day the Terminal is operating or 362 days per year, assuming the design throughput in the 7/16/15 BOD. However,

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[10] 7/16/15 BOD, p. 1, Sec.2.2.

[11] Oakland Global, Project, http://www.oaklandglobal.com/index.php/project/about/project-overview reports handling up to 12, 50-car trainloads per day. Assuming a net capacity of 121 tons per car (7/16/15 BOD, Table 9-1), this amounts to: 12 x 50 x 121 x 362 day/yr = 26,281,200 ton/yr.

[12] A capsize vessel is too large to fit through the Panama Canal and must sail around a cape.

[13] 7/16/15 BOD, Table 8-1.

[14] 7/16/15 BOD, Table 9-1.

[15] Drawing BMH-142, Commodity A Storage Building Section.

if the throughput reported in the Project description of 26.3 million tons of coal per year is assumed, many more unit trains would visit the Terminal each day.

Commodity A

Commodity A is characterized as "very dusty, exhibits spontaneous combustion behavior, potentially explosive".[16] This description coupled with other information in the 7/16/15 BOD, Table 9-1, indicates that Commodity A is most likely coal. This is supported by investigative news reports and e-mail correspondence, identifying Utah coal as the likely source.[17] Commodity A will be blended, suggesting coal from different mines or seams will be blended during loading at the Terminal to meet import requirements.

Commodity A railcars are expected to be bottom dump aluminum construction, closed-top hopper cars with a cargo capacity of about 121 tons.[18] Thus, a train carrying Commodity A will carry 12,584 tons[19]. As 75% of the Terminal design throughput is designated for Commodity A, about 2 unit trains per day carrying coal will visit the Terminal.[20]

Commodity B

Commodity B will have a design throughput of 1.7 MT/yr[21] and is characterized as "very dusty, hygroscopic."[22] Hygroscopic materials absorb water from the air and include many materials including coal, as well as soda ash, cellulose fibers, many fertilizers, salts, and

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[16] 7/16/15 BOD, Table 9-1.

[17] Project Could Transform Local Coal Market to International, The Richfield Reaper, April 7, 2015 ("The purchase of Sufco by Bowie [Resources] is what's driving all of this,"…He said Bowie is interested in expanding its coal shipping capacity to international markets, which would make the coal industry in Utah viable over a longer period of time….By purchasing a portion of the port's capacity, the four partner counties would be able to use 49 percent of an estimated 750,000 tons of shipping capacity each year to ship coal and other products."), http://www.richfieldreaper.com/news/local/article_e13121f0-dd67-11e4-b956-3ff480cc1929.html; Darwin BondGraham, Banking on Coal in Oakland, East Bay Express, August 19, 2015, http://www.eastbayexpress.com/oakland/banking-on-coal-in-oakland/Content?oid=4463888; Utah Wants to Send Trainloads of Coal to California Ports, AllGov California, http://www.allgov.com/usa/ca/news/california-and-the-nation/utah-wants-to-send-trainloads-of-coal-to-california-ports-150428?news=856347; Brian Maffley, Utah Coal: California, Here It Comes – And Not Everyone is Happy, August 14, 2015, The Salt Lake Tribune, http://www.sltrib.com/home/2425141-155/utah-coal-california-here-it-comes; Doug Oakley, Unlikely Partners: Utah Investing $53 Million to Export Coal through Oakland Port, San Jose Mercury News, April 24, 2015; Confidential Communications: (1) cjarrett02@gmail.com to Brody & Amber Keisel, April 8, 2015 ("…the script was to downplay coal, and discuss bulk products and a bulk terminal…); (2) Brody Keisel to Steve Frischknect, April 8, 2015, attaching CIB Presentation; (3) Jeff Holt to Jae Potter, April 24, 2015.

[18] 7/16/15 BOD, p. 12, Sec. 12.1.1.

[19] Amount of coal carried per train: 104 rail cars x 121 tons/car = 12,584 tons/train.

[20] The maximum number of unit trains carrying Commodity A per day = $0.75(9.92 \times 10^6$ ton/yr)/12,584 ton/train = 591 unit trains/yr. As the Terminal will operate 362 days/yr (7/16/15 BOD, p. 5), this means that on average,591/362 = 1.6 unit trains per day or up to 2 unit trains carrying Commodity A will visit the Terminal every day the Terminal is operating.

[21] 7/16/15 BOD, Table 6-1.

[22] 7/16/15 BOD, Table 9-1.

limestone. Commodity B railcars are expected to be steel construction, closed top, bottom dump hopper cars, with a cargo capacity of about 99 tons.[23] A train carrying Commodity B will import 10,296 tons per unit train[24]. Commodity B will not be blended. As 25% of the Terminal design throughput is designated for Commodity B, about one unit train per day on 241 days will carry this unidentified material to the Terminal.[25]

While two separate materials are identified, the design of the facility and the lack of any enforceable conditions would allow 100% of the throughput to be coal.

Dust Control

The BOD indicates the facility will use Best Control Technology (BCT) to control emissions. Public relations information[26] indicates all commodities handed at the Terminal will be:

- transported from origin to the Terminal in specially designed covered rail cars;
- discharged from the covered rail cars into an enclosed underground unit with dust control/collection technology;
- moved within the Terminal in enclosed conveyance systems with dust control/collection technology;
- stored within enclosed dome storage unit(s) with dust control/collection technology; and
- loaded onto the vessels using enclosed state-of-the-art ship loaders with dust control/collection technology.

Commodity A will be stored in a series of covered longitudinal stockpiles and will be reclaimed using dozers. Dust will be controlled by dry fog and/or water spray at the covered railcar dumper building, covered bulk material storage buildings, enclosed transfers, enclosed/covered conveyors, and dry fog and/or water spray at transfer points and stockpiles.

Commodity B will be stored in two concrete storage domes equipped with a dust control system and reclaimed by gravity onto a series of reclaim conveyors in above-ground tunnels underneath the domes. Dust will be controlled using the following:

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[23] The 7/16/15 BOD, Table 9-1 indicates a net capacity of 121 tons for railcars importing both Commodities A and B.

[24] Amount of Commodity B carried per unit train: 104 cars/train x 99 ton/car = 10,296 tons/unit train.

[25] Maximum number of unit trains carrying Commodity B per day = $0.25(9.92 \times 10^6$ ton/yr)/10,296 ton/train = 241 unit trains/yr. As the Terminal will operate 362 days/yr (7/16/15 BOD, p. 5), this means that one unit train carrying Commodity A will visit the Terminal on 241 days.

[26] TLS, FAQ: Frequently Asked Questions, http://tlsoakland.com/faq/.

- cartridge style, pulse-jet dust collectors or bin vents
- unloading boots, enclosed hopper and dust collection at the covered railcar dumper building
- enclosed storage domes with dust collection
- enclosed conveyor transfers
- covered conveyors
- dust collection at transfer point and shiploader (only "as required")
- dust collectors will include rotary air lock.

The design drawings indicate that the material handling equipment – storage domes and sheds, conveyors, loaders, etc. will not be located in an enclosed structure.[27] Thus, there will be emissions of PM, PM10, and PM2.5 from all of the above identified equipment.

ENVIRONMENTAL IMPACTS

The environmental impacts cannot be fully determined based on the available information, reviewed above. However, a similar proposal to export coal from the Port of Oakland was rejected by the Port of Oakland in connection with the proposed Howard Terminal. The issues identified by the Port of Oakland are outlined in a staff report that found significant environmental issues associated with handling export coal.[28] These impacts included:

At the Terminal:

- Fugitive coal dust and local air quality, requiring storage domes; enclosed conveyors and ship-loader systems;
- Risk of explosions;
- Impact of train length, up to 1.5 miles, on rail crossing in densely populated areas along route;
- Berth dredging to accommodate larger and more heavily laden vessels;
- Visual impacts of storage domes and other structures;
- Noise and vibrations from loading, unloading, and conveyor system;
- Construction impacts;
- Diesel particulate matter from train and ship engines;
- Greenhouse Gas (GHG) emissions from shipping coal from Utah to Oakland and Oakland to Asia.

[27] Conceptual Drawings, http://tlsoakland.com/pdf/19.pdf.

[28] Port of Oakland Memo from Anne Whittington to Richard Sinkoff, Re: Environmental Issues Associated with Handling Export Coal, February 19, 2014.

Transport from Mine Source to Terminal:

- The loss of up 12 tons of coal dust, assuming control using surfactants;
- Impacts of train lengths of up to 1.5 miles on rail crossing and noise from train safety horns and rail crossing barriers in communities along the rail line (Completely covering the rail cars could eliminate the dust.)

Coal Consumption in Asia:

- Inconsistent with California climate change policy
- Inconsistent with California Joint Resolution 35, Chapter 139[29]
- Inconsistent with goal to promote cleaner domestic energy source
- Potential to increase acid rain and mercury deposition in the Pacific Ocean and Western U.S. from Asia due to wind patterns

All of these issues apply to the current proposal with the possible exception of the need to dredge. In addition, the proposed Terminal presents the following additional issues not addressed in the Howard Terminal analysis:

- Water use for dust control
- Seismic-induced liquefaction and lateral spreading hazards due to site-specific soil conditions
- Impacts of coal spills on California's water supply
- Covered rail car issues
- Ignitability and spontaneous combustion
- Visual impacts of huge storage domes
- Impact of increase in rail and ship traffic on other operators within the Port of Oakland and elsewhere in San Francisco Bay

Some of these issues are discussed below.

Water Use

The major coal handling operations at the Terminal are enclosed. However, water is still required to control dust during unloading,[30] at storage piles within enclosures, at drop points, and during ship loading. Based on experience at other terminals, about 8 gallons of water are required per ton of coal throughput to control dust.[31] Assuming 100% of the Terminal's design throughput of 9.9 million tons per year is coal or another similarly dusty material, 79.2 million

[29] California Legislative Information, Assembly Joint Resolution No. 35, Chapter 139, Relative to Exportation of Coal, Approved by Governor, September 18, 2012, Filed with Secretary of State, September 18, 2012.

[30] See the significant amount of water used for coal unloading in the video, Unloading Coal via Rotary Dump, proposed for the Terminal, at: http://www.coalcap.com/press.asp.

[31] George D. Emmitt, Minimizing Groundwater Consumption for Required Fugitive Dust Control Programs, http://www.powerpastcoal.org/wp-content/uploads/2011/08/MINIMIZING-GROUNDWATER-CONSUMPTION-FOR-REQUIRED-FUGITIVE-DUST-CONTROL-PROGRAMS.pdf.

gallons of water would be required every year to control dust. In comparison, per capita water use in the area where the Terminal will be located is 71.7 gallons per person per day.[32] Thus, the water required to control dust at the proposed Terminal could supply over 3,000 Oakland residents every year.

California is currently experiencing a record-setting drought that started in 2012 and recently culminated in the first ever mandatory state-wide water restrictions. The April 2015 snow water equivalent was at only 5% of its historical average.[33] The snowpack is the major source of California's water supply, filling its reservoirs as temperatures warm and the snow melts. The record low snowpack coincides with record high January to March temperatures, highlighting the modulating role of temperature extremes in California drought severity. These results foreshadow major future impacts of climate change on the state's water supply. Further, the export of this coal will contribute to global warming and thus aggravate California's water supply situation. Therefore, the use of the state's severely depleted water supply, which is likely to remain so in the future, at a coal terminal that will aggravate the water supply deficit and contribute to global warming, is not a reasonable beneficial use of the State's limited water supply.

Wastewater Disposal

The 79.2 million gallons of water used each year to control dust will be highly contaminated with coal particles and other materials. The documents that I have reviewed identify only "process water collection and treatment facilities" but don't disclose whether "process water" is dust control wastewater nor what type of treatment would be used.[34] Conceptual drawing GC-100 identifies a "washdown treatment vault" with discharge to the Bay. These terms, "process water" and "washdown water", are ambiguous and have no special meaning. If the dust control wastewater is discharged into the Bay, it would result in significant biological impacts due to high amounts of suspended coal particles.

Accidents

The trains carrying Utah coal to the Terminal would most likely enter California in the northern part of the State, traveling via the Feather River Canyon or Donner Pass to the Bay

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[32] SWRCB, July 2015 Water Conservation Report by Supplier, Excel Spreadsheet: October 2014 – April 2015 Urban Water Supplier Report, http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.shtml.

[33] S. Belmecheri et al., Multi-century Evaluation of Sierra Nevada Snowpack, Correspondence, Nature Climate Change, Advance Online Publication, September 14, 2015, http://www.nature.com/articles/nclimate2809.epdf?referrer_access_token=O7tjNvIGP2FXqNF-SJoocdRgN0jAjWel9jnR3ZoTv0MaTV2Rp6vP_EsijdwLJ1-6EMR-RFne5yHuc6YcKNVdCtzoyQ7rj7-QHAuGoydFDdl1GZvEKF_67xl1s32_i8IPfhF0DEEuVeX5gAS68cB5EzrRSO82GCWkqLz34Tmpso7K6rK_mAzmIsrJg7fm6zadxUJGEjxWuUWxeWbRCNrCqvXZGoKMz5WRE6T8-shfV6Iw2TQViyHAL47SGFeDXq6ddrl1KKQLA8Ohmsd4Z95MNwb4qEhsDB903Y4RdbzuGEulOtUpQO0HL41qQaVQp70IzN0AWUuIa5VJDXrPna5LIUUyusya39rwBp72lNCk__zfHqyaN14_6HG4oPUnFZKu&tracking_referrer=www.nytimes.com.

[34] 7/16/15 BOD, p. 4.

Area.[35] Thus, they will travel through some of the state's most densely populated areas, as well as some of its most sensitive ecological areas, as rail lines frequently operate near or over rivers and other sensitive waterways in the state.

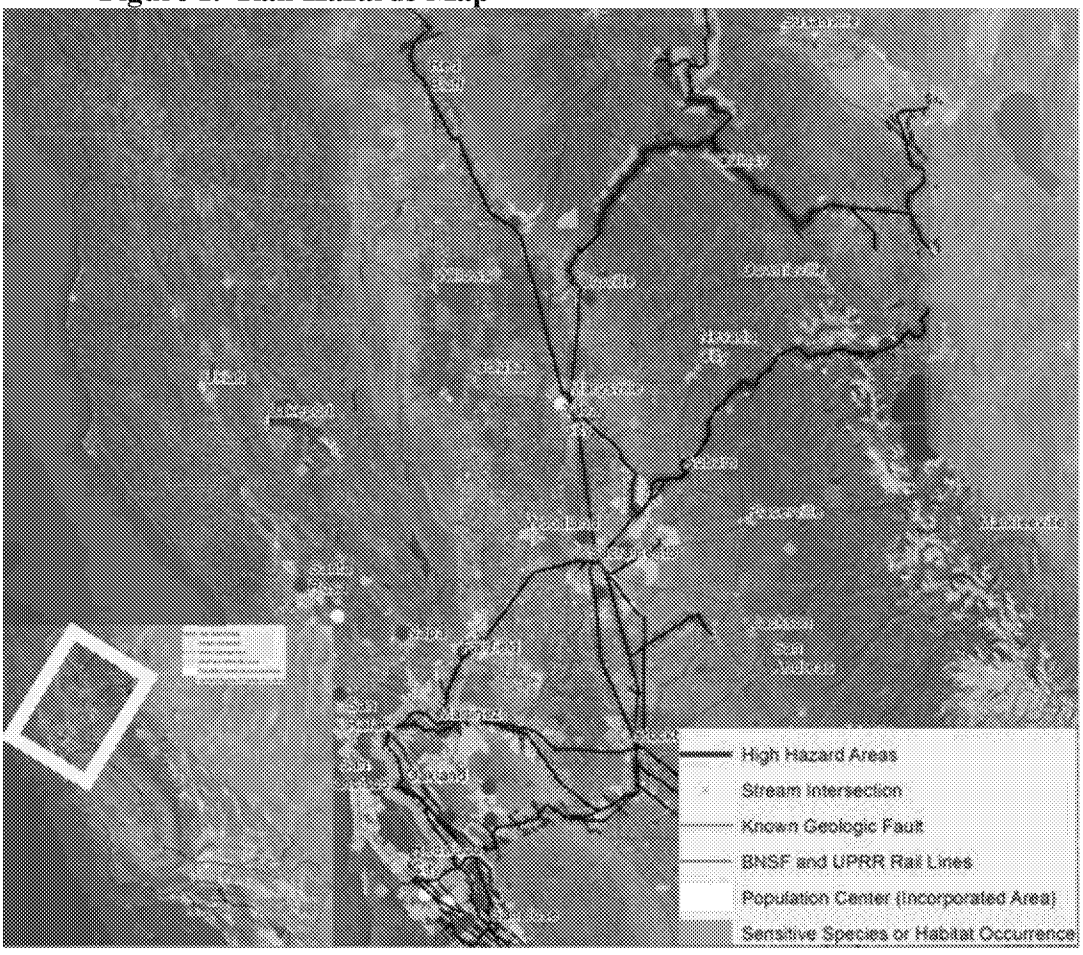
The two most likely routes include numerous "high hazard areas" where accidents are likely due to poor track and infrastructure conditions, e.g., steep grades, poor track condition, bridges in poor condition.[36] See red segments on Figure 1. An accident in these areas could result in a major release of coal into the State's water supply, which would be very difficult to cleanup due to the nature of coal. This could shut down the water supply for much of the state, resulting in significant statewide impacts on agricultural and municipal water supplies as well as significant aquatic biological impacts. A recent derailment in this area, involving corn, rang alarm bells as to the consequences if a more hazardous substance, such as coal, were involved.[37]

[35] See map of U.S. Major Freight Rail Lines at: http://earthjustice.org/features/map-crude-by-rail?utm_source=crm&utm_content=image&curation=ebrief. See also: Cambridge Systematics, Inc., National Rail Freight Infrastructure Capacity and Investment Study, September 2007, Figure 4.1, http://www.camsys.com/pubs/AAR_Nat_%20Rail_Cap_Study.pdf.

[36] Interagency Rail Safety Working Group, State of California, Oil by Rail Safety in California. Preliminary Findings and Recommendations, June 10, 2014.

[37] Tony Bizjak, Feather River Train Derailment Raises New Concerns, Sacramento Bee, December 6, 2014, http://www.sacbee.com/news/local/transportation/article4315150.html. See also: http://www.abc10.com/story/news/local/california/2014/11/26/train-derailment-feather-river-canyon/70133634/.

Figure 1. Rail Hazards Map



Further, the coal trains themselves could increase the probability of an accident by increasing the load on the tracks and by depositing coal dust on the tracks and in the track ballast, which are well known causes of train accidents. Coal trains weigh much more than other types of trains travelling these routes. The unit trains proposed to call at the Terminal loaded with coal, for example, weigh 15,600 tons[38] compared to 5,000 tons per train for double stack container trains, 8,500 tons for manifest trains, and 10,000 tons for grain trains.[39] The extra weight from these coal-carrying trains would pose additional stresses on the tracks, increasing the probability of accidents.

Further, unit trains have recently started importing crude oil to Bay Area refineries, using these same routes. A significant future increase in these crude trains is anticipated. The cumulative increase in unit crude oil and coal trains is a potentially deadly combination,

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[38] Weight of 104 car unit train carrying coal: (104 cars)(130 tonne/car)(1.1 ton/tonne) + (5 locomotives)(150 ton/locomotive) = **15,622 tons.**

[39] Railway Capacity Background & Overview, http://www.quorumcorp.net/Downloads/Papers/RailwayCapacityOverview.pdf.

increasing derailment risk for both coal and oil trains.[40] Oil train derailments can decimate entire communities. The blast zones—within one mile of the rail tracks—for oil trains disproportionately impact environmental justice neighborhoods, communities with racial minorities, low incomes, or non-English speaking households.[41]

Coal Dust

Coal dust from both trains and the Terminal is notoriously difficult to control and results in numerous significant environmental impacts. The 7/16/15 BOD asserts that product will arrive at the Terminal in "North American Covered Hopper Cars", equipped with removable, fiberglass covers,[42] suggesting coal dust from the unit trains will be controlled. However, there is no enforceable condition to require that the rail cars be covered and shippers have historically resisted covering due to cost. The City and other permit-issuing agencies, such as the Bay Area Air Quality Management District, are likely preempted by federal law from regulating coal cars along the rail lines,[43] outside of the Terminal. Thus, the Terminal operator and the shippers can import coal in uncovered cars, regardless of assertions in the 7/16/15 BOD or elsewhere. The most recent Sept. 2015 HDR report prepared for California Capital Investment Group also analyzes uncovered coal cars.

Transporting coal in uncovered cars is standard industry practice to cut costs. Thus, most coal cars are uncovered. Covered rail cars have historically been used to transport bulk commodities such as grain, cement, fertilizers, food and sand, but not coal. While many companies are working on cover designs for coal cars, my research to date has not identified a commercial source for covered coal rail cars. Several companies have developed prototypes, but none are in commercial production. As there are no enforceable conditions requiring that the cars be covered, the applicant and Terminal users have no obligation to use covered rail cars. Thus, it is reasonable to assume that the rail cars servicing the Terminal will be uncovered. Therefore, I discuss some of the issues that will arise if the cars are not covered followed by a discussion of issues with covered cars, should they be used.

Coal dust can result in significant environmental impacts for two principal reasons. First, in California (and many other states), the rail lines parallel waterways. As shown in Figure 1, the two most likely rail routes to Oakland follow rivers and pass through the Sacramento-San Joaquin Delta, the largest and most biologically important estuary on the Pacific coast. These waterways also supply a significant fraction of California's water supply. Coal dust falling

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[40] *See e.g.,* Daily Oil Trains Could Threaten Lives in the Bay Area, SF Chronicle, August 10, 2015, http://blog.sfgate.com/hottopics/2015/08/10/daily-oil-trains-could-threaten-lives-in-the-bay-area/.

[41] Crude Injustice on the Rails, Communities for a Better Environment, June 30, 2015, http://www.cbecal.org/media/cbe-updates/crude-injustice-on-the-rails-report-calls-out-environmental-racism/.

[42] 7/16/15 BOD, Table 9-1.

[43] Tovah R. Trimming, Derailing Powder River Basin Coal Exports: Legal Mechanisms to Regulate Fugitive Coal Dust from Rail Transportation, Golden Gate University Environmental Law Journal, v. 6, issue 2, June 21, 2013, http://digitalcommons.law.ggu.edu/cgi/viewcontent.cgi?article=1104&context=gguelj. *See also* memo to CCIG from Venable, LLP, September 8, 2015 (arguing City of Oakland cannot regulate rail.)

along the tracks in these areas would be blown into or washed into the waterways by rainfall runoff. Second, there is a long history of coal dust creating nuisance conditions for those living and working adjacent to the tracks.

Uncovered Rail Cars

Uncovered rail cars carrying coal emit significant amounts of coal dust.[44] Most coal dust is emitted from the top of the rail car, but some is also emitted from the bottom. The movement of cars during transit creates vibrations that break larger pieces of coal into smaller particles, creating a continuous source of dust as the trains travel to their destination. Dusting also occurs on the empty return trip as leftover coal particles are blown out of the cars. This dust would be deposited along and adjacent to the rail lines between Utah and the Terminal as well as at the Terminal while waiting to be unloaded. Coal dust losses vary with wind speed, train speed, time of year, load shape, and topping agents.

While the 7/16/15 BOD asserts that covered rail cars will be used, this claim is unenforceable, the applicant has failed to identify a source of coal car covers, and there is no history of their use for transporting coal due to added cost and safety issues, discussed elsewhere. The September 2015 HDR report asserts that coal dust can be reduced by at least 85% using topping agents (surfactants) and load profiling/packing. However, these have not been proposed by the applicant and are also unenforceable.

A representative of BNSF testified before the Rail Energy Transportation Advisory Committee (RETAC) that coal loss from an uncovered bottom unloading car during a typical 400 mile trip is on average 45 lb from the bottom and 600 lb from the top, for a total of 645 lb per car.[45] Elsewhere, BNSF has reported that "The amount of coal dust that escapes from PRB coal trains is surprisingly large…BNSF has done studies indicating that from 500 lbs to a ton of coal can escape from a single loaded coal car. Other reports have indicated that as much as 3% of the coal loaded into a coal car can be lost in transit." BNSF has pulled this information from its website, but it was captured and duplicated elsewhere.[46] Norfolk Southern reported similar losses, up to 1,200 lb/car and typically 400 to 800 lb/car along a 500 mile rail corridor hauling a bituminous coals similar to the Utah coals.[47]

The rail distance from central Utah where the coal would be mined to the Terminal is about 750 miles. Assuming three 104-car unit trains per day, up to 68,300 tons/yr of coal dust

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[44] See dust from typical coal unit train at: https://www.youtube.com/watch?v=RzD2olpaooQ.

[45] Minutes, Rail Energy Transportation Advisory Committee, September 10, 2009, http://www.scribd.com/doc/129350651/Surface-TransMinutes-9-10-09-1.

[46] Cassandra Profita, How Much Coal Dust Will There Really Be?, July 30, 2012, http://www.opb.org/news/blog/ecotrope/10753/.

[47] Edward M. Calvin, G.D. Emmitt, and Jerome E. Williams, A Rail Emission Study: Fugitive Coal Dust Assessment and Mitigation, http://www.powerpastcoal.org/wp-content/uploads/2011/08/A-RAIL-EMISSION-STUDY-FUGITIVE-COAL-DUST-ASSESSMENT-AND-MITIGATION.pdf.

could be emitted from trains servicing the Terminal.[48] Assuming entry at Donner Pass, the shortest route, at least 200 miles of this route are in California. Thus, about 27% of the coal dust or about 18,200 tons/yr could be released within the state. While much of this dust would be deposited near the tracks, which are adjacent to rivers and estuaries, a significant amount of the coal dust would become air borne and cause significant downwind air quality, public health, and ecosystem impacts.[49]

Some have claimed—including the recent Sept. 2015 HDR report submitted by CCIG at p. 5—that most of this coal dust is deposited close to the mine. However, numerous You Tube and other videos[50] and Seattle Times photos in the Columbia River Gorge debunk this claim. See Figure 2. Dust is generated throughout the trip by movement of the cars during transit, particularly over the mountainous terrain between the mines in central Utah and Oakland, e.g., they must cross the Sierra Nevada mountains, which will require numerous speed changes as the trains negotiate challenging mountain passes, steep grades, and sharp curves. The references to behavior of wind blown dust from stationary storage piles in the Sept. 2015 HDR report at 5 are irrelevant to train travel. The problems caused by released coal dust are detailed below.

Figure 2. Photograph of Unit Coal Train Passing Through Columbia River Gorge.

First, railroads in California (and elsewhere, see Figure 2) parallel or cross many rivers and estuaries (Figure 1), which contain sensitive species and are lined with riparian corridors.

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[48] Coal dust: Assuming 645 lb/car x (750 mi/400 mi) x 104 cars/train x 3 trains/day x 362 day/yr/2000 lb/ton = **68,296 lbs**.

[49] See reviews in: Dan Ferber, Research Finds Additional Harm from Coal Dust Exposure, February 20, 2013, http://midwestenergynews.com/2013/02/20/research-finds-additional-harm-from-coal-dust-exposure/ and Eric de Place, How Coal Affects Water Quality: State of the Science, March 20, 2013, http://daily.sightline.org/2013/03/20/how-unburnt-coal-affects-water-the-state-of-the-science/.

[50] See the videos at Coal Dust: Norfolk Southern's Most Insidious Gift to Its Own Hometown, http://coaldustnorfolk.com/NSCoalHandling.html.

Thus, some of the 68,300 tons/yr of coal dust released during transit from Utah could end up in riparian zones and waterways, resulting in significant ecological impacts.

Coal dust that reaches waters adjacent to rail lines – such as the American, Feather, Yuba, and Sacramento Rivers and the Sacramento-San Joaquin Delta -- will have adverse physical effects on exposed organisms including abrasion, smothering, reduction in availability of light and clogging of respiratory and feeding organs.[51] Young salmon and trout exposed to coal washings, for example, experienced 100% mortality after 0.5 to 2.5 hrs exposure. The dead fish had heavy secretions of mucus from the skin and gills, to which particles of coal adhered.[52] In another study, exposure of juvenile chinook salmon to coal dust resulted in metabolic activation of genes that convert PAHs to carcinogenic and mutagenic metabolites. Coal dust leachates also reduce the growth rate of trout, cause oocyte atresia and reduce ovarian growth in crayfish, and promote DNA adduct formation and hepatocellular carcinoma in fish.[53]

Second, coal dust destabilizes rail bed ballast, which underlies and stabilizes tracks and has led to accidents, high cleanup costs, and litigation to require shippers of coal from the Powder River Basin to use surfactants to reduce coal dust. BNSF spent more than $100 million cleaning and replacing track ballast in Wyoming in 2009 and 2010. These surfactant rules do not apply to coal shipped from Utah. Further, the dust also deposits on the tracks, causing derailments.[54]

Third, coal dust, blown from unit trains, the Terminal, and staged rail cars at the Terminal, can have many impacts on humans, animals, and plants along the rail lines and in adjacent communities. The coal dust blown or otherwise emitted from these sources consists mainly of fine black particles that are carried by winds onto properties adjoining the Terminal and rail tracks. The most intense dusting events occur when trains travelling in opposite directions meet at normal track speeds,[55] which will be common occurrences due to operation of the Terminal. In addition, tunnels, trestles, and open field often cause emissions due to lateral wind stresses.[56]

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[51] Michael J. Ahrens and Donald J. Morrisey, Biological Effects of Unburnt Coal in the Marine Environment, Oceanography and Marine Biology: An Annual Review, v. 43, pp. 69-122, 2005.

[52] C.F. Pautzke, Studies on the Effect of Coal Washings on Steelhead and Cutthroat Trout, Transactions of the American Fisheries Society, v. 67, pp. 232-233, 1937.

[53] P.M. Campbell and R.H. Devlin, Increased CYP1A1 and Ribosomal Protein L5 Gene Expression in a Teleost: The Response of Juvenile Chinook Salmon to Coal Dust Exposure, Aquatic Toxicology, v. 38, pp. 1-15, 1997.

[54] See, for example:
http://www.stb.dot.gov/decisions/readingroom.nsf/fc695db5bc7ebe2c852572b80040c45f/3bdd891ff0ccc1fb8525794f006db7c9?OpenDocument
and http://www.stb.dot.gov/decisions/ReadingRoom.nsf/WEBUNID/79B5382AE20F7930852578480053111F?OpenDocument.

[55] Simpson Weather Associates, Inc., Norfolk Southern Rail Emission Study, December 30, 1993, http://leg2.state.va.us/dls/h&sdocs.nsf/By+Year/SD581994/$file/SD58_1994.pdf. See also video at: https://www.youtube.com/watch?v=qVUJcmxZ7BE.

[56] Report of the Joint Subcommittee Studying Ways to Reduce Emissions from Coal-Carrying Railroad Cars, Senate Document No. 23, Commonwealth of Virginia, 1997.

Farmers, landowners, and communities along the rail lines would have to deal with nuisance black grit covering their crops, lawns, homes, vehicles, and more seriously, increasing particulate matter in the ambient air, which would result in significant public health issues.[57] See coal dust videos.[58] Testimony before the Joint Subcommittee Studying Ways to Reduce Emissions from Coal-Carrying Railroad Cars" was summarized as follows:[59]

> "Homes and cars need repeated washing, windows and doors must stay closed and outdoor activity is curtailed because of the coal dust. Patio furniture and gardens are said to glisten with coal dust.
>
> A so-called "blowout," typically occurring during extreme meteorological conditions, can result in 40-foot-high clouds of dust billowing upward. Particularly bad episodes have reportedly forced some vehicles traveling along Route 29 to turn on headlights or pull off of the road. Homeowners have made claims with NS in exceptional cases to pay for the cleaning of their homes…[high winds are common in the Bay Area].
>
> For those so affected, the constant presence of coal dust was characterized as a burden that diminishes their quality of life. The dust leaves a greasy black film wherever it lands, settling on windowsills and finding its way through cracks and crevices. Although documentation has not been available, some citizens exposed to emissions expressed concerns about the potentially harmful health effects of coal dust exposure."

Similar complaints have been reported by communities in the Bay Area from coal trains that currently pass through Richmond on their way to the Levin Terminal. "In Parchester Village, a largely black and Latino neighborhood in northwestern Richmond, residents say coal dust blows off the open mounds, covering the grass and coating their screen doors…It's everywhere, he says. If your truck sits here for two, three days without moving you can write your name on the front."[60]

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http://leg2.state.va.us/dls/h&sdocs.nsf/fc86c2b17a1cf388852570f9006f1299/0bef1dac9cc18b48852564420068dc18/$FILE/SD23_1997.pdf.

[57] Paul R. Epstein and others, Full Cost Accounting for the Life Cycle of Coal, Annals of the New York Academy of Sciences, v. 1219, 2011, p. 84.

[58] See videos at: https://www.youtube.com/watch?v=o4v5w-TuhWM; https://www.youtube.com/watch?v=6WdsrkyaGZI; https://www.youtube.com/watch?v=tFlXHT6KCRM; https://www.youtube.com/watch?v=gjhnhZ0mFb4; https://www.youtube.com/watch?v=LwuBhcffcoo.

[59] Report of the Joint Subcommittee Studying Ways to Reduce Emissions from Coal-Carrying Railroad Cars, to the Governor and the General Assembly of Virginia, Senate Document No. 58, Commonwealth of Virginia, Richmond, 1995, http://leg2.state.va.us/dls/h&sdocs.nsf/By+Year/SD581994/$file/SD58_1994.pdf.

[60] Julie Small, Coal Train Dust Worries Richmond Residents, KQED, June 22, 2015, http://ww2.kqed.org/science/2015/06/22/coal-train-dust-worries-richmond-residents/.

"Coal dust" is an umbrella term that includes the full range of particle classifications based on size, from granules to very small particles. Known health effects from coal dust exposure include skin damage, circulatory system problems, and increased risk of developing cancer. In one study, coal dust was associated with respiratory morbidity in school children. A cross section study found that respiratory symptoms were significantly more common in children in the areas exposed to coal dust than the control areas. Elevated symptoms included wheezing, excess cough, and school absences for respiratory symptoms.[61] In another study, proximity to coal mining activities was associated with worse adjusted health status and with higher rates of cardiopulmonary disease, chronic obstructive pulmonary disease, hypertension, lung disease and kidney disease.[62]

Coal dust includes fine particles, both PM10 and PM2.5.[63] These would be emitted from the coal trains along their entire route, from Utah to the Terminal in Oakland as well as from the Terminal itself. Coal dust would be released from staged rail cars waiting to be unloaded,[64] rail car unloading, coal conveying, blending, storing, and transferring coal to ships.

These pollutants are directly linked to health problems because they can travel deep into the lungs, some reaching the bloodstream. They thus affect both the lungs and heart. Numerous scientific studies have linked particle pollution to a variety of health problems, including premature death in people with pre-existing lung and heart disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms, such as irritation of airways, coughing, or difficulty breathing.[65] The Utah coals that will be imported have elevated levels of silica,[66] which is more toxic than coal and is regulated to $1/20^{th}$ the level of coal dust in occupational settings. Exposure to coal dust with elevated silica can result in silicosis, pulmonary tuberculosis, and lung cancer.[67]

Coal dust from uncovered rail cars also can result in other impacts, including soil contamination, visibility impairment, environmental damage, and aesthetic damage. A study adjacent to a coal terminal in Norfolk, Virginia found elevated arsenic associated with coal

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[61] Bernard Brabin and others, Respiratory Morbidity in Merseyside Schoolchildren Exposed to Coal Dust and Air Pollution, Archives of Disease in Childhood, v. 70, pp. 305-312, 1994.

[62] M. Hendryx and M.M. Ahern, Relations Between Health Indicators and Residential Proximity to Coal Mining in West Virginia, American Journal of Public Health, v. 98, pp. 669-671, 2008.

[63] Daniel Jaffe and others, Diesel Particulate Matter and Coal Dust from Trains in the Columbia River Gorge, Washington State, USA, Accepted for publication in Atmospheric Pollution Research, April 23, 2015.

[64] Phyllis Fox, Fugitive Particulate Matter Emissions from Coal Train Staging at the Proposed Coyote Island Terminal, Final Report Prepared for Sierra Club, July 19, 2013.

[65] U. S. Environmental Protection Agency. Particulate Matter, Health, http://www.epa.gov/pm/health.html.

[66] Silica levels range from 58.4% to 61.4% at four Bowie mines that may supply the Terminal. Sept. 2015 HDR Report, p. 13, http://bowieresources.com/skyline/.

[67] Jay Colinet, Health Effects of Overexposure to Respirable Silica Dust, Silica Dust Control Workshop, September 28, 201, http://www.cdc.gov/niosh/mining/UserFiles/workshops/silicaMNM2010/1-Colinet-HealthEffects.pdf.

particles, 2 to 20 times higher than upper crustal levels and 5 times higher than background soil.[68]

The Sept. 2015 HDR report at 14 argues that trace metals in Utah coal are not a concern. However, they base their argument on EPA residential soil screening levels, rather than California risk-based screening levels.[69] The California levels indicate that arsenic levels in Utah coal (1 – 8 mg/kg) are 14 to 114 times higher than the residential soil-screening level (0.07 mg/kg) and are also significantly higher than the commercial/industrial level (0.24 mg/kg).

Coal particles can be carried long distances, settling in lakes and streams, where they can increase acidity and change nutrient balances; deplete soil nutrients; damage sensitive forests and farm crops; and affect the diversity of ecosystems. A study in Oregon, for example, correlated coal dust deposition with significantly higher soil temperatures, decreased soil pH, increased moisture-holding properties, and elevated heavy metal concentrations. These changes were possibly responsible for the lower frequencies and diversity of lichen species in the impacted area.[70] Others have noted that coal dust significantly reduced carbon dioxide exchange of upper and lower leaf surfaces.

The Sept. 2015 HDR study at 13-15 attempts to set aside any worry about coal dust emissions from coal transport as "operations at OBOT will require an air permit through BAAQMD, one of the most stringent regulatory agencies in the U.S...." However, this is incorrect. The BAAQMD has no jurisdiction over emissions from rail transport or mobile sources in general. None of the permits required for the Terminal will limit coal dust emissions from trains. This is an unregulated source.

Covered Rail Cars

While covered rail cars sound like a good idea as they would prevent the release of coal dust, they pose a different set of issues. First, who would own or lease them, the railroads, the coal producers, or the company importing coal from abroad? The Terminal would have no control over whether the trains arrive covered or uncovered. Thus, the claim in the 7/16/15 BOD that the rail cars will be equipped with "removable, fiberglass covers"[71] is meaningless. Further, while the proposed covers could control the dust from the top of the train, they would not control dust from the bottom of the train, which comprises 7% of the total. Further, covered coal cars would create other issues.

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[68] William J. Bounds and Karen H. Johanneson, Arsenic Addition to Soils from Airborne Coal Dust Originating at a Major Coal Shipping Terminal, Water Air Soil Pollution, 185:195-207, 2007.

[69] Office of Environmental Health Hazard Assessment and California Environmental Protection Agency, Human-Exposure-Based Screening Numbers Developed to Aid Estimation of Cleanup Costs for Contaminated Soil, January 2005, Table 5, http://www.oehha.ca.gov/risk/pdf/screenreport010405.pdf.

[70] Sherry Spencer, Effects of coal dust on species composition of mosses and lichens in an arid environment. Journal of Arid Environments, v. 49, issue 4, pp. 843-853, 2001. Abstract available at: http://www.sciencedirect.com/science/article/pii/S014019630190816X.

[71] 7/16/15 BOD, Table 9-1.

First, coal is a highly combustible material, characterized in the 7/16/15 BOD as "very dusty, exhibits spontaneous combustion behavior, potentially explosive."[72] Containing this material in a limited space, beneath a cover, could facilitate spontaneous combustion, by trapping heat in the car. This could result in the delivery of rail cars at the Terminal partially on fire and emitting toxic gases.[73] In fact, it is well known that covered cars that are not properly ventilated are a safety hazard because they increase the risk of the coal spontaneously combusting.[74] Ventilated tops would reduce this risk, but shippers claim they are too expensive. Further, ventilated tops would allow the emission of some coal dust.

The proposal here is for unventilated fiberglass covers, which, if used, present significant safety and public health issues for those along the rail route and near the Terminal in West Oakland. Smoldering rail cars moving through the densely populated Bay Area and queued up at the Terminal present a significant public health risk to nearby businesses and residents as they would release toxic air pollutants.

Second, fiberglass covers can break, bend, blow off, and fall off. Given that train lines pass through residential and commercial areas, such as Fourth Street in Berkeley, these covers could cause serious damage to adjacent properties, pedestrians, and motor vehicles.[75]

Traffic Impacts at Train Crossings

Unit coal trains will adversely impact traffic at at-grade rail crossings, or places where the railroad tracks cross a road.[76] There are 55 at-grade rail crossings between Benicia and the proposed Terminal. A 104-car unit train is about 1.3 miles long[77] and would travel at a rate of about 10 mi/hr in urban areas. Thus, it would take a unit train 9 minutes[78] to pass any given point. Further, a 1.3 mile long train would block multiple rail crossings simultaneously. This would occur up to six times per day for 362 days out of each year as two to three unit trains filled with coal and two to three empty unit trains would pass through each of these crossings. Thus, each crossing would be blocked for up to an hour, 362 days of the year.

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[72] 7/16/15 BOD, Table 5-1.

[73] Coal's Spontaneous Combustion Problem, Sightline Daily, April 11, 2012, http://daily.sightline.org/2012/04/11/coals-spontaneous-combustion-problem/.

[74] Nick Gier, Coal Trains Threaten Environment and Public Health, http://www.sustainablepalouse.org/docs/CoalTrains2923.pdf.

[75] See, for example, Metal Covers Blow off Freight Train, Lompoc Record, July 2, 2006, http://lompocrecord.com/news/local/metal-covers-blown-off-freight-train/article_3ddb578f-5262-595f-8dd5-f439e36d61ef.html.

[76] See, for example, "The bane of all drivers in Seattle's SODO neighborhood: train crossings", http://www.seattlepi.com/local/transportation/article/Getting-There-How-long-can-trains-legally-block-1403713.php.

[77] The proposed trains would have 104 cars. This would require up to 5 locomotives. A locomotive is about 80 ft long and a typical hopper car about 60 ft long. Thus, a 104-car unit train would be: (5x80) + (104x60) = 6,640 ft or about 1.3 miles long, ignoring the gaps between cars.

[78] Transit time = 1.3 miles/10 mi/hr x 60 min/hr + 1 min (open and close gates) = 8.8 minutes.

This long transit time blocking numerous sequential rail crossings simultaneously would create significant traffic jams during rush hours. It would also delay emergency medical response times, significantly impeding emergency vehicles, such as ambulances and fire trucks, creating public emergencies. Finally, it would increase the probability of train-vehicle collisions at grade crossings.

Air Emissions

The unit trains carrying coal to the Terminal will be powered by up to five diesel-fueled locomotives that emit diesel particulate matter (DPM) as well as criteria air pollutants (NOx, SO2, PM10, PM2.5, CO) along rail lines and while idling at the Terminal.[79] Further, ships and supporting tugs that export the coal, and diesel-fired equipment within the Terminal all emit DPM as well as criteria air pollutants. As coal trains weigh much more than other types of trains carrying different products, emissions from exporting coal would be proportionally higher from coal trains than from other types of trains because more locomotives would be needed to carry the extra weight. As noted elsewhere in this report, the unit trains proposed to call at the Terminal loaded with coal weigh much more than other types of trains using these rail lines.

Increased emissions of diesel particulate matter would likely result in significant health impacts in exposed populations along the rail lines and in the vicinity of the Terminal. Exposure to DPM has been linked with acute short-term symptoms such as headache, dizziness, light-headedness, nausea, coughing, difficult or labored breathing, tightness of chest, and irritation of the eyes, nose and throat. Long-term exposures can result in cardiovascular disease, cardiopulmonary disease, increased probability of heart attacks, lung cancer, worsening of asthma, and infant mortality. Children, teens and the elderly are especially vulnerable.[80]

Health risk assessments of rail terminals and ports have found significant cancer risks from DPM up to 2 miles from the facilities. A health risk assessment prepared by the Spokane Regional Clean Air Agency found significant cancer risk (>10 cases in one million exposed) from DPM up to 2 miles from the BNSF Railyard.[81] A health risk assessment of the BNSF Stockton Railyard reported cancer risks from DPM at 100 in a million within 300 yards of the railyard, at 50 in a million within one half mile, at 25 to 50 in a million within 1 mile, and at 10 in a million at up to 2 miles from the railyard.[82] Similar cancer risk levels have been reported at railyards and terminals throughout the state[83] and would be expected in the vicinity of the Terminal, resulting in significant cancer risks in West Oakland.

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[79] Jaffe et al. 2015; Daniel A. Jaffe et al., Diesel Particulate Matter Emission Factors and Air Quality Implications from In-Service Rail in Washington State, USA, Atmospheric Pollution Research, v. 5, pp. 344-351, 2014.

[80] OEHHA, Health Effects of Diesel Exhaust, http://oehha.ca.gov/public_info/facts/pdf/diesel4-02.pdf.

[81] Spokane Regional Clean Air Agency, Health Risk Study for the Burlington Northern/Santa Fe Railroad Spokane Railyard, September 6, 2011, https://www.spokanecleanair.org/documents/air%20quality%20monitoring%20reports%20studies/BNSF%20Spokane%20Railyard%20Health%20Study.pdf.

[82] California Air Resources Board (CARB), Health Risk Assessment for BNSF Railway Stockton Railyard, November 19, 2007, http://www.arb.ca.gov/railyard/hra/bnsf_stockton_hra.pdf.

[83] See, e.g., Port of Long Beach Pier S Redevelopment Project (http://www.polb.com/civica/filebank/blobdload.asp?BlobID=8735); Port of Los Angeles San Pedro Waterfront

Noise

The equipment in the Terminal – ship loaders, switching locomotives, stackers, conveyors, reclaimers, railcar dumpers, ship loaders, dozers, etc. -- are major sources of noise that will be audible in adjacent West Oakland communities and will cause significant noise and vibration impacts.

Further, the unit trains that service the Terminal are major sources of noise that will adversely affect communities along the rail lines and adjacent to the Terminal. The noise from trains is legendary. In Berkeley where I live, train noise can be heard throughout the city, from Fourth Street near the tracks into the Berkeley Hills, 5 miles distant.

While there are many sources of noise from trains (high-pitch screeching, rumbling, idling engines, moving cars, etc.), horn sounding is the most significant. Federal rules governing the blowing of locomotive engine horns require that engineers of all trains sound horns for at least 15-20 seconds at 96-110 decibels (dB) at all public crossings. Decibels in the range of 80-105 are extremely loud, whereas those above 105 are dangerous. Decibels are logarithmic, meaning that 100 decibels is ten times as loud as 90, 110 decibels is ten times as loud as 100, and so on.

Trains servicing the Terminal will pass through 55 at-grade public crossings within the Bay Area. Round trip travel of up to three unit trains per day through 55 at-grade crossing will result in about 2 hours of horn noise[84]. Thus, every day that the Terminal operates, residents within communities along the rail line will be exposed to nearly 2 hours of extremely loud train horns.[85]

While impacts to quality of life from repeated loud noise are self-evident, chronic noise exposure has been proven to cause adverse health effects, including cardiovascular disease; cognitive impairment in children; sleep disturbance and resultant fatigue; hypertension; arrhythmia; increased rate of accidents and injuries; and exacerbation of mental health disorders such as depression, stress and anxiety, and psychosis.[86]

Secondary effects from sleep disturbance can also occur including fatigue, depressed mood and well-being, and decreased performance and alertness. Cardiovascular effects, independent of sleep disturbance, can also occur with acute exposure to noise mostly due to elevated blood pressures and levels of stress-induced hormones. In addition, noise can exacerbate

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Project (http://www.portoflosangeles.org/EIR/SPWaterfront/DEIR/AppxD3_HRA.pdf); Four Commerce Railyards (http://www.arb.ca.gov/railyard/hra/4com_hra.pdf); BNSF Watson (http://www.arb.ca.gov/railyard/hra/bnsf_watson_hra.pdf).

[84] Daily duration of train noise: 20-seconds/sounding x 55 at-grade crossings x 6 train trips/day = 6,600 seconds= 1.83 hours.

[85] http://www.coaltrainfacts.org/key-facts#trains.

[86] http://www.coaltrainfacts.org/key-facts#sthash.X5aI5sYT.dpuf.

stress and anxiety and impair task performance. The National Institute for Occupational Safety and Health recommends less than 15 minutes of exposure per day to noises over 100 dB.[87]

Visual Impacts

The Terminal, located at the foot of the new Bay Bridge and adjacent to communities in West Oakland, will not be fully enclosed based on currently available design drawings. Thus, the various components will be visible from West Oakland, local freeways, and the Bay Bridge. These components include the Commodity A storage buildings, enclosures that are about 100 feet high and 203 feet in diameter[88] and the Commodity B dome which is 142 feet high and 167 feet in diameter.[89] Also visible will be thousands of feet of conveyors and the ship loading apparatus. These massive structures will block views of the Bay and attract attention of passing motorists, which could potentially lead to accidents.

CONCLUSION

In summary, many adverse impacts would result if coal were imported at the proposed Terminal, rather than other materials. These include:

- High water usage to control Terminal dust, especially significant in light of the California drought and further anticipated impacts from climate change
- Adverse public health impacts from coal dust and diesel particulate matter emitted by unit coal trains and the facility,
- Increased potential of train accidents that could adversely impact the state's water supply,
- Adverse aquatic and riparian ecosystem impacts adjacent to the rail lines,
- Adverse noise and vibration impacts along the rail lines and in West Oakland near the Terminal, and
- Adverse traffic impacts, including delayed response time of emergency vehicles.

None of these impacts were anticipated in the CEQA review of this Project. Further, none of the mitigation measures listed in the Sept. 8, 2015 Stice & Block Letter address these impacts. None of these impacts would be mitigated by any of the permits that must be obtained to operate the Terminal.

[87] http://www.coaltrainfacts.org/key-facts#trains.

[88] Conceptual Drawing BMH-142.

[89] Conceptual Drawing BMH-150.

EXHIBIT C

Technical Memorandum
Air Quality, Climate Change, and Environmental Justice Issues from Oakland Trade and Global Logistics Center

SEPTEMBER 18, 2015

PREPARED FOR:

EARTHJUSTICE

PREPARED BY:

SUSTAINABLE SYSTEMS RESEARCH, LLC

Table of Contents

EXECUTIVE SUMMARY

Sustainable Systems Research, LLC was asked by EarthJustice to review potential air quality issues associated with the handling and exportation of coal through the proposed Oakland Bulk and Oversized Terminal (OBOT). The OBOT will be a newly constructed bulk export facility located at Berth 7 as part of the Oakland Army Base Redevelopment. A summary of the key findings are as follows,

- The terminal design specification has not been well defined; tonnage of bulk is estimated to be between 9.9 million tons and 10.5 million tons;

- It is unclear how much of the total bulk throughput will be coal, but assuming that 10.5 million tons of coal is shipped each year, as much as **approximately 646 tons per year of fugitive coal dust may be generated by the movement of coal through the port facility;**

- If coal throughput is constrained to the level of investment by Utah partners, as much as **approximately 323 tons per year of fugitive coal dust may be generated by the movement of coal through the port facility;**

- There are no proven topping agents that have demonstrated effectiveness at reducing coal dust over long trips;

- Rail car covers are frequently referred to in the project documents. We were unable to find any evidence of rail cars covers in production, nor evidence of any rail covers that have been field tested for their ability and effectiveness in reducing fugitive coal dust on extended train trips;

- West Oakland is the adjacent neighborhood and is considered a vulnerable community. Vulnerable communities have a higher risk of differential exposure, susceptibility and sensitivity, differential preparedness, and differential ability to recover as a result of cumulative environmental stress;

- Spring dust storms originating in Africa or Asia transport large quantities of dust mixed with industrial soot, polycyclic aromatic hydrocarbons (PAHs), as well as mercury and ozone;

- Atmospheric mercury can travel long distances causing both local and global contamination. In aquatic systems, mercury can be converted to methylmercury, which is a bioaccumulative toxic compound, and finally,

- ***Shipping 10.5 million tons of coal annually through OBOT will contribute approximately 30 million tons of CO_2 each year to climate change***.

INTRODUCTION

Sustainable Systems Research, LLC was asked by EarthJustice to review potential air quality issues associated with the handling and exportation of coal through the proposed Oakland Bulk and Oversized Terminal (OBOT). The OBOT will be a newly constructed bulk export facility located at Berth 7 as part of the Oakland Army Base Redevelopment. The qualifications of the project analysis team are provided in Appendix B.

BACKGROUND

The OBOT has been designated to receive an investment from Utah that would secure access rights to 49% of the terminal capacity most likely for coal.[1] The expected number of trains and actual amount of coal to be transported through the harbor is difficult to ascertain, and as shown below, varies by source,

- Oakland Global Website (OGW): The facility is expected to operate "*24-hours a day to facilitate moving cargo directly between ships and rail, handling up to 12, 50-car trainloads per day.*[2]
- The FAQ list on the Terminal Logistics Solutions website (TLS): "*TLS will be designed to handle an annual throughput of 9,500,000 metric tons of bulk agriculture and mineral commodities and receive up to three unit trains of 114 rail cars per day.*[3]
- The Basis for Design conceptual specifications (BD): "*Design capacity will be 9 million tonnes per annum (Mtpa) (pg1); "The design calls for incoming trains of 104 railcars to be split in and handled on 26 railcars "ladder type" storage tracks (pg. 13).*"[4]

When everything is converted to similar units, the tons of coal projected to be handled at OBOT's design capacity could range from 9.9 to 10.5 million tons per year (Table 1).

Table 1. Coal Shipment Characteristics

	Coal (million-tons/yr)	Unit Trains per day	Cars per Train
OGW	10.5[5]	12	50
TLS	9.5	3	114
BD	9.9[6]		104

[1] Amy O'Donoghue, *Utah invests $53 million in California port for coal, other exports*, Deseret News, April 24, 2015, *available at* http://www.deseretnews.com/article/865627254/Utah-invests-53-million-in-California-port-for-coal-other-exports.html?pg=all; see also, http://www.deseretnews.com/article/865627254/Utah-invests-53-million-in-California-port-for-coal-other-exports.html?pg=all

[2] http://www.oaklandglobal.com/index.php/project/about/project-overview (accessed Sept 14/2015)

[3] http://tlsoakland.com/faq/ (accessed Sept. 14/2015)

[4] http://tlsoakland.com/pdf/4.pdf

[5] 12 trains * 50 cars/train *100 tons/car. Bulk trains cars will vary between 100 to 110 tons per car; coal usually travels in hopper cars which carry between 70 to 110 tons (see, CSX, Railroad Equipment, Hopper Car, http://www.csx.com/index.cfm/customers/equipment/railroad-equipment/ (accessed Sept 5/2015)

[6] Converted to tons

If the shipment of coal from Utah investors is limited to their investment level, 49%, and the total tonnage is 10.5 million tons per year, the amount of coal coming through the terminal would be approximately 5.1 million tons per year, or nearly 14,000 tons per day. Even at this "investment" level activity, as set forth below, the effects of moving this quantity of coal will be quite significant.

Upon arrival at the OBOT, the coal will be moved to shipping vessels for export. Based on the conceptual design,[7] it appears that hopper cars will be utilized to transport the coal from the trains to ships.[8] The conceptual plans indicate that two commodity dumpers will be used to unload the cars. One commodity dumper has a two car shed, the other has a one car shed with a separate unenclosed shed. To reduce fugitive dust, each coal car will presumably be unloaded in the two car dumping shed and then, according to the conceptual plans, transferred via a hopper to an enclosed conveyor.

Various documents suggests that the staging area for the trains will extend back approximately 2200 feet from the dumper shed, where the track splits. A unit train of 50 cars will use slightly more than one-half of a mile,[9] assuming that a single train is serviced through one dumper shed (rather than taking the time to uncouple and move cars around to use both dumper sheds).

We estimated the fugitive dust emissions for two scenarios: 1) the available bulk potential (12, 50-car trainloads) is used entirely for coal, 2) the amount of coal shipped through the OBOT is limited to the level of the Utah investment (49%, or 6, 50-car trainloads). It is important to note that this analysis may produce conservative estimates in terms of the amount of fugitive coal dust because the basis design (BD), which only recently was made public, indicates that unit trains will be split into 25 car segments for unloading. This would likely produce a larger amount of fugitive coal dust than is estimated in this report.

Scenario 1. Assuming that 12 trains per day arrive with coal (i.e., coal fulfills the entire terminal handling potential), trains will arrive approximately every 2 hours. Conservatively, unloading of the 50-car train can be expected to take between 3 to 4 hours, assuming a bottom dump hopper car is used.[10] During the processing time, cars will be idle on the tracks with exposed coal. At 3 hours unloading time, coal will be exposed approximately 63% of each day; at 4 hours unloading time, coal will be exposed roughly 85% of each day. Under the 4 hour unloading time, this equates to 20 hours of exposed coal each day per train.

Scenario 2. Assuming that 6 trains per day arrive with coal (matching the investment level of 49%), trains should be arriving approximately every 4.8 hours. Unloading of the 50-car train can be expected to take between 3 to 4 hours, assuming a bottom dump hopper car is used.[11] During

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[7] See http://tlsoakland.com/pdf/4.pdf

[8] It's also possible that a gondola car could be used; coal moved in this fashion would involve a rotary hopper within the unloading shed.

[9] Assume each hopper car is approximately 60 feet in length and the 50-car train is served by two locomotives, each at 80 feet in length.

[10] If a single car rotary dump is used, the time to unload a 50 car train will be longer, ranging from 4 to 6 hours.

[11] Ibid

the processing time, cars will be idle on the tracks with exposed coal. At 3 hours unloading time, coal will be exposed approximately 63% of each day; at 4 hours unloading time, coal will be exposed roughly 85% of each day. Under the 4 hour unloading time, this equates to 20 hours of exposed coal each day per train.

The dust from exposed coal is susceptible to being blown by wind while waiting to be loaded. Fugitive coal dust can also be generated during unloading, conveyance, and ship loading processes. While the terminal operator has suggested that additional pollution controls may be used for mitigation, there are two considerations that could affect implementation of mitigation strategies. First, there is no requirement to mitigate coal dust, and second, current and projected long-term coal profit margins are sufficiently tight[12] that unless there is a requirement for mitigation, it is unlikely that any will be used. Thus, for the purposes of this report, the main focus in terms of fugitive coal dust is on the staging area and its potential to generate coal dust that affects the surrounding communities.

FUGITIVE DUST AND DIESEL PARTICULATE MATTER EMISSIONS

The proposed coal export facility will generate significant emissions, both from coal and from locomotive activities. There are four primary factors that influence the quantity of fugitive coal dust from trains:[13] the car and load profile geometry; the physical properties of the coal; the weather and trip characteristics, and the application of dust control measures. Fugitive dust will predominantly occur during the loading, unloading, and transit of the coal. When coal is in transit from Utah, fugitive dust is expected to occur throughout the trip. BNSF has estimated that fugitive dust from coal that is in transit can be in the range of 500 to 2000 lbs *per train car*.[14] Recent research indicates that fugitive dust as well as diesel particulate matter (DPM) emitted as a result of fuel combustion can be significantly higher along rail lines; for $PM_{2.5}$, levels can be as much as double the background concentrations.[15]

Once the coal enters the port facility, both combustion DPM and fugitive dust are concentrated into a smaller area. There will be additional locomotives that will need to be used to assist in train switching. In many cases, the switching trains are usually older line haul trains, and tend to have much higher emissions.[16] Other emissions generating activities include trucks going to and from the terminal, diesel equipment operating onsite and ship emissions.

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[12] Fulton, M. (2014) King Coal disappoints investors: recent financial trends in global coal mining, *Carbon Tracker Initiative*, Energy Transition Advisors: 58 pps.

[13] Kotchenruther, R (2013) Fugitive dust from coal trains: Factors effecting emissions and estimating PM2.5, EPA Region 10, NW-AIRQUEST 2013: 18 pps. url: http://lar.wsu.edu/nw-airquest/docs/201306_meeting/20130606_Kotchenruther_coal_trains.pdf (accessed Sept 4, 2015).

[14] http://daily.sightline.org/2011/08/10/at-least-the-website-is-clean/

[15] Jaffe, D. (2014) Diesel particulate matter emission factors and air quality implications from in-service rail in Washington State, *Atmospheric Pollution Research*, 5: 344-351.

[16] SR (2007) Toxic Air Contaminant Emissions Inventory and Dispersion Modeling Report for the Delores and ICTF Rail Yards, Long Beach, CA

The likelihood of high levels of fugitive coal dust from the transportation, unloading and storage of coal at the terminal constitutes a major health hazard. Therefore, for the purposes of this report, the main focus of analysis is on fugitive coal dust emissions from trains waiting to be unloaded. Under these conditions, it is reasonable to assume that the coal is mostly dry, and having completed the extended train trip, the degree of control efficiency is approaching zero.

Total Fugitive Coal Dust Emissions

The quantity of emissions can be estimated using U.S. EPA's AP-42 method. However, as will be noted later, this method may underestimate the actual amount of fugitive emissions occurring. Moreover, the current lack of detail regarding the actual process by which the coal will be transported and handled required the use of a number of assumptions that may also result in a less accurate estimate.

Given these caveats, the total emissions from the exposed coal during the train waiting period prior to, or during unloading at the terminal are estimated for Scenario 1 (12 trains per day) to be approximately 646 tons per year and for Scenario 2 (5 trains per day), approximately 323 tons per year.

The calculation details are provided in Appendix A. There are also a few analyses points worth noting. In order to calculate these emissions, the number of disturbances had to be estimated. For the purposes of these calculations, only one disturbance per day was assumed. In fact, the number of disturbances is likely to be much higher, particularly if the 25 car segmenting discussed in the conceptual design basis report (DB) is implemented. It is important to note that every time a train is moved, or jostled, the coal is disturbed. It is also possible that dust will be slightly less if the amount of time used to unload coal is expedited. However, even at 50% less exposure time, under Scenario 1, the total fugitive coal dust emissions will still exceed 315 tons/year.

Viability of Topping Agents and Covers for Reducing Dust

The terminal developer has indicated possibly using coal surfactants (topping agents) and/or covered train cars as methods of mitigating dust emissions. Neither of these methods will provide effective protection from coal dust emissions; surfactants cannot provide protection for the duration of a coal train trip from Utah, and coal covers have never been commercially used or evaluated for their efficacy.

As of 2011, BNSF requires that all shippers moving coal from Wyoming or Montana adhere to BNSF's coal loading rule.[17] However, the BNSF rules do not apply to coal shipped from Utah. The BNSF tariff has two requirements. First, the shipper must groom loaded coal according to a specified rounded top profile, which allows for approximately 26 inches of coal exposure vertically from the top edge of the rail car. The surface width of the exposed area can vary from

[17] BNSF Price List 6041-B, Providing rules and regulations governing unit train and volume all-rail coal service, also accessorial services and charges therefor applying as provide in the price list, Effective October 9, 2011, BNSF Price Management, Fort Worth, Texas: 20 pps.

118 inches to 128 inches. The second requirement is that exposed coal must be treated with one of four topper agents, or demonstrate that whatever is employed for dust suppression can achieve an 85% reduction in coal losses at the time of loading.[18] Topping agents (or surfactants) are used to control the fugitive dust from coal train cars.

Shippers are responsible for paying for dust suppression. There are also no compliance measures in place that would ensure that trains travel the entire length of their trip and meet the 85% dust reduction requirement. Said another way, the only federal rules for surfactant or topping agent use and load profiling only require an application at the mine for coal originating in Montana or Wyoming.[19] Without compliance mechanisms for all trains, regardless of origination, for the application of specific topper agents, it is unlikely that the coal companies would pay for this, particularly as coal's profit margins continue to decline.[20] Therefore, it can reasonably be assumed at this point in time that coal transported and shipped through Oakland from Utah will not be treated with a topping agent and fugitive dust will occur during coal transport and unloading.

However, even if treated with a topping agent, it is likely that the efficiency of any topper agent would be significantly reduced by the time the unit train arrives in Oakland.[21] Topping agents are applied at the mine prior to coal shipping. With the application of a topping agent, an approximately 4 inch crust is created on the exposed surface protruding from the coal car. As cars are jostled and bumped during the train ride, or are exposed to high wind velocities, such as those that occur in high mountain passes, it is likely that the crusting will decay and breakup, leading to exposed coal which can then be windblown.

BNSF has argued that, in their tests, the application of the agent has been shown to 85% effective at reducing fugitive coal dust. While the specific details of the BNSF "Super Trial" testing have never been made publically available, it is clear from the summary report that is available that although BNSF claimed 85% dust suppression at the time of loading, there are significant caveats to both the BNSF testing and the results. First, the experimental treatment (topper) was not randomly assigned to train/cars. This – by itself – would render the results exploratory at best. Further, there is no information provided in the BNSF Super Trial summary report on the range of meteorological conditions or train speeds under which testing occurred. Without these data, it is impossible to characterize the weather or train speed regimes under which the testing was completed, and more importantly, conditions to which results could be applied. Finally, BNSF notes that,

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[18] Docket No. FD 30186, Tongue River Railroad Company, Inc, Information Request No. 3, BNSF Response to Letter from Victoria Rutson, Office of Environmental Analysis, Surface Transportation Board, June 17, 2013.
[19] http://www.bnsf.com/customers/what-can-i-ship/coal/coal-dust.html
[20] Fulton, M. (2014)
[21] See, for example, Kutchenruther EPA Region 10, Fugitive Dust from Coal Trains: Factors Effecting Emissions & Estimating PM2.5, 2013; available at: http://lar.wsu.edu/nw-airquest/docs/201306_meeting/20130606_Kotchenruther_coal_trains.pdf

> "...during the course of the Super Trial, field audits of treated trains showed that there was at times significant variation in the quality and consistency of the physical application of topical treatments at the mines. This was not surprising due to the fact that the application procedures were being done on a test basis with temporary facilities. However, the quality of application of the topical treatment could make a significant difference in the effectiveness of the application in suppressing coal dust emissions. In addition, audits of the load profile show that proper load profiling is not being consistently achieved at the mines. Effective coal dust reduction will require that careful attention be given to controlling the quality of the application process and the load profiling when coal dust suppression measures are implemented (pg 7)."

The limitations pointed out by BNSF preclude use of toppers as a fool proof method for reducing coal dust without additional experimentation that will assist in defining the appropriate application procedures and load profiles, and under what conditions variations are applicable.

In fact, in response to an August 2010 request from Cynthia Brown, Chief, Office of Proceedings, for the Surface Transportation Board, that BNSF provide a list of "academic and industry articles and reports related to coal dust (pg 1)", only three of the 27 papers were peer-reviewed papers. Two of the three peer reviewed papers noted the exploratory nature of their work and called for additional testing on the application and effectiveness of *all* topper agents.

Finally, in recent years there has been some development of hard and soft covers that would theoretically snap onto existing (plain gondola) cars, limiting coal exposure, particularly during transit. In a search for use of these technologies, we were able to find three companies offering possible car covers: CoalCap, ClearRRails, LLC, and Strategic Rail Systems. However, no information was found on the in-use cost, unloading efficiencies, durability, and practicality of the covered systems offered by any of the companies. We were also unable to confirm that any of the cover designs have actually gone into production. In a review of the literature, we could not find any papers or reports that described the technical specifications and provided a report on efficacy. It appears, on the basis of our search, that the covers are not in production, have never been in production, and have never been field tested for their ability and effectiveness for reducing fugitive coal dust on extended train trips.

THE EFFECT OF INCREASED COAL DUST ON HEALTH

Coal dust poses a health threat to communities; exporting coal through Oakland would increase coal dust and exacerbate health problems, especially on already vulnerable populations like West Oakland. Air quality regulations require that particles less than or equal to 10 micrometers in diameter (PM_{10}) and particles up to 2.5 micrometers in size ($PM_{2.5}$) meet national standards. Coarse particles refer to re-suspended dust, soil and crustal material, with mass concentrations greater than a 2.5-μm cut point. Coal dust particles can range in size from 1 to 100 microns, which clearly encompasses size ranges relevant to the PM standards. The quantity of fugitive coal dust, and any effect on current attainment status was not considered in the original EIR, or

in the 2012 addendum. This is significant because there are clear health implications for residents in neighborhoods in close proximity to the OBOT.

The effects of particulate matter air pollution on health are well documented.[22] Long-term PM exposure has been implicated in increased incidences of respiratory illnesses,[23] cardiopulmonary mortality,[24] and decreased lung function.[25] Short-term exposure has been associated higher stroke mortality,[26] myocardial infarction,[27] and pollutant-related inflammatory responses.[28] In particular, coal dust increases the likelihood of pneumoconicosis and exacerbates inflammatory responses such as bronchitis and emphysema.

For vulnerable communities, there is a higher risk of differential exposure, susceptibility and sensitivity, differential preparedness, and differential ability to recover as a result of cumulative environmental stress.[29] Children, the elderly, and people with existing health conditions are particularly vulnerable to inhalation of pollution.[30,31] Additionally, low-income households and people of color can be more vulnerable to the effects of pollution exposure for a number of reasons, including greater rates of preexisting health conditions, greater exposure to a number of environmental hazards, greater social vulnerability (including stress), and limited access to health care.[32,33]

West Oakland, the neighborhood which abuts the Port area, is one of the poorest neighborhoods in the county and experiences some of the highest poverty rates in the Bay Area. In 2010, Lisa Jackson, former EPA Administrator, led an environmental justice tour and attended an

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[22] Pope, C. Arden, and Douglas W. Dockery. 2006. "Health Effects of Fine Particulate Air Pollution: Lines That Connect." *Journal of the Air & Waste Management Association* 56 (6): 709–42. doi:10.1080/10473289.2006.10464485.

[23] Dockery, D.W.; Speizer, F.E.; Stram, D.O.; Ware, J.H.; Spengler, J.D.; Ferris, B.G. Effects of Inhalable Particles on Respiratory Health of Children; *Am. Rev. Respir. Dis.* **1989**, *139,* 587-594.

[24] Dockery, D.W.; Pope, C.A., III; Xu, X.; Spengler, J.D.; Ware, J.H.; Fay,M.E.; Ferris, B.G.; Speizer, F.A. An Association between Air Pollution and Mortality in Six U.S. Cities; *N. Engl. J. Med.* **1993**, *329,* 1753-1759.

[25] Pope, C.A., III; Dockery, D.W. Acute Health Effects of PM_{10} Pollution on Symptomatic and Asymptomatic Children; *Am. Rev. Respir. Dis.* **1992**, *145,* 1123-1128.

[26] Kan, H.; Jia, J.; Chen, B. Acute Stroke Mortality and Air Pollution: New Evidence from Shanghai, China; *J. Occup. Health* **2003**, *45,*321-323

[27] Peters, A.; Dockery, D.W.; Muller, J.E.; Mittleman, M.A. Increased Particulate Air Pollution and the Triggering of Myocardial Infarction; *Circulation* **2001**, *103,* 2810-2815.

[28] Liao, D.; Duan, Y.; Whitsel, E.A.; Zheng, Z.-J.; Heiss, G.; Chinchilli, V.M.; Lin, H.-M. Association of Higher Levels of Ambient Criteria Pollutants with Impaired Cardiac Autonomic Control: A Population-Based Study; *Am. J. Epidemiol.* **2004**, *159,* 768-777

[29] EPA, "Framework for Cumulative Risk Assessment," May 2003, EPA/630/P-02/001F; "Concepts, Methods, and Data Sources for Cumulative Health Risk Assessment of Multiple Chemicals, Exposures and Effects: A Resource Document," August 2007, EPA/600/R-06/013F

[30] Rachel Morello-Frosch, Miriam Zuk, Michael Jerrett, Bhavna Shamasunder and Amy D. Kyle. Understanding The Cumulative Impacts Of Inequalities In Environmental Health: Implications For Policy. Health Affairs, 30, no.5 (2011):879-887.

[31] EPA, (2007) "Concepts, Methods, and Data Sources for Cumulative Health Risk Assessment of Multiple Chemicals, Exposures and Effects: A Resource Document," August, EPA/600/R-06/013F.

[32] Morella-Frosh (2011)

[33] EPA (2007)

environmental justice Town Hall in Oakland to raise awareness of the challenges and needs of underserved communities like West Oakland. The neighborhood has a long history of exposure to high levels of pollutants. Compared to other areas in Oakland, residents are exposed to roughly five times higher levels of diesel particulates, and experience more than seven times the per capita diesel exhaust than Alameda County as a whole.[34] Additional fugitive coal dust on top of long-term environmental stress would very likely create cumulative health-related concerns in an already burdened and vulnerable community.

Global Transport of Coal Emissions

There is strong evidence to suggest that much of this coal will be shipped to and consumed within Asia.[35] In addition, scientific evidence now shows that despite being used in Asia, pollutants like fine particulate matter, mercury, and ozone are transported back across the Pacific to the west coast.

China, in particular, is expected to generate the highest demand for coal, followed by Korea, Taiwan, and the developing economies of India and Indonesia. Within the U.S., the use of coal in the future is likely to continue to decline, thus making the Asian markets, in particular China, a likely consumer of the OBOT coal.[36]

Black carbon, which is produced during the combustion process of fossil fuels like coal, is a soot composed of fine particulate matter. A recent Nature review[37] of the state of scientific knowledge with respect to the environmental effects of black carbon revealed a cascading of events that begins with the burning of fossil (diesel and coal) and biomass fuels. The high black carbon emissions from burning then give rise to atmospheric brown clouds that contain, among others, sulphates, nitrates, and fly ash. Rain and snowfall eventually remove the black carbon from the atmosphere and create pollution both locally and globally.

Scientific evidence has shown a pattern of consistent, frequent transport of fine (<2.5 μm) Asian dust over the eastern Pacific and western North America, including California.[38,39] The Asian fine dust concentrations (24-hour average) are between 0.2 and 1 $\mu g/m^3$ and only very rarely exceed 5 $\mu g/m^3$. Spring dust storms originating in Africa or Asia transport large quantities of dust mixed with industrial soot across the Pacific Ocean. Using aircraft, these dust-soot mixtures

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[34] Pacific Institute (2003) *Reducing Diesel Pollution in West Oakland*, Pacific Institute, San Francisco: 16 pps (last accessed Sept. 10, 2015)

[35] Bornozis, N. (2006) Dry Bulk Shipping: The engine of global trade, A Review of the Dry Bulk Sector, *Sponsored Report in Barrons,* October: 13 ppgs

[36] Thomas M. Power, The Greenhouse Gas Impact of Exporting Coal from the West Coast An Economic Analysis SIGHTLINE DAILY, July, 2011, available at http://www.sightline.org/wp-content/uploads/downloads/2012/02/Coal-Power-White-Paper.pdf

[37] Ramanathan, V., G. Carmichael (2008) Global and regional Climate Changes Due to Black Carbon, *Nature*, Vol. 1: 221-227.

[38] VanCuren, R., T. Cahill (2006) Asian aerosols in North America: Frequency and concentrations of fine dust, *Journal of Geophysical Research*, 111(D20), DOI: 10.1029/2002JD002204

[39] Ewing, S., J. Christenson, S. Brown, R. et al (2010) Pb Isotopes as an Indicator of the Asian Contribution to Partuclate Air Poluution in Urban California, *Environmental Science and Technology*, 44(23): 8911-8916.

have been tracked all the way across the Pacific at elevations as low as the surface to as high as 14km. Under certain conditions, the lifetimes of brown clouds can be extended with the result of increasing the persistence of soot-filled fog.

Other studies have identified significant trans-Pacific atmospheric transport of Asian generated polycyclic aromatic hydrocarbons (PAHs),[40] which result from incomplete combustion of coal, among other fuel sources, as well as mercury[41] and ozone.[42] Mercury, in particular, poses a vexing problem. While Europe and North America were major contributors historically, projections now indicate that fossil fuel emissions generated in Asia will drive growth in global mercury deposition.[43] Atmospheric mercury can travel long distances in the right chemical form,[44] causing both local and global contamination.[45] In aquatic systems, mercury can be converted to methylmercury, which is a bioaccumulative toxic compound in fish and humans.[46] Humans can be exposed to mercury by consuming fish, and mercury poses special risks to women of childbearing age and children.[47] Methylmercury exposure causes impaired neurological development and a host of other issues.[48]

GHG EMISSIONS

The proposed export of coal from the OBOT terminal will generate additional greenhouse gas emissions during combustion that will directly increase the negative effects of climate change. Climate change is responsible for sea level rise and exacerbating the drought, both of which are direct effects to Oakland and California. Every project that results in greenhouse gas emissions contributes to climate change. The magnitude of warming that we experience both currently and in the future is not determined by "emissions in any one year, but by cumulative CO2 emissions" produced over time.[49] Thus, every project must account for its contribution to climate change.

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[40] Lafontaine, S. J. Schrlau, J. Butler et al (2015) Relative influence of trans-Pacific and regional Atmospheric Transport of PAHs in the Pacific Northwest, US.

[41] Jaffe, D.; Prestbo, E.; Swartzendruber, P.; Weiss-Penzias, P.; Kato, S.; Takami, A.; Hatakeyama, S.; Kajii, Y. Export of atmospheric mercury from Asia. Atmos. Environ. 2005, 39 (17), 3029−3038

42 Fischer, E. V.; Jaffe, D. A.; Weatherhead, E. C. Free tropospheric peroxyacetyl nitrate (PAN) and ozone at Mount Bachelor: Causes of variability and timescale for trend detection. Atmos. Chem. Phys. Discuss. 2011, 11 (2), 4105−4139

43 Rafaj, P.; Bertok, I.; Cofala, J.; Schopp, W. Scenarios of global mercury emissions from anthropogenic sources. Atmos. Environ. 2013,79, 472−479

[44] Driscoll, C. T., Mason, R. P., Chan, H. M., Jacob, D. J., and Pirrone, N.: Mercury as a global pollutant: sources, pathways, and effects, Environ. Sci. Technol., 47, 4967–4983, doi: 10.1021/es305071v, 2013

[45] Selin, N. E. Global Biogeochemical Cycling of Mercury: A Review. Annu. Rev. Environ. Resour. 2009,34(1), 43−63.

[46] Mergler, D., Anderson, H. A., Chan, L. H. M., Mahaffey, K. R., Murray, M., Sakamoto, M., and Stern, A. H.: Methylmercury exposure and health effects in humans: a worldwide concern, Ambio, 36, 3–11, doi: 10.1579/0044-7447(2007)36[3:meahei]2.0.co;2, 2007

[47] http://www.fda.gov/food/resourcesforyou/consumers/ucm110591.htm

[48] http://www.who.int/mediacentre/factsheets/fs361/en/

[49] Davis and Socolow (2014) Commitment accounting of CO_2 emissions, *Environmental Research Letters*, 9(8): pg 1 (accessed Sept 10, 2015)

The proposed 10.5 million tons of coal shipped annually through OBOT will contribute approximately 30 million tons of CO_2 each year to climate change.[50] ***This is approximately equivalent to the size of seven average power plants.***

A recent law review article makes a cogent and important argument that GHG emissions that result from international consumption of coal exported from the U.S. must be considered under NEPA, and by extension state environmental laws such as CEQA. Exported coal from OBOT "*is a domestic action triggering domestic damage, with just one link of the proximate cause chain taking place abroad (pg. 245).*" The coal is mined in the U.S., transported to a port in the U.S., consumed overseas, adding additional GHG emissions to the atmosphere, further exacerbating climate change, which in the final link of the proximate cause chain, results in damages to the U.S. Two examples clearly illustrate the damage being done. Within the Bay Area, sea level rise is already occurring as a result of climate change, and projected to be much worse if GHG emissions do not decline.[51] Moreover, there is also now clear scientific evidence that "*anthropogenic warming is estimated to have accounted for 8–27% of the observed [California] drought anomaly in 2012–2014 and 5–18% in 2014 (pg 1).*"[52]

In short, GHG emissions from the proposed shipping of coal through the OBOT will increase the warming caused climate change. Increased warming will lead to both local and global impacts, including sea level rise and droughts that are worse than would occur naturally.

CONCLUSION

The proposed project, which involves transport of upwards of 10.5 million tons of coal from Utah to California to be sold overseas, has a direct and proximate impact on Oakland. The project will create additional health hazards due increased fugitive coal dust emissions. We were unable to find any scientifically validated methods for mitigating the coal dust, which is associated with transport and unloading of the coal at the terminal. The increased potential for significant health effects will be borne primarily by the adjacent neighborhood, West Oakland, which is a vulnerable community. Finally, the GHG emissions generated by the consumption of coal overseas will significantly increase warming caused by climate change. Increased temperatures are responsible for sea level rise and exacerbated drought conditions, the effects of which are observed both locally and globally.

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[50] Derived as: 10,500,500 tons of coal * (2.86 tons CO_2/ton of coal) using conversions found in http://www.eia.gov/coal/production/quarterly/co2_article/co2.html. It should also be noted that Davis and Socolow's (2014) (see note 12) suggest that carbon emissions annually from coal in Utah could be substantially higher. In addition, if the coal is used as coking coal for steel production, emissions may higher.

[51] Slagen, A. M. Carson, C. Katsman (2014) Projecting twenty first century regional sea level changes, *Climate Chane*, 124:317-332.

[52] Williams, P., R. Seager, J. Abatzoglou, B. Cook, J. Smeardon, E. Cook (2015), Contribution of anthropogenic warming to California drought during 2012-2014, *Geophysical Research Letters,* DOI: 10.1002/2015GL064924

Appendix A: Fugitive Dust Calculations for Coal Trains Awaiting Unloading

The emission factor (EF), expressed in g/m^2 per year, is calculated as,

$$EF = k \sum_{i=1}^{N} Pi$$

where k is the particle size multiplier; N is the number of disturbances per year, and P_i is the erosion potential (m/s^2), which is calculated using the observed fastest mile of wind for the ith period between disturbances.

The erosion potential, P_i, can be calculated as,

$$P_i = 58(u^* - u_t^*)^2 + 25(u^* - u_t^*) \quad \text{eq. 2}$$

where u^* is the friction velocity (m/s) and u_t is the threshold friction velocity (m/s).

There are some caveats to using the AP-42 method. First, these equations only apply to dry, exposed material. They also assume that there is limited erosion potential, and that the surface of the area on which fugitive emissions may occur is flat. Thus, it is likely that emissions are under-estimated given that new coal will arrive at least 5 times a day.

The friction velocity, u^*, can be estimated by $u^* = 0.053u_{10}^+$, where u_{10}^+ is the fastest mile of wind. The fastest mile wind speed is no longer reported in local weather data; however, it can be calculated using gust basic wind speed.[53] The maximum 5 sec wind gust recorded at the Oakland station at the Western Regional Climate Center (RAWS) was 65 mph.

Calculating $u^* = 0.053(65\ mph) * (\frac{0.4471\frac{m}{s}}{mph})$ = 1.54 m/s. The threshold velocity is taken from Table 13.2.5-2. A factor of 0.54 m/s is used (fine coal dust on concrete pad); this might be relatively conservative since the coal will be in open train cars; most of Utah's coal is bituminous.[54] From eq. 2, the erosion potential, P_i, is equal to 59.49 g/m^2.

Scenario 1.

Setting the number of disturbances to at least once per day, the estimated PM emissions *for single event*, is calculated as,

$$\begin{aligned} PM_{single\ event} &= EF * Area \\ &= \left(1.0 \left[\frac{\left(59.49 \frac{g}{m^2}\right)\left(0.002205 \frac{lb}{g}\right)}{10.764 \frac{ft^2}{m^2}} \right] \right) * (No.Trains * Length * Width) \\ &= 4167\ lbs/day \end{aligned}$$

[53] http://publicecodes.cyberregs.com/st/ca/st/b200v07/st_ca_st_b200v07_16_sec009_par006.htm (accessed Sept. 8, 2015).

[54] http://www.creferencedesk.com/resources/state-symbols/utah/rock.html (accessed Sept. 7, 2015).

If we assume that trains are present 85% of the day, that there is at least one disturbance per day, which is extremely conservative given the amount of traffic going through the terminal, and that there is no effective topping left by the time the train has arrived to the port, then the total PM emissions expected from fugitive dust events is calculated as,

$$Total\ PM = PM_{single\ event} * \%Time\ Trains\ are\ Present = 4167 \frac{lbs}{day} * 0.85$$
$$= 646.37\ tons/year$$

Scenario 2, with 6 trains per day, can be calculated similarly. The total estimated annual PM emissions under Scenario 2 are 323.2 tons/year.

Additional caveats to this analysis are noted in the report.

Appendix B: Team Qualifications

For two decades, Professor Deb Niemeier has focused on integrating models for estimating mobile source emissions with transportation modeling. Her primary research interest has been on developing highly accurate, accessible processes and emissions modeling and travel behavior models that can be used in the public sector, including the identification and modeling of environmental health disparities and improved understanding of formal and informal governance processes in urban planning. This combination of basic and translational research has resulted in new ways to identify the spatial properties of mobile source emissions, new methods for developing vehicle emissions inventories, and improved regulatory guidance, including better identification of vulnerable populations. In 2014, she was named a Fellow of the American Association for the Advancement of Science (AAAS) for "distinguished contributions to energy and environmental science study and policy development." In 2015, she was named a Guggenheim Fellow.

Her accomplishments include serving as the lead author for current federal guidance for PM (particulate matter) hotspot analysis for California, whose standards generally exceed federal standards. This guidance was based on translational work in vehicle emissions modeling and transportation project development conducted as part of the six year state and federally funded program, the UC Davis Air Quality Project (AQP), which resulted more than 50 reports aimed at improving public agency transportation-air quality modeling. Led by Prof. Niemeier, new ways to better estimate mobile source emissions inventories were developed and ushered into public sector practice through the AQP. This work was seminal in developing innovative and rigorous evaluation processes for public agencies charged with assessing the air quality effects of new transportation infrastructure and is used in some form by nearly all state transportation agencies.

More recently, her research group's efforts in synthesizing research on the return to background concentrations at roadside edge has resulted in a revision of current thinking about minimum acceptable distances from roadway edges for sensitive populations. This work has motivated a number of new studies around the world examining air pollutant concentrations at much greater distances than previously thought necessary. She is currently working with collaborators in sociology and political science broadly examining the intersection of governance processes in regional planning and climate change outcomes, and better connecting urban planning processes with mitigation of environmental disparities. She was also the lead author for the Transportation Chapter of the Southwest Climate Assessment conducted as part of the 2014 National Climate Assessment.

Working with an interdisciplinary research group of graduate students, post-doctoral scholars, and faculty collaborators, she has published 130 journal articles and 9 book chapters. She has been the major advisor for 24 Ph.D. students, a number of whom now serve as university faculty at various institutions, including Cornell University, University of Illinois, University of New Mexico, and Georgia Tech. Her teaching and research has been generously funded by the National Science Foundation, the California Air Resources Board, the Environmental Protection Agency, the Federal Highway Administration, and the California Department of Transportation. As part of a company she formed with 3 former students, she also works with legal advocacy groups and environmental law clinics on social justice issues associated with access to transportation and transportation-air quality.

She is the current and founding Director for the Sustainable Design Lab at UC Davis. She is in her second year of chairing the university budget committee. She currently serves as a member of the

National Academy of Engineering Board on Energy and Environmental Systems. She is on the science advisory board for Capital Public Radio, and wrote their blog on energy and the environment for four years. She chairs the Policy and Environment Cluster of NECTAR, the Network on European Communications and Transport Activities Research. Dr. Niemeier is a member of the Transportation Research Board and has served on several National Research Council committees; her current service includes NCHRP 25-38 (Data Sources for MOVEs) and SHRP 2 C10B (Partnership to Develop an Integrated Travel Demand Model and Fine-Grained, Time-Sensitive Network) Expert Task Group. She is a member of the American Association for the Advancement of Science, recently completing an elected four-year member-at-large term on the AAAS engineering section nominating committee. She is a member of the graduate faculty in the departments of Computer Science; Transportation, Technology, and Policy; Education, and Geography. She currently sits on the Executive Committee of the Graduate Geography Group.

Dr. Niemeier has served as chair of the UC Davis civil engineering department. She also served as the Director of the John Muir Institute and Associate Vice Chancellor in the Office of Research at UC Davis. The John Muir Institute is home to 150 faculty and staff conducting research at the interface of the environment and society. She has received a number of awards including the Aldo Leopold Leadership Award, the Chancellor's Fellow Award, an NSF CAREER award, and UC Davis Outstanding Faculty Mentor and Faculty Advisor awards. She is currently the editor-in-chief of *Sustainable Cities and Society* and also recently completed a six year appointment as the Editor-in-Chief of *Transportation Research, Part A*, the leading international journal focused on transportation policy and practice. She was the first woman in the journal's history to serve in this position. She has served on the Mars Corp. Sustainability Council as well as numerous other sustainability-related boards. She received her B.S. in civil engineering from the University of Texas (1982), and her Ph.D. in civil engineering from the University of Washington (1994).

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Principal. Sustainable Systems Research, LLC, 2012-Present
Recent Consulting.

- Natural Resources Defense Council, *Review of Southern California International Gateway Project Recirculated Draft EIR*, 2012
- Natural Resources Defense Council, *Coal Dust and Rail: Impacts of Coal Transport from the Powder River Basin*, 2012
- East Yard Communities for Environmental Justice and Natural Resources Defense Council, *Review of the Transportation and Air Quality Analysis in the I-710 Draft EIR*, 2012
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PROFESSIONAL APPOINTMENTS

Editor-in-Chief, Sustainable Cities and Society, 2014-Present
Editor-in-Chief, Transportation Research, Part A, 2007-2012
Editorial Advisory Board, Transportation Research, Part B, 2003-Present
MARs Corp, Sustainable Science Board, 2009-Present
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Ecosystem Management, Inc. *Albuquerque Regional Transportation Infrastructure and Land Use: Climate Change Impacts And Adaptation*, 2014

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Engineering Technician. City of Morro Bay Department of Public Services, 2014-Present.

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PUBLICATIONS

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SAN FRANCISCO
BAYKEEPER®

September 21, 2015

Oakland City Council
Mayor Schaaf
Oakland City Administrator
1 Frank H. Ogawa Plaza
Oakland, CA 94612

RE: Comments regarding water quality impacts associated with coal transportation, handling, and export from the Oakland Bulk and Oversized Terminal (File #14-1215)

I. Introduction

On behalf of San Francisco Baykeeper ("Baykeeper") and our over 3,000 members who use and enjoy the environmental, recreational, and aesthetic qualities of San Francisco Bay and its surrounding tributaries and ecosystems, we respectfully submit these comments regarding the potential public health and safety impacts from the transportation, transloading, handling, and/or export of coal through the City of Oakland. Recent reports indicate that half of the proposed Oakland Bulk and Oversized Terminal ("OBOT") project, equivalent to 9.5 million metric tons, will be dedicated to the transport of coal and other commodities from Utah.[1] This could result in the transport of up to a dozen 50-car trainloads of coal per day along San Francisco Bay and through communities already facing the poorest air quality in the region.[2] Coal transport and export is inconsistent with Oakland's desired use of the former Army Base, incompatible with City Council Resolution No. 85054, and threatens already impaired waterways and creeks that lead to the Bay.

II. Water pollution from transporting, handling, and exporting Utah coal

The transport of coal through the region and along sensitive waterways creates the potential to exacerbate water quality impairments associated with poly-aromatic hydrocarbons (PAHs), dioxins and heavy metals. These contaminants, as well as other industrial contaminants, such as PCBs, are already found in higher concentrations in the vicinity of the former Army Base. Consequentially, the presence of a coal export terminal is likely to result in additional impairment.

It is important to note that this proposed coal terminal lacked an environmental review specific to coal, and despite the proponent's claims and some preliminary drawings recently posted on the company's website, there are no final design plans to analyze for this review. As such, we assume the rail transportation of coal and operations at the terminal will be identical to the most

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[1] Amy O'Donoghue, *Utah invests $53 million in California port for coal, other exports*, Deseret News, April 24, 2015, *available* at http://www.deseretnews.com/article/865627254/Utah-invests-53-million-in-California-port-for-coal-other-exports.html?pg=all

[2] P. Matier and A. Ross, *Opponents of Oakland coal shipping target governor's pal*, San Francisco Chronicle, July 25, 2015, *available* at www.sfchronicle.com/bayarea/article/Opponents-of-Oakland-coal-shipping-target-6405576.php

common methods of coal transport (by uncovered train cars) and similar to other coal export facilities (containing uncovered piles without adequate protections in place to prevent exposure to the elements).

a. Potential pollution pathways to the Bay

Coal is most likely to impact the Bay and surrounding communities through aerial deposition, wastewater disposal, and stormwater runoff, and it could also enter these areas through train derailment.

During transportation through the use of uncovered rail cars, coal dust is primarily deposited through aerial deposition, which is exacerbated by poorly maintained rail tracks, uneven coal beds, and strong winds. When offloaded using "bottom dump" cars, coal material often leaks through the bottom or is released in a plume of dust at the unloading point. According to a Burlington Northern Santa Fe (BNSF) study, uncovered rail cars can lose anywhere from 500 to 2,000 pounds of coal dust.[3] Ultimately, much of the fugitive coal dust that is carried long distances by wind and water will settle in waterways that lead to the Bay. While surfactants or topping agents may be used for coal originating from Montana and Wyoming, no surfactants are required for coal originating in Utah. Even if surfactants are applied to uncovered rail cars, they are not 100% effective in preventing coal dust and can themselves be a source of pollution.[4]

Once the trains reach the coal terminal, methods of unloading the coal can be either manual or automated.[5] Coal is inherently dust producing. For this reason, water is required to control coal dust when handling and unloading/loading coal at the terminal facility.[6] The resulting wastewater highly contaminated with coal particles, unless fully captured, will drain directly into the Bay. Additionally, coal dust, regardless of how it is handled, will inevitably enter the Bay through wind deposition. After the coal is unloaded from the rail cars, it is typically stored in open stockpiles while awaiting loading into ships. The prevailing winds at the Oakland shorelines will blow coal directly into the water when it is stored in open piles along the shoreline. In addition to coal blowing into the water, erosion of the pile and polluted stormwater runoff from the coal pile are two additional ways that coal can enter the Bay. Coal spillage can also occur during the loading onto shipping tankers and barges, which sit directly on the water. And any cargo washing of the rail car, ship loaders, shipping tankers and barges will also result in coal runoff.

[3] BSNF Railway Company, 2011, *available* at http://www.coaltrainfacts.org/docs/BNSF-Coal-Dust-FAQs1.pdf
[4] Ashley Ahearn, *What Coal-train dust means for human health*, Oregon Public Broadcasting, March 10, 2013, *available* at http://www.opb.org/news/article/coal-dust-a-closer-look/
[5] M.J Ahrens and D.J. Morrisey, *Biological Effects of Unburnt Coal in the Marine Environment*, Oceanography and Marine Biology, 2005
[6] George D. Emmitt, *Minimizing groundwater consumption for required fugitive dust control programs*, http://www.powerpastcoal.org/wp-content/uploads/2011/08/MINIMIZING-GROUNDWATER-CONSUMPTION-FOR-REQUIRED-FUGITIVE-DUST-CONTROL-PROGRAMS.pdf

Exporting coal via rail also increases the chances of a train derailment in addition to a tanker or barge spill in the Bay.[7] By way of just a few examples, in December 2012, a tanker that was carrying 180,000 tons of coal crashed into the Westshore Terminal in Vancouver. In July 2012, three coal trains derailed on July 2, 3, and 4, in Pasco, Washington, Pendleton, Texas, and Chicago Illinois, respectively. The Pasco train derailment dumped over 6 million pounds of coal into the iconic Columbia River Gorge, and was caused in part due to an accumulation of coal on the tracks that interfered with the stability and integrity of the track structure.[8]

b. Environmental consequences of coal in marine and non-marine environments

Inherently, coal contains numerous pollutants that are toxic at low concentrations such as mercury, lead, arsenic, uranium, thorium, and polycyclic aromatic hydrocarbons (PAHs). Caution should be exercised when pollutants with that combination of toxins threaten to enter the environment in large quantities. The studies that have been conducted in the past few decades of unburnt coal in waterways demonstrate overall negative impacts on water quality and aquatic ecosystems. Based on the studies that have been conducted, it can be inferred that the consequences will be similar in the Bay and along the Oakland shoreline.

One of the main concerns is the sheer quantity of coal that could be deposited in the Bay. Over a 22-year period, scientists examined coal accumulation around the Westshore Terminal in Vancouver. They observed coal concentrations of over 10% at a distance of 350 meters from the terminal and 2% concentrations as far as 1,750 meters away.[9] This steady accumulation of coal dust on aquatic sediments poses harm to the flora and fauna living on the bottom of the sea floor, potentially reducing the diversity and number of species in the aquatic ecosystem. Additionally, increased concentrations of suspended particulate coal in water behaves similarly to other suspended or deposited sediments by blocking light, which can negatively interfere with fish habitat.[10] Coal particulates can also find their way into the breathing apparatus of aquatic species, affecting their ability to survive. The suspended coal sediments can also reduce water clarity, which negatively impacts predator fish species from finding food.[11]

In addition to the physical consequences in aquatic environments, unburnt coal also has chemical consequences on fish species. Studies in the past have shown that exposure to coal particles and dust can result in reduced growth rates in trout and reduced spawning success of

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[7] Laura Nelson, *Derailed coal train fuels critics of increased Northwest shipping*, Los Angeles Times, July 3 2012, *available* at http://articles.latimes.com/2012/jul/03/nation/la-na-nn-coal-dust-train-derail-20120703

[8] G. Hamilton and T. Crawford, *Ship croshes into dock at Westshore Terminals, spilling coal into water*, The Vancouver Sun, December 9, 2012, *available* at http://www.vancouversun.com/news/Ship+crashes+into+dock+Westshore+Terminals+spilling+coal+into+water+with+video/7667184/story.html

[9] R. Johnson, and R.M. Bustin, *Coal dust dispersal around a marine coal terminal (1977-1999), British Columbia: The fate of coal dust in the marine environment*, International Journal of Geology, 2006

[10] M.J Ahrens and D.J. Morrisey, 2005

[11] D.H. Wilber and D.G. Clarke, *Biological effects of suspended sediments: a review of suspended sediment impacts on fish and shellfish with relation to dredging activities in estuaries*, North American Journal of Fisheries Management, 2001

fathead minnows.[12] Further, exposure to coal has been found to interfere with the mortality of Steelhead and Cutthroat trout.[13] Other consequences include the alteration of viral cellular metabolic processes in juvenile Chinook salmon.[14] More worrisome is the fact that in the Bay, Steelhead trout are a threatened species and Chinook salmon are an endangered species. Additionally, it been found that the topping agents or surfactants sometimes used to "reduce" coal dust loss on trains, could actually boost the ability of coal pollutants to enter the environment.[15]

Oxidizing coal particles also reduce dissolved oxygen levels, which create adverse living conditions for bottom dwelling species.[16] These negative conditions can have reverberating impacts up the food chain. And in freshwater ecosystems, mineral salts in coal oxidize when exposed to water, which can increase the salinity of the water.[17] Furthermore, acidic runoff from coal piles is a common problem at these types of terminals, and with high sulfur coal, the runoff in freshwater streams can reduce the diversity of aquatic species.[18]

c. Firsthand experience with negative water quality impacts of coal

Baykeeper has firsthand experience with the negative impacts of coal and petroleum coke products on the Bay based on our recent legal action to enforce the Clean Water Act against the only other Bay facility exporting such materials, the Levin Richmond Terminal. *See San Francisco Baykeeper v. Levin Enterprises, Inc.*, Case No. 12-04338-EDL (N.D. Cal.). In that case, Baykeeper retained a national expert, Dr. William J. Rogers, who documented high concentrations of heavy metals (including lead, chromium, mercury, selenium, and arsenic), PAHs, and PCBs, in samples collected near the Levin facility that were well above state water quality standards and criteria for the protection of aquatic life.[19] Dr. Rogers found that such pollutants posed a direct risk to benthic marine life, as well as a risk birds and mammals that forage in the area due to the bioaccumulation of these pollutants in shellfish and finfish.[20]

In sum, coal in aquatic environments negatively impacts the water quality, aquatic species, and the entire ecosystem in potentially irreversible ways. Allowing coal to pass through Oakland foreshadows a similar grim future for the Bay.

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[12] D.W. Herbert and S.M. Richards, *The growth and survival of fish in some suspension of solids of industrial origin*, Air Water Pollution, 1963

[13] C.F. Pautzke, *Studies on the effect of coal washings on Steelhead and Cutthroat Trout*, Transactions of the American Fisheries Society, 1938

[14] P.M. Campbell and R.H. Devlin, *Increased CYP1A1 and ribosomal protein L5 gene expression in a teleost: the response of juvenile Chinook salmon to coal dust exposure*, Aquatic Toxicology, 1997

[15] Ashley Ahearn, 2013

[16] R. Johnson and R.M. Bustin, 2006

[17] M.J Ahrens and D.J. Morrisey, 2005

[18] M.C. Swift, *Effects of coal pile runoff on stream quality and macroinvertebrate communities*, Journal of American Water Resources Association, 1985

[19] Expert Report of Dr. William J. Rogers Regarding *San Francisco Baykeeper v. Levin Enterprises, Inc.* in the U.S. District Court, Northern District of California, Case number 3:12-cv-04388-EDL (September 2013).

[20] *Id.*

III. Conclusion

Coal should not be part of the Oakland Army Base project if the City of Oakland believes in 1) protecting the health and safety of the San Francisco Bay and all its surrounding waterways, 2) keeping healthy the people who reside near the railways and shoreline, and 3) exemplifying the City of Oakland's and California's commitment to be coal-free.

To date, there is insufficient information or facility design planning to evaluate the exact ways that petroleum coke and coal can enter the water from the proposed terminal. The problems may only be exacerbated by the fact that there are no enforceable conditions to require any sort of pollution mitigation. If this project is to move forward, there must be a thorough and comprehensive environmental review of the terminal in order to comprehensively analyze the risks of unburned coal in marine and non-marine environments and waterways, specifically in the Bay, and to effectively address and reduce the risks of any such water quality and public health impacts.

Thank you for considering this important environmental issue with all the seriousness it warrants. Please do not hesitate to contact us with any questions you may have about this project and the health of the Bay.

Sincerely,

Jessica Wan
Policy Intern

Ian Wren
Staff Scientist

David C. Smith
(510) 735-0034
dsmith@sticeblock.com

September 8, 2015

SENT VIA ELECTRONIC MAIL
JMonetta@oakland.net

Sabrina Landreth
City Administrator
CITY OF OAKLAND
1 Frank Ogawa Plaza, 3rd Floor
Oakland, California 94612

Re: September 21, 2015, Oakland City Council Public Hearing

Dear City Administrator Landreth,

General Introduction

This firm represents Oakland Bulk and Oversized Terminal, LLC (OBOT), one of the developers of the Oakland Global Trade and Logistics Center (Oakland Global) at the former Oakland Army Base. A critical component of the project in Oakland Global's West Gateway area is the rail-served, multi-commodity bulk and oversize marine terminal (the Terminal). For over five years, the City of Oakland (City), OBOT, and other Oakland Global developers have embraced and vigilantly pursued a vision to transform the former Oakland Army Base to a state-of-the-art facility, setting new standards for economic vitality, job creation, and environmental improvement. The vision and commitment have not changed for anyone.

Oakland Global will involve the collective investment of more than $500 million in private and public funds, many of those funds already having been committed. Oakland Global will establish 2,800 project construction jobs, 2,000 permanent waterfront jobs, an estimated 4,225 regional jobs, and produce up to $300 million annually in regional employment income, in a region suffering a crippling 17 percent unemployment rate currently.

On September 2, 2015, our office received a "Notice of Public Hearing on the Health and/or Safety Impacts of Coal," dated August 28, 2015 (Notice). The Notice makes no specific reference to any particular project, facility, or operation, but asks interested parties to provide specified information about coal, again, without reference to any project, facility, or operation. According to the Notice, the public hearing will be September 21, 2015, at 4:00 p.m. (Hearing).

We have also received a copy of a September 2, 2015, letter from Earthjustice to the Oakland City Administrator regarding "Proposed Oakland Coal Export Terminal" (EJ Letter). In the letter, Earthjustice characterizes the Hearing as follows: "The City Council will hold a Public Health and Safety Hearing on September 21, 2015, to consider the health and safety consequences of allowing development of the coal export terminal. We understand that the City Administrator will be preparing a staff report with her recommendations regarding development of the project."

The Notice provides that any information provided to the City prior to 1:00 p.m. on September 8, 2015, would be included in the City Council Agenda packet. We ask that this letter be so included.

Project Entitlements and Status

The City approved the entitlements for Oakland Global in 2012 and 2013, and concluded its review of the project in accord with the California Environmental Quality Act (CEQA) at that time. The project description under CEQA specifically identified and analyzed the Terminal, including that the Terminal would handle "non-containerized bulk goods."[1] The City vested, among other rights, the (a) right to lease the West Gateway area for the development and operation of the Terminal and (b) corresponding land use entitlements for the project with the adoption of a Lease Disposition and Development Agreement (LDDA) and Development Agreement (DA) (collectively with all other City approvals, the Entitlements).[2] As part of the Entitlements, the City imposed literally hundreds of mitigation measures and conditions of approval to ensure that the Terminal would be operated safely and in compliance with all applicable laws.[3]

OBOT has been diligent and thorough in its development of the project. It is in full conformance with all of its obligations to date and importantly has recently agreed, *at the City's request*, to expedite development at the West Gateway and, as a result, to assume millions of

[1] 2012 Initial Study and Addendum, pg. 30.
[2] As to vested rights conveyed by adoption of a development agreement, *see* Mammoth Lakes Land Acquisition, LLC v. Town of Mammoth Lakes, 191 Cal.App.4th 435, 442 (2010) (upholding a $30 million damage award in favor of developer based upon city's *anticipatory* breach of development agreement, as evidenced by town managers refusal to cooperate with developer).
[3] Standard Conditions of Approval and Mitigation Monitoring and Reporting Program, 2012 Oakland Army Base Project (Revised by City Council 7-16-13), attached hereto as Exhibit A.

dollars of additional financial responsibility in connection with the timely development of the Oakland Global project.

While OBOT is the developer of the Terminal project, OBOT has negotiated with several third parties regarding the Terminal, at various times to either form a joint venture with OBOT for the development and operation of the Terminal or to independently develop and operate the Terminal under a sublease arrangement with OBOT acting as a passive sublandlord. OBOT is currently pursuing the latter arrangement and, effective as of April 2014 OBOT has entered into a sublease option that provides Terminal Logistics Solutions (TLS) with the exclusive right to sublease the terminal portions of the West Gateway property. To clarify some prior misunderstandings and misinformation, the sublease option agreement is the sole relationship between OBOT and TLS. They are wholly independent entities and have no direct or indirect managerial or other control relative to their respective operations.

It is our understanding that TLS is currently evaluating potential operations at OBOT, including potential clients wishing to ship bulk materials through OBOT. TLS is soliciting interest from throughout the western region as to the full range of legal materials that bulk suppliers expect from facilities of this caliber, consistent with the Entitlements.

The development of the Terminal is not about the shipping of any single bulk material; rather, it is the development of full-service, non-containerized, bulk, multi-commodity facility capable of handling any of the multitudes of legal materials the bulk market demands and for which it requires the type of trade and logistics facilities to be offered at the Terminal. It is impossible to know exactly which or how many commodities may ultimately be shipped through the Terminal over the life of the facility. What is known is that to be commercially viable, the Terminal must be capable of addressing the current market need, and then it will have to shift and evolve as that market demand shifts and evolves. And that is precisely what is being designed and exactly the project for which the City granted the project Entitlements in 2012 and 2013. TLS is not committing to the export of coal or any other commodity. They intend to construct a multi-commodity facility that can be retrofitted over time to handle any commodity. The bulk market is not going away, even if the demand for a particular commodity wanes. The only thing that would affect the Terminal's economic viability is the uncertainty that would be created by EJ's request to line item veto based on public opinion.

There Is No Basis for the Alleged Health Impacts Asserted by Earthjustice

Earthjustice goes to great lengths to recount the challenging *existing* air quality concerns in and around the Port region and West Oakland. But the EJ Letter itself acknowledges that this circumstance is due to *existing* "diesel pollution and hazardous waste exposure."[4]

Earthjustice ignores, however, that it was precisely this challenging status quo that was one of the biggest drivers for approval of the integrated, multi-modal, and state-of-the-art facilities at Oakland Global. Without question or dispute, the Terminal will operate far more efficiently and with far superior emissions reduction mandates than the status quo. Said another way, the region, its workers, and its residents are in a far superior position in terms of health and environmental stewardship with Oakland Global and its modern and exacting regulatory mandates than without it.

Earthjustice apparently has not acknowledged or contemplated the full compliance to date with the City-imposed mitigation obligations of the project that have led to enhanced air monitoring, with Bay Area Air Quality Management District (BAAQMD) audited and certified instrumentation, in three locations surrounding the Oakland Global project since October 2013. Additionally, Earthjustice fails to acknowledge the existing unit trains of uncovered coal that routinely run through Oakland, without recordable impact from testing done since October 2013, or a single registered complaint from the community. Photos September 4, 2015, of these coal shipments being transported by rail through Oakland are attached as Exhibit B.

After meticulously documenting sources for the existing diesel-based concern in the region, the EJ Letter then makes a quantum leap to the conclusory and unsubstantiated assertion that operations of the Terminal will make things worse. Incredibly, Earthjustice makes that assertion without a single evidentiary citation to support it.[5] Moreover, they make the assertion without ever once acknowledging the hundreds of mitigation measures and conditions of approval already imposed on the project by the City, to say nothing of myriad federal, state, regional, and local laws and regulations with which the Terminal ultimately must comply, regardless of which bulk material may be being transported. Without consideration of these mandates as they apply to the Terminal, the EJ Letter is little more than speculation, conclusory assertions without substantiation, and out-of-context anecdotal instances designed solely for sowing confusion and fear among Council members and the public.

[4] EJ Letter, pg. 4, fn. 6, 7.
[5] EJ Letter, pg. 5.

Instead of presenting the *current* mitigation measures , conditions of approval, and federal, state, regional, and local laws with which OBOT must comply, the EJ Letter ignores this regulatory foundation and piles on hypothetical circumstances that "most commonly" occur and allegedly "common" practices which could, perhaps, hypothetically "create additional exposure risks for the community."[6] And yet the EJ Letter provides not a single detail or piece of evidence regarding practices that will actually occur at this modern, highly-regulated facility, much less how that practice creates material risk whatsoever arising either for the future workers at OBOT and Oakland Global, or the surrounding community or any part thereof.

Perhaps most illustrative of Earthjustice's desperation to scare the community and City officials so as to mask the lack of credible facts, the EJ Letter actually makes the absurd analogy that working at the Terminal would be tantamount to working in a coal mine, and then cites to a *1995* study regarding the health consequences to workers in an actual coal mine.[7]

OBOT: A State-of-the-Art Facility

The EJ Letter waxes long as to concerns over certain commodities potentially coming through OBOT, where they might be shipped, and what may come of them there. Setting such speculation aside and focusing directly on the facility – Oakland Global, including the Terminal – it is beyond dispute and the EJ Letter makes no contrary allegation that this state-of-the-art facility will be a model, unlike any other comparable facility around the world. The emission-reduction mandates to which it is already subject through the City and the Bay Area Air Quality Management District, to name just some, ensure a facility fully in compliance with the greenhouse-gas-reducing policies and mandates of the state cited in the EJ Letter, including AB 32, Executive Orders, and regulations promulgated by the California Air Resources Board.

This facility will not thwart realization of California's greenhouse gas reduction efforts, it will be a model for compliance.

The City's Legal Authority

General Overview

Earthjustice also goes to great lengths to posit extraordinary legal authorities supposedly available to the City to further Earthjustice's agenda. Those purported authorities are either nonexistent, or wholly irrelevant. That a New York court may have upheld a fracking ban in a

[6] *Id.*
[7] EJ Letter, pg. 13, fn. 48.

township in that state is wholly irrelevant to the fully vested status of Oakland Global and its Entitlements.[8] It is important to note that none of the cited ordinances appear to impact rail facilities or vested rights, each of which is key to the Terminal and the City's (in)ability to impose new laws that affect the Terminal.

Federal Preemption

Other counsel for OBOT on the project, the Venable law firm, has analyzed the question of federal preemption related to any curtailment of the rail facilities servicing the Terminal at the state or local level. These legal experts on rail operations have reviewed the facts regarding the Entitlements and the proposed operations at the Terminal, and they have concluded that federal law would preempt any efforts by the City that would burden rail transportation. Importantly, they reach this conclusion regardless of whether the land at issue, or any portion thereof, may be owned by the City.[9]

Vested Rights

As provided above, the City's approval of the LDDA and DA established the mutual intent of the City and OBOT to vest OBOT's rights to develop the Terminal according to the plans and intentions embodied in the totality of the Entitlements, and that is exactly what OBOT and the City have been doing since approval of the Entitlements.

California's development agreement statute[10] was adopted expressly for the purpose of eliminating the ambiguity of the common law notion of "vested rights."[11] As summarized by one of the state's premiere real estate and land use authorities:

> "In addressing the lack of certainty and economic waste created by the common law vested rights rule, the Legislature's intent was to preserve the local government discretionary authority over development projects, but to allow for the current exercise of that discretion by freezing zoning and other land use regulations applicable to the property to ensure the developer will not be adversely impacted by changes in the standards for government approval during the development process. At the same time, it

[8] *See, e.g.*, EJ Letter, pg. 15.
[9] Legal Memorandum, The Venable Law Firm, September 8, 2015, attached hereto as Exhibit C.
[10] Ca. Gov. Code § 65864 et seq.
[11] Santa Margarita Area Residents Together v. San Luis Obispo County, 84 Cal. App. 4th 221, 229-230 (2000).

> was intended to give developers some assurance that they will be able to complete the total project as approved when they begin to commit their resources to the project. It also serves the public need to provide comprehensive long-range planning and land-use integrity for large projects, rather than often haphazard land use control imposed on a series of smaller, fragmented projects."[12]

In *Mammoth Lakes Land Acquisition, LLC* v, *Town of Mammoth Lakes*, the Court of Appeal upheld a $30 million damages award against the Town for the *anticipatory* breach of a development agreement.[13] The Town Staff's actions in contravention of the rights vested under the development agreement were the evidence of the Town's anticipatory breach of the development agreement.[14]

Earthjustice's campaign regarding Oakland Global is the perfect example of the need for and propriety of the Legislature's enactment of the development agreement statutes. As noted, OBOT's intentions for and development of the Terminal have remained consistent since its initial application and negotiations with the City – a full-service, state-of-the-art, integrated and multi-commodity bulk material facility capable of handling whatever legal demand the market presents over its generational operative life, including the imperative capacity to evolve and deal with alternative commodities as market and consumer demands shift. That remains OBOT's intent.

Earthjustice and representatives of the Sierra Club in this and other forums have professed robust support for the project, the jobs it will bring, and the economic vitality and catalyst it establishes for the community, *provided*, however, that it does not handle any commodity to which their memberships happens to object at that point in time.[15] If today's objectionable issue suggest that commodity X should not come through OBOT, based on a news story, what will it be tomorrow? What about five years from now? 15 years? Will beef products for developing countries become unacceptable because of the extreme methane production inherent in cattle facilities? What about grain shipments? What if they include genetically modified grain products? Where does the cloud of uncertainty end if the City Council asserts that it, or any entity can act as a court of ultimate review to block approved, lawful operations at OBOT that happen to involve a politically incorrect commodity of the day?

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[12] Miller and Starr, *California Real Estate, 3d edition*, § 25:72 (footnotes deleted).
[13] 191 Cal.App.4th 435
[14] *Id.* at 447-448.
[15] EJ Letter, pg. 12.

It is that very cloud of uncertainty that inhibits the ability to advance the contract for and financing of projects of this scale and duration. And, yes, it goes to the very heart of the ultimate viability of the project. As noted before, this is not a debate over one commodity, it is about the viability of an entire project, as approved, entitled, and vested by the City.

The Development Agreement

The DA does provide : "City shall have the right to apply City Regulations adopted by City after the Adoption Date, if such application (a) is otherwise permissible pursuant to Laws (other than the Development Agreement Legislation), and (b) city determines *based on substantial evidence* and after a public hearing that a failure to so would place existing or future occupants or users of the Project, adjacent neighbors, or any portion thereof, or all of them, in a condition substantially dangerous to their health or safety."[16]

As to the first prong of this two-prong test in the DA, it is unclear to us what specific mechanism, "permissible pursuant to Laws," the City Council is being encouraged to consider. The EJ Letter makes no specific recommendation, perhaps because of the qualifier that any such action must be legal, any any City action consistent with Earthjustice's request would clearly be preempted under federal law.

As to the second prong of the test, as noted above, Earthjustice provides the City nothing but argument and innuendo. There is no evidence, let alone *substantial* evidence, before the City that the development and operation of the terminal in full compliance with all applicable laws and required mitigation measures and conditions of approval as always intended "would place existing [workers at the project or the surrounding community] in a condition substantially dangerous to their health and safety." Quite to the contrary, as demonstrated above, establishment of Oakland Global subject to the myriad of laws and regulations with which it must comply, will actually bring superior operations and environmental standards to the region benefitting it in terms of job creation, economic vitality, and environmental standards.

There are no facts or other evidence before the City Council that would justify, according to the terms of the DA or governing law generally, new actions or enactments by the City that

[16] DA, July 16, 2013, pg. 19, § 3.4.2 (*emphasis* added). The term "Laws" is defined in the DA as: "The Constitution and Laws of the State, the Constitution of the United States, and any codes, statutes, regulations, or executive mandates thereunder, and any court decision, State or federal, thereunder. The term 'Laws' shall refer to any or all Laws as the context may require. 'Law' or 'Laws' excludes, for the purposes of this Agreement, any local ordinance, regulation, rule or requirement." *Id.* at p. 11.

would thwart or disrupt, directly or indirectly, CCIG's vested rights and obligations to develop Oakland Global, including OBOT.

California Environmental Quality Act

Earthjustice also implores the City to start a new round of "studies" regarding future operations at the Terminal. But approval of the Entitlements included full and final compliance with CEQA as to the full range of construction and operations at Oakland Global, including the Terminal. Where CEQA has already been conducted and completed for a project, no further analysis is either required or permitted unless there is substantial new information, substantial changes in the project, or substantial changed circumstances that were not or could not have been known at the time of project approval that result in new significant impacts or a substantial increase in previously identified significant impacts.[17]

The proposed construction and operation of the Terminal are exactly as envisioned and anticipated by the parties to the Entitlements. There is no new information, change in the project, or change in circumstances that was not known or could not have been known at the time of the project approvals. In its Project Description, the 2012 Addendum provides in relevant part:

> "The working waterfront variant would maintain the existing uses on the 34.1-acre area at the northwest edge of the site. Cargo would move directly between ships and rail. Export cargo would consist of non-containerized bulk goods, and inbound cargo would consist primarily of oversized or overweight cargo unable to be handled on trucks, and thus transferred directly from ships to rail. This facility, called the Oakland Bulk and Oversized Terminal, would operate on a 24 hour per day basis and is anticipated to handle up to six 50-car trainloads per day in each direction (for a total of 12 movements per day), plus occasional one and two-car manifest moves. Specifically, the facility is anticipated to handle up to three "unit trains" per day with each "unit train" being 6,400 feet long with 100 cars and is broken into two fifty-car trainload sections of about 3,200 feet each, which are moved in/out of the West Gateway Marine Terminal."[18]

[17] Ca. Pub. Res. Code, § 21166; Guidelines, § 15162.
[18] 2012 Addendum, pg. 30.

Thus, the entitlement of the Terminal was for an industry-standard facility, without reference or limitation as to the specific inclusion or exclusion of any commodity or commodities. Earthjustice asserts that the potential inclusion of one or more commodities being shipped through the Terminal somehow constitutes "new information" that was not or could not have been known. Quite to the contrary, information as to standard "non-containerized bulk goods," as described in the Addendum is and was readily available on the internet, and otherwise, from both governmental and non-governmental sources. For example, a simple internet search brings up a 2012 report by the American Trucking Association characterized "Freight Transportation in 2011":

> "Bulk freight dominates rail-carload traffic, accounting for 73% in 2011, according to our estimates. Coal is still king, accounting for 40-50% of total tonnage historically. Water transport is even more bulk-commodity oriented, representing almost 91.0% of total freight, primarily petroleum, coal, nonmetallic minerals, farm products, and waste and scrap, according to our calculations." U.S. Freight Transportation Forecast to 2023, American Trucking Association, available at: http://www.aztca.org/pdf/ATA-Freight-Forecast.pdf , pg. 9.[19]

Additionally, the U.S. Department of Transportation (DOT) annually updates statistics regarding commodity shipments, modes, and trends. "Freight Facts and Figures 2013," a compilation report of its annual statistical calculations by DOT notes that in 2012, "[t]he leading commodities by weight are bulk goods including gravel, cereal grains, and coal." (Available at: http://www.ops.fhwa.dot.gov/freight/freight_analysis/nat_freight_stats/docs/13factsfigures/pdfs/fff2013_highres.pdf , pg. 8.)

And the Bureau of Transportation Statistics and continual updates related to bulk commodity statistics and trends.
(See: http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/state_transportation_statistics/state_transportation_statistics_2012/html/table_03_04.html .)

Further, OBOT has every reason to believe that the City not only had the ability to uncover detailed information about the nature of the bulk commodity market in 2012, but was actually in possession of such information prior to certifying the CEQA document for the Oakland Global project. We understand that in late 2011 or early 2012, the City's Community and Economic

[19] The Forecast is attached hereto as Exhibit D.

Development Agency (CEDA) hired The Tioga Group, Inc. (Tioga) to specifically examine the commercial viability of the Terminal and all of its potential operations. Specifically included in the scope of work for Tioga is "review of the history of such [bulk] cargos moving to/from the West Coast of North America (WCNA); . . . "[20] In conjunction with that effort, the City and/or Tioga contacted a myriad of sources to validate the OBOT proposal and related third-part operations, which to our knowledge included interviews with Kinder Morgan, Union Pacific Railroad, Ports America and Metro Ports specifically regarding operations at Wharf G in Long Beach. To date, the City has refused to produce or make public the Tioga work product. But it is indisputable that the City had the opportunity to review the market composition of the bulk materials as entitled and vested for operations at the Terminal, and it is abundantly clear from the sample of publicly assessable resources cited above, what that analysis would have shown.

Accordingly, there is no actual or potential operation at the Terminal that was not known or could not have been known at the time of adoption of the 2012 Addendum. Thus, there is no legal basis under CEQA for re-opening the already concluded CEQA review.

Conclusion

So once responsible and reasoned minds set aside the campaign of fear, speculation, and innuendo, what do we know?

- Oakland Global, including the Terminal, has and will continue to bring thousands of jobs to Oakland. The project has already demonstrated that more than 50% of the hours worked are by local Oakland residents, well surpassing expectations and project commitments.[21]
- Oakland Global will be a state-of-the-art facility bringing far superior operations environmentally, logistically, and economically.
- The local community will benefit environmentally, economically, and in access to jobs from Oakland Global.
- Oakland Global and the Terminal will operate in full compliance with state and local greenhouse gas reduction mandates, including AB 32, the Governor's Executive Orders, and California Air Resources Board regulations.

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[20] Proposal – Assistance for Oakland CEDA: Brea-bulk Opportunity (draft as of December 22, 2011), attached hereto as Exhibit E.

[21] Building and Construction Trades Council of Alameda County, AFL-CIO, August 27, 2015, letter to Mayor Libby Schaaf and Members of the Oakland City Council, pg. 2, attached hereto as Exhibit F.

- Operations at Oakland Global and the Terminal are subject to literally hundreds of City-imposed mitigation mandates and condition to ensure a safe facility.
- There is no evidence whatsoever that the City inhibiting the Terminal operations will have any impact whatsoever on energy-related greenhouse gas emissions globally.
- Interfering with the operations at the Terminal would violated federal law which has preempted any actions by local governments burdening rail transport, whether on or off City-owned property.
- Interfering with the operations at Terminal in the manner proposed by Earthjustice is prohibited by the Development Agreement and would expose the City to significant legal damages for, at a minimum, breach of the development agreement.

We assume that all participants at the September 21 Public Hearing – proponents of Oakland Global and OBOT, Earthjustice, and the City staff and officials of Oakland – would equally and uniformly embrace two foundational objectives:

> (1) The economic, health, employment, and environmental wellbeing of the entire Oakland community, and
>
> (2) The dedication to leave a sustainable and healthy community for our children and grandchildren.

Setting aside, again, rhetoric and speculation, an *ultra vires* action by the City to illegally disrupt or delay OBOT's vested right to develop the Terminal will do tremendous violence to both of those objectives on multiple fronts. However, honoring the commitments it made in the Entitlements and remaining committed to the vision and promise of Oakland Global that was universally embraced in awarding the Entitlements will directly and specifically advance both.

We ask the City Council to honor and maintain its ongoing role in the realization of Oakland Global's employment, economic, health, and environmental benefits to the City and all of its residents.

Sincerely,

David C. Smith
STICE & BLOCK, LLP

cc: Mayor Libby Schaaf
Honorable Members of the Oakland City Coucil
City Attorney Barbara Parker

EARTHJUSTICE

ALASKA CALIFORNIA FLORIDA MID-PACIFIC NORTHEAST NORTHERN ROCKIES
NORTHWEST ROCKY MOUNTAIN WASHINGTON, D.C. INTERNATIONAL

September 2, 2015

REC'D
9/3/15
JN/CC

Via Electronic Mail

Oakland City Administrator
1 Frank Ogawa Plaza, 3rd Floor
Oakland, CA 94612
(510) 238-3301
cityadministrator@oakland.net

Re: **Proposed Oakland Coal Export Terminal**

To the Oakland City Administrator:

I. INTRODUCTION

I am writing on behalf of the Sierra Club, West Oakland Environmental Indicators Project, San Francisco Baykeeper, and Communities for a Better Environment, to provide their comments relating to the proposal to develop California's largest coal export terminal at the former Oakland Army Base redevelopment, now known as the Oakland Global Trade and Logistics Center ("Oakland Global") on the Oakland waterfront. These groups are dedicated to protecting community health and promoting environmental justice, and have many members who live, work, and recreate in and around the proposed terminal site. Due to the numerous health and safety risks posed by the transportation and storage of coal in the West Oakland community, they strongly oppose the development of a coal terminal at Oakland Global.

Exporting coal from Oakland will have many negative impacts on community health and the environment, and violates commitments made by state and local officials to reduce climate change forcing greenhouse gas emissions. For these reasons we respectfully request the City to take a stand for the community and reject development of a coal terminal:

1. Allowing coal exports out of Oakland will add to the pollution in West Oakland, a low-income, predominantly African American community

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already suffering the health effects of industrial and freight pollution (*see* p. 4);

2. Exporting coal is a dirty and dangerous activity, which impacts communities adjacent to the export terminal and along rail lines, creates dangerous conditions for workers in the terminal, and contaminates sensitive habitat (*see* pp. 5 to 6);

3. Exporting coal to be burned in Asia and other nations increases emission of harmful air pollutants, including carbon dioxide emissions; which fuel climate change and violate Oakland and California's climate change reduction goals (*see* pp. 7 to 9);

4. Potential mitigations, such as a covered coal facility and covered train cars, do not go far enough in protecting the public from the effects of transporting coal (see pp. 9 to 11);

5. Committing to coal exports is a risky investment, since coal markets are declining worldwide; consequently, constructing and operating a coal terminal will not provide high-quality or stable jobs (see pp. 11 to 13);

6. The City of Oakland has a public duty to protect the health and safety of its citizens and has the ability to ban coal exports (see pp. 13 to 16).

The City Council will hold a Public Health and Safety Hearing on September 21, 2015 to consider the health and safety consequences of allowing development of the coal export terminal. We understand that the City Administrator will be preparing a staff report with her recommendations regarding development of the project. This letter provides information on the health and safety risks of the proposed coal terminal, including links to relevant articles and studies, which will hopefully assist the City Administrator in her preparation of the staff report for the project.

II. RECENT DEVELOPMENTS AT OAKLAND GLOBAL

The Oakland Global development at the former Oakland Army Base is a massive project that will create additional transportation and logistics infrastructure on the Oakland waterfront, as well as space for various commercial, industrial, and retail enterprises. (City of Oakland, 2012 Oakland Army Base Project, Initial

Study/Addendum (May 2012) at pp. 1-4.[1]) Enhancing the capacity of a pre-existing marine terminal, located at Berth 7, is one of the developments planned for the area. (*Ibid.* at p. 30.) The stated purpose of this terminal, the Oakland Bulk and Oversized Terminal ("OBOT"), is to transport cargo between the railroad and ships, and its "[e]xport cargo would consist of non-containerized bulk goods, and inbound cargo would consist primarily of oversized or overweight cargo unable to be handled on trucks." (*Ibid.*)[2] The environmental review prepared for the development did not in any way mention, consider, or study the environmental and health effects of shipping coal out of OBOT.

New information has come to light recently indicating that a significant part of OBOT's shipping capacity would be dedicated to the shipment of Utah coal. In April 2015, Utah's Community Impact Fund Board approved $53 million for investment in the OBOT.[3] In exchange for this investment, Utah would have a guaranteed right to use 49 % of OBOT's capacity, or 9 million metric tons.[4]

A coal export terminal was never part of the original development plans for Oakland Global. Consequently, Oakland citizens have not had any meaningful opportunity to weigh in on the effects of establishing California's largest coal export terminal on the Oakland waterfront. As set forth below, shipping coal creates impermissible health and safety risks for the residents of Oakland, and the City should take a stand in banning the transportation of this dangerous fuel through the City.

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[1] *Available at http://ec2-54-235-79-104.compute-1.amazonaws.com/Government/o/PBN/OurServices/Application/DOWD009157.htm.*

[2] Similarly, the City and Port's federal funding application makes no mention of the terminal being used for the transportation of coal, and simply states that "Berth 7 would be converted to a modern break-bulk terminal for movement of commodities such as iron ore, corn and other products brought into the terminal by rail. The terminal would also accommodate project cargo such as windmills, steel coils and oversized goods." (City of Oakland and Port of Oakland, TIGER III Funding Application Project Narrative at p. 4; *available at http://www.portofoakland.com/pdf/about/TIGER_application.PDF*)

[3] Doug Oakley, *Unlikely partners: Utah investing $53 million to export coal through Oakland port,* Contra Costa Times, Apr. 24, 2015; *available at* http://www.contracostatimes.com/breaking-news/ci_27981684/unlikely-partners-utah-investing-53-million-export-coal.

[4] Amy O'Donoghue, *Utah invests $53 million in California port for coal, other exports,* Deseret News, April 24, 2015, *available at* http://www.deseretnews.com/article/865627254/Utah-invests-53-million-in-California-port-for-coal-other-exports.html?pg=all

III. ALLOWING DEVELOPMENT OF A COAL EXPORT TERMINAL AT OAKLAND GLOBAL WILL HAVE SERIOUS IMPACTS ON THE SURROUNDING COMMUNITY

1. Exporting Coal From Oakland Will Further Burden a Highly Impacted Community

The community surrounding the redevelopment area and Port of Oakland already suffers from poor air quality and poor health outcomes due to Port operations and other industrial activities in the area.[5] Exporting coal, which will have immediate and long-term health impacts, will only add to the already significant health burdens of the community.

According to the California Environmental Protection Agency, the community adjacent to the redevelopment area is severely burdened by diesel pollution and hazardous waste exposure, and its residents suffer from extremely high rates of asthma.[6] The California Air Resources Board's Health Risk Assessment for the area found that residents of West Oakland are exposed to three times the amount of diesel particulate matter compared to the other residents of the air basin.[7]

The health outcomes for area residents are grim. When compared to the outcomes for residents in the hillside neighborhoods of Oakland, residents living near the redevelopment area are more likely to give birth to premature or low birth weight

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[5] *See* Grace Rubenstein, *Air Pollution Controversy Swirls Around Oakland Army Base Development*, KQED, May 6, 2014; *available at* http://ww2.kqed.org/news/air-pollution-dispute-west-oakland-army-base; *https://www.youtube.com/watch?v=GrKwTm5jIdE&feature=youtu.be*

[6] Cal EnviroScreen Results for Census Tract 6001401700, *available at* http://oehha.ca.gov/ej/ces2.html.

[7] California Air Resources Board, *Diesel Particulate Matter Health Risk Assessment for the West Oakland Community* at 2 (December 2008); *available at http://www.arb.ca.gov/ch/communities/ra/westoakland/documents/westoaklandreport.pdf*

children, suffer from diabetes, heart disease, stroke, and cancer.[8] Individuals born in West Oakland can expect to die 15 years earlier than individuals born in the Oakland Hills.[9] Allowing construction of a coal terminal to go forward will only add to these burdens and creates unacceptable risks to the community.

2. Transporting and Storing Coal Creates Impermissible Health and Safety Risks

Transporting coal to West Oakland and storing it in the neighborhood will generate large quantities of particulate matter emissions and create additional health, safety and environmental risks, which the community is ill-equipped to bear.

Coal is most commonly transported in open train cars, and according to BNSF studies (one of the rail operators that will be serving the proposed terminal), these open train cars can shed some 500 to 2,000 lbs. of coal dust from each rail car as.[10] Large quantities of coal dust will be released by trains – some 60,000-240,000 pounds of coal per train over the rail route – as coal trains are frequently 120 cars long.[11] Once it has arrived at the export terminal, coal is commonly stored in open piles, creating additional exposure risks for the community.[12]

Coal dust contains many harmful components and exposure to fugitive coal dust from coal trains, coal storage piles, and loading and unloading practices can cause impaired lung function, cardiovascular disease, and developmental disorders in

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[8] Communities for a Better Environment, *East Oakland Diesel Truck Survey Report* at p. 4, September 2010, *available at* http://www.cbecal.org/wp-content/uploads/2013/01/Diesel-truck-study-FINAL-092710.pdf.

[9] *Ibid.* at p. 5.

[10] *See* Polly Wood, *Another Voice: Coal Transport Comments Needed Now*, Hood River News, Friday, January 11, 2013, *available at* http://www.hoodrivernews.com/news/2013/jan/11/another-voice-coal-transport-comments-needed-now/; *see also*, Hearing Transcript, July 29, 2010, *Ar. Elec. Coop. Ass'n – Petition for Declaratory Order*, Surface Transportation Board, Docket No. FD 35305, at 42:5 13.

[11] *Ibid.* (500 lbsx120 cars=60,000 lbs, 2000 lbs x 120 cars=240,000 lbs)

[12] No terminal design plans have been published for the proposed Oakland Global coal export terminal. However, even supposed "state of the art" covered facilities generate significant particulate matter and nitrogen oxide pollution, and modeling for a proposed covered terminal in Oregon showed that it would result in major violations of particulate matter and NOx standards. *See* Air Quality Modeling for the proposed enclosed coal export facility at the Port of Morrow, http://media.oregonlive.com/environment_impact/other/AERMOD_Modeling_Morrow_vfin.p f

children.[13] Concerns about the serious effects of coal dust exposure prompted the U.S. Department of Labor to pass regulations protecting coal miners from coal dust exposures.[14] However, no such regulations are in place to protect West Oakland community members from coal dust exposures.

Coal transportation and storage also creates safety hazards for the surrounding community and along the rail lines. Coal dust is highly combustible and creates immediate physical risks from explosions and fires.[15] The Surface Transportation Board, the federal agency responsible for regulating rail traffic, has concluded that coal dust is a "pernicious ballast foulant" which can impair track stability and lead to train derailment.[16]

Pollution from coal transportation and storage can also impact the wildlife and fisheries in the San Francisco Bay Area, and near the proposed project site, which include endangered and threatened species like green sturgeon, Chinook salmon, steelhead and longfin smelt.[17] Coal dust can enter the aquatic environment through "stormwater discharge, coal pile drainage run-off, and when coal dust from storage piles, transfer conveyor belts and rail cars becomes deposited in the surrounding environment."[18] Exposure to coal dust has been found to interfere with the normal development of aquatic species like salmon.[19] Coal pile runoff is typically acidic and can contain high concentrations of copper, iron, aluminum and nickel, which also have

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[13] *See* Position Statement on Coal Exports from Concerned Oregon Physicians to Governor Kitzhaber and associated appendices, *available athttp://www.psr.org/chapters/oregon/assets/pdfs/position-statement-on-coal-1.pdf*; Brabin, Smith, *et al.*, Respiratory Morbidity in Merseyside schoolchildren exposed to coal dust and air pollution, 70 Archives of Disease in Childhood 4 (April 1994).

[14] 75 Fed. Reg. 64411, 79 Fed. Reg. 24813.

[15] *See The Fire Below: Spontaneous Combustion in Coal*, U.S. Dep't of Energy (May 1993); *available at http://www.coaltrainfacts.org/docs/EH-93-4-The-Fire-Below_-Spontaneous-Combustion-in-Coal.pdf;*

[16] Surface Transportation Board Decision, *Arkansas Electric Cooperative Corporation – Decision on Petition for Declaratory Order*, Docket No. FD 35305 (Mar. 3, 2011); *available at http://stb.dot.gov/Decisions/readingroom.nsf/UNID/79B5382AE20F7930852578480053111F/$file/40436.pdf*

[17] Initial Study/Addendum at 175; 2002 Draft Environmental Impact Report for Oakland Army Base Redevelopment at 4.12-17.

[18] P.M. Campbell, R.H. Devlin, *Increased CYP1A1 and Ribosomal Protein L5 Gene Expression: The Response of Juvenile Chinook Salmon to Coal Dust Exposure*, Aquatic Toxicology 38 (1997); *available at http://fishphysiology.org/wp-content/uploads/2014/02/Campbell1.pdf*

[19] *Id.*

the potential to create negative environmental effects.[20] Moreover, the steady accumulation of coal dust on aquatic sediments could harm the flora and fauna living on the bottom of the sea floor, potentially reducing the diversity and number of species in various aquatic ecosystems.[21] Coal behaves similarly to other suspended or deposited sediments in aquatic environments by abrading and attenuating light, which negatively interferes with fish habitat.[22]

Operating a coal export terminal creates myriad health, safety and environmental risks, and the City should reject development of the proposed coal export terminal.

3. Exporting Coal Will Contribute to Climate Change and Other Local Pollution Effects

Exporting coal from Oakland also enables the continued use of coal as a fuel source, driving the continued production of climate change inducing greenhouse gas emissions, which have both local and global effects. California lawmakers have committed to reducing the state's role in producing greenhouse gas emissions, and the City of Oakland should not allow development of a coal export terminal that will interfere with these reductions goals.

Coal-fired power plants are a leading source of carbon dioxide emissions.[23] Each ton of coal burned by a typical coal plant will generate about 2.6 million tons of carbon dioxide.[24] Thus, Oakland exports of 10 million tons of coal will result in 26 million tons of carbon dioxide emissions. As set forth by the United Nations' Intergovernmental Panel on Climate Change, unrestrained greenhouse gas emissions like carbon dioxide are responsible for increasing global warming, and "[l]imiting climate change will

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[20] Environmental Protection Agency, *Steam Electric Power Generating Point Source Category: Final Detailed Study Report*, EPA 821-R-09-008 (October 2009) at 3-22 to 23; *available at http://water.epa.gov/scitech/wastetech/guide/steam-electric/upload/Steam-Electric_Detailed-Study-Report_2009.pdf*

[21] R.M. Bustin, R. Johnson, *Coal Dust Dispersal Around a Marine Coal Terminal (1977-1999), British Columbia: The Fate of Coal Dust in the Marine Environment*, International Journal of Coal Geology 68 (2006) pages 57-69.

[22] M.J Ahrens M. J., D.J. Morrisey, *Biological Effects of Unburnt Coal in the Marine Environment*, Oceanography and Marine Biology 43 (2005) pages 69-122.

[23] *See* Union of Concerned Scientists, *Environmental Impacts of Coal Power, available at http://www.ucsusa.org/clean_energy/coalvswind/c02c.html#.VVsOKWTLeos.*

[24] How Coal Works, Coal and Other Fossil Fuels, Union of Concerned Scientists, http://www.ucsusa.org/clean_energy/coalvswind/brief_coal.html#.VcU5XflViaU

require substantial and sustained reductions of greenhouse gas emissions."[25] The City should not support a development that will contribute to continued climate change.

Continued coal combustion overseas will have tangible and harmful effects on the local community. The byproducts of coal burned overseas do not remain in the region where the coal was burned – soot, mercury, ozone, and other byproducts of coal combustion can travel across the Pacific Ocean and affect the health of western states' ecosystems and residents.[26] In fact, the National Oceanic Administration recently found that air pollution in Asia contributes to ozone pollution in the western United States.[27] Coal combustion also drives climate change effects contributing to sea-level rise and ocean acidification.[28] Given the extensive amounts of shoreline development, the Bay Area is particularly vulnerable to sea level rise, and rising sea levels could flood residential areas, and affect key commercial and industrial areas, like local airports, highways and waste treatment plants.[29]

Permitting a development that contributes to climate pollution frustrates the commitments made by state and local officials to reducing climate change. Lawmakers in the State of California have recognized the urgent need to reduce the production of greenhouse gas emissions, and over the years have passed landmark legislation like AB 32 and issued executive orders to enable reductions goals. Most recently, in April 2015, Governor Jerry Brown issued an executive order mandating that the state reduce its greenhouse gas emissions to 40 percent below 1990 levels by 2030.[30] Further, Joint Assembly Resolution 35 urged Governor Brown to inform neighboring governors in Washington and Oregon of the health and climate risks associated with exporting coal

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[25] IPCC, Climate Change 2014: Synthesis Report, at p. 8, *available at*: http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf.

[26] Eric de Place, *Northwest Coal Exports: Some Common Questions about economics, health, and pollution* (Nov. 2011) at 7; *available at* http://www.sightline.org/wp-content/uploads/downloads/2012/11/coal-FAQ-November-12.pdf

[27] NOAA Press Release, *Asian Emissions Can Increase Ground-Level Ozone Pollution in the U.S. West* (Mar. 5, 2012); *available at http://researchmatters.noaa.gov/news/Pages/ozonestudy.aspx*

[28] *See* University of Copenhagen, Climate Office, Press Release, *International Scientific Congress Climate Change: Global Risks, Challenges, and Decisions – Key Messages from the Congress* (Mar. 12, 2009); *available at* http://climatecongress.ku.dk/newsroom/congres_key_messages

[29] *See* San Francisco Bay Conservation and Development Commission, *Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline* at 2 (October 6, 2011); *available at http://www.bcdc.ca.gov/BPA/LivingWithRisingBay.pdf*

[30] Office of Governor Brown, *New California Goal Aims to Reduce Emissions*, April 29, 2015, *available at* http://gov.ca.gov/news.php?id=18938.

to countries with air quality regulations less stringent than our own.[31] In rejecting a proposed coal terminal near Jack London Square, the Port of Oakland referenced these commitments and reaffirmed that a coal terminal would run counter to California's greenhouse gas reductions goals.[32]

The City of Oakland has previously committed to fighting climate change. In 2012, the City adopted an Energy and Climate Action Plan setting forth actions to reduce the City's energy consumption and "greenhouse gas emissions associated with Oakland."[33] Most recently, on June 17, 2014, the Oakland City council approved a resolution opposing the transportation of hazardous fossil fuels like coal through the City, expressing concern about the effects of coal exports and stressing the need for a transparent process and full environmental review.[34] It should reaffirm such commitments now.

Continued coal combustion, even if it occurs overseas, has real, local effects. The City of Oakland should not allow development of a coal terminal that will harm the local community and interfere with the City and State's commitments to reduce greenhouse gas emissions and fight climate change.

4. The Available Mitigations Cannot Alleviate The Harmful Effects of Coal Exports

The developer of the proposed coal export terminal has not made any facility plans available, and there is no way to evaluate the effectiveness of the facility at mitigating the environmental effects of exporting coal. While the developer may now be asserting that the coal export facility and the rail cars serving it may be covered, when a similar proposal arose in the context of the Howard Terminal at the Port of Oakland, the Port still rejected it based on environmental grounds.[35] The Port of Oakland is a partner agency in the Army Base redevelopment.

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[31] http://www.leginfo.ca.gov/pub/11-12/bill/asm/ab_0001-0050/ajr_35_bill_20120918_chaptered.html

[32] Port of Oakland, *Staff Report re: Environmental Issues Associated With Handling Export Coal* at 3 (February 19, 2014); **attached as Exhibit A.**

[33] City of Oakland, Energy and Climate Action Plan (December 4, 2012); *available at http://www2.oaklandnet.com/oakca1/groups/pwa/documents/report/oak039056.pdf*

[34] Oakland City Council, Resolution No. 85054 C.M.S. (June 17, 2014); *available at https://oakland.legistar.com/LegislationDetail.aspx?ID=1747455&GUID=D41B7760-10B0-455E-B1F5-88894FBAD097*

[35] Port of Oakland, *Supplemental Agenda Report* at 111 (February 27, 2014); **attached as Exhibit A.**

Proposed mitigations for other coal export facilities – such as covered coal storage piles, or covered rail cars – still give rise to serious pollution concerns. For example, air modeling for a proposed "state of the art" covered coal export facility at the Port of Morrow in Oregon showed major exceedances of particulate matter and nitrous oxide (NOx) national ambient air quality standards.[36] Both of these pollutants have significant human health effects. NOx are highly reactive gasses that can cause respiratory problems such as asthma attacks, respiratory tract syndrome, bronchitis, and decreased lung function. NOx also contributes to visibility impairment, global warming, acid rain, formation of ground-level ozone and formation of toxic chemicals.[37] Similarly, particulate matter pollution has significant health impacts including premature death, "increased hospital admissions emergency room visits, absences from school or work, and restricted activity days," due to aggravated cardiovascular and respiratory problems.[38] Sadly, the populations most at risk for these health impacts are the sick, the elderly, and children.[39] Covered coal dust facilities also generate other health and safety risks. Enclosed facilities must be ventilated, have water runoff and fire controls that all involve coal dust releases into the air and water.[40] Coal is also flammable and known to spontaneously combust.[41]

The developer may also propose the use of "covered" railroad cars in shipping coal through Oakland, as a means reduce the environment impacts. Again, there is no

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[36] *See, e.g.*, Air Quality Modeling for the proposed enclosed coal export facility at the Port of Morrow, http://media.oregonlive.com/environment_impact/other/AERMOD_Modeling_Morrow_vfin.pdf

[37] *See, e.g.*, Jaffe, D., et al. Atmospheric Pollution Research, 5 (2014), 344--351, available at http://www.atmospolres.com/articles/Volume5/issue2/APR-14-040.pdf

[38] 72 Fed. Reg. at 20,586-87 ("Epidemiological studies have shown statistically significant correlations between elevated PM2.5 levels and premature mortality."); 75 Fed. Reg. 22,896, 22,900 (Apr. 30, 2010) (EPA has determined that, "Both ozone and PM2.5 are associated with serious public health problems, including premature mortality…")("Studies have demonstrated that both fine and coarse PM can have negative effects on public health and welfare. For example, each is associated with increased mortality (premature death) rates and morbidity (illness) effects such as cardiovascular disease and decreased lung function.").

[39] *Id.*

[40] *See* IEA, December, 2010, http://www.iea-coal.org/documents/82476/7685/Propensity-of-coal-to-self-heat-(CCC/172; *See also* HOSSFELD & HATT, PRB COAL DEGRADATION: CAUSES AND CURES 1, at www.researchgate.net/publication/228972594_PRB_COAL_DEGRADATIONCAUSES_AND_CURES.

[41] Coal's spontaneously combustion problem, Sightline, April 11 2012, http://daily.sightline.org/2012/04/11/coals-spontaneous-combustion-problem/

way to evaluate the efficacy of covered rail cars as a proposed mitigation, because the developer has not posted design plans for the facility or transportation infrastructure, and there are no enforceable conditions in place for the facility or trains. Even so, there is no covering that can eliminate pollution and safety risks posed by shipping coal by rail. The developer may intend to use "surfactants" – a chemical substance sprayed over loose coal – to control coal dust. However, surfactants do not fully prevent coal dust loss as they wear off the coal along the rail lines (acting as a pollutant in their own right), and require massive quantities of water to apply. The developer may intend to use "covered rail cars," which are not a practical or effective pollution control measure. There are no covered coal trains currently in use in the United States, and to our knowledge there has been no published study about the efficacy of coal train covers. Even covered rail cars would need a ventilation or fire suppression system, thus allowing coal dust releases into the air and water. Further, because coal is inherently flammable, concerns have been raised about whether covered coal trains would increase fire risks. Additionally, because the Federal Rail Administration or the Surface Transportation Board would have jurisdiction over promulgating and enforcing any covered train rules, the use of coal train covers is not something the developer could guarantee.

Without seeing concrete design plans, it is difficult to comment on full extent of potential environmental, public health and safety impacts associated with the mitigations that could be proposed by the developer. However, there are still serious concerns associated with the use of potential mitigations. Covered facilities still create air and water pollution risks, surfactants are ineffective at fully controlling coal dust, and covered train cars an untested and difficult to enforce mitigation. The City should not trust the developer's assurances that a coal export facility can be safely operated – particularly when there are no design plans or enforceable conditions in place – and should act to prevent development of the facility.

IV. THE RISKS OF DEVELOPING A COAL TERMINAL OUTWEIGH ANY OF THE ECONOMIC ADVANTAGES

The health and environmental risks of developing a coal terminal outweigh any of the potential economic advantages of committing to export a financially risky commodity.

Committing to export coal is a risky investment and not likely to generate a stable income stream for the City due to diminishing worldwide demand for coal. Domestic and foreign coal markets are on the decline due to environmental regulations

requiring power companies to turn to cleaner fuel sources, low natural gas prices, and an uptick in renewable energy use.[42] In recent months, a number of coal companies have declared bankruptcy due to these forces.[43] Even railroad giant BNSF has stated that it does not expect any growth in coal consumption, and that its investments in developing transportation infrastructure in the Powder Basin will "eventually be stranded assets."[44]

Members of the coalition are supportive of jobs creation in the City, and would like to see the continued economic revitalization of Oakland. However, committing to construct and operate an export terminal for a waning and harmful commodity is not the way to create good and stable jobs. Terminals that ship bulk goods like coal produce far fewer jobs than terminals that ship other types of commodities, like big machines or goods shipped on pallets.[45] The analysis conducted by Professor Dan Kammen of the University of California, Berkeley on the proposed Gateway Pacific coal export terminal in the Northwest showed only one job created for every $2 million spent, whereas, comparable investments in renewable energy generate twice as many jobs.[46] Dr. Kammen concludes that "[t]he much-ballyhooed coal-terminal jobs are a fool's bargain that should be rejected on economic grounds alone, never mind the obvious impacts. It's time we stopped feeding such fossil dinosaurs and started investing seriously in U.S. innovators, workers and companies that can help realize our low-carbon future."[47]

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[42] *See* Why Coal Companies Are Collapsing in Such Spectacular Fashion, greentechmedia, 30 July 2015, http://www.greentechmedia.com/articles/read/why-coal-companies-are-collapsing-in-such-spectacular-fashion; Institute for Energy Economics and Financial Analysis, *Global Energy Markets Transition Drives Thermal Coal into Structural Decline* (Jan. 14, 2015); *available at* http://ieefa.org/global-energy-markets/; Morgan Stanley: Vast majority of US export coal uneconomic at current spot prices, SNL financial 21 July 2015, https://www.snl.com/InteractiveX/Article.aspx?cdid=A-33289010-12341

[43] Kelsey Butler, *Peabody, Arch Coal May File Chapter 11 Bankruptcy on Obama Rules*, The Street (August 5, 2015); *available at http://www.thestreet.com/story/13244580/1/peabody-arch-coal-may-file-chapter-11-bankruptcy-on-obama-rules.html*

[44] Institute for Energy Economics and Financial Analysis, *Railway Executive Sees Powder River Basin Coal for What it Is: A Stranded Asset* (June 29, 2015); *available at http://ieefa.org/railway-executive-sees-powder-river-basin-coal-for-what-it-is-a-stranded-asset/*

[45] Eric de Place, Sightline Institute; *Northwest Coal Exports: Some Common Questions about Economics, Health and Pollution* at 8 (November 2012); *available at http://www.sightline.org/research/coal-export-faq/*

[46] Dan Kammen, For Greater Job Growth Invest in Renewable Energy not US Coal Exports, National Geographic Blog, January 15, 2013, http://energyblog.nationalgeographic.com/2013/01/15/for-greater-job-growth-invest-in-clean-energy-not-u-s-coal-exports/

[47] *Id.*

Coal is a commodity that also poses danger to workers in close proximity to it on a regular basis. Prolonged, direct exposure to coal dust – studied especially in miners – has been linked to health issues such as chronic bronchitis, decreased lung function, emphysema, cancer, and death.[48] It has also been shown to increase the risk of mortality from heart disease.[49]

There are few real economic benefits from committing to ship coal out of Oakland, and the City should reject the proposed coal export terminal and turn to developing projects which can bring healthy and stable jobs to the community.

V. THE CITY HAS A PUBLIC DUTY TO PROTECT ITS CITIZENS AND PREVENT THE DEVELOPMENT OF A COAL TERMINAL WHICH WILL HARM THE COMMUNITY

Neither the Port of Oakland nor the City of Oakland has ever examined the environmental consequences of shipping millions of tons of coal through Oakland Global. The City has a duty to protect the health and safety of its citizens and cannot allow the development of a coal terminal which will cause serious harms to the community. The City has the power to regulate in order to protect the public health and safety, and should exercise its powers to protect the community from the development of the proposed coal terminal.

A. The Environmental Effects of the Proposed Coal Terminal Have Never Been Studied

The environmental effects of the proposed coal terminal have never been studied. It is irresponsible for the City to allow development of a project that has never been studied under the California Environmental Quality Act ("CEQA") or the National Environmental Protection Act ("NEPA"), statutes designed to promote governmental

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[48] "Criteria For a Recommended Standard: Occupational Exposure to Respirable Coal Mine Dust" U.S. Department of Health and Human Services, September 1995, pages 52-116. Occupational Exposure to Respirable Coal Mine Dust, U.S. Department of Health and Human Services, Sep 1995, http://www.cdc.gov/niosh/docs/95-106/pdfs/95-106.pdf

[49] Landen, Deborah, et al, "Coal Dust Exposure and Mortality from Ischemic Heart Disease Among a Cohort of U.S. Coal Miners", July 2011, American Journal of Industrial Medicine, Vol. 53, Issue 10, page 6. http://www.cdc.gov/niosh/mining/UserFiles/works/pdfs/cdeam.pdf

transparency and provide the public with information about municipal developments affecting their health.

CEQA requires agencies responsible for a project to provide the public and decision makers with information about "the potential significant environmental effects of proposed activities," and to develop ways that "environmental damage can be avoided or significantly reduced." 14 Cal. Code Regs. ("CEQA Guidelines") § 15002(a); *Laurel Heights Improvement Ass'n v. Regents of the University of California* (1988) 47 Cal.3d 376, 400). Likewise, NEPA was intended to "insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." 40 C.F.R. § 1500.1(b); *Center for Biological Diversity v. United States Forest Serv.*, 349 F.3d 1157, 1166 (9th Cir. 2003) (citation omitted).

Coal is not mentioned in any of the environmental review documents discussing the Oakland Global project. When the redevelopment of Oakland Global was first proposed, the environmental review for the project made no mention of the possible shipment of coal through the development.[50] Similarly, while the Initial Study/Addendum for the project prepared in 2012 discussed the facility handling "non-containerized bulk goods," it did not raise the possibility that coal could be shipped through the development.[51]

As outlined above, coal poses unique environmental and health harms that other bulk goods do not pose. Utah's investment in the development of the Oversized and Bulk Terminal would commit the facility to shipping millions of tons of Utah coal per year.[52] The City should not allow development of the project when there is no information about or analysis of the impacts that such a project will have on the community.

B. The City Has the Legal Authority to Ban Coal Exports

The City has the legal authority to ban coal exports in order to protect the public health and safety, and it should exercise such power here.

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[50] *See* City of Oakland, Draft Environmental Impact Report, Oakland Army Base Area Redevelopment Plan (April 2002); *available at* http://www2.oaklandnet.com/oakca1/groups/ceda/documents/report/oak025318.pdf.

[51] *See* Initial Study/Addendum at p. 30; Figure 1-2.

[52] Amy O'Donoghue, *Utah invests $53 million in California port for coal, other exports*, Deseret News, April 24, 2015, *available at* http://www.deseretnews.com/article/865627254/Utah-invests-53-million-in-California-port-for-coal-other-exports.html?pg=all

In approving the Development Agreement with the developer of Oakland Global, the City did so with the understanding that "[t]he public safety, health, convenience, comfort, prosperity and general welfare will be furthered by the Development Agreement."[53] The Development Agreement itself explicitly allows the City to apply additional city regulations to Oakland Global if it "determines based on substantial evidence and after a public hearing that a failure to do so would place existing or future occupants or users of the Project, adjacent neighbors, or any portion thereof, or all of them, in a condition substantially dangerous to their health and safety."[54]

Municipalities in California have long had the power to impose conditions on the conduct of industrial operations within their bounds where necessary to protect public health and safety.[55] Consistent with this authority, Oakland can use its zoning and police powers to prohibit use of city lands for coal exports.

Many other municipalities have used their zoning and police powers to prohibit the use of municipal lands for dangerous activities such as fossil extraction and transportation. Some recent examples include:

1) **Dryden, New York and Middlefield, New York Fracking Bans** – In 2011, the town board of Dryden, New York used its zoning powers to prohibit "all oil and gas exploration, extraction and storage activities."[56] In revising the zoning ordinance, the town board found that such industrial activity "would endanger the health, safety and general welfare of the community through the deposit of toxins into the air, soil, water, environment, and in the bodies of residents."[57] The town of Middlefield, New York passed a similar ban.[58]

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[53] Oakland City Council, Ordinance No. 13183-CMS at 3 (July 16, 2013); *available at https://oakland.legistar.com/LegislationDetail.aspx?ID=1427119&GUID=9122B74A-273F-4343-B954-F848BC668685*

[54] Development Agreement between City of Oakland Prologis CCIG Oakland Global at Section 3.4.2, July 16, 2013; *available at ibid.*

[55] *See Marblehead Land Co. v. City of Los Angeles*, 47 F.2d 528, 531 (9th Cir. 1931)(upholding city authority to use zoning ordinance to protect residents from fire hazard and noxious gases resulting from oil drilling operations); *Friel v. Los Angeles County*, 172 Cal.App.2d 142, 157 (1959); *Hermosa Beach Stop Oil Coalition v. City of Hermosa Beach*, 86 Cal.App.4th 534, 555 (2001)

[56] *See Matter of Wallach v. Town of Dryden*, 23 N.Y.3d 728, 740 (N.Y. 2014); *motion for argument denied*, 24 N.Y.3d 981 (N.Y. 2014).

[57] *Id.*

[58] *Id.*

2) **San Benito County, California, Fracking Ban** – In November 2014, San Benito County sponsored a ballot measure banning fracking, which passed with over 57 percent of the vote.[59] The county found that high-intensity operations like fracking posed threats to water resources and air quality and other threats, and found that amending town zoning regulations to prohibit fracking would promote and protect the "health, safety, welfare, and quality of life of County residents."[60] An industry group challenged the measure, but dropped its lawsuit in April 2015.[61]

3) **South Portland, Maine, Crude Oil Loading Ban** – In July 2014, the town of South Portland, Maine passed a zoning ordinance prohibiting the bulk loading of crude oil, including tar sands, onto ocean-going vessels.[62] The City found that crude oil loading activity would increase the emission of hazardous air pollutants and decided to impose limitations on waterfront development "for the benefit of the public health and welfare."[63] The city amended the zoning ordinance to prohibit "the bulk loading of crude oil onto marine tanker vessels," and to prohibit "construction or installation of related facilities, structures, or equipment that would create significant new sources of air pollution..."[64]

Many other municipalities have used their powers to regulate how extractive operations or other hazardous activities may be conducted. *See* **Appendix A**.

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[59] *San Benito County voters pass fracking ban with Measure J*, KSBW.com (November 5, 2014); http://www.ksbw.com/news/central-california/hollister-gilroy/san-benito-county-voters-pass-fracking-ban-with-measure-j/29566148

[60] San Benito County, Protect Our Water and Health: Ban Fracking Initiative, *available at http://www.protectsanbenito.org/uplonds/2/5/9/2/25924404/san_benito_protect_our_water_and_health__ban_fracking_initiative.pdf*

[61] Felix Cortez, *$1 billion lawsuit dropped against San Benito County*, KSBW.com (April 7, 2015); *available at http://www.ksbw.com/news/-1-billion-lawsuit-dropped-against-San-Benito-County/32241288*

[62] *See* Kelley Bouchard, *South Portland Approves Law Barring Tar Sands Oil*, Portland Press Herald (July 22, 2014); *available at http://www.pressherald.com/2014/07/22/south-portland-set-for-final-vote-on-tar-sands-ban/*

[63] City of South Portland, Clear Skies Ordinance, at 23, *available at http://www.southportland.org/files/4314/0439/7333/DOC_Recommendations_Parts_1-4_07-01-14.pdf*

[64] *Id.* at 11.

The City of Oakland should honor its commitments to fighting climate change and use its authority to protect the public health and safety of its citizens and prevent the development of the proposed coal terminal.

* * *

Thank you for your consideration of these comments. As you are aware, community groups are greatly concerned about the serious health and safety consequences of allowing coal exports to pass through Oakland. The City of Oakland has the chance to act as a local and national leader in committing to protect its residents from a dangerous fossil fuel and should act now to prevent the development of the proposed coal export terminal.

Sincerely,

Irene Gutierrez, Attorney
Earthjustice

On behalf of:
Sierra Club, West Oakland Environmental Indicators Project, Communities For A Better Environment, San Francisco Baykeeper

cc: City of Oakland:
officeofthemayor@oaklandnet.com

Port of Oakland:
jbetterton@portoakland.com

Council District 1 Dan Kalb:
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Council At-Large Rebecca Kaplan:
atlarge@oaklandnet.com, rkaplan@oaklandnet.com

APPENDIX A – MUNICIPAL REGULATION OF HAZARDOUS ACTIVITIES

Regulation	Examples
A. Outright ban of certain industry activities	1. South Portland, ME ban of loading crude oil onto any marine tank vessel.
	2. Dryden, NY and Middlefield, NY's fracking bans
	3. Greeley, CO's total ban on all oil and gas production and exploration
	4. Oakland, CA's nuclear free zone
B. Banning oil and gas activities in certain areas via zoning regulations	1. Sharon, OH's ban on building within 200 feet of any oil or gas well head
	2.Springfield Township, OH's ordinance restricting exploration of oil and gas and operation of wells to commercial-industrial zoned districts
	3. County of LA's zoning ordinance prohibiting drilling of oil wells within areas zoned for residential purposes

	4. City of Commerce, CO's fracking regulations
C. Industry Restrictions (retrofitting plants, curtailing certain methods of production, etc.)	1. Chicago's bulk material storage rules
	2. Montana's statewide ban of cyanide leaching in gold mining
	3. Boulder, CO's ordinance regulating the installation and retrofit of solid fuel burning devices
	4. Greeley, CO's regulations
D. Permits for oil/gas operations	1. Greeley, CO's ordinance requiring special use permits for oil and gas operations
	2. La Plata County, CO's ordinance requiring special use permit for oil and gas operations
	3. Burkburnett, TX's ordinance requiring drilling permits for oil wells drilled within the city

	4. Ventura County, CA's ordinance requiring permits for oil exploration and extraction on certain property
	5. St. Clair Shores, MI's license requirement for the delivery of coal, coke, or fuel oil
E. Banning certain activity until there's waste disposal capability	1. California state regulation banning nuclear fission thermal power plants until there are adequate short- and long-term waste disposal mechanisms
	2. Wisconsin state regulation banning certification of nuclear power plants unless there are adequate disposal capabilities for the plant's waste and the proposed plant is economically advantageous to ratepayers
	3. Kentucky state regulation banning construction on nuclear power facilities until the public service commission finds that the US government has approved a means of disposal

F. Voter Approval	1. Montana's law reserving the exclusive right to determine whether major nuclear facilities are built and operated in the state for the people of Montana
	2. Maine's law requiring voter approval for the construction of any new nuclear power plant
G. Legislative Approval	1. Hawaii's Constitutional provision disallowing the construction of any nuclear fission power plant or the disposal of radioactive material without legislative approval
	2. Rhode Island's law requiring approval from the general assembly for the construction of an oil refinery or a nuclear plant

1) Response to Follow-up to Questions from CCIG/OBOT/TLS

CCIG/OBOT/TLS

10.6.15 Response to City Questions

CALIFORNIA CAPITAL & INVESTMENT GROUP

OBOT
OAKLAND BULK AND OVERSIZED TERMINAL

TLS

October 6, 2015

SUBMITTED ELECTRONICALLY
dcole@oaklandnet.com

Claudia Cappio
Assistant City Administrator
CITY OF OAKLAND
One Frank H. Ogawa Plaza
Oakland, California 94612

Re: Responses and Information for City Follow-Up Questions to September 21 Informational Hearing

Dear Ms. Cappio,

Following on an informational hearing held by the City on September 21, 2015, the City issued a series of follow-up questions on September 28, 2015. Attached is the collective response to the follow-up questions on behalf of California Capital and Investment Group (CCIG), Oakland Bulk and Oversized Terminal (OBOT), and Terminal Logistics Solutions (TLS). As you are aware, CCIG is the construction manager for delivery of public improvements at the Oakland Global Trade and Logistics Center (Project), OBOT is the developer of the West Gateway portion of the Project, including the multi-commodity bulk terminal (Terminal), and TLS currently holds an exclusive option to sub-let and operate the Terminal.

As a prefatory matter, we feel compelled to reiterate a few fundamental facts:

First, as we have stated repeatedly, there has been no commitment to include or exclude any particular commodity to or from the Terminal. Over its generational life, the Terminal will undoubtedly hand a wide variety of commodities based on market demand. TLS remains in a mode of "due diligence," exploring the current market demand for the services to be provided at the Terminal, and that process is ongoing and includes discussions with multiple entities regarding a variety of potential commodities.

Second, there is no discretionary action related to the Project pending before the City. The discretionary entitlements for the Project are complete and vested. The City finalized full and complete review of the Project under the California Environmental Quality Act (CEQA) in 2012, including the filing of a Notice of Determination with the County and the State Clearinghouse. Given these circumstances, we want to be clear that the provision of information and responses to questions by CCIG, OBOT, or TLS should in no way be interpreted as suggesting that the entitlements for the Project are in any way incomplete or anything less than fully vested. Further, nothing herein is intended to or should be interpreted as altering or amending in any way the entitlement documents for the Project.

Third, the HDR white paper submitted prior to the September 21 hearing concluded that even without any extraordinary measures or Terminal design features, the Terminal as proposed can and will be operated safely and without undue concern to either the workers at the Project (including the Terminal) or the surrounding community. Unlike the speculative hypotheticals offered by opponents of the Project, the HDR analysis was based upon review of the Basis of Design document submitted to the City on September 8, the Standard Conditions of Approval and Mandatory Mitigation and Reporting Program (SCA/MMRP), federal law, state law, and all regional regulatory requirements including those of the Bay Area Air Quality Management District (BAAQMD). Now-standardized industry best practices documented in the white paper establish the safety of the Terminal as proposed. That TLS herein agrees to incorporate further measures and design features in no way compromises that foundational determination by HDR. And a peer review provided herein corroborates those conclusions.

Finally, we continue to be puzzled by this entire process by the City, including the September 21 hearing. As noted, the Project entitlements are vested, substantial evidence stands un-refuted in the record that the Project and Terminal as proposed can and will bring a new level of regulatory control and oversight to the area, and all of the beneficial reasons for the community that the City originally embraced the vision for the Project remain unchanged.

Should you have any questions regarding the materials provided herein, please to not hesitate to let us know.

Sincerely,

Phil Tagami
CALIFORNIA CAPITAL AND
INVESTMENT GROUP
OAKLAND BULK AND OVERSIZED
TERMINAL

Jerry Bridges
TERMINAL LOGISTIC SOLUTIONS

CCIG/OBOT/TLS RESPONSE TO CITY 9/28/15 QUESTION #2

2) Based upon #1 above, what are the health and/or safety impacts of coal being transported from rail to ship at the Break Bulk Terminal on the existing or future occupants or users of the Project, Adjacent Neighbors, or any portion thereof, or all of them?

In terms of air quality, the health and safety of occupants of the project (existing or future port workers) will be governed by California Occupational Safety and Health Administration (Cal/OSHA) regulations and employee-specific health and safety training and plans as required by Federal and State OSHA. Appropriate signage and workplace postings will also be necessary. A protocol for visitors to the facility will be established by the marine terminal operator(s). As explained in more detail in *HDR's Air Quality & Human Health and Safety Assessment of Potential Coal Dust Emissions (September 2015)* (HDR Report) at pages 6-9, internal facility dust control technology and best management practices will be employed to keep indoor air quality and outdoor air quality within the facility property at acceptable levels as required under Cal/OSHA rules.

Regarding adjacent neighbors, their health and safety in terms of air quality will be governed by federal, California, and Bay Area Air Quality Management District (BAAQMD) regulations. As explained in the submitted HDR Report, internal facility dust control technology and best management practices will be employed to maintain air quality outside the facility property at acceptable levels as required under California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS), and air quality in the vicinity of the facility property will be monitored accordingly.

The TLS multi-commodity bulk terminal design and operational procedures will be developed in accordance with the project's CEQA Standard Conditions of Approval/Mitigation Monitoring and Reporting Program (SCA/MMRP), federal regulations, and permitting requirements, as delineated in the TLS Basis of Design Volume 1, Sections 5-7, submitted to the City of Oakland on September 8, 2015. Additionally, TLS will incorporate the design features and best management practices recommended in the HDR Report, which are state-of-the art controls for handling of bulk material at a marine terminal and represent enclosed operations for purposes of transferring commodities, including coal, from rail to ship.

CCIG/OBOT/TLS RESPONSE TO CITY 9/28/15 QUESTION #3

3) Would TLS through CCIG/OBOT contractually agree to:

a. Following the South Coast Air Quality Management District (SCAQMD) Rule 1158 restrictions?

Yes. If acceptable to the City, TLS will agree to comply with the SCAQMD Rule 1158. Per an October 2, 2015 conversation between Jerry Bridges, President of TLS and Jack Broadbent, Executive Office/Air Pollution Control Officer of BAAQMD, the current understanding is that BAAQMD is preparing their own "Rule 1158" and the process could take a year before adoption. Concurrently, TLS will be developing their bulk terminal plans and specifications, a final operation manual, and an air quality plan, which will be submitted for City approval as a condition precedent to issuance of a building permit pursuant to Ordinance No. 13183 C.M.S. These could include the applicable provisions/requirements of Rule 1158.

b. Only handle bituminous coal?

Yes. As a multi-commodity bulk terminal operation, TLS will handle a wide range of bulk products consistent with safe and lawful operation of the facilities designed. With respect to coal, if it is a commodity exported through the TLS bulk terminal, TLS will agree to handle only high-rank bituminous or anthracite-grade coal (coal that has reached ultimate maturation), the latter of which is currently used by EBMUD's water filtration system. (See Exhibit 3-A). It is important to note that the demands for various commodities change and no commodity has been specifically included or excluded from the TLS terminal operation.

c. Only use "covered" trains from the product source?

Yes. TLS will agree to use covered rail cars. While TLS will operate a multi-commodity bulk terminal, with respect to coal, if it is a commodity exported through the TLS bulk terminal, TLS proposes to use "EcoFab" rail car covers (or car covers with similar specifications provided by other manufactures). The lead vendor under consideration is "EcoFab", which has over 40 years of experience protecting bulk material in transit logging millions of miles of covered railcar mileage per month with a established record of reliability and safety. "EcoFab" is providing and maintaining thousands of covers in Canada, the United States, Australia and the South America. Materials handled by country include:

- Argentina - Copper concentrate
- Australia – Copper concentrate, lead concentrate, phosphate, grain
- Canada – Copper concentrate, lead concentrate, zinc concentrate, nickel concentrate
- Chile – Copper concentrate
- USA – Copper concentrate, lead concentrate, nickel concentrate, low level radioactive soils, wood chips, low level radioactive waste, silver concentrate, steel castings

The Department of Transportation (DOT), has determined that the "Ecofab Railcar Cover System" meets the criteria for a closed transport vehicle, as specified in Title 49 CFR 173.403(c). The U.S. Federal Railroad Administration (FRA) has indicated to "EcoFab" that their cover design is compliant with North American Safety Appliance Regulations.
See the "EcoFab" website for details – www.ecofab.com.

d. Abide by the proposed Basis of Design?
Yes. While much lies ahead in terms of commodity selection, terminal design, and commodity-specific utility, TLS will agree to abide by the 4-volume Basis of Design submitted to the City of Oakland on September 8, 2015, which provides the foundation of minimum requirements that will apply to TLS facility development and operations, regardless of commodity being handled at any given time.

The TLS Basis of Design is intended to provide the City with context for the project's operating environment and desired performance parameters; and it is a project deliverable that marks the beginning of a process, as referenced in the introduction of Volume 1. Starting with the foundational information contained in the Basis of Design, through the Design Development and Construction Documents phases, the project operations manual, air quality plan, and MMRP compliance plan will be completed concurrent with the submittal of approximately 76 required permits.

e. Incorporate all "protective measures" identified in TLS' July 15, 2015 letter?
Yes. TLS will agree to incorporate all "protective measures" identified in the TLS July 15, 2015 letter and the Basis of Design submittal.

At this point in time, OBOT and TLS propose that any agreement regarding items 3(a) – (e) would be incorporated into the Subordination and Non-Disturbance Agreement between the City, OBOT and TLS that relates to the sublease between OBOT and TLS whereby OBOT and TLS would agree to be bound by the provisions of such agreement. Further, to the extent the agreed upon matters related to rail operations, TLS would agree to only accept shipments of the subject commodity that were handled pursuant to the agreed upon requirements. This would provide the City with the right to directly enforce the agreement against OBOT and TLS and, after the implementation of the agreed upon notice and cure procedures, require the termination of the ground lease if OBOT is the defaulting party or the sublease if TLS is the defaulting party.

Please note at the foregoing responses set forth OBOT and TLS' general concurrence with the applicable subject matter; however, such responses shall not be binding on OBOT or TLS unless and until a definitive written agreement regarding the same is entered into by the City, OBOT and TLS.

EXHIBIT 3-A

EBMUD Use of Anthracite Coal for Water Filtration

Description of Anthracite use at EBMUD

EBMUD operates six surface water treatment plants, as follows:

- Sobrante WTP
- Upper San Leandro WTP
- Orinda WTP
- Walnut Creek WTP
- Lafayette WTP
- San Pablo WTP

These WTPs are taken in and out of service for various operational and maintenance reasons. At any particular time, as few as two or as many as six WTPs may be in service providing drinking water.

Each of the six WTPs uses filtration to remove particulate material from the surface water as required by law. All six of the WTPs use a combination of anthracite and sand for the filter media, and all of them use gravity to move the water through the filters. As each filter becomes plugged with particulate material and the flow rate through it decreases, it is backwashed to clean it. Backwashing involves running clean water through the filter in reverse to dislodge the particles. As part of the backwashing process, some of the anthracite media can get washed out. Therefore, additional anthracite is sometimes added to each filter to maintain the depth needed for proper filtration. Depending on the plant and the backwashing conditions, supplemental anthracite may not be needed for many years. Aside from occasional supplementation, the anthracite media is not routinely replaced. It is a very inert material and resistant to degradation. Many of our anthracite filters are decades old. When new anthracite is purchased, it is specified to match the existing media (identical size and uniformity coefficient). All six WTPs use anthracite media consisting of grains that are approximately 1 mm in size.

Each of the Water Treatment Plants has a different number of filters, and the filters are different sizes. In some cases, each filter is divided into two boxes that can be backwashed separately. The following table summarizes the number of filter boxes at each WTP, the size of each box, the depth of the anthracite filtering media, and the total volume of anthracite in cubic feet.

	Number of filter boxes	length (ft)	width (ft)	total surface area (ft2)	depth (ft)	volume (ft3)
Sobrante WTP	8	48	24	9,216	2.50	23,040
Upper San Leandro WTP	10	30	40	12,000	2.50	30,000
Orinda WTP	40	20	30	24,000	2.08	50,000
Walnut Creek WTP, old	8	24	48	9,216	1.50	13,824
Walnut Creek WTP, new	8	24	48	9,216	3.00	27,648
Lafayette WTP, old	8	20	30	4,800	2.00	9,600
Lafayette WTP, new	8	20	31	4,960	2.00	9,920
San Pablo WTP	7	40	32.5	9,100	2.00	18,200
					TOTAL:	182,232

ENTERED

APR 25 2014

By: _____

Invoice

911-24745-AE

WW C 911 2008015 301

MATERIAL RECEIVED

BY _____ DATE 4/25/14

PRICED APPROVED

BY _____

Bill To

E.B.M.U.D.
Accounts Payable
PO Box 23060
Oakland, CA. 94623-2306

REMIT TO:

KC INTERNATIONAL
33487 Carlsbad Circle
Thousand Palms, CA
92276

Invoice Date	Invoice Number	Purchase Order Number	Date Shipped	Terms
2/24/2014	8064 B		2/21/2014	Net 30

Item	Qty	Unit	Description	Unit Price	Extension
KCI-3 MM	16,500	Lbs	3 MM (70 CTC) virgin coal carbon (P/N 919647) delivered to Oakland plant.	2.90	47,850.00
KCI-3 MMR	16,500	Lbs	Custom Regenerated 3 MM carbon (P/N 919646) delivered	1.60	26,400.00
			Sales Tax	9.00%	~~4,306.50~~ 2376.00
				TOTAL	~~$78,556.50~~ 28776.00

Phone # 626-574-6875 Fax # 626-574-8458 E-mail ken@kcintl.net

ENTERED

APR 25 2014

By: _____

Invoice

911-24747-AE

Bill To

E.B.M.U.D.
Accounts Payable
PO Box 23060
Oakland, CA. 94623-2306

WW C 911 20088015 301
MATERIAL RECEIVED
BY [signature] DATE 4/29/14
PRICED APPROVED
BY [signature]

REMIT TO:

KC INTERNATIONAL
33487 Carlsbad Circle
Thousand Palms, CA
92276

Invoice Date	Invoice Number	Purchase Order Number	Date Shipped	Terms
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				TOTAL	~~$78,556.50~~

52,156.50

Phone # 626-574-6875 Fax # 626-574-8458 E-mail ken@kcintl.net

CCIG/OBOT/TLS RESPONSE TO CITY 9/28/15 QUESTION #4

4) If additional measures were agreed to contractually or if the City imposed additional regulations pursuant to the DA exception, could third parties, like railroads, challenge on preemption grounds?

Question 4 asks about two different issues: (1) additional measures agreed to contractually and (2) additional regulations imposed pursuant to the DA exception. We address those two issues separately.

With respect to additional measures mutually agreed to pursuant to a subsequent contract: The Surface Transportation Board (STB) has held that "a town may seek court enforcement of voluntary agreements that the town has entered into with a railroad, notwithstanding section 10501(b), because the preemption provision should not be used to shield a carrier from its own commitments, and voluntary agreements must be seen as reflecting the carrier's own determination that the agreements would not unreasonably interfere with interstate commerce." *Joint Pet. for a Declaratory Order—Boston & Maine Corp. and Town of Ayre*, 2001 WL 458685, at *5 (STB May 1, 2001).

Neither OBOT nor TLS believe that a third party rail carrier could assert a preemption claim that would successfully invalidate an agreement not to accept rail shipment that did not comply with the requirements of an agreement entered into by OBOT and TLS with respect to the matters set forth in Items 3(a) – (e) above.

However, new regulations or restrictions unilaterally imposed pursuant to some purported finding under DA or otherwise that affects rail transportation would stand on a different footing than contractual agreements. State and local regulation of rail transportation is allowed only in relatively narrow circumstances. The STB has explained that "state and local regulation is permissible where it does not interfere with interstate rail operations, and localities retain certain police powers to protect public health and safety. For example, non-discriminatory enforcement of state and local requirements such as building and electrical codes generally are not preempted." *Town of Ayre*, 2001 WL 458685, at *5. As to general principles and breadth of federal preemption generally, please refer to the Venable memorandum included as Exhibit C to the September 8, 2015, letter to the City from Stice & Block.

CCIG/OBOT/TLS RESPONSE TO CITY 9/28/15 QUESTION #5

5) Why/how would federal preemption apply if the rail was built on private (City) land and subject to pre-existing restrictions (imposed before allowing rail to be built)?

Whether a potential burden on interstate commerce occurs on public or private land is irrelevant. The plain language of ICCTA gives the Surface Transportation Board "exclusive jurisdiction" over rail transportation, including construction and operation of rail tracks, even if they are spur or industrial tracks located entirely in one State. 49 U.S.C. § 10501(b)(2). As several courts have observed, "[i]t is difficult to imagine a broader statement of Congress' intent to preempt state regulatory authority over railroad operations" than the one contained in ICCTA. *City of Auburn v. United States*, 154 F.3d 1025 (9th Cir. 1998) (quoting CSX *Transp., Inc. v. Georgia Pub. Serv. Comm'n*, 944 F. Supp. 1573, 1581 (N.D. Ga. 1996)). It is thus irrelevant who owns the land on which the rail line is built. The STB's exclusive jurisdiction preempts any state or local regulation that would place an unreasonable burden on interstate commerce. Assoc. of Am. R.R. v. South Coast Air Quality Mgmt. Dist., 622 F.3d 1094, 1097-98 (9th Cir. 2010).

Regulations imposed before allowing a rail line to be built are subject to special scrutiny, and are more likely to be preempted. This class of regulation— known as a "preclearance requirement"— is "preempted because by [its] nature [it] unduly interfere[s] with interstate commerce by giving the local body the ability to deny the carrier the right to construct facilities or conduct operations." *Town of Ayre*, 2001 WL 458685, at *5.

EARTHJUSTICE

ALASKA CALIFORNIA FLORIDA MID-PACIFIC NORTHEAST NORTHERN ROCKIES
NORTHWEST ROCKY MOUNTAIN WASHINGTON, D.C. INTERNATIONAL

September 14, 2015

Via Overnight Mail

Oakland City Administrator
1 Frank Ogawa Plaza, 3rd Floor
Oakland, CA 94612

Re: Proposed Oakland Coal Export Terminal

To the Oakland City Administrator:

On September 1, 2015, the Sierra Club, West Oakland Environmental Indicators Project, San Francisco Baykeeper, and Communities for a Better Environment submitted comments to the City Administrator's office objecting to the proposed development of California's largest coal export terminal at the former Oakland Army Base, now known as the Oakland Global Trade and Logistics Center ("Oakland Global"). That letter provided community advocates' reasons for objecting to the coal export terminal, including information about the various health, safety, and environmental implications of exporting coal.

This letter supplements the September 1, 2015 letter by providing additional information on the health, safety and environmental harms created by operating a marine coal export terminal on the Oakland waterfront. This letter provides information about the effects of comparable coal export terminals in the Pacific Northwest, specifically:

1. May 3, 2012 and January 8, 2013 comment letters submitted by Columbia Riverkeeper, the Sierra Club and other organizations on the proposed Morrow Pacific coal terminal, a comparable coal terminal located in Oregon. Those comment letters and supporting exhibits are contained within **Disk A – Coyote Islands** on the DVD enclosed with this letter.

2. A January 21, 2013 comment letter submitted by Columbia Riverkeeper, the Sierra Club and other organizations on the proposed Gateway Pacific coal terminal and Custer Spur rail expansion project located in

CALIFORNIA OFFICE 50 CALIFORNIA STREET, SUITE 500 SAN FRANCISCO, CA 94111
T: 415.217.2000 F: 415.217.2040 CAOFFICE@EARTHJUSTICE.ORG WWW.EARTHJUSTICE.ORG

Washington state. That comment letter and supporting exhibits are contained within **Disk B – Pacific Coal** on the DVD enclosed with this letter.

3. A November 15, 2013 comment letter prepared by Earthjustice on the proposed Millennium Bulk Terminals – Longview Shipping Facility, a comparable coal export terminal located in Washington State. That comment letter and supporting exhibits are contained within **Disk C – Millenium Bulk 1** and **Disk D – Millenium Bulk 2** on the DVD enclosed with this letter.

These proposed facilities are similar to the proposed Oakland coal export facility. Thus, the analysis of the effects of these terminals will instructive in understanding the potential effects of the Oakland coal export facility.

Thank you for your consideration of these comments. As you are aware, community groups are greatly concerned about the serious health and safety consequences of allowing coal exports to pass through Oakland. The City of Oakland has the chance to act as a local and national leader in committing to protect its residents from a dangerous fossil fuel and should act now to prevent the development of the proposed coal export terminal.

Sincerely,

Irene Gutierrez, Attorney
Earthjustice

On behalf of:
Sierra Club, West Oakland Environmental Indicators Project, Communities For A Better Environment, and San Francisco Baykeeper

Encl. (DVD)

cc: City of Oakland
Port of Oakland

October 6, 2015

Via Electronic Mail
Oakland City Council
Oakland City Administrator
1 Frank Ogawa Plaza, 3rd Floor
Oakland, CA 94612
(510) 238-2386
Council@oaklandnet.com
cityclerk@oaklandnet.com
dcole@oaklandnet.com
CCappio@oaklandnet.com
LSchaaf@oaklandnet.com

Re: Proposed Oakland Coal Export Terminal

Dear City Councilmembers and City Administrator:

We are writing on behalf of West Oakland Environmental Indicators Project, Sierra Club, Communities for a Better Environment, San Francisco Baykeeper, and Asian Pacific Environmental Network to follow up on our previously submitted comments and reports dated September 2, 2015 September 14, 2015 and September 21, 2015 pertaining to the significant health and safety problems associated with coal. The letters, testimony from experts and community members, and the scientific studies in the record provide the substantial evidence needed for the Oakland City Council to regulate on this issue. This letter provides: (1) additional information and clarification of points raised during the City Council hearing; and (2) responses to key questions raised by Claudia Cappio of the City Administrator's office.

The record to date already contains examples of analogous coal terminals and the significant health and safety impacts associated therewith, as well as Oakland-specific studies about the air pollution and other pollution burdens faced in the community. This provides the substantial evidence basis for the City to regulate to eliminate coal from the Army Base Redevelopment. Some of the follow-up questions posed by Oakland City Council members and City Administrator are site-specific questions pertaining to the effects of the proposed coal export terminal in the West Gateway development. Specific answers to these questions are not

readily available at this time because the proper environmental review was never conducted to account for the shipment of coal through that area, or indeed, through any part of the former Oakland Army Base. The environmental review required by the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) would provide that site-specific information, should the City Council require such information for its decision-making process.

The project developers[1] repeatedly assured community members and the City itself that they had no intention of shipping coal all while they were engaged in backroom negotiations in Utah to bring coal through Oakland. This violates the community's trust, as well as the letter and spirit of CEQA and NEPA.

Given this background, the City of Oakland should seriously question promises from these developers that the supposed "state-of-the-art" coal terminal will mitigate risks to the community especially when: (1) a full environmental review for this project discussing coal was not conducted; (2) there are no binding mitigation conditions in place to deal with the coal-specific environmental, health and safety problems; (3) the international coal market is in shambles and thus the revenue stream for this project is questionable at best; (4) initial terminal design plans were released only a few weeks ago and even in this short time period have already changed; (5) the terminal operator, Terminal Logistics Solutions (TLS), has never itself operated anything before, let alone a bulk export facility and so has no operations track record; and (6) given the developer's history of making assurances that no coal would be part of this project all while apparently working to secure a coal deal.

The point of environmental review is to have an open and informed discussion about the project and its potential impacts from the outset so that lawmakers and the public have an accurate understanding of the environmental, health and safety concerns associated with a project. CEQA also requires alternatives or mitigation measures to alleviate such impacts where possible.[2] Here there was no discussion about coal export, storage or transportation during the environmental review process for the Army Base redevelopment, and therefore no opportunity to have the necessary public dialogue.

The oral and written testimony presented at the September 21, 2015 Oakland City Council meeting established that there is the huge potential for significant health and safety impacts if the former Oakland Army Base were to ship coal. We believe there is substantial

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[1] California Capital Investment Group (CCIG) and Prologis, through the joint venture entity Prologis CCIG Oakland Global entered into development agreements with the City for the purposes of redeveloping the former Army Base. These entities, or some part thereof, have leased the West Gateway development where the coal export terminal will be located to Terminal Logistics Solutions. Oakland Bulk and Oversized Terminal LLC is also involved with the development of the bulk terminal. These entities are collectively referred to as the "developers."

[2] *See No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 84. CEQA Guidelines § 15002(a)(2) and (3). *See also Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564.

evidence in the record upon which the City of Oakland can regulate to eliminate coal from this project based on the health and safety concerns. To be clear, however, the September 21 hearing is not a substitute for the further environmental review that is needed if the developers do intend to ship coal through Oakland. Further, our groups do not believe that all public health and safety aspects of a coal export terminal could be mitigated.

Although CCIG touts having hundreds of mitigation conditions, not one of those conditions addresses the unique health and safety concerns that coal poses. Further, the design plans from TLS keep changing. In the few weeks from when the initial design plans were submitted to City Council and the September 21 hearing, there are two drastically different pictures of what their coal terminal might look like.

The City already possesses substantial evidence about the harms of transporting coal through Oakland, which would allow it to take action and prevent the use of City lands for coal transportation. Further, given the absence of concrete information about the final terminal design, and the absence of enforceable mitigation measures specific to a coal export terminal, the City should at least require further site-specific environmental review before the project is allowed to proceed. We thus respectfully request the City to take action to prevent a facility that has never been studied, and for which no enforceable mitigations have been developed, from going forward without the appropriate City oversight.

A. Additional Information and Clarification on Points Raised During September 21, 2015 Council Hearing

1. CCIGs's Report form HDR Contains Only Cursory Project Analysis and Makes Several Misstatements.

The report submitted on behalf of CCIG from HDR prior to the September 21, 2015 hearing contains a number of flawed assumptions and misstatements, which we correct below.

A. Emissions from Rail Cars In Oakland Will be Significant, not Negligible.

The HDR report takes the position that coal dust emissions from coal transport and handling will be "minimal"; however, the report makes a number of assumptions that are flawed. First, the HDR report mainly discusses dust control measures like load profiling and surfactants, not physical covers for rail cars which indicates that the coal will most likely be uncovered. *See* HDR at 3-9. Here, the applicant CCIG and TLS have not proposed using surfactants or load profiling. *See* Expert Report of Phyllis Fox ("Fox") at 12, submitted with September 21, 2015 Comments. The HDR report notes that "the port developer will cover the rail cars to prevent any such emissions that could otherwise occur early in the train trips." *See* HDR at 6. However, HDR provides no citation to any evidence or study to back such a claim. Such covers appear to be only in the theoretical design phase since our experts were unable to confirm any company

was currently producing them, and there are no technical papers evaluating their effectiveness. *See* Expert Report of Deb Niemeier ("Niemeier") at 9, submitted with September 21, 2015 Comments.

Second, given the above information, one can assume the coal trains will be uncovered. Uncovered coal cars spew massive amounts of coal dust into communities all along the rail line and to neighbors near the coal export terminal. See Fox report at 13 **(18,200 tons of coal dust per year could be released into the air and waterways near the rail line alone)**; Niemeier at 7 **(up to 646 tons of coal dust released on site from rail cars).** Measures like load profiling and surfactant use are only in place for coal originating from the Powder River Basin, not Utah. *See, e.g.,* Niemeier at 7, n. 17. Utah coal has no requirements in place to govern how it is shipped, and it would likely be shipped in the industry standard open top rail cars without any load profiling or surfactants. Indeed, CCIG and TLS have not proposed using surfactants as a mitigation measure. *See* Fox at 12. Still, even assuming surfactant and load profiling are used, surfactants wear off over the course of the train trip. *See* Niemeier at 8 (noting that the crusts formed by topping agents wear off when cars are jostled or exposed to high winds—like mountain passes in the Sierras through which the coal would travel—causing the topping agent to decay and exposing coal to the wind.) Coal also comes out of the bottom of rail cars, which would not be impacted by surfactant use or load profile shaping. *See* Fox at 12, 17.

Contrary to what the HDR report asserts, such coal dust emissions occur not just next to the mines, but also at much later points near the port. *See* Fox at 13 (including accompanying photograph of a train visibly emitting coal dust in the Columbia River Gorge, several hundred miles from any coal mines) ; Jaffe at 2 (studies in Seattle area and Columbia River Gorge found that "nearly all coal trains emit coal dust.")[3] Surfactants wear off the coal loads during the journey, and are indeed pollutants themselves.

The size of coal particles lost during transport varies—some particulate matter will be in larger size than others and much of the data on coal dust loss focuses on what is visibly found next to the tracks and in waterways. The recent Jaffe study looked specifically at air quality in the Columbia River Gorge and "measured the respirable size fractions of PM." Jaffe at 17. This is important for two reasons. First, the study was conducted several hundred miles away from the coal mine sites so shows that coal dust lost occurs at all parts of the rail journey, not just next to the coal mine. And second, using real world data, not simply a predictive model, it shows that the coal dust loss that occurs far from the mine site is the type that can be inhaled by the residents of the communities along the rail lines and next to ports. Coal dust emissions from rail cars are significant, and would be a health and safety problem if the Oakland terminal were to ship coal.

[3] Jaffe, D., et al. "Diesel Particulate Matter and Coal Dust from Trains in the Columbia River Gorge,Washington State, USA" Atmospheric Pollution Research. 2015.

B. Emissions from the Terminal will be significant.

The HDR reports asserts—without a single scientific citation--that the "state-of-the-art controls" for the proposed coal export terminal will mean that coal dust is not an issue. *See* HDR report at 6-9. As previously stated, it is unclear exactly what controls terminal plans since there was never an environmental review of coal handling, and thus none of the mitigation conditions address the problems associated with coal. *See* Fox at 21. There are no binding conditions that require any sort of pollution control technology from the terminal. Already, it appears that the terminal design plans recently released changed from large rectangular metal buildings to multiple dome-shaped buildings. *Compare* Basis of Design Plans posted by TLS at pp. 19-20, *available at* http://www2.oaklandnet.com/w/oak054820; and plans shown at City Council hearing on September 21, 2015 (minute 45:13); *available at* http://oakland.granicus.com/MediaPlayer.php?view_id=2&clip_id=1837&meta_id=106943. The design plans analyzed are a moving target, changing with the developer's whims, and do not provide a firm basis for analyzing the terminal's impacts.

The materials handling equipment—storage domes, sheds, conveyers, loaders and the like—will not be located in an enclosed structure meaning that there will be particulate matter emissions but these cannot be quantified without more specific information. *See* Fox at 6.

HDR admits that "controlling coal dust will also require the use of water sprays and/or foggers." HDR at 6-7. The amount of water required to attempt to control dust is massive—over 79 million gallons or 8 gallons of water per ton of coal. *See* Fox at 7-8. Considering California's current drought, this is a poor use of the City's limited water resources, and puts the health and safety of Oakland residents at risk by using potable water to reduce coal dust that could be used for Oakland residents, soiling such water with polluting coal dust, and using the water to treat coal which will further contribute to climate change and the drought.

C. Oregon Morrow critiques re air quality violations

The HDR report criticizes the reference in our previous comments to the air modeling conducted at the Port of Morrow, Oregon. This Oregon facility is currently on indefinite hold in its construction due to the State of Oregon Department of State Lands' denial of a major project permit on the basis of environmental concerns. That permit denial is currently being litigated, as is the air permit.

The Port of Morrow, Oregon air modeling found major exceedances of both PM and NOx at an enclosed terminal site from open trains, partially enclosed barges, and the idling time of such engines on the site during loading and unloading. There were several different scenarios modeled, and the PM and NOx concerns involve both coal dust and the pollution from the engines idling on the trains and barges during loading and unloading. Pollutant emissions from trains and tug boats are emitted near the ground, with little plume rise. Hence, the maximum pollution impacts occur near the project site. Modeled receptors are placed at the site boundaries

where the public has access to capture these maximum pollution impacts. Even in the Tongue River Railroad modeling that HDR included to supposedly show that there would be no pollution problems, the modeling showed 1 hour NOx standard violations (although underestimated, as described below.)

Because there are no firm design plans, there has been no project-specific environmental review, and CCIG/TLS have not yet applied for an air permit for this facility, there is not enough information to run a full model for the potential air quality impacts at the proposed Oakland Army Base coal export facility. This just again underscores the need for additional information.

With the limited information available, Dr. Niemeier reviewed the particulate matter impacts in two different scenarios for a coal terminal in Oakland and found that there would be between **323-646 tons of coal per year would be emitted during the loading and unloading process at the proposed coal terminal in Oakland.** *See* Niemeier at 5-7.

HDR's following criticisms of the Port of Morrow modeling are inaccurate, as described below:

1) Emission rates are conservative, not erroneous—HDR claims that the wind erosion figured used inaccurate assumptions, that is that wind would be a one time issue. However, the Columbia River Gorge is an extremely windy area where wind is a frequent occurrence and coal trains move on site during loading loading/unloading, meaning that the coal is disturbed which can cause more emissions. *See, e.g.*, Niemeier at 7. Local wind speeds were used in the Oregon modeling, which is the accepted practice. Most waterfront areas are quite windy so it's likely that similar concerns might exist in Oakland. HDR's criticisms are without citation or support.

   Source emissions used in the Port of Morrow modeling were taken mainly from little information provided in the project application. The application only shows total annual emissions and not maximum short-term (1-hour and 24-hour) emissions rates that are required by the modeling. For example, modeled emissions for trains and boats are based on the annual rates divided by the number of hours operating during one year. This can understate the maximum short-term impacts since they are based on average emission rates. For wind erosion, emissions were calculated for the worst day using AP-42 emission factors approved by the US EPA. That is appropriate for modeling 24-hour PM impacts.

2) Mobile source emissions were accurate not misrepresented—Again, HDR seems to misunderstand what exactly was modeled. The modeling looked at scenarios at an enclosed coal export facility accepting coal from open top trains that was then unloaded at a facility where it was loaded onto enclosed barges to complete the journey downriver to be loaded onto larger ships. The time during loading/unloading at the facility is where many of the emissions come from.

Short-term (1-hour and 24-hour) modeling is based on train unloading and barge/ship loading with the assistance of tugboats. In these modeling scenarios, project sources are stationary most of the time and hence it is reasonable to model them as point sources. This is the same approach used by the California Air Resources Board and New Jersey DEP in their port studies (references given in the AMI report). In fact, stack parameters in these studies were used in the AMI modeling. It should be noted that modeling used area sources for wind erosion from railcars.

The situations reviewed were times when loading/unloading of trains and barges, pulled by tugs, would occur in one concentrated location (i.e., at the Port site itself, akin to what is proposed in Oakland.) Some scenarios also excluded trains. While there would also be additional pollution from the tugs pulling barges down river and the open top trains hauling coal from the Powder River Basin to Oregon, these scenarios looked at only onsite emissions during loading/unloading. Those extremely elevated NOx and PM results should be of great concern to the Oakland City Council because that would be the pollution suffered by the residents of West Oakland if the coal terminal is built and trains/ships are onsite doing such loading and unloading of coal multiple times per day, nearly every day of the year.

3) Wind erosion –HDR states that the barges were assumed to be open in the modeling. Again this is inaccurate. Enclosed barges were assumed. The engines on the tugs attached to the barges account for some pollution, as does coal dust from the open top trains. Wind erosion figures were for open trains.

4) Stationary emission points and stack height—HDR states that the emissions points were improperly combined and that the stack height was incorrect in the modeling. However, the pollutant emissions from trains and boats are emitted near the surface, with little plume rise. Hence, their maximum impacts occur near the project site not further away like in an industrial facility with a taller stack. Modeled receptors are placed at the site boundaries where the public has access to capture these maximum impacts. Air agencies do not measure pollutant concentrations at these locations. They often rely on measurements made at air monitoring stations which can be several miles away from the project site and thus would not as accurately predict emissions.

5) Location of the public/receptors—HDR argues that the receptors were placed too close to the site to be realistic. Again, that is an inaccurate criticism. All air agencies including US EPA require that receptors be placed in ambient air where the public has access. It is customary to place receptors at the site boundaries and beyond. As mentioned above, due to low plume rise, maximum project impacts occur near the project site.

It is worth noting that the population of the town of Boardman, the town located near the proposed Port of Morrow facility, is further away than at the proposed coal export facility at the former Oakland Army Base. The residents of West Oakland live and work

in extremely close proximity to the terminal, which again should trigger great concern with the Oakland City Council for potential PM and NOx impacts at this terminal site.

While HDR attempts to criticize one set of the Port of Morrow modeling (several sets were provided) they do without any citation to a scientific paper and they fail to provide their own similar modeling and they do nothing to refuse the NOx and PM concerns flagged. Both pollutants are of significant public health concern.

D. The Surface Transportation Board Dust Analysis for the Tongue River Railroad was flawed

In the HDR report, the consultant borrowed some analysis from a draft Environmental Impact Assessment for the Tongue River Railroad in Montana and claimed that this study proves there are no health effects from coal trains. HDR purports this to be the first analysis of coal dust by a federal agency, notwithstanding the volumes of information produced in hearings by both BNSF and Union Pacific railroads about the problems associated with coal dust before the STB a few years ago in which the STB found coal dust to be a "pernicious ballast foulant" linked to train derailments, among other conclusions.[4]

In sum, STB's analysis fails to disclose the full scope of impacts due to coal dust from trains on the Tongue River Railroad, including impacts to air quality and human health. The principal source of coal dust in areas affected by the Tongue River Railroad is coal "blown from the top of the rail cars by the air moving over the loaded, uncovered rail cars." Tongue River Railroad Draft Environmental Impact Statement (hereafter "DEIS" at 4-14). As Ranajit Sahu, Ph.D., noted in his expert memorandum for the Northern Cheyenne tribe, BNSF estimates that coal loss from the tops of rail cars are 600 pounds per car over a 400 mile route. Sahu Mem. at 18.[5] For a single, 125-car train, this translates to 37.5 tons of coal and coal dust emitted to the air or deposited on the ground and in waterways in just the first 400 miles of the coal's route from Otter Creek to West Coast export terminals. As STB acknowledges, "[w]hen particulate matter is inhaled, larger particles are filtered in the nose or throat by cilia and mucus, but small particles can pass through into the lungs. The smallest particles can enter the circulatory system, where they harden and inflame the arteries. This increases the risk of heart attack and other cardiovascular problems." DEIS at 6-3.

STB underestimated fugitive coal dust emissions and their adverse impacts to air quality and human health. STB modeled dispersion of airborne particulate using EPA's AERMOD air

[4] Surface Transportation Board Decision, *Arkansas Electric Cooperative Corporation – Petition for Declaratory Order*, Docket No. FD 35305 (Mar. 3, 2011), accessed: http://www.stb.dot.gov/decisions/readingroom.nsf/WebDecisionID/40436?

[5] This letter incorporates by reference the coal dust arguments raised in the Northern Cheyenne Tribe's comments and expert report. Dr. Sahu's report is submitted along with this letter.

dispersion and deposition model. DEIS at G-11. The model incorporates, most critically, assumptions based on estimated rail car coal dust emissions. Id. Several of STB's underlying assumptions, as described in the DEIS, are inappropriate or unsupported as detailed below.

First, STB improperly failed to consider coal dust emissions over the entire rail route. It appears that STB's conservative (i.e., high production) scenarios looked at coal loss from 6.32 trains per day for a daily total of 322.71 train miles—or just over 50 miles per train. DEIS at E-33. Yet fugitive dust from coal trains is known to occur well beyond the first 50 miles of its trip. *See, e.g.*, Fox at 13. Thus, these emissions are "reasonably foreseeable" emissions that must be considered under NEPA or CEQA.[6] In lieu of its truncated analysis in the DEIS, STB must analyze coal dust emissions over the entire route from mine to market.[7]

Second, STB failed to disclose or justify its assumptions regarding particle size distribution from coal lost from trains, a significant factor in calculating overall fugitive dust emissions. While BNSF has provided estimates of coal loss from rail cars, those estimates appear to reference the total volume of coal lost. For purposes of evaluating coal dust emissions, STB considered only a fraction of this total volume, assuming that particles larger than 50 microns would be deposited immediately adjacent to the railway and not become airborne. In its analysis, STB estimated the total suspended particulate ("TSP"), defined as particles less than 50 microns, emitted from loaded rail cars for each build scenario. DEIS at E-45. TSP includes particles smaller than 50 microns and includes PM10 and PM2.5. Id. at 6-4. Based on examinations of other coal types, STB assumed a particle size distribution of 45% PM10 and 8.6% PM 2.5 relative to TSP. Id. at E-44. However, STB fails to disclose or justify its assumptions regarding the particle distribution of TSP relative to total coal lost from rail cars. STB's analysis cannot be supported without such information.

Third, STB also failed to demonstrate the efficacy of coal dust mitigation measures. In particular, "much is unknown as far as the composition of almost all of the 'approved' [topper] agents." Sahu Mem. at 21-22. As described in the separate comments of Northern Cheyenne Tribe, STB has refused to make available documents regarding the efficacy of coal dust mitigation measures, undermining the public's ability to meaningfully evaluate STB's assumptions and leaving STB without the requisite support for its claim that such measures will reduce fugitive coal dust emissions by 85%. Without such support, STB's estimates of coal dust emissions that incorporate its mitigation assumptions are arbitrary.

Dr. Sahu's independent analysis yielded far higher projections of coal dust emissions than those estimated by STB. Sahu Mem. at 18. **Even applying STB's assumed 85%**

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[6] See, e.g., Petition of Arkansas Electric Cooperative Corporation for a Declaratory Order, STB Finance Docket 35305, BNSF PowerPoint, at 3-10 (Nov. 17, 2010. 40 C.F.R. § 1508.8.

[7] At a minimum, STB must consider coal dust emissions for the first 400 miles of train routes based on coal loss data that is readily available from BNSF.

reduction in emissions due to dust suppression measures, Dr. Sahu estimated 41 times higher emissions than the estimate provided by the STB. Id. at 18 n.36. Based on this analysis, we agree with Dr. Sahu's conclusion that the STB's estimates for coal dust emissions from the TRR are "grossly inaccurate." Id. at 19.

STB's flawed coal dust emissions calculations in turn corrupted the agency's modeled air quality impacts from coal dust. STB's modeling showed that airborne dust will not cause exceedances of air quality standards except for the 1-hour standard for nitrogen oxide (NOx) concentrations. DEIS at 4-17. However, because STB underestimated a fundamental input to its model—coal dust emissions—its modeling results are fatally flawed and form an illegitimate basis for STB's conclusion that air quality impacts are not significant. *See e.g., Silverton Snowmobile Club*, 433 F.3d 782 (NEPA requires analysis to "ha[ve] a rational basis and t[ake] into consideration the relevant factors").

Even with STB's unsupportably low emissions estimates, their modeling demonstrated that NOx emissions will exceed the 1-hour standard. DEIS at 4-17. In 2010, EPA promulgated the 1-hour standard for ambient NOx concentrations at the level it deemed necessary to protect human health after finding that even short-term exposures to high NOx levels can cause severe respiratory impacts.[8]

For reference, Nitrogen oxides ("NOx") are highly reactive gases emitted primarily from the combustion of fossil fuels in mobile and stationary sources. NOx can cause respiratory problems such as asthma attacks, respiratory tract symptoms, bronchitis, and decreased lung function. NOx emissions result in nitrogen deposition, which may cause "significant adverse changes" in terrestrial ecosystems such as soil acidification, increases in soil and plant susceptibility to natural stresses, and alteration of natural plant species balances. Nitrogen deposition can also adversely affect aquatic ecosystems through acidification or eutrophication, both of which cause a reduction of water quality, and can leave the waterbody unfit for many aquatic organisms and/or human consumption. In addition, NOx emissions contribute to visibility impairment, global warming, acid rain, formation of ground-level ozone and formation of toxic chemicals. NOx is also a precursor chemical to fine particulate matter. Deposition of pollutants also has profound negative impacts on ecosystems. Studies demonstrate that in the Western United States, some aquatic and terrestrial plant and microbial communities are significantly altered by nitrogen deposition.[9]

While the NOx emissions threshold is set at 188 $\mu g/m^3$ for a 1-hour period, NOx emissions attributable to the Tongue River Railroad are modeled to reach 297 $\mu g/m^3$. DEIS at 4-

[8] Final Rule, Primary National Ambient Air Quality Standards for Nitrogen Dioxide, 75 Fed. Reg. 6,474, 6,483 (Feb. 9, 2010).

[9] See Mark E. Fenn, et al, Ecological Effects of Nitrogen Deposition in the Western United States, BioScience Vol. 53:4, Apr. 2003, available at http://www.bioone.org/doi/abs/10.1641/0006-3568(2003)053%5B0404:EEONDI%5D2.0.CO%3B2.

17. STB attempts to dismiss these modeled impacts. Citing a 2012 study by the American Petroleum Institute among others, STB claims that EPA's AERMOD model "has been documented in a number of studies to over-predict the highest 1-hour NO2 concentration from 1.7 to 2 times the observed concentration." Id. at 4-17–18. Accordingly, STB reduced predicted NOx concentrations to account for this "model bias." Id. at 4-18. While STB states that EPA is "aware" of the purported model bias, EPA has not conceded a bias of 1.7 to 2 times in its approved model, and has not sanctioned any post-modeling reductions in modeled values.[10] Moreover, STB's analysis relied on a version of AERMOD (13350) that modified earlier versions to incorporate a "Tier 2 ambient ratio method for the 1-hour NO2 NAAQS" in order to partially address industry's critique of the models' treatment of NOx. Id.; see DEIS at E-135 (specifying use of AERMOD 13350). STB has failed to justify its post-modeling reduction of projected NOx impacts in the DEIS.

In addition to Dr. Sahu's criticisms of the STB's modeling, recently published studies of coal trains in Washington also conclude that coal trains are still emitting significant amounts of particulate matter far from the mine origins even when topping agents are used. Professor Dan Jaffee's studies have examined respirable particulate matter emitted from coal trains in the Northwest.[11] His research, based on real world empirical observations, not simply modeling, indicate that the type of respirable particulate matter that causes health impacts is emitted by coal trains.

For all of these reasons, STB's analysis of air quality and human health impacts due to fugitive coal dust emissions is arbitrary and unsupported.

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[10] See Revision to the Guideline on Air Quality Models: Enhancements to the AERMOD Dispersion Modeling System and Incorporation of Approaches to Address Ozone and Fine Particulate Matter, 80 Fed. Reg. 45,340, 45,342-43 (July 29, 2015); see also R. Chris Owen and R. Brode, Clarification on the Use of AERMOD Dispersion Modeling for Demonstrating Compliance with the N02 National Ambient Air Quality Standard (Sept. 30, 2014.

[11] Jaffe, D., et al. Atmospheric Pollution Research, 5 (2014), 344---351, available at http://www.atmospolres.com/articles/Volume5/issue2/APR-14-040.pdf and Jaffe, D., et al. "Diesel Particulate Matter and Coal Dust from Trains in the Columbia River Gorge,Washington State, USA" Atmospheric Pollution Research, 2015.

B. Responses to Questions Raised by City Administrator

The following section addresses key questions put forth by the Assistant City Administrator in her letter of September 28, 2015.

Question 1--How to define "project" and "adjacent neighbor."

The section of the Development Agreement dated July 16, 2013, provides in pertinent part:

> 3.4.2 Regulation for Health and Safety. Notwithstanding any other provision of this Agreement to the contrary, City shall have the right to apply City Regulations adopted by City after the Adoption Date, if such application (a) is otherwise permissible pursuant to Laws (other than the Development Agreement Legislation), and (b) *City determines based on substantial evidence and after a public hearing that a failure to do so would place existing or future occupants or users of the Project, adjacent neighbors, or any portion thereof, or all of them, in a condition substantially dangerous to their health or safety*. The Parties agree that the foregoing exception to Developer's vested rights under this Agreement is in no way intended to allow City to impose additional fees or exactions on the Project, beyond the City Fees described below in Section 3.4.5, that are for the purpose of general capital improvements or general services (except in the event of a City-wide emergency).

Project, as defined in the agreement, encompasses at least the West, East and Central Gateway Development areas and Billboard sites.[12]

"Adjacent Neighbors" is not a defined term of the Development Agreement. We believe the term includes all of West Oakland at minimum, and all of Oakland if given broader meaning since with the presence of section 3.4.2 the City intended to reserve for itself the power to regulate health and safety hazards at the Project for all of its citizens, not just a limited subset of them. Moreover, as set forth in our earlier comment letters, due to the effects of coal transportation, storage and combustion, communities outside of the immediate Project vicinity will be exposed to coal dust. Thus, the term "adjacent neighbors" should not be construed too narrowly.

Question 2--Health and safety impacts for Project Occupants and Adjacent Neighbors

The numerous health and safety impacts associated with this project have been discussed at length in our previous comments and expert reports. The response below provides a reference to where information on the following topics can be found:

Public health

Air:

--Coal dust pollution of air—*See, e.g.*, Fox at 12-13; Niemeier 7, 9-11.
--Elevated rail and barge traffic polluting air—*See e.g.*, Fox at 19.

[12] *See, e.g.*, Agreement Definitions of Project, which include Exhibits D-1 and D-2 (noting East, Central, West Gateway and Billboard portions of the project.)

--Health impacts linked to air by particulate matter include respiratory illness, cardio pulmonary mortality, and stroke among other problems. – *See e.g.*, Niemeier at 9-10,
--Pollution crossover to California from burning coal in Asia (soot, fine dust, mercury, ozone.)—*See e.g.*, Niemeier at 11-12.

Water:
--Coal dust pollution of water. *See e.g.*, Fox at 7-8.
--Discharge of coal-laden waste water to the Bay would have detrimental impacts on aquatic life. *See e.g.*, Fox at 8-9
--Significant water use to keep coal dust controlled in drought-ridden California. *See e.g.*, Fox at 7-8.

Worker Safety:
--Utah coal has elevated silica which poses an elevated health risk to workers of cancer and other respiratory ailments. *See* Fox at 16

Cumulative public health impacts on an already overburdened community—West Oakland already disproportionately impacted by pollution (e.g, elevated asthma rates, significant harm to children/the elderly/low-income/minority populations) which would only worsen with a coal terminal—Niemeier at 9-11; Fox at 19

Climate:
--the amount of coal to be exported by the Oakland terminal is the equivalent of 30 million tons of CO2 each year, the equivalent of 7 average size power plants in a state that currently has no coal planst. *See* Niemeier at 12-13.
--Climate change poses special harm to Oakland in terms of sea level rise and drought. *See e.g.*, Niemeier at 12-13, Fox at 7-8.

Soil
--coal dust causes soil contamination with pollutants like arsenic. *See* Fox at 16-17.

Public safety

Fire—coal is dusty, explosive and has high fire risk., *See e.g.*, Fox at 18.
Derailments
—coal dust emitted from trains contributes to train derailments, which is especially concerning in light of more oil train movement throughout the Bay Area. *See e.g.*, Fox at 10-11,18.
--coal trains are heavier than other types of trains like passenger rail or freight which can pose stress to the rail ballast and also increase derailment risk. *See* Fox at 10/
Emergency Response-mile-long trains could reduce emergency response times, and increase collision risks. *See* Fox at 18-19.

Questions 3, 4, 5, 18 – The City's Ability to Regulate and/or Require Further Environmental Review

The Oakland City Council maintains the clear legal authority to regulate land owned by the City of Oakland. This legal authority includes zoning, enacting prohibitions, or other conditions on the use of such lands. As we have stated in our previous comments, municipalities in California have long had the power to impose conditions on the conduct of industrial operations within their bounds where necessary to protect public health and safety.[13] Consistent with this authority, Oakland can use its zoning and police powers to prohibit use of city lands for coal exports. Many other municipalities in California and beyond have used their zoning and police powers to regulate similar industries.[14]

As our previous comments state, the rail preemption arguments raised by developers and their counsel are not fully accurate and should not concern the City here. First, as set forth above, the City has the inherent ability to regulate the use of its lands. This power is separate from the matter of whether the City has the ability to directly regulate the rail lines running through the City, and as shown by the examples of other municipalities referenced above, there is no conflict with the regulatory bodies with oversight over rail transportation. Second, even if some of the City's regulatory powers were preempted by the federal authorities governing rail lines, the City retains some regulatory powers over rail lines in order to protect community health and safety, and could regulate in that manner to protect the public.[15]

Finally, as noted in prior comment letters submitted to the City on September 1, 2015 and September 21, 2015 there has never been any environmental review of the proposed coal export terminal. Indeed, there was no opportunity to conduct additional environmental review given that, until April 2015, lawmakers and the public were left in the dark about whether the Army

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[13] *See* September 1, 2015 Comment Letter at p. 15, *citing Marblehead Land Co. v. City of Los Angeles*. 47 F.2d 528, 531 (9th Cir. 1931)(upholding city authority to use zoning ordinances to protect residents from fire hazard and noxious gases resulting from oil drilling operations); *see also. Friel v. Los Angeles County*, 172 Cal.App.2d 142, 157 (1959); *Hermosa Beach Stop Oil Coalition v. City of Hermosa Beach*, 86 Cal.App.4th 534, 555 (2001).

[14] For example, San Benito, Santa Cruz and Mendocino Counties have all passed ordinances prohibiting the conduct of "fracking" on county lands, due to the health and safety risks posed by such activity. Jurisdictions outside of California, like Dryden, New York, have also enacted fracking bans. The town of South Portland, Maine has enacted a zoning ordinance prohibiting the loading of crude oil on marine tanker vessels. *See* Appendix A to September 1, 2015 Letter for a more comprehensive list of towns using zoning and police powers to restrict risky activities on City lands.

[15] *See* September 21, 2015 Comment Letter, *citing Flynn v. Burlington Northern Santa Fe Corp.*, 98 F.Supp.2d 1186 (E.D. Wash. 2000); *CFNR Operating Co. v. City of American Canyon*, 282 F.Supp.2d 1114 (N.D. Cal. 2003); *Borough of Riverdale, Petition for Declaratory Order The New Susquehanna & Western Railway Cop.*, 1999 WL 715272, STB Finance Docket No. 33466 at 8-9 (09/9/1999); *see also. Union Pacific Railroad v. California Public Utilities Commission*. 346 F.3d 851, 860 (9th Cir. 2003)

Base development would involve a committed coal terminal.[16] The California Environmental Quality Act requires additional environmental review of project where there are substantial changes in the nature of the project, the circumstances under which a project is undertaken, or new information arises after the environmental review of a project is completed. (*See* Public Resources Code §21166.) All of these conditions are present here, since the public did not know and could not have known about the proposed coal export terminal until April 2015, and further, the proposed coal export terminal represents a significant departure from oversized bulk terminal that the public was expecting.

Question 7--If coal is not exported from Oakland, what will happen to that coal and why?

If coal is not exported from Oakland, it is likely that most of that coal will stay in the ground. The international export markets for coal are risky and declining, and Bowie Resources, the company behind the Utah investment, is currently supplying coal to U.S. power plants that are slated to convert to other resources like natural gas, or to shut down. Bowie's current total coal production is just over 11 million tons per year.[17] Intermountain Power, the recipient of some of this Bowie coal, is slated to convert to natural gas at the end of 2024.[18] The Bowie coal contracts with 7 and 4.5 million ton minimums expire in 2020 and 2024, meaning that the majority of Bowie's coal is not contracted after this point in time.[19] It is likely that Bowie will not secure additional domestic coal contracts given larger market trends.[20] The Bowie No. 2 mine in Colorado just announced major layoffs again, the second time in only 2 years at this mine on the heels of losing a supply contract with the Tennessee Valley Authority and weak demand for coal.[21]

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[16] As shown by the Public Records Act requests submitted by Sierra Club to the City and Port of Oakland and the responses received, community members made efforts to learn about whether coal export would be a part of the Army Base development. Based on the written responses received from the City and Port, as well as information learned during face-to-face meeting with the developer, community members understood that coal would not be a part of the development. These PRA requests and responses are attached to this letter.

[17] *See* Bowie Resource Partners LP SEC Form S-1 at 2, accessed: http://www.sec.gov/Archives/edgar/data/1631790/000104746915005595/a2225124zs-1.htm (noting coal production in 2014 was just over 11 million tons.)

[18] "LA City Council Votes to Move Away from Coal-fired Energy", LA Times, April 23, 2013, http://articles.latimes.com/2013/apr/23/local/la-me-ln-council-coal-energy-20130423

[19] *See* Bowie Resource Partners LP SEC Form S-1 at 2, accessed http://www.sec.gov/Archives/edgar/data/1631790/000104746915005595/a2225124zs-1.htm.

[20] *See* Tom Sanzillo, Institute for Energy Economics and Financial Analysis, September 21, 2015 written testimony at 15-16 (noting that Utah coal production as a whole is declining, and Western power plants are turning to other non-coal resources).

[21] *See* "More Layoffs Hit Bowie Coal Mine", The Grand Junction Sentinel, September 29, 2015, accessed http://www.gjsentinel.com/news/articles/more-layoffs-hit-bowie-coal-mine (announcing layoffs of nearly 100 workers at Bowie No. 2 mine); KVNF Radio, "Local Reaction to Bowie Coal Mine Layoffs", October 30, 2014, http://kvnf.org/post/local-reaction-bowie-coal-mine-layoffs (announcing

Without domestic demand for coal, Bowie is looking to international markets. However, international coal markets are also in a permanent state of decline. Major investment and financial research firms like Citibank, Goldman Sachs, J.P. Morgan, and Bernstein Research "reflect the consensus that the international coal market is oversupplied, and that global coal producers will continue to face unsustainably low prices and tight margins...[and] that the trend is not likely to reverse itself."[22] China and India's coal use is predicted to sharply decline in coming years.[23] Without international demand for coal, and with declining domestic demand, there is ample support for the proposition that the Utah coal will stay in the ground.

Question 11 – HDR Engineering Air Quality & Human Health & Safety Assessment

Please see above for discussion on the flaws of the HDR Report.

Question 13--Effectiveness of Covered Rail Cars at Reducing Pollution

As a preliminary point, enacting, contracting or enforcing a regulation like covered rail cars that involve movement of trains in an interstate manner is likely not an area that the City of Oakland could regulate without some rail industry or developer challenge. Thus, the developer's promises to provide covered rail cars from mine to port are moot.

To respond to the City Administrator's questions regarding the efficacy of covered rail cars:

A) No, covered rail cars are not currently in use in the U.S. or elsewhere for transporting coal. *See* Niemeier at 9; Fox at 11.

B) We have been unable to uncover any research relating to the use of covered coal cars to transport coal. *See* Niemeier at 9; Fox at 11.

C) The websites show some prototypes for these theoretical covers but the websites do not contain engineering information.

D) The effectiveness of covered coal cars is unknown because there are been no studies done to date that we have been able to uncover. It is unknown how well covers function and their ability to effectively contain coal dust. *See* Niemeier at 9. Health and safety questions about ventilation and fire risk exist. *See* Fox at 18.

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layoffs of 150 workers at Bowie No. 2 mine in in reaction to "the cancelation of a coal supply agreement with the Tennessee Valley Authority and continued weak demand for coal in the region.")

[22] *See* Tom Sanzillo, Institute for Energy Economics and Financial Analysis, September 21, 2015 written testimony at 7.

[23] *See* Tim Buckley, India's New Emissions Target Adds Momentum to Global Coal Transition, Institute for Energy Economics and Financial Analysis, October 5, 2015, http://ieefa.org/indias-new-emissions-target-adds-momentum-to-global-energy-transition/

Questions 14 and 15—Effectiveness of Other Fugitive Dust Control Methods

To respond to the City Administrator's questions regarding the use of other fugitive dust control methods:

A) **Water use**—Water use would be at least 8 gallons per ton of coal handled at the facility for a total of approximately 79.2 million tons of water, or the equivalent of supplying water to 3000 Oakland residents. *See* Fox at 7-8. In the age of longer and more prolonged droughts in Oakland and in California due to climate change, this is an inappropriate use of our limited water resources.[24] This is water use at the terminal site for loading/unloading/handing, and more water would likely be required to load the trains at the mine and possibly to suppress dust along the rail journey. The Basis of Design plans provided by Terminal Logistics do not detail the source of the water, or how it would be disposed. The drawings show "washdown treatment water" discharges directly to the San Francisco Bay. *See* Fox at 8. Coal dust poses a risk to waterways.

B) **Spray/surfactant/topping agent**—CCIG/TLS do not indicate that they will use any sort of topping agent. *See* Fox at 12. There are no railroad requirements forcing Utah coal to be treated with any sort of topping agent. *See* Niemeier at 7-8. Fox at 14. If surfactants were used their efficacy and safety is questionable. First, although use of surfactants in some contexts is common, their efficacy and safety for use on coal-carrying trains is unproven. The claimed 85% control efficiency has been called "junk science" by coal shippers. Topping agents wear off long the route, are themselves pollutants, and can even possibly increase the amount of coal lostdue to saltation.[25] Second, surfactants contain myriad undisclosed chemicals, many of whose biological and ecological effects have not yet been adequately studied. Surfactants could cause a number of potential harms, including: danger to human health during and after application; surface, groundwater, and soil contamination; air pollution; changes in hydrologic characteristics of the soils; and impacts on native flora and fauna populations.[26]

C) **Other measures—load profiling?** CCIG/TLS do not indicate that they will use any sort of load profiling. *See* Fox at 12. There are no railroad requirements forcing Utah coal to be loaded in any particular way. *See* Niemeier at 7-8. Fox at 14. Load profiling does not fully reduce coal dust emissions.

D) **How effective in absolute terms and vs. covered cars?**
There is no public data or research that we have found to compare the use of surfactants, load profiling and covered rail cars to transport coal, likely because covered rail cars have not been commercially deployed. *See* Niemeier at 9; Fox at 11. Nonetheless, even if CCIG/TLS

[24] Professors Noah Diffenbaugh and Christopher Field, "A Wet Winter Won't Save California", New York Times, September 19, 2015, http://www.nytimes.com/2015/09/19/opinion/a-wet-winter-wont-save-california.html

[25] *See* Phyllis Fox, Fugitive Particulate Matter Emissions from Coal Train Staging at the Proposed Coyote Island Terminal, July 19, 2013.

[26] *See* Environmental Protection Agency, Potential Environmental Impacts of Dust Suppressants: Avoiding Another Times Beach § 3 (May 30-31, 2002).

were to claim they would use a surfactant or topping agent, it is first questionable who would pay for that treatment and guarantee it would happen. The claims about 85 % efficacy are not well-supported. Such agents wear off during travel and windy conditions as would be experienced along the railroute from Utah to California. Even under perfect conditions, surfactants do not fully contain coal dust. *See* Niemeier 8-9.

Question 16—Emergency Response and Actual Operations

A) Combustion risk of coal

Coal is known to spontaneously combust, in part due to its flammable dust.[27] Even CCIG/TLS basis of design acknowledges that coal is "very dusty, exhibits spontaneous combustion behavior, [and is] potentially explosive."[28]

B) Containment poses risk of fire or explosion?

Coal is a highly combustible material and its transportation, storage and handling pose risks of fire or explosion. Keeping coal confined in enclosed spaces may make fires happen by trapping heat if not properly ventilated. *See* Fox at 18. And of course ventilation means that dust can escape into the environment. *Id.* With frequent mile-long trains traveling to and from the proposed export facility, this also means reduced emergency response times in several East Bay communities, a problem that would certainly hinder any sort of timely response to a fire at the proposed coal terminal in West Oakland. *See* Fox at 18-19.

C) How can ILWU concerns be addressed or mitigated?

The ILWU flagged concerns about worker health and safety for those handling coal on the docks and noted that even wearing masks did not fully alleviate respiratory concerns. During the September 21, 2015 public hearing, ILWU members stated that they do not wish to handle coal, and ILWU Local 10 and 34 have passed resolutions opposing the use of the Army Base development for coal transportation.[29] The project proposed for the Army Base is of special concern that the Utah coals handled and exported from the proposed Oakland facility have elevated levels of silica. Silica levels range from 58.4% to 61.4% at four Bowie mines that may supply the Terminal.[30] Exposure to coal dust with elevated silica can result in silicosis, pulmonary tuberculosis, and lung cancer. *See* Fox at 16. Coal with elevated silica was the subject of recent MSHA coal dust regulations to decrease worker exposure to that type of coal dust in particular.

In sum, even if the developer proposes mitigation conditions, or there are applicable state or federal worker safety standards, we do not believe worker risks can be fully eliminated and thus

---

[27] *See The Fire Below: Spontaneous Combustion in Coal*, U.S. Dep't of Energy (May 1993); *available at http://www.coaltrainfacts.org/docs/EH-93-4-The-Fire-Below_-Spontaneous-Combustion-in-Coal.pdf.*

[28] 7/16/15 Basis of Design at Table 5-1.

[29] *Longshore Workers Vote to Oppose Coal Exports in Oakland*, September 18, 2015; *available at https://www.ilwu.org/longshore-workers-vote-to-oppose-coal-exports-in-oakland/*

[30] Sept. 2015 HDR Report, p. 13, citing http://bowieresources.com/skyline/.

do not think that the Oakland facility should handle coal because of its inherent health and safety risks to workers such as ILWU members and to the larger community.

C. Additional Documents Provided With This Letter

With this letter, we are also submitting these additional documents to provide the City Council with further information on the harms of coal transportation through Oakland and the regulatory options available to the City:

1. Attachment 1 – Letter previously submitted to City Administrator attaching 4 CDs worth of studies documenting the health and safety harms caused by coal. These CDs will be submitted again to the City.
2. Attachments 2a through 2d - Sierra Club's public records requests and responses from the City of Oakland and the Port of Oakland as they related to our inquiries about potential coal terminal development.
3. Attachment 3 – December 2013 Oakland Global Newsletter
4. Attachment 4 - A September 24, 2015 letter to the California Transportation Commission expressing concern about the use of Proposition 1B Trade Corridor Improvement Funds to support a coal export terminal when that use was not disclosed in the funding application and is contrary to the intended use of such funds.
5. Attachment 5 - Color copy of powerpoint slides showing the ills of coal transportation.
6. Attachment 6 - Dr. Ranajit Sahu, *Comments on Air Quality and Coal Dust Sections of Draft EIS for the Proposed Tongue River Railroad Company, Inc.*
7. Attachment 7 - Dr. Daniel Jaffee, *Diesel Particulate Matter and Coal Dust From Trains in the Columbia River Gorge*

Sincerely,

Jessica Yarnall Loarie, Staff Attorney,
Sierra Club Environmental Law Program

Irene Gutierrez, Attorney, Earthjustice

Brought to you by the Oakland Global Trade & Logistics Center and California Capital & Investment Group

OAKLAND GLOBAL NEWS

Issue 4

Monthly Updates on the Oakland Global Trade & Logistics Center Project

IN THIS ISSUE

QUICK LINKS

Oakland Global Website

Oakland Global News, December 2013

Dear Reader,

Happy Holidays! Oakland Global News is a monthly newsletter for readers with an interest in staying current as the Oakland Global Trade & Logistics Center (former Oakland Army Base) project evolves. This week OG News includes stories about the Oakland Bulk and Oversized Terminal and several other topics. Enjoy and Happy New Year!

Project Updates

Following the Oakland Global groundbreaking event on November 1, actual construction work has started at the former Oakland Army Base. The project also has made significant contributions to its surroundings on the former base.

- Demolition: Lead and asbestos abatement is on-going at several warehouses scheduled for imminent demolition. Nine large buildings will ultimately be demolished as part of the early construction work, but a preliminary step is disconnecting utilities, and segregating and disposing lead and asbestos-laden debris. Following the abatement process, valuable wood will be preserved for reuse and resale.

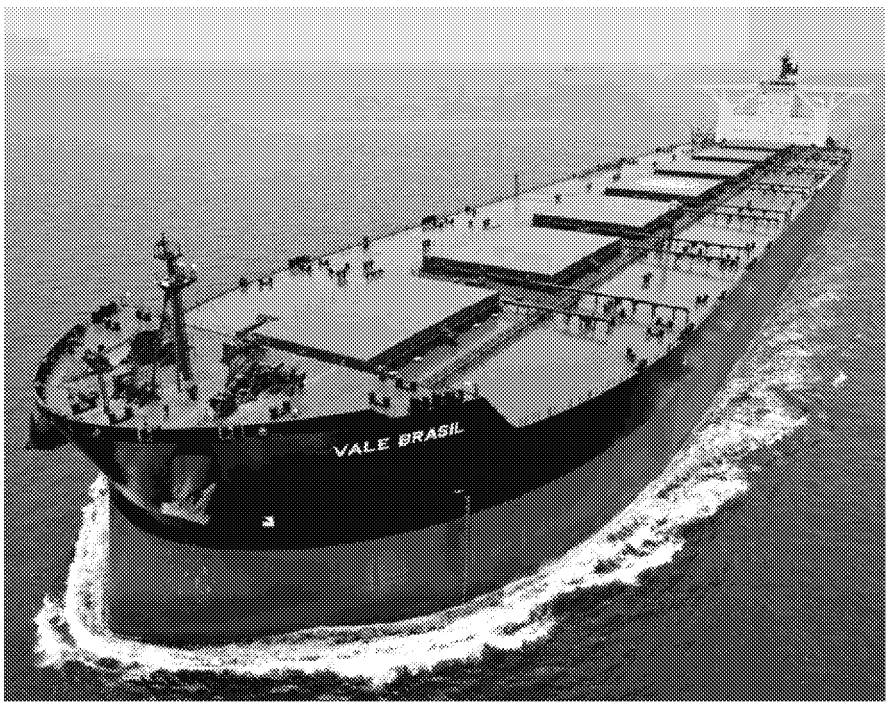
- Construction operations center: Ten trailers housing approximately 25 offices and several conference rooms have been installed on the Oakland Global project site to serve as construction headquarters for the next 54 months. Office occupants number approximately 25 and include representatives from CCIG, the City of Oakland and the project construction joint venture team, which includes the Tuner, Top Grade and Flatiron companies.The construction operations center trailers are located near the intersection of 11th Street and Maritime Street and occupy a five-acre parcel. The offices are open 7 a.m. to 3:30 p.m. Monday through Friday.

- Bike Path Port-a-potties: Two port-a-potties have been added to the Bay Bridge pedestrian / bike path parking lot created in a joint effort between Caltrans, the City of Oakland and Oakland Global developer CCIG. Caltrans built the new path as part of the new Bay Bridge, but did not provide additional parking. The lot, which is at the intersection of Burma Road and

Maritime Street, opened in November. Given the length of the trip to the end of the path and back, the port-a-potties are a welcome improvement for visitors.

Oakland Bulk and Oversized Terminal

A new service for the Oakland waterfront



Bulk commodity ship

Transforming the former Oakland Army Base into a modern trade and logistics center is central to the Oakland Global plan. That work will include replacing 1940s infrastructure with modern utilities, roads and buildings designed to move goods efficiently to and from Oakland. But, a lesser-known aspect of the project is a new marine break-bulk commodity terminal on the westernmost section of the base.

The Oakland Bulk and Oversized Terminal (OBOT) is expected to capture some of the business that Oakland loses to other West Coast ports, which feature bulk terminals. OBOT will take advantage of the city's direct ocean path to China and railroad tracks that stretch to agricultural products in California's Central Valley.

When running to full capacity, OBOT is expected to move approximately 2 million metric tons of bulk products that would otherwise be shipped through other West Coast ports. The commodities typically are transported on land to and from ports in boxcars or rail cars designed to carry a specific product. Ocean-going

vessels commonly carry bulk goods in their hulls rather than in containers.

"The Port of Oakland relies heavily on cargo that moves primarily by truck. That limits Oakland's potential as a national gateway," said Phil Tagami, CEO of California Capital & Investment Group, which is the majority partner in OBOT. Creating a marine terminal opens a new pathway for the Oakland waterfront - one serviced by rail."

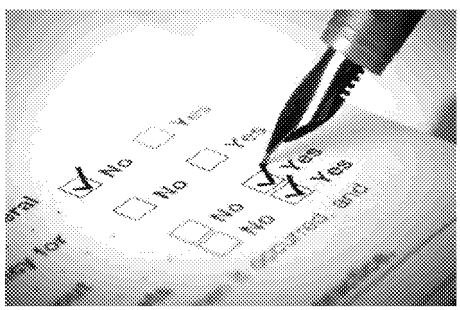
Given California's wealth of natural resources, it's not surprising that CCIG would contemplate moving agricultural products through OBOT, such as corn, soybeans, flour and dehydrated garlic. But the list of potential products is much longer, including iron ore, pot ash, soda ash, building materials and steel products.

One bulk material OBOT does not plan to export or import is coal. CCIG and Port of Oakland officials have been asked about potential coal shipments as part of Oakland Global and OBOT. Coal is not in the plans, according to Tagami.

"It has come to my attention that there are community concerns about a purported plan to develop a coal plant or coal distribution facility as part of the Oakland Global project," Tagami said. "This is simply untrue. The individuals spreading this notion are misinformed. CCIG is publicly on record as having no interest or involvement in the pursuit of coal-related operations at the former Oakland Army Base."

Ex-Offender Employment Support Survey

To ensure that the Oakland Global project is doing everything possible to hire Oakland resident ex-offenders reentering the workforce, CCIG is currently sponsoring a survey of East Bay non-profit organizations that work with the reentry population.



The 15-question survey is intended to gather information about services currently available to East Bay employers seeking to hire reentry job applicants. The goal is to use the information to create partnerships between the project and groups with similar hiring goals.

CCIG mailed and emailedthe survey on December 2 to 27 organizations, many of which are located in Alameda County. The organizations include the Oakland Private Industry Council, the Unity

Council, Allen Temple Housing and Economic Development Corp. and Youth Uprising. So far, only six organizations have responded to the survey. They are as follows:

- Oakland Private Industry Council
- Law Family Community Development Inc.
- Society of St. Vincent de Paul of Alameda County
- Michael Chavez Center
- Tri-Valley Regional Occupational Program
- C.U.R.A. Inc.

In January, CCIG will be following up with calls to the organizations that have not responded to the survey.

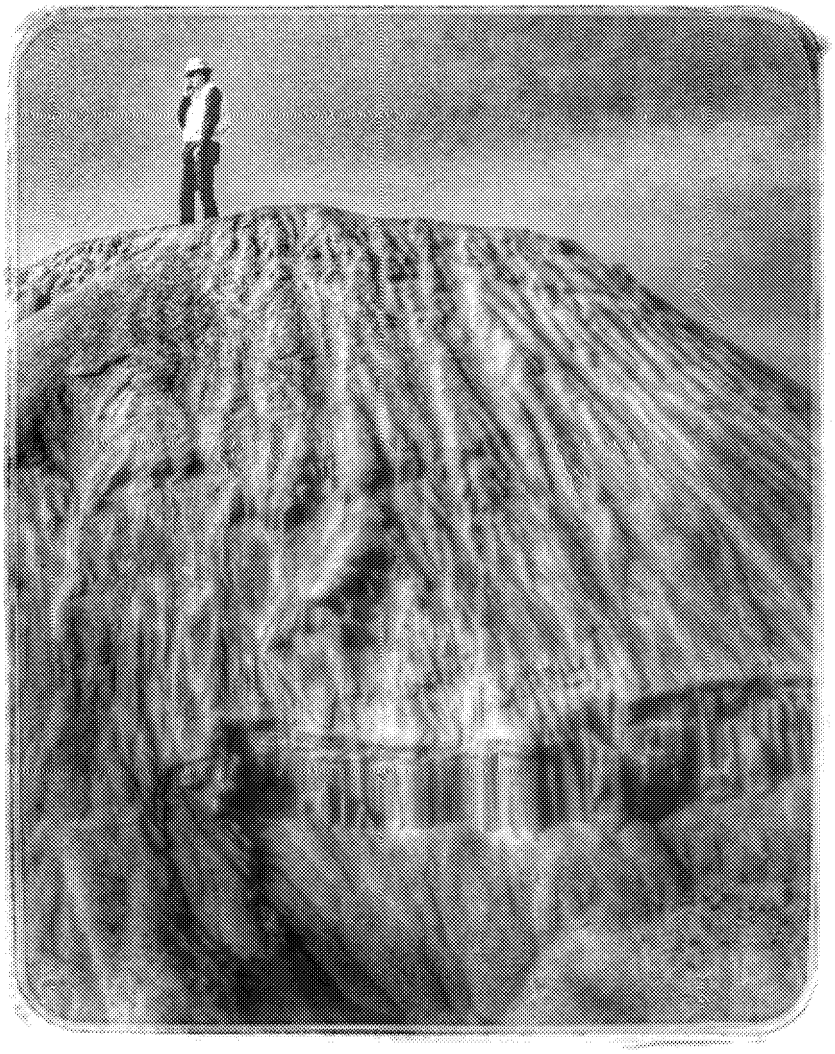
Oakland Global's job policies were created as part of a lengthy dialogue with community and labor groups. The policies strongly emphasize hiring union laborers and local residents. Specifically, the policies dictate that each contractor involved in Oakland Global construction meet the following requirements: At least 50 percent of project work hours be performed by Oakland residents; a minimum of 25 percent of apprentice work hours be performed by disadvantaged workers; and 20 percent of project work be performed by apprentices.

Disadvantaged workers include ex-offenders, and with limited exceptions, the jobs policies prohibit contractors from inquiring about applicants' history of involvement with the criminal justice system.

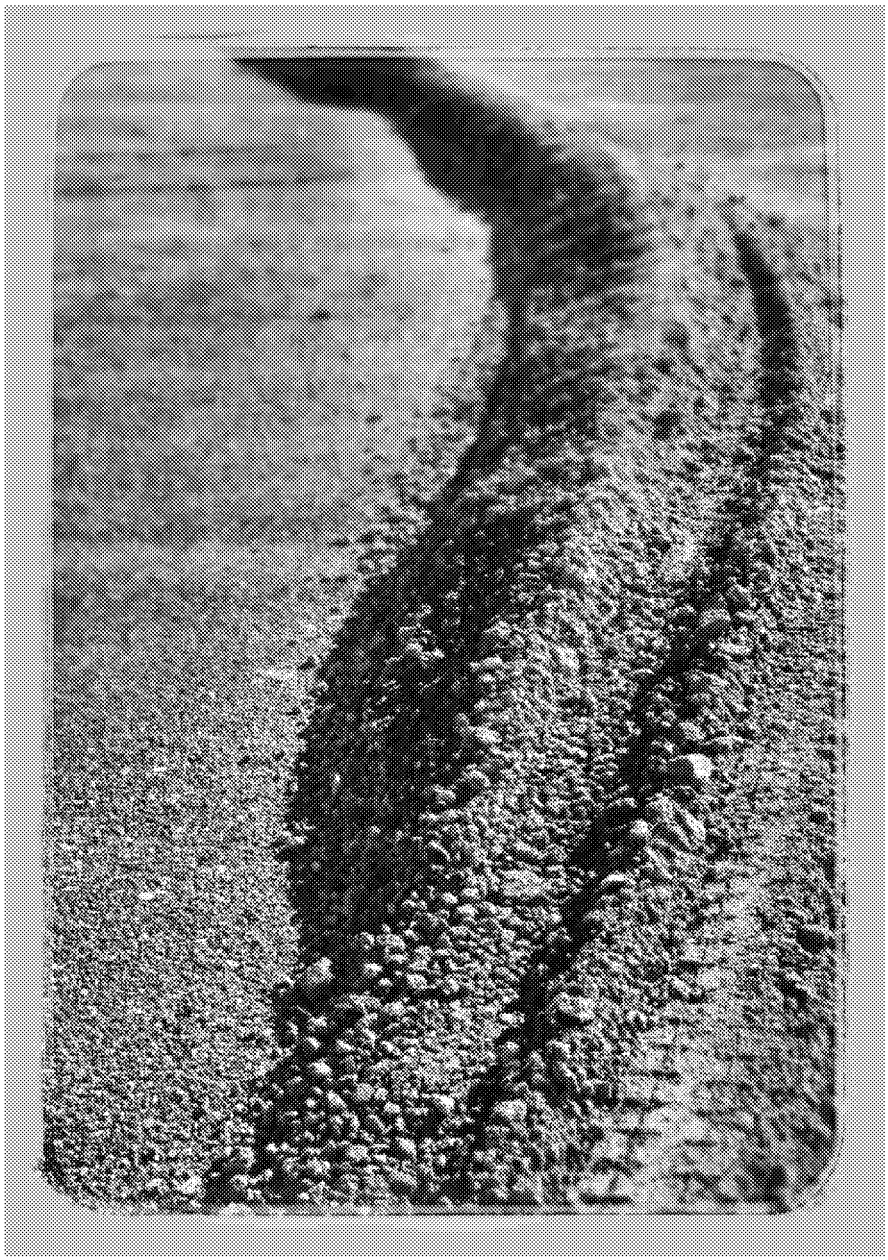
CCIG welcomes any information regarding services available to employers seeking to hire reentry workers. Contact: Chrissy Becker at 510-355-0128 x 113 or at Chrissy@rojeconsulting.com.

Army Base Photography

As a recurring feature, the Oakland Global News presents photography from the Army Base.The photos and captions below are by Dan Nourse.



Worker atop recycled aggregate in the North Gateway.



Recycled asphalt closeup

Dan Nourse is a project manager for the Oakland Army Base focusing on environmental remediation, site elevation increase and site surcharging. Dan was instrumental in the redevelopment of Emeryville and West Oakland. He is a self taught photographer and uses photography to capture the progress of redevelopment projects as well as producing artful images along the way.

In addition to his project manager duties, Dan is the head coach of Cal Men's Lacrosse Team.

Stay informed

Thank you for taking the time to learn more about the Oakland Global Trade & Logistics Center development. I believe that the Oakland Global Newsletter will prove to be a useful tool for staying informed and current on this important project going forward.

Sincerely,
Phil Tagami

Forward this email

5) Response to Follow-up to Questions from East Bay Regional Parks District

From:	Yolande Barial Knight
To:	Cole, Doug; dkalb@oaklanet.com; Schaaf, Libby; lguillen@oaklandnet.com; Gallo, Noel; Brooks, Desley; Kaplan, Rebecca; Reid, Larry; McElhaney, Lynette; Campbell Washington, Annie; Campbell Washington, Annie
Cc:	Robert E. Doyle; Bob Nisbet; Erich Pfuehler
Subject:	Coal"s Public Health Comment Letter - EBRPD Director Sutter
Date:	Monday, October 05, 2015 4:49:36 PM
Attachments:	Coal Public Health Comment - EBRPD Sutter 10-5-2015.doc

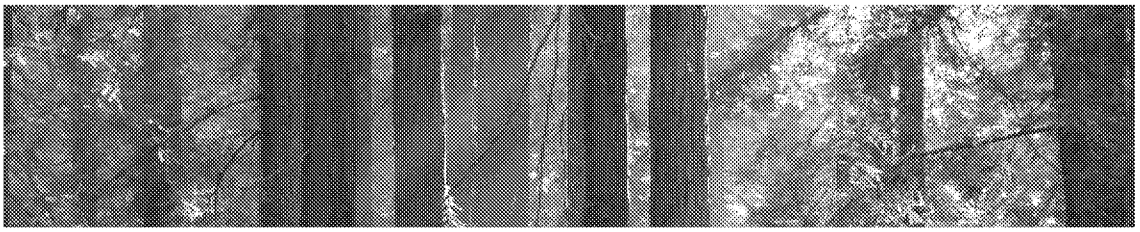
Good Afternoon,

Please find attached a letter from Director John Sutter, EBRPD Board. It is a comment on Coal's Public Health and/or Safety Impacts received from Winnie Woo on October 2, 2015. Per that email, the deadline for submission was extended to 4pm on Tuesday, October 6, 2015.

Thank you.

East Bay Regional Park District

Yolande Barial Knight
Clerk of the Board | General Manager's Office
East Bay Regional Park District
2950 Peralta Oaks Court, Oakland, CA 94605
T: 510-544-2020| F: 510-569-1417
ybarial@ebparks.org | www.ebparks.org



East Bay Regional Park District

2950 PERALTA OAKS COURT P.O. BOX 5381 OAKLAND CALIFORNIA 94605-0381 T: 1-888-EBPARKS F: 510-569-4319 TRS RELAY: 711 WWW.EBPARKS.ORG

October 5, 2015

Mayor Libby Schaaf
1 Frank H. Ogawa Plaza
3rd Floor
Oakland, CA 94612

Oakland City Councilmembers
1 Frank H. Ogawa Plaza
3rd Floor
Oakland, CA 94612

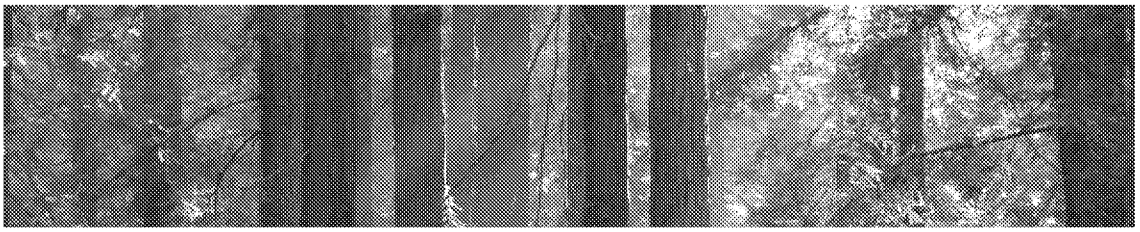
Dear Mayor Schaaf and City Councilmembers,

I am the elected Director to the East Bay Regional Park District (District) Board representing most of Oakland. As you know, the District along with eight other public agencies, is planning the future Gateway Park on former Oakland Army Base land which the federal government is committed to convey to the District by a public benefit conveyance.

Major entry to the bike/ped trail of the new Bay Bridge will be from Gateway Park. Of course, part of our mission as a park district is to encourage the public to engage in vigorous outdoor exercise; biking and hiking on trails is part of that task. Our next door neighbor will be the bulk terminal now proposed for off-loading coal onto ships which will undoubtedly release plenty of coal dust. The risk to our park users is obvious. The grade from the park to the bridge will be uphill thereby exerting bikers, joggers and walkers who will probably inhale coal dust in the process.

The mile long trains transporting the coal are likely to block Burma Road and other arteries leading to the park, thereby isolating the park from the rest of the city. This is not only inconvenient, but could be dangerous in the event of an emergency, trapping sick or injured people in the park for long periods of time.

For these and other reasons, please prohibit coal transportation through the city.



2950 PERALTA OAKS COURT P.O. BOX 5381 OAKLAND CALIFORNIA 94605-0381 T: 1-888-EBPARKS F: 510-569-4319 TRS RELAY: 711 WWW.EBPARKS.ORG

Yours truly,
/s/ Director John Sutter
Director, EBRPD

cc. Robert Doyle
Bob Nisbet
Erich Pfuehler
Oakland City Councilmembers

- Dan Kalb, Council District 1
- Abel Guillen, Council District 2
- Lynette Gibson McElhaney, Council District 3
- Annie Campbell Washington, Council District 4
- Noel Gallo, Council District 5
- Desley Brooks, Council District 6
- Larry Reid, Council District 7
- Rebecca Kaplan, Vice Mayor

From: John Sutter
To: Cole, Doug
Subject: Coal
Date: Tuesday, September 29, 2015 2:09:10 PM

Dear Mr. Cole--I was unable to speak at the hearing, although signed in, because of the large number of speakers. There are some additional questions that need answers. Hopefully, you can add them to the list of questions. They are:
--How will the coal shipments effect the users and workers at the proposed Gateway Park, which will be next door to the terminal?
--What is the expected level of coal dust at the park in general, and the area where cyclists and pedestrians are going up to or coming down from the Bay Bridge trail?
--Will the trains carrying the coal cross Burma Road? What is projected average and maximum wait time at train crossing(s) for those entering of leaving the park?
Thank you
John Sutter, Director, East Bay Regional Park District

John Sutter
33 Linda Ave. #2606
Oakland, CA 94611
Phone 510 597 1440
Fax 510 597 1403

From:	Jess Dervin-Ackerman
To:	DL - City Council; Moss, Tomiquia; Cole, Doug; Monetta, John; Cappio, Claudia; Landreth, Sabrina; Office of the Mayor
Subject:	East Bay Regional Park District Opposes Coal at Oakland Global Development
Date:	Tuesday, November 10, 2015 3:40:03 PM
Attachments:	Oppose Coal Export Reso.pdf

To Whom It May Concern,

Please see attached resolution passed by the East Bay Regional Parks Board on Nov 3rd.

Thanks,

--
Jess Dervin-Ackerman
Conservation Manager

Sierra Club, San Francisco Bay Chapter
2530 San Pablo Ave, Suite I
Berkeley, CA 94702
Office: (510) 848 - 0800 ext. 304
Cell: (510) 693-7677
jess.dervin-ackerman@sierraclub.org

p.s. My last day at the Sierra Club Bay Chapter is Tuesday, Nov 24th. Please add my personal email, jdervina@gmail.com to your contacts!

EAST BAY REGIONAL PARK DISTRICT

RESOLUTION NO.: 2015 - 11 - 316

November 3, 2015

RESOLUTION TO OPPOSE EXPORT OF COAL THROUGH
THE NEW OAKLAND GLOBAL TRADE AND LOGISTICS CENTER

WHEREAS, the mission of the East Bay Regional Park District includes a commitment to incorporate an environmental ethic to guide all that we do; and

WHEREAS, the District is an active, committed leader in the international Healthy Parks Healthy People movement; and

WHEREAS, the new eastern span of the Oakland-San Francisco Bay Bridge features the very popular Alexander Zuckermann bicycle / pedestrian path along its southern edge which is now a destination of regional significance; and

WHEREAS, the pathway will connect to a segment of the Bay Trail on a spit of U.S. Army property located at the east end of the bridge, which is planned to be transferred to the East Bay Regional Park District for the development of Gateway Park; and

WHEREAS, the possibility of daily release of coal dust directly adjacent to a park is counter to the District's mission to provide healthful recreation and include an environmental ethic in the District's activity; and

WHEREAS, coal dust presents clear health risks to communities, as tests show that coal dust contains substances known to impact human health including arsenic, lead, chromium, nickel, selenium and other toxic heavy metals; and

WHEREAS, coal burning leads to as many as 13,000 premature deaths every year and more than $100 billion in annual health costs.

NOW, THEREFORE, BE IT RESOLVED the Board of Directors of the East Bay Regional Park District hereby express opposition to the export of coal through Oakland and specifically the Oakland Global Trade and Logistics Center at the former Oakland Army Base; and

BE IT FURTHER RESOLVED, the General Manager is hereby authorized and directed, on behalf of the District and in its name, to execute and deliver such documents, and to do such acts as may be deemed necessary or appropriate to accomplish the intentions of this resolution.

Moved by Director Sutter, and seconded by Director Wieskamp, and adopted this 3rd day of November, 2015, by the following vote:

FOR:	Beverly Lane, Doug Siden, John Sutter, Ayn Wieskamp, Dennis Waespi.
AGAINST:	None.
ABSTAIN:	None.
ABSENT:	Diane Burgis, Whitney Dotson

Board President

CERTIFICATION
I, Yolande Barial Knight, Clerk of the Board of Directors of the East Bay Regional Park District, do hereby certify that the above and foregoing is a full, true and correct copy of Resolution No. 2015I-216 adopted by the Board of Directors at a regular meeting held on November 3, 2015

11)Response to Follow-up to Questions from Labor Organizations

From:	josie@alamedalabor.org
To:	Cole, Doug
Cc:	Office of the Mayor; Landreth, Sabrina; Moss, Tomiquia
Subject:	Attention: Alameda Labor Council Opposition to Coal Coming Through Oakland for Export
Date:	Tuesday, October 06, 2015 3:57:18 PM
Attachments:	10.06.No.Coal.Oakland.ltr.doc ALC--NoCoalExports_9.18.15.pdf

Dear Douglas,

Please include the attached letter and resolution in the documents at http://www2.oaklandnet.com/Government/o/City Administration/d/NeighborhoodInvestment/OAK038485

Sincerely,

Josie Camacho

Josie Camacho
Executive Secretary-Treasurer
Alameda Labor Council
100 Hegenberger Road, Ste 150
Oakland, CA 94621
(510) 632-4242 ext 231 Office
(510) 632-3993 Fax

http://bit.ly/Oakland/TownHall

Reforming the Criminal Justice System Town Hall

image

Reforming the Criminal Justice System Town Hall

The reality of mass incarceration brings irrevocable harm to working people. Everyday across America, highly qualified men and women on the job hunt are

View on actionnetwork.org Preview by Yahoo

Resolution Opposing the Export of Coal
Through the New Oakland Global Trade and Logistics Center

WHEREAS we support the development of a bulk shipping facility at the former Oakland Army Base (the new Oakland Global Trade and Logistics Center) to create good, union jobs with strong local hire requirements and community benefits for residents of Oakland; and we support the shipping of bulk commodities such as steel, wood, grains, sand, gravel and other non-hazardous materials; and

WHEREAS we acknowledge and commend the ongoing and growing commitment of labor to environmental justice issues that affect workers, communities, and future generations, including and not limited to the collaboration of labor with community groups to secure stricter environmental standards on projects and worksites that not only protect workers but diminish environmental hazards and pollution impacting public health and climate; and

WHEREAS we also acknowledge the hard work of this Council and its member affiliates who over a period of years attended hundreds of meetings to influence and negotiate the plan to develop the former Oakland Army Base to ensure that it would provide good jobs to area residents via a project labor agreement, a community benefits agreement containing local hire requirements, and union recognition provisions; and

WHEREAS it has recently come to light that California Capital & Investment Group (CCIG) and Terminal Logistics Solutions have been soliciting a partnership with four Utah counties — Sevier, Sanpete, Carbon and Emery — to allow them to export millions of tons of Utah coal each year from mines owned by Bowie Resources through the Oakland Bulk and Oversized Terminal at the Oakland Global development; and

WHEREAS terminals that ship coal provide far fewer jobs than terminals that ship containers or general cargo; jobs involving coal are unhealthy and unsafe due to dust emissions; coal is increasingly an anti-union industry; and with the imminent closing of the Deer Creek mine in Emery County, Utah, there will be no union mines operating in that state; and

WHEREAS coal dust presents clear health risks to workers and communities, as tests show that coal dust contains substances known to impact human health including arsenic, lead, chromium, nickel, selenium, and other toxic heavy metals; and

WHEREAS coal burning leads to as many as 13,000 premature deaths every year and more than $100 billion in annual health costs; and

WHEREAS West Oakland residents are already twice as likely to visit the emergency room for asthma as the average Alameda County resident, and are also more likely to die of cancer, heart and lung disease, and toxic coal dust is linked to decreased lung capacity, increased childhood bronchitis, asthma, pneumonia, emphysema, and heart disease; and

WHEREAS it is widely believed by the scientific community that 80% of the world's coal reserves must stay in the ground if the planet is to have a chance of keeping global warming under 2ºC by

2050, and that the mining, transport, and burning of this coal consistently results in nearly 14 million metric tons of greenhouse emissions per year and coal burning is responsible for one third of US carbon emissions—the main contributor to climate disruption; and

WHEREAS the Port Commission unanimously voted in 2014 to reject proposals to build a new coal and petroleum coke export facility at the Howard Terminal in Oakland, citing environmental problems, public health hazards, economic pitfalls, and public opposition to the project; and

WHEREAS more than 15,000 Oakland and other East Bay residents have signed a petition opposing coal in Oakland, over 80 organizations and businesses have expressed their opposition, and numerous elected officials at the local, regional, and state levels have called for a coal-free Oakland; and

WHEREAS despite this unified opposition to coal we also unequivocally honor the work and the commitments of hundreds of union members in construction, in trucking, in the railyards and on the docks who are on site working to develop the former Oakland Army Base; support their continued work and the work of hundreds more union members; and believe that this project can move forward without coal and question that our opposition must necessarily endanger the good middle-class jobs that we fought hard to produce in the first place; NOW

THEREFORE BE IT RESOLVED that the Alameda Labor Council express opposition to the export of coal through Oakland and specifically the Oakland Global Trade and Logistics Center at the former Oakland Army Base; and

BE IT FINALLY RESOLVED that the Alameda Labor Council send a letter to the Oakland Mayor, City Council, and project developers asking them to reject the export of coal through the Oakland Global project, to not take funds from Utah to secure use of the terminals for coal, and to execute a binding agreement or adopt an ordinance that will bar export of coal from this public land.

Adopted by Executive Committee and Delegates
Read before Oakland City Council 9/21/15 by Kim Moses SEIU 1021 Port Chapter President

Josie Camacho, Executive Secretary-Treasurer

Alameda Labor Council, AFL-CIO

Send all correspondence to:
Executive Secretary-Treasurer
Josie Camacho, CWA 39521

October 6, 2015

Honorable Mayor Schaaf
Honorable City Council Member McElhaney
Honorable City Council Member Kalb
Honorable City Council Member Guillen
Honorable City Council Member Gallo
Honorable City Council Member Campbell-Washington
Honorable City Council Member Brooks
Honorable City Council Member Reid
City Council Member Kaplan
1 Frank Ogawa Plaza, 3rd floor
Oakland, CA 94621

Dear Mayor Schaaf and City Councilmembers:

RE: Opposition to Coal Coming Through Oakland for Export

On behalf of the Alameda Labor Council, AFL-CIO representing 109 affiliated local unions composed of 100,000 union members, I am writing to express opposition to the export of coal through Oakland and specifically, the Oakland Global Trade and Logistics Center at the former Oakland Army Base. We are concerned about the public health and safety impacts on workers and the community.

We call upon you to reject the export of coal through the Oakland Global project, to not take funds from Utah to secure use of the terminals for coal, and to execute a binding agreement or adopt an ordinance that will bar the export of coal from this public land.

Sincerely,

Josie Camacho

Josie Camacho
Executive Secretary-Treasurer

Attachment: Resolution Opposing the Export of Coal

Alameda Labor Council, AFL-CIO
100 Hegenberger Rd., Ste 150., Oakland CA 94621
(510) 632-4242 fax (510) 632-3993 www.alamedalabor.org
C:\Users\cole9d\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Outlook\3K5NWRP5\10.06.No.Coal.Oakland.ltr (2).docopeiu:29/afl-cio vjc

From:	Derrick H. Muhammad
To:	City Clerk; Cole, Doug
Cc:	Kalb, Dan; Guillen, Abel; McElhaney, Lynette; Campbell Washington, Annie; Gallo, Noel; Kaplan, Rebecca; Reid, Larry; Brooks, Desley; jbetterton@portoakland.com; Office of the Mayor
Subject:	Re: ILWU position on Oakland Coal Exports
Date:	Monday, October 05, 2015 4:49:02 PM
Attachments:	100515_ILWU_Comments_against_coal_2.pdf

Dear Mr. Cole:

Please accept for filing the attached letter.

International Longshore and Warehouse Union
Local 10
400 North Point St.
San Francisco, CA 94133
(415) 760-1993

October 5, 2015

Via Electronic Mail:

Oakland City Council
1 Frank Ogawa Plaza, 3rd Floor
Oakland, CA 94612
(510) 238-2386
cityclerk@oaklandnet.com, dcole@oaklandnet.com

RE: Oakland Coal Exports

To the Oakland City Council:

My name is Derrick Muhammad. I'm a longshoreman and elected Business Agent at the International Longshore and Warehouse Union, Local 10. My union brothers and sisters at ILWU Local 10 and I have researched the possibility of exporting coal at the former Oakland Army Base. After much discussion, we voted to oppose coal as a cargo at the property. In accordance with our democratic vote, I testified against the export of coal – but in favor of the building of a bulk export facility – at the City Council meeting on Sept. 21, 2015. My comments below reflect my personal statement as well as the position of the rank-and-file members of ILWU Local 10.

Above all, I encourage you to not buy into the false "health versus jobs" dichotomy that the pro-coal side is perpetuating. The simple fact is that we can – and must – have both. Developers and marketers of port projects regularly promise jobs to needy communities and then claim to have the only possible solution to the community's need for jobs. I assure you that bulk shipping *without* coal is a lucrative business, as our 25,000 longshore brothers and sisters can attest as they work in all West Coast ports from Bellingham, Washington to San Diego, California handling grain, gravel, potash, salt, steel, and many other bulk commodities. If the developers keep looking for better cargoes to export, they will find them.

One point I did not hear at the September 21st meeting, but that's important: Other cargoes are not only safer, but more financially stable than coal. The coal industry is on shaky ground worldwide. On June 25, 2015, the Washington Post published an article titled "The (possible) slow death of coal," and on July 25, 2015 an industry article titled "Bankruptcies starting to pile up in coal industry"[i] included these points:

> *After decades of strong financial numbers and dominance in the electric power sector, coal producers are starting to fall apart faster than anyone could have anticipated. ... The only way out – exporting coal abroad to energy hungry countries like China – is also quickly closing off. Oversupply on international markets is depressing prices, and even China is showing less of an appetite for coal than many anticipated. For example, for the fiscal year ending in June 2015, China posted a 31 percent decline in imported thermal coal. China's economic growth is slowing, but it is also implementing air pollution measures that are reducing its demand for coal. Moreover, China is propping up domestic producers to the detriment of coal miners abroad, such as those in the U.S. So far 2015 has been a horrendous year for coal, but the ugly forecast keeps getting worse.*

On the health front, we agree with the testimony of our neighbors in Oakland who sounded the alarm over the health impacts a coal terminal would have on the local community. Oakland residents already deal with highway emissions, asthma and other concerns. The community doesn't want or need nine million tons of coal added to their list of worries.

To be clear about the ILWU's pro-terminal and anti-coal position: Longshore workers have been looking forward to the building of a bulk commodities terminal on the site of the Oakland Army Base for several years. We still support the building of the terminal and believe that bulk shipping is the most beneficial use of that property – but coal is wrong for our community and our docks.

I and the members of ILWU Local 10 urge the city and the developers to commit to a "no coal" pledge. There's a finite amount of deep berth dock space available along the coastline for use. There's a whole continent's worth of agricultural, mineral and other bulk goods to export – and hungry markets for those valuable products all around the world. Oakland and the East Bay community need good jobs, but we don't need coal to make them happen.

Thank you for hearing our comments against coal, and in favor of a *coal-free* bulk terminal in Oakland.

Sincerely,

Derrick Muhammad
Business Agent, ILWU Local 10

[1] http://oilprice.com/Energy/Coal/Bankruptcies-Starting-To-Pile-Up-In-Coal-Industry.html

From:	Marie Walcek
To:	Cole, Doug
Cc:	DL - City Council; Office of the Mayor; Cappio, Claudia; Monetta, John; "BParker@oaklandcityattorney.org"
Subject:	ALC Resolution Against Coal Exports
Date:	Monday, October 05, 2015 9:29:06 AM
Attachments:	ALC- ResolutionOnCoalExports_9-18-15.docx

Please find attached for consideration.

Thank you,
Marie

Marie Walcek
California Nurses Association
National Nurses United
2000 Franklin Street, Oakland, CA 94612
Email: mwalcek@calnurses.org
Office: 510-433-2742
Cell: 510-517-1871

Resolution of the Alameda Labor Council
Opposing the Export of Coal through the New Oakland Global Trade and Logistics Center

September 18, 2015

WHEREAS we support the development of a bulk shipping facility at the former Oakland Army Base (the new Oakland Global Trade and Logistics Center) to create good, union jobs with strong local hire requirements and community benefits for residents of Oakland; and we support the shipping of bulk commodities such as steel, wood, grains, sand, gravel and other non-hazardous materials; and

WHEREAS we acknowledge and commend the ongoing and growing commitment of labor to environmental justice issues that affect workers, communities, and future generations, including and not limited to the collaboration of labor with community groups to secure stricter environmental standards on projects and worksites that not only protect workers but diminish environmental hazards and pollution impacting public health and climate; and

WHEREAS we also acknowledge the hard work of this Council and its member affiliates who over a period of years attended hundreds of meetings to influence and negotiate the plan to develop the former Oakland Army Base to ensure that it would provide good jobs to area residents via a project labor agreement, a community benefits agreement containing local hire requirements, and union recognition provisions; and

WHEREAS it has recently come to light that California Capital & Investment Group (CCIG) and Terminal Logistics Solutions have been soliciting a partnership with four Utah counties — Sevier, Sanpete, Carbon and Emery — to allow them to export millions of tons of Utah coal each year from mines owned by Bowie Resources through the Oakland Bulk and Oversized Terminal at the Oakland Global development; and

WHEREAS terminals that ship coal provide far fewer jobs than terminals that ship containers or general cargo; jobs involving coal are unhealthy and unsafe due to dust emissions; coal is increasingly an anti-union industry; and with the imminent closing of the Deer Creek mine in Emery County, Utah, there will be no union mines operating in that state; and

WHEREAS coal dust presents clear health risks to workers and communities, as tests show that coal dust contains substances known to impact human health including arsenic, lead, chromium, nickel, selenium, and other toxic heavy metals; and

WHEREAS coal burning leads to as many as 13,000 premature deaths every year and more than $100 billion in annual health costs; and

WHEREAS West Oakland residents are already twice as likely to visit the emergency room for asthma as the average Alameda County resident, and are also more likely to die of cancer, heart and lung disease, and toxic coal dust is linked to decreased lung capacity, increased childhood bronchitis, asthma, pneumonia, emphysema, and heart disease; and

WHEREAS it is widely believed by the scientific community that 80% of the world's coal reserves must stay in the ground if the planet is to have a chance of keeping global warming

under 2°C by 2050, and that the mining, transport, and burning of this coal consistently results in nearly 14 million metric tons of greenhouse emissions per year and coal burning is responsible for one third of US carbon emissions—the main contributor to climate disruption; and

WHEREAS the Port Commission unanimously voted in 2014 to reject proposals to build a new coal and petroleum coke export facility at the Howard Terminal in Oakland, citing environmental problems, public health hazards, economic pitfalls, and public opposition to the project; and

WHEREAS more than 15,000 Oakland and other East Bay residents have signed a petition opposing coal in Oakland, over 80 organizations and businesses have expressed their opposition, and numerous elected officials at the local, regional, and state levels have called for a coal-free Oakland; and

WHEREAS despite this unified opposition to coal we also unequivocally honor the work and the commitments of hundreds of union members in construction, in trucking, in the railyards and on the docks who are on site working to develop the former Oakland Army Base; support their continued work and the work of hundreds more union members; and believe that this project can move forward without coal and question that our opposition must necessarily endanger the good middle-class jobs that we fought hard to produce in the first place; NOW

THEREFORE BE IT RESOLVED that the Alameda Labor Council express opposition to the export of coal through Oakland and specifically the Oakland Global Trade and Logistics Center at the former Oakland Army Base; and

BE IT FINALLY RESOLVED that the Alameda Labor Council send a letter to the Oakland Mayor, City Council, and project developers asking them to reject the export of coal through the Oakland Global project, to not take funds from Utah to secure use of the terminals for coal, and to execute a binding agreement or adopt an ordinance that will bar export of coal from this public land.

7) Response to Follow-up to Questions from Richard Grassetti

From:	gecons
To:	Cole, Doug; DL - City Council; Office of the Mayor; Cappio, Claudia; Monetta, John; BParker
Cc:	lora jo foo; ted
Subject:	response to September 28, 2015 City Memo Regarding follow-up Questions on Coal's Public Health and/or Safety Impacts
Date:	Monday, October 05, 2015 1:28:50 PM
Attachments:	18 responses-quals.docx

Dear Ms. Cappio,

I am attaching my response to Question 18 posed by you in your September 28, 2015 memo to Interested Parties regarding follow-up questions on Coal's Public Health and/or safety impacts. I have also attached my qualifications as a CEQA expert.

In short, CEQA is applicable, the coal use is substantial new information not evaluated in the 2002 EIR or 2012 Addendum, and a new Supplemental or Subsequent EIR is required. it is my professional opinion that the previous Addendum was inappropriate for the 2012 changes, and is also inappropriate for the more impactful coal project now being proposed.

Please feel free to contact me with any questions.

thank you-

Richard Grassetti

Richard Grassetti
Grassetti Environmental Consulting
(510) 849-2354
www.grassettienvironmental.com

Response by Richard Grassetti, CEQA Consultant, to City Question #18

Qualifications:

Richard Grassetti is a CEQA consultant with over 32 years of experience. He has managed preparation of over 300 CEQA documents, and is considered an expert in the field. In addition to his consulting practice, he taught the Environmental Impact Assessment course at Cal State East Bay for 15 years, and regularly instructs CEQA and NEPA workshops for planning professionals and others. Mr. Grassetti is an Oakland resident, and his consulting practice is a certified Oakland small business. His complete qualifications are attached.

Response:

a) Preemption issue:

CEQA applies to local approvals of development projects, including the rail terminal.

b) Why does CEQA apply:

There are two reasons that CEQA applies.

> **1) The project has been substantially changed from that assessed in the original EIR and Addendum, and the public could not have previously known about the change; and,**
>
> **2) The City had the authority to enact new ordinances to protect its citizens from health and safety hazards associated with the project; those ordinances are discretionary and subject to CEQA.**

These are discussed below.

> **1) Substantial Changes to the project re-open the CEQA Process**

CEQA (Guidelines Section 15378 (a) defines a project as …..

> "***the whole of an action*** (emphasis added), which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following :
>
> > (1) An activity undertaken by a person which is supported in whole or in part through public agency contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies.
> >
> > (2) An activity involving issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies."

Any development project includes both construction and operations phases, either of which could adversely affect the environment. The Program-level 2002 OAB EIR and 2012 Addendum addressed general construction and operations of the terminal, but never disclosed any of the

materials that would pass through the facility. The Addendum simply stated that unit trains approximately 6000 feet in length would use the facility. Any hazardous materials transported to the facility were omitted from the project description. Therefore the reader would reasonably assume that no hazardous materials would be transported through the facility. If hazardous materials had been proposed for transport, then the EIR would have been deficient for not analyzing the impacts of such transport. Given the common use of unit trains for agricultural products, and the absence of any discussion of hazardous materials transport, a reader would reasonably assume that "the whole of the project" did not include any hazardous materials, including coal.

CEQA requires that, changes to a project occur that may result in new or substantially greater environmental impacts than previously disclosed, additional CEQA review must be conducted. Per Guidelines Section 15162 a),

> "When an EIR….has been certified for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence…one or more of the following:
>
> > (1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
> >
> > (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or,
> >
> > (3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:
> >
> > > (A) The project will have one or more effects not discussed in the previous EIR or Negative declaration;
> > >
> > > (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;….."

The use of the project terminal for coal is a major change from the project as described in the EIR Addendum, which did not disclose the transport or impacts of any hazardous materials associated with that terminal. This would be considered a major change because substantial evidence has been placed on the record before the City that the project would likely have a significant health impact associated with coal dust effects and climate change, as well as water quality, and water use, among other impacts. Health risks associated with this use were not evaluated in the 2002 EIR or 2012 Addendum.

The coal terminal use also constitutes substantial new information. This change in the project description and its associated impacts were not known and could not have been known at the time of project approval because they were not disclosed. Further, when directly questioned by City staff and elected officials about the possibility of coal use the applicant denied any such intended

use. This use also was denied in writing by the applicant in 2013. It was not until April 2015 that the applicant made public this substantial change to the project.

A review of City files indicates no mention of coal at the time the Addendum was prepared. Coal was added to the project at a later date. As documented in the CBE et. al. writ petition (filed October 2, 2015), the public could not have reasonably known about the substantive change in the project until or after April 5, 2015. Because the impacts of transport, storage, and shipment of coal were not considered in the Addendum, and because those impacts are potentially significant (as documented in the September 21, 2015 public hearing and associated submittals), the Addendum it is deficient and additional CEQA documentation must be prepared by the City.

(A) Appropriate CEQA Documentation

Furthermore, given the Section 15126 requirements for subsequent CEQA review, an addendum was not and is not the appropriate CEQA document for this project. The revisions to the project were and are substantial, and reflect substantial changes in both the project and its potential impacts. A subsequent or supplemental EIR is required.

(B) Opportunity for the City to Correct CEQA Deficiencies

When a project is changed such that potential new significant environmental impacts may occur, a lawsuit compelling performance of an agency's duty to conduct further environmental review may be filed within 180 days of the time the "plaintiff knows or should have known that the project underway differs substantially from the one described in the initial EIR." (*Concerned Citizens of Costa Mesa, Inc. v. 32nd Dist. Agric. Assn.* (1986) 42 Cal.3d 929). The addition of coal to the project became known publically on or about April 5, 2015. Citizens for a Better Environment, et. al. has filed a lawsuit challenging the adequacy of the CEQA documents for the project. When the City became aware of the change to the project, it had the affirmative duty to revise the CEQA documents for the project. Given the current litigation, the City should work with the plaintiffs to develop a scope of work for a new CEQA document (EIR supplement or Subsequent EIR addressing the coal-related issues, as well as any other new/substantially changed environmental issues).

2) New City regulations to address the project's health and safety impact would trigger new CEQA review.

As described above (Guidelines Section 15378), CEQA is triggered by discretionary entitlements, agreements, and/or funding decisions on the part of a lead or responsible agency. The City has made both land use entitlements/agreements and funding decisions regarding the project. It is not clear whether additional City discretionary funding or lease approval actions are required to permit the proposed coal terminal. If additional funding or lease agreements are required, those would constitute discretionary actions that would require re-opening the CEQA process for the project.

Further, under *Section 3.4.2 Regulation for Health and Safety*, in the City's July 2013 agreement with Prologis allowing the terminal,

> "The City shall have the right to apply City Regulations adopted by City after the Adoption Date, if such application (a) is otherwise permissible pursuant to Laws (other than the Development Agreement Legislation), and (b) City determines, based on substantial evidence and after a public hearing, that a failure to do so would place existing or future

occupants or users of the Project, adjacent neighbors, or any portion thereof, or all of them, in a condition substantially dangerous to their health or safety."

Any regulations adopted by the City to reduce the project's health and safety impacts to sensitive neighboring communities would be discretionary actions that would require CEQA review.

c) Extent and scope of additional CEQA review:

As discussed above, because the health impacts associated with coal transport and handling are new, significant (and potentially unavoidable, on the basis of substantial evidence presented to the City), and may require additional mitigation, a Supplemental or Subsequent EIR would be required to address these issues. Another Addendum would not comply with the requirements of Section 15126, which state that an addendum shall be used only if none of the conditions described (above) under Section 15162 calling for the preparation of a subsequent EIR have occurred.

d) Is new CEQA review required for changes to commodities handled at the terminal:

As described above, a new CEQA review would be required only if substantial evidence of substantial changes in health risk were provided to the City in its review of the use, and those changes are not already considered or effectively mitigated by previously adopted assessments and mitigation measures, respectively. Such evidence has been provided to the City, therefore a new CEQA review is required.

Qualifications:

Richard Grassetti

PRINCIPAL

Expertise

- CEQA/NEPA Environmental Assessment
- Project Management
- Geologic and Hydrologic Analysis

Principal Professional Responsibilities

Mr. Grassetti is an environmental planner with over 32 years of experience in environmental impact analysis, project management, and regulatory compliance. He is a recognized expert on California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) processes. He also has served as an expert witness on CEQA and planning issues. Mr. Grassetti regularly conducts peer review and QC/QA for all types of environmental impact analyses, and works frequently with public agencies, citizens groups, and applicants. He has managed the preparation of over 60 Federal and state environmental impact assessment documents, as well as numerous local agency planning and permitting documents. Mr. Grassetti also has prepared over 300 technical analyses for these documents. He has analyzed the environmental impacts of a wide range of projects including infrastructure improvements, ecological restoration projects, waste management projects, mixed-use developments, energy development, military base reuse projects, and recreational facilities. In addition to his consulting practice, Mr. Grassetti regularly conducts professional training workshops on NEPA and CEQA compliance, and is a lecturer at California State University, East Bay, where he teaches courses on environmental impact assessment.

Professional Services

- Management and preparation of all types of environmental impact assessment and documentation for public agencies, applicants, citizens groups, and attorneys
- Peer review of environmental documents for technical adequacy and regulatory compliance
- Expert witness services

- Assisting clients in Federal and state environmental impact assessment process compliance
- Preparation of technical analyses for impact assessments
- Preparation of project feasibility, opportunities, and constraints analyses, and mitigation monitoring and reporting plans

Education

University of Oregon, Eugene, Department of Geography, M.A., Geography (Emphasis on Fluvial Geomorphology and Water Resources Planning), 1981.

University of California, Berkeley, Department of Geography, B.A., Physical Geography, 1978.

Professional Experience

1992-Present	Principal, GECo Environmental Consulting, Berkeley, CA
1994-2013	Adjunct Professor, Department of Geography and Environmental Studies, California State University, East Bay, Hayward, CA
1988-1992	Environmental Group Co-Manager/ Senior Project Manager, LSA Associates, Inc. Richmond, CA
1987-1988	Independent Environmental Consultant, Berkeley, CA
1986-1987	Environmental/Urban Planner, City of Richmond, CA
1982-1986	Senior Technical Associate - Hydrology and Geology - Environmental Science Associates, Inc. San Francisco, CA
1979-1981	Graduate Teaching Fellow, Department of Geography, University of Oregon, Eugene, OR

Professional Affiliations and Certifications

Member and Past Chapter Director, Association of Environmental Professionals, San Francisco Bay Chapter

Member, International Association for Impact Assessment

Publications and Presentations

Grassetti, R. *Understanding Environmental Impact Assessment – A Layperson's Guide to Environmental Impact Documents and Processes.* 2002 (Revised 2011)

Grassetti, R. *Round Up The Usual Suspects: Common Deficiencies in US and California Environmental Impact assessments.* Paper Presented at International Association for Impact Assessment Conference, Vancouver, Canada. May 2004.

Grassetti, R. *Developing a Citizens Handbook for Impact Assessment.* Paper Presented at International Association for Impact Assessment Conference, Marrakech, Morocco. June 2003

Grassetti, R. *CEQA and Sustainability.* Paper Presented at Association of Environmental Professionals Conference, Palm Springs, California. April 2002.

Grassetti, R. and M. Kent. *Certifying Green Development, an Incentive-Based Application of Environmental Impact Assessment*. Paper Presented at International Association for Impact Assessment Conference, Cartagena, Colombia. May 2001

Grassetti, Richard. *Report from the Headwaters: Promises and Failures of Strategic Environmental Assessment in Preserving California's Ancient Redwoods.* Paper Presented at International Association for Impact Assessment Conference, Glasgow, Scotland. June 1999.

Grassetti, R. A., N. Dennis, and R. Odland. *An Analytical Framework for Sustainable Development in EIA in the USA*. Paper Presented at International Association for Impact Assessment Conference, Christchurch, New Zealand. April 1998.

Grassetti, R. A. *Ethics, Public Policy, and the Environmental Professional.* Presentation at the Association of Environmental Professionals Annual Conference, San Diego. May 1992.

Grassetti, R. A. *Regulation and Development of Urban Area Wetlands in the United States: The San Francisco Bay Area Case Study*. Water Quality Bulletin, United Nations/World Health Organization Collaborating Centre on Surface and Ground Water Quality. April 1989.

Grassetti, R. A. *Cumulative Impacts Analysis, An Overview*. Journal of Pesticide Reform. Fall 1986.

1986, 1987. Guest Lecturer, Environmental Studies Program, University of California, Berkeley.

REPRESENTATIVE PROJECT EXPERIENCE

IMPACT ASSESSMENT REGULATORY COMPLIANCE SEMINARS

Mr. Grassetti has conducted numerous CEQA and NEPA compliance seminars for entities including:

- Alameda County Waste Management Authority
- San Francisco County Transportation Authority
- West Bay Sanitary District
- North Coast Resource Management, Inc.
- Element Power Company
- Tetra Tech Inc.
- Impact Sciences Inc.
- Northwest Environmental Training Center (over 10 workshops)
- California State University East Bay (14 years teaching Environmental Impact Assessment)

PREPARATION OF ENVIRONMENTAL IMPACT ASSESSMENT DOCUMENTS

Prospect Island Restoration Project. Mr. Grassetti is providing CEQA guidance and preparing technical sections for an EIR on a proposed 1400-acre fisheries enhancement project in the northern Sacramento/San Joaquin River Delta. Major issues include water quality, biological resources, and construction impacts. Client: Wetlands and Water Resources/Stillwater Sciences, for California Department of Water Resources.

Upper Putah Creek Restoration Project Program EIR. Mr. Grassetti is managing preparation of a Program Environmental Impact Report on restoration of approximately 21 linear miles of stream channel of Putah Creek, near Davis, CA. Major issues include biological resources, water quality, and land use compatibility. Client: Wetlands and Water Resources, for the Putah Creek Conservancy.

Salt River Ecosystem Restoration Project EIR. Mr. Grassetti managed preparation of an Environmental Impact Report for the restoration of a large area of former marsh and open channel near Ferndale in Humboldt County. The project includes creation of a new seven-mile-long river channel and a 400-acre wetland restoration. Major issues include biological resources, land use, hydrology/flooding, and construction impacts (noise, air quality, traffic.). Client: Humboldt County Resource Conservation District.

Aramburu Island Shoreline Protection and Ecological Enhancement Project Initial Study. Mr. Grassetti managed preparation of an Initial Study for a proposal by the Audubon Society to

stabilize the shoreline and improve bird and seal habitat on the 34-acre Aramburu Island site in Marin County. Major issues include biological resources, hydrology/flooding, and construction impacts. Client: Wetlands and Water Resources.

Forward Landfill Expansion Project EIRs. Mr. Grassetti managed preparation of three EIRs for expansion of the Forward Landfill in San Joaquin County. Major issues include air quality, health and safety, biological resources, and traffic. Client: San Joaquin County Community Development Department.

San Francisco PUC WSIP Projects. Mr. Grassetti assisted in the preparation of the San Francisco Public Utility Commission's Water Supply Improvement Project Program EIR, as well as two other CEQA documents for smaller projects under that program. Major issues include hydrology, water supply, and fisheries. Client: Water Resources Engineering/Orion Associates.

Parsons Slough Project CEQA Review: Mr. Grassetti managed preparation of an expanded Initial Study for a tidal sill (dam) project to reduce scour in Parsons Slough, an arm of the ecologically sensitive Elkhorn Slough. This IS may lead to either an EIR or Mitigated Negative Declaration. Major issues include fisheries, marine mammals, water quality, aesthetics, and construction issues (noise). Client: Vinnedge Consulting/Elkhorn Slough National Estuary Reserve.

Hamilton Wetlands/Todds Road CEQA Review. Mr. Grassetti managed preparation of the CEQA Initial Study for an alternative access road for truck traffic to the Hamilton Wetlands Restoration Project to reduce the project's potential noise impacts. Major issues included noise, biological resources, and cultural resources. Client: California State Coastal Conservancy.

San Francisco Bay Water Trail Program EIR. Mr. Grassetti assisted in the preparation of the EIR for a "water trail" for small non-motorized boats throughout San Francisco Bay. The project involves designation of 115 access sites as well as policies for stewardship and education. Major issues include disturbance of birds, marine mammals, water quality, historic resources, and wetlands. Client: California State Coastal Conservancy.

Dutch Slough Restoration Project/Oakley Community Park EIR. Mr. Grassetti managed preparation of the EIR for a 1400-acre wetland restoration and 80-acre community park on former diked lands in Oakley. Major issues include fisheries, water quality, historic architectural resources, and wetlands. Client: California State Coastal Conservancy.

Vineyard RV Park Expansion Initial Study. Mr. Grassetti managed preparation of the Initial Study for an expansion of a mobile home park in Solano County near Vacaville. Major issues included flooding, biological resources, and traffic. Client: Vineyard RV Park.

Pinole Creek Restoration Project Initial Study. Mr. Grassetti prepared the CEQA Initial Study for a 2.5-mile long creek restoration project in the City of Pinole. Major issues included biological resources, flooding, and water quality. Client: City of Pinole.

Knobcone Subdivision Initial Study. Mr. Grassetti managed preparation of an Initial Study for a 5-unit subdivision in Richmond. Major issues include geologic hazards and biological resources. Client: City of Richmond.

Baxter Creek Restoration Project CEQA Consulting. Mr. Grassetti assisted City of El Cerrito staff in the preparation of an Initial Study for the proposed Baxter Creek Restoration Project. Client: City of El Cerrito.

West of Fairview Subdivision Supplemental EIR. Mr. Grassetti managed preparation of a Supplemental EIR for a 700-unit residential development in Hollister. Major issues include traffic, biology, and utility services. Client: City of Hollister.

American Canyon Initial Studies. Mr. Grassetti managed preparation of two initial studies for commercial and warehouse projects in the City of American Canyon. Major issues include traffic, biological resources, and geology. Client: City of American Canyon.

Hampton Road Subdivision EIR. Mr. Grassetti managed preparation of a focused EIR for a 10-unit subdivision in the San Lorenzo area of Alameda County. Major issues include historic resources. Client: Philip Chen.

Pelandale-McHenry Specific Plan. Mr. Grassetti prepared the Specific Plan for an 80-acre residential/commercial development in Modesto. Major issues included land use, traffic, and provision of adequate infrastructure. Client: Meritage Homes

Monte Cresta Roadway Extension Initial Study. Mr. Grassetti prepared an Initial Study/Negative declaration for a roadway extension in San Juan Hills area of the City of Belmont. Major issues included slope stability and growth inducement. Client: City of Belmont

Bethel Island Water Supply Project. Mr. Grassetti prepared an Initial Study for a proposed new water supply system for the community of Bethel Island in Contra Costa County. Major issues included growth inducement, archaeological resources, and biological resources. Client: Bethel Island Municipal Improvement District.

San Francisco Bay Estuary Invasive Spartina Control Project EIR/EIS and Addendum. Mr. Grassetti managed preparation of the programmatic EIR/EIS on a plan to control invasive cordgrasses throughout the San Francisco Bay. Major issues included endangered species, visual resources, water quality, and human health and safety. Mr. Grassetti subsequently prepared an addendum for the addition of a new herbicide to the Spartina Control Program. Client: California State Coastal Conservancy.

U.S. Navy Bay Area Base Closure and Re-Use Environmental Studies. Mr. Grassetti assisted in the NEPA/CEQA review process for US Navy Base Closures and Re-Use for the San Francisco Bay Area. Work tasks include CEQA compliance overview, internal peer review, quality control reviews, and preparation of technical analyses. Specific projects are summarized below:

Mare Island Naval Shipyard EIR/EIS Studies. Mr. Grassetti prepared the hydrology section of the EIR/EIS on the shipyard closure and reuse program, conducted a peer review of the geology section, and conducted QA/QC review of the entire EIR/EIS. Client: Tetra Tech, Inc.

Oak Knoll Naval Medical Center EIR/EIS Studies. Mr. Grassetti conducted a CEQA/NEPA quality control and peer review of the EIS/EIR prepared for disposal and reuse of the Oak Knoll Naval Medical Center EIS/EIR in the City of Oakland. Client: Tetra Tech, Inc.

NAS Alameda EIR/EIS Studies. Mr. Grassetti prepared the hydrology section of EIR/EIS on reuse of the Naval Air Station, conducted a peer review of the geology section, and conducted QA/QC review of the entire EIR/EIS. Client: Tetra Tech, Inc.

Naval Station Treasure Island EIR/EIS Studies. Mr. Grassetti prepared the hydrology section of the EIR/EIS on reuse of Naval Station Treasure Island, conducted a peer review of the geology section, and conducted QA/QC review of the entire EIR/EIS. Client: Tetra Tech, Inc.

Hunters Point Naval Shipyard EIR/EIS. Mr. Grassetti assisted in the responses to comments and peer review of the EIR/EIS for the Hunters Point Naval Shipyard in San Francisco. Client: Uribe and Associates.

Naval Fuel Depot Point Molate. Mr. Grassetti conducted overall internal peer reviews of several drafts of the EIR/EIS for reuse of the former Naval Fuel Depot Point Molate in Richmond, CA. In addition, he prepared the Noise, Socioeconomics, and Cultural Resources sections of the EIS/EIR. Client: Uribe and Associates.

CEQA/NEPA PEER REVIEWAND EXPERT WITNESS CONSULTING PROJECTS

Jackson State Forest CEQA Review. Mr. Grassetti prepared a detailed analysis of the CEQA adequacy of the California Department of Forestry's EIR on a new management plan for the 40,000 acre Jackson State Forest. Major issues included forestry practices, water quality, and biological resources. Client: Dharma Cloud Foundation

Los Angeles Airport Arrival Enhancement Project Environmental Assessment NEPA Peer Review. Mr. Grassetti prepared a peer review and expert declarations regarding the adequacy of the NEPA Environmental Assessment for rerouting of flight paths for aircraft arriving at Los Angeles International Airport. Major issues included adequacy of assessment of noise effects on traditional cultural practices of the Morongo Band of Mission Indians. Client: Law Offices of Alexander & Karshmer.

St Mary's College High School Master Plan Peer Reviews. Mr. Grassetti conducted peer reviews of two Initial Studies for proposed expansions of a high school. Major issues included noise and traffic. Client: Peralta Perk Neighborhood Association.

Lawson's Landing EIR Peer Review. Mr. Grassetti conducted detailed per reviews of numerous CEQA documents for the proposed master plan for the Lawson's Landing mobile home park and campground in Marin County. Client: Environmental Action Committee of West Marin.

Coaches Field Initial Study Peer Review. Mr. Grassetti Conducted a peer review of a proposed lighted ballfield project in the City of Piedmont. Mr. Grassetti's review resulted in the Initial Study being withdrawn and an EIR being prepared. Client: Private Party.

Metropolitan Oakland International Airport Development Plan Environmental Impact Report CEQA Review. Mr. Grassetti performed a critical review and assisted in the preparation of comments and ultimately successful litigation regarding the proposed expansion of Metropolitan Oakland International Airport. Major issues included noise, cumulative impacts, and alternatives selection/analyses. Client: Law Office of John Shordike.

San Francisco International Airport Environmental Liaison Office Consulting. Mr. grassetti conducted various internal peer review tasks associated with environmental studies being prepared for SFIA's proposed runway expansion. Client: LSA Associates, Inc.

El Cerrito Lumber Yard CEQA Peer Review. Mr. Grassetti conducted an internal peer review for an Initial Study on a controversial parcel in the City of El Cerrito. Client: City of El Cerrito.

Sausalito Marina CEQA Critique. Mr. Grassetti prepared a peer review and critique of an EIR for a proposed new marina in Sausalito. Client: Confidential

Sausalito Police and Fire Station CEQA Critique. Mr. Grassetti prepared a peer review and critique of an EIR for a proposed new public safety building in Sausalito. Client: Confidential

Napa Verison Tower CEQA Critique. Mr. Grassetti conducted a peer review and critique for a cellular telephone tower in the City of Napa. Client: Confidential.

Morongo Mining Projects Environmental Reviews. Mr. Grassetti provided CEQA, NEPA, and technical consulting to the Morongo Band of Mission Indians regarding two aggregate mines adjacent to their reservation in Riverside County, CA. Client: Law Office of Alexander & Karshmer.

Napa Skateboard Park Peer Review. Mr. Grassetti conducted a peer review and critique for a neighborhood association on a proposed skateboard park in the City of Napa. Client: Confidential.

Headwaters Forest Project EIR/EIS Review. Mr. Grassetti conducted an expert review of the CEQA and NEPA adequacy and technical validity of EIR/EIS on the Headwaters Forest Habitat Conservation Plan, Sustained Yield Plan, and land purchase. Clients: Environmental Law Foundation; Environmental Protection and Information Center, and Sierra Club.

Global Photon Fiber-Optic Cable EIR Peer Review. Mr. Grassetti assisted in a third-party peer review of an EIR on a proposed offshore fiber-optics cable. Client: Tetra Tech, Inc., and California State Lands Commission.

Coachella Valley Water Management Plan CEQA Peer Review. Mr. Grassetti assisted a consortium of Coachella Valley Indian Tribes in reviewing CEQA documents on the Coachella Valley Water Management Plan. Client: Consortium of Coachella Valley Tribes.

Salton Sea Enhanced Evaporation System Initial Study/Environmental Assessment Peer Review. Mr. Grassetti reviewed the draft IS/EA for a spray project to evaporate excess return flow water from the Salton Sea. Client: Morongo Band of Mission Indians.

Santa Rosa Home Depot CEQA Peer Review: Mr. Grassetti conducted a peer review and provided expert testimony regarding the adequacy of the Environmental Impact Report and associated technical studies for a proposed Home Depot shopping center in Santa Rosa. Client: Redwood Empire Merchants Association.

Mitsubishi Mine CEQA Litigation Review. Mr. Grassetti conducted a review of legal briefs regarding the adequacy of CEQA analyses for a proposed mine expansion in San Bernardino County. Client: Law Offices of Thomas Mauriello.

Mariposa County Planning Policy Reviews. Mr. Grassetti conducted a review of proposed alterations to the Mariposa County General Plan for CEQA compliance. Client: Dr. Barton Brown.

Gregory Canyon Landfill Environmental Processing Review. Mr. Grassetti was retained to review the environmental permitting and CEQA analyses for the proposed Gregory Canyon Landfill in northern San Diego County. Procedural issues include landfill siting requirements and CEQA process compliance. Technical issues include cultural resources, hydrology, endangered species, traffic, and health and safety. Client: Law Offices of Alexander & Karshmer and Pala Band of Mission Indians.

Otay Ranch Development CEQA Review. Mr. Grassetti prepared an expert review of the Environmental Impact Report for the 23,000-acre Otay Ranch project in San Diego County in connection with ongoing litigation. Major issues were CEQA compliance, compliance with the California planning process, biological impacts, cumulative impacts, and alternatives. Client: Law Offices of Charles Stevens Crandall.

Carroll Canyon Burn Facility CEQA Compliance Review. Mr. Grassetti prepared a CEQA process review for a proposed Negative Declaration on a planned contaminated-earth burning facility in the City of San Diego. Client: Law Offices of William Mackersie.

Monterey Bay Marine Lab CEQA Compliance Review: Mr. Grassetti assisted attorneys in review of a CEQA Negative Declaration, NEPA Environmental Assessment, and associated documents for the relocation of the Monterey Bay Marine Laboratory. Issues included the effectiveness of mitigation to cultural and biological resources, the appropriateness of the Negative Declaration versus an EIR, and other CEQA issues. Client: Law Offices of Alexander & Karshmer.

Monterey Ground Water Ordinances CEQA Compliance Review. Mr. Grassetti provided expert CEQA consulting services to attorneys regarding the appropriateness of Monterey County's CEQA processing of proposed ground water ordinances. Client: Salinas Valley Water Coalition.

Sonora Mining Corporation CEQA Review/Expert Witness Services. Mr. Grassetti conducted a review and critique of CEQA compliance for the proposed expansion of Sonora Mining Corporation's Jamestown Gold Mine in Tuolumne County, California. Client: Law Office of Alexander Henson.

Save Our Forests and Rangelands Expert Review and Witness Services. Mr. Grassetti provided expert review, consulting services, and expert witness testimony on CEQA issues for a successful

legal challenge to an EIR and Area Plan for 200,000 acres in the Central Mountain Sub-region of San Diego County. Client: Law Offices of Milberg, Weiss, Bershad, Specthrie, & Lerach.

4) Response to Follow-up to Questions from the Bay Area Quality Management District

From:	Henry Hilken
To:	Woo, Winnie; Cole, Doug
Cc:	Jack Broadbent; Jean Roggenkamp; David Vintze; Alison Kirk; Phil Martien
Subject:	RE: Follow Up Questions on Coal"s Public Health and/or Safety Impacts
Date:	Monday, October 05, 2015 12:17:20 PM

Dear Doug,

Thank you for the opportunity to offer further comments on the transportation of coal into the Bay Area and its transfer to ships through the proposed Break Bulk Terminal (Project). Below, I have addressed questions concerning the Bay Area Air Quality Management District (BAAQMD or Air District) posed by the City of Oakland in the memo from Claudia Cappio, dated September 28, 2015.

Availability of Data on the Health Impacts of Coal

Through the Community Air Risk Evaluation (CARE) Program, the Air District has established that despite great strides in reducing air pollution throughout the region, some communities in the Bay Area still experience relatively higher pollution levels and corresponding health effects, compared to their counterparts in other parts of the Bay Area.

Air pollution levels of many pollutants are highest in communities in close proximity to pollution sources – such as near freeways, busy roadways, distribution centers, ports, and large industrial sources like petroleum refineries. This describes both the communities surrounding the Port of Richmond and the Port of Oakland. The Air District does not have readily available data on specific health impacts to Richmond residents of coal shipments in Richmond. However, we do know that Richmond is exposed to relatively high levels of air pollution and residents suffer the health effects of these elevated emissions due to multiple sources of air pollution in close proximity. Likewise, West Oakland residents, who already face elevated health risks due to their proximity to various pollution sources including the Port of Oakland, rail yards and associated facilities, interstate freeways, and other sources, could face increased risk if the Project was approved without proper mitigation measures.

Given time and resources, it would be possible to measure the coarse particulate matter (PM10) in the air that is attributed to the transportation of coal products. For example, after the South Coast Air Quality Management District passed Rule 1158, which requires trucks carrying coal to cover the materials to prevent fugitive emissions, South Coast did find decreased PM10 at selected schools sites along truck routes. You can read more about Rule 1158 and follow-up studies here: http://www.aqmd.gov/home/library/air-quality-data-studies/air-quality-monitoring-studies/rule-1158 Air District staff believes, however, that previous air quality modeling and measurements amply demonstrate that the West Oakland community experiences higher exposure to air pollution, and associated health effects, compared to other parts of the region, and that continued efforts to minimize air pollution emissions are needed.

The Air District is Available to Assist the City

Air District staff is available to meet with City staff and assist in the evaluation of Terminal Logistics Solutions' proposed mitigation measures and discuss additional measures. As Air District staff stated at the Sept. 21 hearing, potential air quality emissions and impacts to public health from the proposed Project include fugitive dust and equipment engine emissions. Dust emissions can be reduced through aggressive containment of all aspects of material handling – rail cars, conveyers, storage piles, etc. To address engine emissions, the Air District encourages the City of Oakland to require that the Project

proponents commit to the cleanest engines available, including Tier III locomotive engines, electric-powered cranes, cleanest available cargo handling equipment, and shore power for bulk ships.

I look forward to our continued collaboration and working together to ensure that the Project is as health-protective as possible.

Air District staff is available to assist the City in addressing these comments. If you have any questions, please contact Alison Kirk, Senior Planner, at (415) 749-5169 or akirk@baaqmd.gov.

Henry Hilken
Director of Planning and Climate Protection
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

hhilken@baaqmd.gov
(415) 749-4642

From: Woo, Winnie [mailto:WWoo@oaklandnet.com]
Sent: Tuesday, September 29, 2015 12:29 PM
Cc: Cole, Doug
Subject: Follow Up Questions on Coal's Public Health and/or Safety Impacts

Sending on behalf of Claudia Cappio.

Dear Interested Parties:

Thank you for the very informative oral and written evidence submitted to date as part of the City's September 21, 2015 Public Hearing on the public health and/or safety impacts and other impacts of the transportation, transloading, handling and/or export of coal products in/through the City of Oakland.

Although we are still reviewing the materials submitted before and during the hearing, we are requesting answers be provided to the attached list of questions, some of which are technical and/or legal in nature. Please provide responses **no later than Monday, October 5, 2015 at 4:00pm**. Please direct responses to **Douglas Cole, at dcole@oaklandnet.com**.

The attached letter, all responses received and the written materials submitted as part of the public hearing are (or will be) posted on the City's website at:

http://www2.oaklandnet.com/Government/o/CityAdministration/d/NeighborhoodInvestment/OAK038485

Winnie Woo
Executive Assistant
City of Oakland

Office of the City Administrator
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Oakland, CA 94612
Tel: (510) 238-7798
Fax: (510) 238-2223

Rule 1158 Studies of Air Quality Near Petroleum Coke, Coal and Sulfur Storage, Handling and Shipment Facilities.

In June 1999, the South Coast AQMD amended Rule 1158, which applies to the storage, handling, and shipment of petroleum coke, coal and sulfur. Amended Rule 1158 further reduced particulate emissions from these sources. Subsequently, California State legislation (AB 1775 -- Lowenthal) added a Health and Safety Code section (Section 40459) which calls for the AQMD to maintain a program of monitoring particulates within the Port of Los Angeles and the Port of Long Beach, and assess prevalent coke particulates and improvements in air quality.

To monitor the efficacy of the Rule and address legislative requirements, the AQMD initiated a series of "Rule 1158 Follow-Up Studies". This page contains reports of a series of ongoing studies of the particulate matter and elemental carbon concentrations measured in the greater Long Beach/Wilmington area. The studies are each about 20 to 30 pages in length, and they can be downloaded by clicking on the appropriate title below.

Rule 1158 Follow-up Study #12 and #13 (Sampling Conducted November 2005-February 2006 and December 2006 - March 2007))
(PDF, 2.58MB) (29 pages)

Rule 1158 Follow-Up Study #11 (Sampling Conducted October 2004-December 2004)
(PDF, 4.7MB) (32 pages)

Rule 1158 Follow-Up Study #10 (Sampling Conducted May 2004-June 2004)
(PDF, 4.9MB) (30 pages)

Rule 1158 Follow-Up Study #9 (Sampling Conducted October 2003-November 2003)
(PDF, 4.7MB) (32 pages)

Rule 1158 Follow-Up Study #8 (Sampling Conducted May 2003-June 2003)
(PDF, 4.1MB) (27 pages)

Rule 1158 Follow-Up Study #7 (Sampling Conducted October 2002-December 2002)
(PDF, 3.8MB) (26 pages)

Rule 1158 Follow-Up Study #6 (Sampling Conducted May 2002-June 2002)
(PDF, 4.0MB) (24 pages)

Rule 1158 Follow-Up Study #5 (Sampling Conducted November 2001-January 2002)
(PDF, 4.0MB) (25 pages)

Rule 1158 Follow-Up Study #4 (Sampling Conducted May and June 2001)
(PDF, 4.0MB) (25 pages)

Rule 1158 Follow-Up Study #3 (Sampling Conducted November and December, 2000)
(PDF, 4.0MB) (26 pages)

Rule 1158 Follow-Up Study #2 (Sampling Conducted May and June, 2000)
(PDF, 216kb) (19 pages)

Rule 1158 Follow-Up Study #1(Sampling Conducted November and December 1999)
(PDF, 216kb) (17 pages)

(Study #1 Graphs and Figures)
(PDF, 34kb) (5 pages)

6) Response to Follow-up to Questions from the County of Alameda, Public Health

From: Drake, Carmen, Public Health, OOD on behalf of Davis M.D., Muntu, Public Health, OOD
To: Cole, Doug
Subject: Coal Project Responses
Date: Tuesday, October 06, 2015 2:37:12 PM
Attachments: Coal Project Responses to Questions 10-6-15.docx

Dear Mr. Cole:

Please accept the attached responses to questions regarding the public health and safety impacts of the transportation, transloading, handling and export of coal products in/through the City of Oakland.

Please direct questions to Anna Lee, anna.lee@acgov.org.

Best,
Muntu Davis

MUNTU DAVIS, MD, MPH
ALAMEDA COUNTY HEALTH OFFICER

Sow a thought and you reap an act;
Sow an act and you reap a habit;
Sow a habit and you reap a character;
Sow a character and you reap a destiny.

Coal

Responses to City Administrator's Follow-up Questions and review of HDR Engineering Report

Dr. Muntu Davis, Alameda County Health Officer

10-6-15

1. How should "Project" and "Adjacent Neighbors" be defined pursuant to Development Agreement (DA) Section 3.4.2 ("existing or future occupants or users of the **Project Adjacent Neighbors**, or any portion thereof, or all of them, in a condition substantially dangerous to their health or safety")?

   - Project – All private development subject to the Development Agreement which include the West, East and Central Gateway Development Area Leases, or just the West Gateway Development Area Lease portion which includes the location of the Break Bulk Terminal and rail right-of-way?

     The "Project" should be defined as public and private development subject to the Development Agreement, West, East and Central and North Gateway Development Areas and Leases and rail right-of way. This ensures that the health and environmental protections put in place by City of Oakland Council will cover all future activities at the former Oakland Army Base.

   - Adjacent Neighbors – The Army Base Redevelopment Plan Area, West Oakland Specific Plan Area, all of West Oakland, some other geographic area?

     "Adjacent Neighbors" should be defined as all existing and future residents of Oakland that will be impacted, particularly West Oakland and East Oakland, and existing and future workers at the Oakland Bulk and Oversized Terminal (OBOT), the larger Development Area, and the Port of Oakland. In the case of the impacts of handling coal and an explosion, many Oakland residents will be impacted, particularly West Oakland residents. Residents of the flatlands of East Oakland are anticipated to be impacted by the transport of coal dust. Additionally, workers at the Terminal, the larger Development Area, and the Port of Oakland are another population that will be impacted and continuously exposed to working conditions dangerous to their health and safety.

2. Based upon #1 above, what are the health and/or safety impacts of coal being transported from rail to ship at the Break Bulk Terminal on the existing or future occupants or users of the **Project**, **Adjacent Neighbors**, or any portion thereof, or all of them?

   The cumulative health impact of adding an additional source of pollution where the population already experiences a disproportionate burden of disease is the biggest concern. East and West

Oakland have long been designated by the Bay Area Air Quality Management District's Community Air Risk Evaluation (CARE) Program as being an where air pollution contributes most to poor health outcomes relative to other communities in the Bay Area. They are also listed as some of the top communities identified by California Environmental Protection Agency's (CalEPA) Cal Enviroscreen tool, which uses a comprehensive screening methodology to identify California communities that are disproportionately burdened by multiple sources of pollution. Any additional sources of air pollution will have a significantly greater impact in an area already disproportionately burdened by multiple sources of air pollution and with high rates of emergency room visits and hospitalization for asthma and cancer risk from existing pollution.

After reviewing information presented on both sides related to air quality impacts of coal transport via rail, it is reasonable to conclude that there will be increased emissions, particularly for those living and working nearby, from both fugitive coal dust and rail traffic, resulting in increased health concerns. Of extreme concern is PM 2.5 emitted from coal dust and diesel exhaust. Higher concentrations of diesel exhaust, a complex mixture of particles and gases, in addition to the 15% of coal dust lost along the rail lines (the remaining percentage of an unestimated amount of coal dust lost after implementation of the HDR Engineering's proposed coal dust mitigation methods), will negatively impact communities in East and West Oakland, Ashland-Cherryland, San Leandro and Hayward that already impacted by air pollution.

In West Oakland, the overall rate of asthma emergency department visits is almost two times the Alameda County rate.[i] East and West Oakland children are hospitalized for asthma twice as much as children under five in the County. [ii] In East Oakland, the overall rate of asthma hospitalizations is over two times the Alameda County rate.[iii] Having asthma means missing school and work for doctor's appointments and to go to the Emergency Room. Missed days means falling behind in school and families falling behind economically, which has long-term health impacts. The health burdens add up to a shorter life expectancy; an African American child in East Oakland can expect to live about 14 years less than a White child in the Oakland Hills. And for West Oakland, the difference in life expectancy is 12 years.[iv] The impacts from coal transport would backpedal on important recent public health gains from improved air quality and reduced asthma rates, particularly in West Oakland.

The Analysis of the Air Quality Impacts of the Proposed Morrow Pacific Project (Tran, Khanh T., 2012) examines a similar scenario to the proposed project of offloading from trains to an enclosed building via conveyors and found increases in NO_2 and PM 2.5 that exceeded NAAQS Standards even without including background concentrations, and even for PM 2.5 when modeling an all enclosed scenario.[v] Dr. Bart Ostro examined a study of coal trains near Seattle, Washington and found significant increases in PM 2.5 from train emissions and coal dust in neighborhoods along rail lines (Jaffe, D., et.al., 2014).[vi] HDR Engineering's Report of the Surface Transportation Board's study on rail transport in Montana concluded that PM 10 and 2.5 would not exceed NAAQS.[vii] However, as noted by Dr. Ostro, this analysis does not take into account background concentrations, which are

currently high for West Oakland and the I-880 corridor and were found by the Bay Area Air Quality Management District to exceed the 24-hour PM 2.5 NAAQS standard more than 3 times year.[viii]

The health and safety impacts of the transport and handling of coal include emissions of fugitive coal dust and diesel particulates from train engines. In both cases, PM 2.5 poses a health risk to nearby residents and workers. PM 2.5 is smaller than the diameter of a human hair and because of its size can be inhaled deep into the lungs and can enter the bloodstream.

Inhalation of coal dust would put vulnerable populations at greatest health risk. These populations include children less than 5 years of age, pregnant women, elderly and people with asthma and other respiratory disease, and people with cardiovascular disease. Inhalation of coal dust is linked to increased risk of lung disease and cancer.

The U.S. Department of Labor has long recognized the health effects of coal dust on workers, which affects the respiratory system, and coal workers have been shown to experience increased risk of chronic bronchitis, decreased pulmonary function, emphysema, and a condition called black lung from the inhalation of coal dust.[ix]

Workers at the terminal will be potentially impacted by coal dust and/or coal mist when the coal is transferred from trains to the Terminal and working with the stockpiles in the Terminal to load them onto ships.

Workers will have to constantly water the stockpiles to reduce the risk of combustion and fires.[x] It is not clear whether or not the byproduct of spraying or misting coal will create a distinct health and/or safety concern for workers in the Terminal and the environment around the Port.

Another concern of the health impacts from transport of coal includes increased risks of derailments and fires. Derailments are a reality and can increase due to transporting coal. One example of the risk to residents and the challenge to our emergency response system is the crude oil train derailment in Lac Megantic, Quebec resulted in 47 deaths, dozens of destroyed buildings, $1 billion in property damage and thousands of residents displaced in July, 2013.[xi] Both BNSF and Union Pacific connect Utah to Oakland. The rail lines pass through densely populated neighborhoods throughout Alameda County and the flatlands of East and West Oakland to the Terminal.

West Oakland already has a significantly increased cancer risk from diesel emissions. Diesel exhaust is a complex mixture of fine particles and gases. A significant portion of diesel exhaust consists of particles 2.5 microns or less in diameter (PM 2.5). Diesel exhaust is a listed toxic air contaminant by the California Air Resources Board and the California Office of Environmental Health Hazard Assessment and listed as a hazardous air pollutant to the United States Environmental Protection Agency.[xii] Several of the substances in diesel exhaust are listed by the International Agency for Research on Cancer as a carcinogen, or as a probable or a possible human carcinogen.

11. Has there been a detailed review/analysis performed of the CCIG/OCOT commissioned September 15, 2015 HDR Engineering Air Quality & Human Health & Safety Assessment Report? Does that report adequately analyze the potential health and/or safety impacts as framed in Items #1 and 2 above? If not, why?

    The CCIG/OBOT commissioned HDR Engineering Report does not adequately analyze the potential health and/or safety impacts as framed in Items #1 and 2. It does take into account the cumulative health impact of adding an additional source of pollution where the population already experiences a disproportionate burden of disease as a result of pollution and where multiple sources of pollution already exist.

    The HDR Engineering report does not estimate the amount of coal dust ("fugitive coal dust") that would be lost during rail transport; the report only states that, "The coal dust mitigation methods of load profiling/packing and using topping agents have been effective in greatly reducing emissions of coal dust, by at least 85%." The remaining 15% of coal dust emissions not mitigated by these methods is expected to negatively impact health and the environment along the rail lines and surrounding areas. Particles of 2.5 microns or less in diameter (PM 2.5) from coal dust are important since it can be inhaled deep in the lungs.

    Uncovered coal cars could be as long as 125-cars long and lose an average of 500 pounds of coal per car in transit, totaling 60,000 pounds lost per trains on an average trip.[xiii] Estimations of fugitive coal dust by Dr. Bart Ostro would be significant, resulting in 400 tons of coal dust deposition along the rails and surrounding areas in Oakland annually, even with the recommended mitigations methods that would result in 85% control, as stated by HDR Engineering.

    The HDR Engineering report recommends employing rail cars that unload, "via bottom drop (rather than tipping/dumping), and coal dust emissions from the unloading operations should be controlled by water sprays and/or foggers as coal drops into a hopper that connects to the conveying system." Their report does not discuss the limitations of and coal dusts lost from the bottom drop mechanism during the segment of transport from the beginning and unloading points.

    The Analysis of the Air Quality Impacts of the Proposed Morrow Pacific Project (Tran, Khanh T., 2012) examines similar a scenario to the proposed project of offloading from trains to enclosed building via conveyors and found increases in NO_2 and PM 2.5 that exceeded NAAQS Standards even without including background concentrations, even for PM 2.5 when modeling an all enclosed scenario.[xiv] Dr. Bart Ostro examined a study of coal trains near Seattle, Washington and found significant increases in PM 2.5 from train emissions and coal dust in neighborhoods along rail lines (Jaffe, D., et.al., 2014).[xv] HDR Engineering's Report of the Surface Transportation Board's study on rail transport in Montana concluded that PM 10 and 2.5 would not exceed NAAQS.[xvi] However, as noted by Dr. Ostro, this analysis does not take into account background concentrations, which are currently high for West Oakland and the I-880 corridor and were found by the Bay Area Air Quality Management District to exceed the 24-hour PM 2.5 NAAQS standard more than 3 times year.[xvii]

The HDR Engineering report also does not discuss the impact of emissions from the recommended filtered ventilation system on the outside air and the anticipated quantity and source of water needed for this spray system and its impact on the local water system and State in terms of the current and ongoing drought.

Lastly, as mentioned in Item #1, it is not clear whether or not the byproduct of spraying or misting coal will create a distinct health and/or safety concern for workers in the OBOT and the environment around the Port.

12. What specific Standard Conditions of Approval and/ or Mitigation Measures contained in the SCAMMRP would address the potential health and/ or safety impacts of coal as framed in Items #1 and 2 above?

    The proposed innovation requires unloading of uncovered rail cars, conveying coal to an enclosed storage building, conveying coal to the dock and loading it onto the ships for export. I am unaware of where these types of facilities are already operating in the U.S. with tested and evaluated best practices.

    In my review of the existing SCA/MMRPs, standards and mitigations would have to go above and beyond the existing SCA/MMRPs. Mitigation 4.4-3b would include criteria air pollutants from rail-related operations at the West Gateway Rail and Maritime Operations SCA-AIR-3 would take into account diesel particulate matter, but neither includes the transport or handling of coal or other fossil fuel commodities.[xviii] Additionally, as the project would indirectly increase greenhouse gas emissions, this has implications for the Greenhouse Gas Reduction Plan (SCA GCC-1). This project would also have implications for the Hazards and Hazardous Materials and Stormwater Pollution Prevention (SCA HYD -1 through 4) Standards/ Mitigations.

    The following are suggestions for inclusion. To note, these would require additional monitoring for compliance and adaptive management should the mitigations not adequately protect nearby residents, which adds more administrative burden to the City of Oakland.

    A. Fugitive dust will be emitted from the unloading of trains into the "enclosed" Terminals. Spraying at the openings at both ends of rail cars before they are dropped to conveying systems will require large volumes of water and a wastewater collection system to filter coal particles/mud and any toxic byproducts before it enters the sewer system or within an onsite wastewater treatment facility. It may require additional stormwater measures to prevent water mixed with coal from entering the Bay waters. Additional compliance and monitoring would need to be included, which can become an administrative burden for the City.

    B. The "enclosed" Terminals will require spraying, which presents the need for best practices mentioned above, and a closed ventilation system with PM 2.5 filtration, MERV 13 rating. These filters need to be changed frequently (every couple months). The plan for proper storage, disposal of the dirty filters and replacement would need to be specified and in compliance with any local, state of federal requirements. Additional compliance and monitoring would need to be included, which can become an administrative burden for the City.

C. To reduce exposure of workers in the Terminal, they would need to constantly spray water and wear protective equipment, including respirators that can filter PM 2.5 100% of the time when working in the Terminal and handling the coal. Most respirators lose their effectiveness after becoming wet, which is more likely if water spraying or misting will be used in OBOT. Additional compliance and monitoring would need to be included with these measures.

D. Cleaning of equipment, such as conveyor belts, from the unloading, loading and preparation for shipping will require large volumes of water as well as on-site wastewater treatment to filter out coal particles/mud and any toxic byproducts before it's combined with the sewer system or recirculated onsite. Additional compliance and monitoring of the equipment and systems would need to be included, which can become an administrative burden for the City.

E. A hazardous materials plan would need to be developed with the Oakland Fire Department around reducing the risk of combustion from stock piles. Additional compliance and monitoring of the equipment and systems would need to be included.

16. With respect to emergency response planning and actual operations

a. What is the public safety/ combustion risk of coal?

Coal dust can be 2.5 microns or less in diameter (PM 2.5) are carries significant health risks as mentioned above. Coal is highly combustible and produces toxic smoke when burned. It would require venting and watering measures to reduce the risks to workers and neighborhoods. Yes, see answer to Question #2.

b. Does the transport, containment present the potential for catastrophic explosion or fire danger?

Yes. Recommend this be discussed with the City Fire Chief.

c. Are coal operations monitored by OSHA?

Unknown on the details of authority at this time; would need additional consultation.

d. How can ILWU concerns be addressed or mitigated?

See answer to Question #12 for some suggestions related to health effects of coal dust.

---

[i] For West Oakland zip codes 94607, 94608, 94609, and 94612, the overall rate of asthma ED visits is 1014.6 per 100,000 residents; the Alameda County rate is 531.8 per 100,000. The asthma ED visit rate for children (0-4 year-olds) is 1224.3 per 100,000 compared to the Alameda County rate of 929.0 per 100,000. Source: CAPE Unit, Alameda County Public Health Department/ Health Care Services Agency with data from California Office of Statewide Health Planning and Development (OSHPD), 2011-2013.

[ii] For West Oakland 94607, 94608, 94609, and 94612 the overall rate of asthma inpatient hospitalization is 206.8 per 100,000 residents; the Alameda County rate is 120.6 per 100,000. The childhood (0-4 year-olds) asthma hospitalization rate for West Oakland is 752.3 per 100,000; the county rate is 421.9 per 100,000. Source: CAPE Unit, Alameda County Public Health Department/ Health Care Services Agency with data from California Office of Statewide Health Planning and Development (OSHPD), 2011-2013.

[iii] For East Oakland zip codes 94601, 94603, 94605 and 94621, the asthma inpatient hospitalization rate is 265.0 per 100,000 residents; the county rate is 120.6 per 100,000. The childhood (0-4 year-olds) asthma hospitalization rate for East Oakland is 899.4 per 100,000; the county rate is 421.9 per 100,000. Source: CAPE Unit, Alameda County Public Health Department/ Health Care Services Agency with data from California Office of Statewide Health Planning and Development (OSHPD), 2011-2013.

[iv] Source: CAPE Unit, Alameda County Public Health Department/ Health Care Services Agency with data from Alameda County Vital Statistics, 2011-2013.

[v] http://media.oregonlive.com/environment_impact/other/AERMOD_Modeling_Morrow_vfin.pdf

[vi] http://www.atmos.washington.edu/jaffegroup/uploads/Jaffe_2014_trains_final.pdf

[vii] http://www.tonguerivereis.com/documents/draft_eis/chapters/Ch04_AQ.pdf

[viii] http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE_Retrospective_April2014.ashx?la=en

[ix] From US Department of Labor: https://www.osha.gov/dts/chemicalsampling/data/CH_228895.html, and the *NIOSH Pocket Guide to Chemical Hazards*, which is intended as a source of general industrial hygiene information for workers, employers, and occupational health professionals: http://www.cdc.gov/niosh/npg/npgd0144.html

[x] http://www.eastbayexpress.com/oakland/activists-work-to-stop-east-bay-coal-exports/Content?oid=4301720

[xi] Lac Megantic, Quebec crude oil train derailment resulted in 47 deaths, dozens of destroyed buildings, thousands of residents displaced in July, 2013: http://www.huffingtonpost.com/news/lac-megantic-explosion/

[xii] http://www.arb.ca.gov/toxics/dieseltac/de-fnds.htm

[xiii] http://www.sltrib.com/home/2425141-155/utah-coal-california-here-it-comes

[xiv] http://media.oregonlive.com/environment_impact/other/AERMOD_Modeling_Morrow_vfin.pdf

[xv] http://www.atmos.washington.edu/jaffegroup/uploads/Jaffe_2014_trains_final.pdf

[xvi] http://www.tonguerivereis.com/documents/draft_eis/chapters/Ch04_AQ.pdf

[xvii] http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE_Retrospective_April2014.ashx?la=en

[xviii] http://www2.oaklandnet.com/oakca1/groups/ceda/documents/report/oak042281.pdf

From: Lee, Anna, Public Health, OOD
To: Woo, Winnie
Cc: Cole, Doug
Subject: RE: Follow Up Questions on Coal"s Public Health and/or Safety Impacts
Date: Thursday, October 01, 2015 10:44:38 AM

Hi Winnie and Doug,

If we have answered some of these questions in our letter and oral testimony, do you still want us to respond to the questions, at least the ones that are relevant to our expertise? I'm sure you've gotten a lot of information and want to reduce redundancies.

Thank you,
Anna

Anna Lee
Local Policy Coordinator
Place Matters, Office of the Director
Alameda County Public Health Department
1000 Broadway, Suite 500
Oakland, CA 94607
anna.lee@acgov.org | Phone: (510) 267-8019
Like us on Facebook | Visit our Website

From: Woo, Winnie [mailto:WWoo@oaklandnet.com]
Sent: Tuesday, September 29, 2015 12:29 PM
Cc: Cole, Doug
Subject: Follow Up Questions on Coal's Public Health and/or Safety Impacts

Sending on behalf of Claudia Cappio.

Dear Interested Parties:

Thank you for the very informative oral and written evidence submitted to date as part of the City's September 21, 2015 Public Hearing on the public health and/or safety impacts and other impacts of the transportation, transloading, handling and/or export of coal products in/through the City of Oakland.

Although we are still reviewing the materials submitted before and during the hearing, we are requesting answers be provided to the attached list of questions, some of which are technical and/or legal in nature. Please provide responses **no later than Monday, October 5, 2015 at 4:00pm**. Please direct responses to **Douglas Cole, at dcole@oaklandnet.com**.

The attached letter, all responses received and the written materials submitted as part of the public hearing are (or will be) posted on the City's website at:

http://www2.oaklandnet.com/Government/o/CityAdministration/d/NeighborhoodInvestment/OAK038485

Winnie Woo
Executive Assistant
City of Oakland
Office of the City Administrator
One Frank H. Ogawa Plaza, Suite 301
Oakland, CA 94612
Tel: (510) 238-7798
Fax: (510) 238-2223

3) Response to Follow-up to Questions from the Environmental Protection Agency

From:	Gaudario, Abigail on behalf of Blumenfeld, Jared
To:	Cole, Doug; DL - City Council
Cc:	Grow, Richard
Subject:	EPA Comments regarding proposed Oakland Coal Terminal
Date:	Monday, October 05, 2015 3:52:11 PM
Attachments:	EPA Comments_Proposed Coal Export Terminal.pdf

Please see attached letter from U.S. EPA regarding the proposed Oakland Coal Terminal.

Abigail Gaudario
Office of the Regional Administrator
75 Hawthorne Street
San Francisco, CA 94105
(415) 947-4238

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

OCT 5 2015

OFFICE OF THE
REGIONAL ADMINISTRATOR

City Council President Lynette Gibson McElhaney
Oakland City Hall
1 Frank H. Ogawa Plaza
Oakland, CA 94612

Subject: Proposed Coal Export Terminal in Oakland

Dear Council President Gibson McElhaney and Councilmembers:

I am writing regarding the proposed coal export terminal in Oakland. Thank you for providing a hearing on September 21, 2015, to gather input from the community and for your commitment to evaluate information received as a result of the hearing.

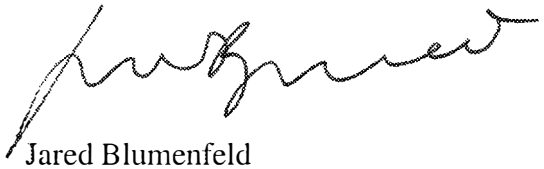
EPA has worked closely with the West Oakland community since the late 1990's. In 2002, EPA began facilitating a structured collaborative process to provide a forum for problem solving among the broad set of stakeholders involved in the revitalization of West Oakland. This effort was formalized in 2005 as the West Oakland Toxics Reduction Collaborative, and was quite active for several years, including participation by the Administrator of EPA in two of the Collaborative's meetings.

In January, 2000 EPA provided comments on the Environmental Impact Statement (EIS) prepared by the U.S. Army Corps of Engineers to assess the potential impacts that might result following transfer and reuse of the Oakland Army Base (OAB). While the EIS identified potential "significant adverse air quality effects," it did not address impacts associated with the proposed transport and export of coal. That EIS was prepared to comply with the National Environmental Policy Act (NEPA) and was finalized in 2001. I understand that subsequent additional environmental review documents were prepared to comply with the California Environmental Quality Act (CEQA). While the CEQA reviews did not consider coal transport and handling impacts, they nevertheless projected, after mitigation, "significant but unavoidable" air quality impacts. As you are likely aware, our agency and other environmental and public health agencies requested further discussion of mitigation plans to better address the remaining impacts. We do not anticipate additional review of this project unless there is another federal agency action subject to NEPA.

In recent years, coal handling and transport related projects proposed in other areas (Oregon and Washington) have required federal permits and associated reviews. We note that, while the specific facts may differ, the results of the analysis completed for these other projects may provide insight into the possible impacts of the proposed coal export terminal in Oakland. Please contact Richard Grow, EPA Region 9 Air Division, at grow.richard@epa.gov if you need assistance locating relevant environmental review documents to aid in your decisionmaking.

In support of our ongoing relationship with the West Oakland Toxics Reduction Collaborative, we encourage the City to consider public health and environmental impacts, as well as measures to reduce such impacts, when making decisions about possible future uses at the Port of Oakland.

Sincerely,



Jared Blumenfeld

cc: William O. Bresnick, DHS
Pattie Tom, DOT
Jack Broadbent, BAAQMD

DRAFT

Oakland Bulk and Oversize Terminal

Oakland, Alameda County, California

BASIS OF DESIGN

Volume 1

07/21/2015

CALIFORNIA CAPITAL & INVESTMENT GROUP

OAKLAND GLOBAL

PORT OF OAKLAND · OGC · OAKLAND GLOBAL LLC · CITY OF OAKLAND

"one vision, one team, one project"

HDR

OBOT

OAKLAND BULK AND OVERSIZED TERMINAL

ARCHITECTURAL DIMENSIONS

TERMINAL LOGISTICS SOLUTIONS (TLS)

BASIS OF DESIGN (BOD)

ER 1840

OAK 0004709

Terminal Logistics Solutions (TLS)
Basis of Design

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15. Notional Water Treatment Plant (Oakland Army Base Redevelopment Project Construction Dewatering Treatment Plant)
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16. Conceptual Drawings
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19. Wharf 6, 6 1/2, and 7 Oakland Army Base Structure Type Selection and Seismic Retrofit Report

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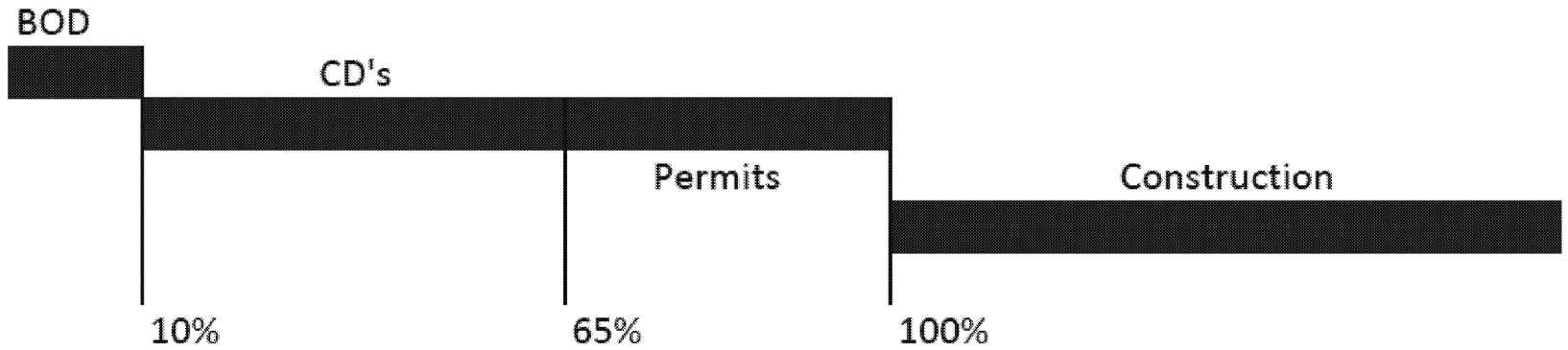
1. BX-903 and BX-904 Environmental Enclosure
2. BAM-1020 Operating Manual
3. SASS & SuperSASS PM Ambient Chemical Samplers
4. Dewatering Operations and Maintenance Manual

Basis of Design (BOD) Introduction

In general, a Basis of Design document is the first step in a project's design process. The BOD describes a project's operating environment and the desired project performance parameters. The operating environment includes the physical attributes and limitations of project location, available utilities, and regulatory constraints. The BOD leavens project purpose with environmental limitations and policy oversight. As illustrated in the graphic below, the BOD is the first step in the design process. The next phase in the design process will be design development (10% to 65%) which will be advised by and in coordination with the Terminal Logistics Solutions (TLS) operating plan which will be adopted by TLS prior to the final construction documents (as applicable) or prior to the award of any design build element or procurement package. Permitting/agency approvals to proceed to construction will be requested as the design progresses as proscribed by the permitting agencies. Permits to operate the project will be obtained before the project is put into operation.

In addition to the normal California regulatory regime of existing federal, state, and local regulations, the Terminal Logistics Solution (TLS) project must be designed, constructed, and operated within and in conformance to the Oakland Army Base Redevelopment program Standard Conditions of Approval /Mitigation Monitoring and Reporting Program (SCA/MMRP) requirements.



Project Development Process

Basis of Design

Oakland Bulk and Oversized Terminal

California Capital Investment Group

Preliminary Engineering

Port of Oakland, Oakland, CA
July 16, 2015

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Contents

Basis of Design
Oakland Bulk and Oversized Terminal

Tables

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1 Basis of Design

This establishes the definition of elements of the preliminary engineering design to achieve the production capacities desired by the owner and defines the basic infrastructure needs to operate the plant in the manner desired by the owner with respect to safety and environmental goals.

2 Project Definition

2.1 Title of Project

Oakland Bulk and Oversize Terminal (OBOT).

2.2 Background

Oakland Bulk and Oversize Terminal (OBOT)OBOT intends to re-develop the Oakland Army Base located within the Port Authority Outer Harbor in Oakland, CA. OBOT is responding to a general shortfall in trans-shipment capacity for the marine export of bulk products from the West Coast.

The Oakland Army Base Property covers approximately 135 acres. The leasable area of OBOT covers 20.31 acres, consisting of 12.45 acres of land area and 7.86 acres of wharf. The project property consists of warehouse storage and mostly paved and impervious concrete. OBOT has entered into a 60-year lease agreement with the City of Oakland to develop the site. Subsequently, OBOT has entered into a development agreement with Trans Logistics Solutions (TLS) to develop the OBOT. OBOT is the long-term lease holder and TLS will be a tenant of OBOT.

OBOT will develop the marine terminal based on a staged implementation approach. Design capacity will be 9 million tonnes per annum (Mtpa), with a stabilized throughput of 75% of design, or 6.3 Mtpa. The first stage (Stage 1) will develop the terminal overall capacity to approximately 6.3 Mtpa and include trans-shipment of Bulk Material Products.

2.3 Project Objectives

OBOT's objectives for this phase of the project are to create a terminal for the receipt by rail, storage and shipment of Commodity A and Commodity B as follows:

- Commodity A with a desired throughput of 5.0Mtpa.
- Commodity B with a desired throughput of 1.5Mtpa.
- There is a requirement for segregated storage to blend Commodity A.
- No requirement for segregated storage or blending of Commodity B.
- To commission the new terminal by the 1st quarter of 2018.
- Utilize proven technologies and modern design standards.
- Utilize Best Control Technology (BCT) to control or eliminate emissions.
- No lost time injuries or environmental breaches.

Basis of Design
Oakland Bulk and Oversized Terminal

3 General

3.1 Location

The property is located on the San Francisco Bay at the East end of the Bay Bridge in Oakland, California. The site can be found at 37.82°, -122.318° (Lat., Lon.).

3.2 Soils

There have been several geotechnical studies made available to HDR for review. These studies outline basic design data for a few different pile configurations, as well as slope stability under the existing wharves in non-seismic conditions. One of the documents identifies the potential seismic-induced liquefaction and lateral spreading hazards at this site and recommends further studies to determine the types of ground improvement methods necessary to mitigate these hazards, based on the configuration of the facility and tolerance to settlement and lateral displacement.

Reviewed studies are outlined below:

- Technical Memo – Dredged Slope Stability, Oct. 17, 2014, Kleinfelder: This memo summarizes the static stability of the slope beneath wharves 6, 6½, and 7 under proposed dredging to 50 ft. depth near the berth face. The report concludes that the stability of the existing slope can accommodate the proposed dredging, but specifically excludes the stability of the modified slope under seismic loading.
- Seismic Site Specific Horizontal Accelerations, Nov. 24, 2014, Kleinfelder: This memo provides site specific lateral seismic accelerations for CLE, DE and MCE earthquake hazard levels for Wharves 6, 6½ and 7. It does not provide information about liquefaction or lateral spreading potential of the site.
- West Gateway Terminal Preliminary Pile Capacity Geotechnical Memo, Oct. 28, 2014, Kleinfelder: This memorandum provides preliminary pile capacities for three different types of pile, based on a CPT performed on the upland side of the dock. These pile capacities are intended for preliminary design of the piled foundations supporting equipment and buildings on the upland side of the terminal. The pile capacities do not include any reductions for seismic induced liquefaction or lateral spreading.
- 65% Geotechnical Report, Oakland Army Base – Horizontal Development, Jun. 20, 2013, Berlogar Stevens & Associates: Memorandum with preliminary analysis and recommendations based on geotechnical explorations performed around the site. This memo identifies the liquefaction and lateral spreading hazards for the site and recommends further analysis to determine specific impacts on the proposed design of the facility.

3.2.1 Geotechnical Recommendations

Additional Geotechnical Recommendations to come.

3.3 Units of Measurement

The Imperial system of units will be used and is assumed to be the system of units used for design, fabrication and construction.

Material capacities will be given in metric tons (tonnes).

3.4 Service Life

Design lives for the various elements of the terminal are provided in Table 3-1.

Table 3-1. Service Life

System	Design Life
Major Equipment Structures (Shiploaders, Stackers, Conveyors, Reclaimers, Railcar Dumper, etc.)	30 years
Mechanical Components (Reducers, bearings, pumps, etc.)	60,000 hours
Structural Components	50 years
Marine Fender System	25 years

The design service life of equipment and structures relies on inspection, maintenance and repairs at regularly scheduled intervals. Major equipment such as shiploaders, stackers, reclaimers and railcar dumper will also require periodic major refurbishment for repairs to coating systems and other component upgrades that cannot otherwise be conducted during normal maintenance windows.

3.5 Safety & Access

The design, manufacture and installation of the required equipment shall be designed to comply with the regulations of the local, state and federal authorities having jurisdiction, as well as Occupational Safety and Health Administration (OSHA).

All platforms, stairs, handrails, walkways, ladders and accesses shall be specified to comply with the requirements of the local, state and federal authorities having jurisdiction as well as OSHA.

Mechanical components will be selected and designed to facilitate safe access for inspection, maintenance, disassembly and replacement.

4 Scope of Work

The specific scope of work for the OBOT Preliminary Engineering includes design of facilities and systems as follows:

- Site preparation including clearing, grading and ground improvements to strengthen existing soils and mitigate seismic-induced liquefaction and lateral spreading.
- Utility services (potable and process water, sanitary sewer, natural gas, and electricity).
- Fire protection systems.

- Access roads and equipment maintenance and circulation routes.
- Rail departure track from mainline railway, on-site operations and storage rail for unit train unloading and storage.
- Covered bulk material storage structures and foundations.
- Surfacing and structural design of storage pads, general site access and operations areas.
- Material handling equipment and foundations for railcar unloading, stacking, storage, reclaiming and ship loading.
- Administration, maintenance and operations buildings and associated foundations.
- Stormwater management facilities (retention/detention ponds, culverts, and ditches).
- Process water collection and treatment facilities.
- Marine structures, dock, mooring and fendering systems for loading ships.

5 Products

Products to be handled by the terminal are Commodity A and B. There is a requirement to blend Commodity A. The design for Commodity A blending is limited to two sources. The blending process is expected to be accomplished through reclaiming operations performed during ship loading. There are no requirements for the blending of the Commodity B, but each product handled will be required to have segregated storage.

The properties of materials handled at the facility are defined in Table 5-1.

Table 5-1. Material Properties

Properties	Commodity A	Commodity B
Bulk Density	48 lb/ft^3 (Volume Calculations) 55 lb/ft^3 (Mass Calculations)	59 lb/ft^3 (Volume Calculations) 78 lb/ft^3 (Mass Calculations)
Angle of Repose	35-38°	32-37°
Surcharge Angle	20-25°	20-25°
Moisture Content (Inherent)	12% (Inherent) 11% (Surface) 23% (Total)	0%
Maximum Lump Size	3 in	Granules
Corrosiveness	Not Corrosive	Not Corrosive
Abrasiveness	Extremely Abrasive	Abrasive
Special Handling Constraints	Very dusty, exhibits spontaneous combustion behavior, potentially explosive	Very dusty, hygroscopic

6 Throughput

OBOT intends to develop the marine terminal based in phases per Table 6-1.

Table 6-1. Terminal Throughput

Properties	(Estimated)
Commodity A	5.0 MMTPA
Commodity B	1.5 MMTPA

A preliminary spreadsheet simulation has been developed as a separate document.

7 Hours of Operation

The terminal will operate three 8-hour shifts a day, 362 days a year.

8 Marine

8.1 General

A new mooring and berthing system will be constructed at the existing wharf (Wharf 7) capable of handling Capesize vessels. The proposed mooring and berthing system will be independent of the existing wharf, and will utilize breasting dolphins with fender panels and mooring dolphins with quick release mooring hooks. The dolphins will utilize steel pipe piles with cast-in-place concrete pile caps. There will also be two in-water arc shaped runways to support the quadrant loaders, founded on steel pipe piles. The pivot point supporting the tail end of the quadrant loaders will be supported on piles driven within the footprint of the existing wharf. The pivot support structure will have an independent pile supported foundation and be isolated from the existing timber wharf structure.

8.2 Design Vessels

Design vessel information is provided in Table 8-1.

Table 8-1. Design Vessels

Specification	Handysize/ Handymax	Panamax	Capesize
Deadweight tonnage	25,000-50,000 DWT	60,000-80,000 DWT	180,000 DWT[1]
Length Overall (LOA)	630 ft.	965 ft.	1020 ft.
Beam	105 ft.	106 ft.	148 ft.
Loaded Draft (Max.)	39 ft.	46 ft.	51 ft.[1]
Dredging Depth	No Dredging	No Dredging	No Dredging[1]

[1] Capesize ships, due to the existing 51 feet of draft with no plans for dredging, will be lightly loaded to an approximate maximum of 130,000 tonnes.

8.3 Mooring operations

No mooring operations studies are proposed at this stage of the project and it is assumed that Capesize vessels can be moved into position to moorage facilities that will be designed to accept the design vessel.

8.4 Dredging

No dredging is proposed to increase the design draft conditions. However, maintenance dredging will be required to maintain the design draft at the berth.

9 Mechanical

9.1 General

Mechanical equipment will be selected based on modern material handling systems utilizing automation where reasonable to increase efficiency. Conveyance systems will be designed to Conveyor Equipment Manufacturers Association (CEMA) standards.

The mechanical systems will include:

- Railcar unloading equipment.
- Stacking, reclaiming and storage equipment.
- Conveyors for feeding, stacking and reclaiming.
- Ship loading equipment.

9.2 Railcar Dumpers

Requirements for the railcar dumpers can be found in Table 9-1.

Table 9-1. Railcar Dumper Requirements

Properties	Commodity A	Commodity B
Type	Bottom Dump	Bottom Dump
Railcars	North American Covered Hopper Cars[1]	North American Closed Top Hopper Cars
Gross Weight	130 tonnes	130 tonnes
Net Capacity	110 tonnes	110 tonnes
Number of Dumpers:	1	1
Railcar Positioning Method	Switching Locomotive or Indexer	Switching Locomotive or Indexer
Design Dump Cycle Time	See Simulation	See Simulation

[1] Removable, fiberglass covers

9.3 Conveyance

9.3.1 Troughed Belt Conveyors

Commodity A

Commodity A conveyors will be 48 or 84 in. equipped with 45° CEMA class C6 or E7 idlers, troughed fabric belts, electric drive units and remote gravity take-ups and a maximum angle of 15 degrees. Where practical, drive units will be located at ground level with vehicle access. All conveyors will be housed in fully-enclosed galleries with single sided walkways and designed with ample access to tail pulleys and other critical areas for maintenance.

Commodity B

Commodity B conveyors will be 48 in. equipped with 35° CEMA class C6 idlers, troughed fabric belts, electric drive units and remote gravity take-ups and a maximum angle of 15 degrees. Where practical, drive units will be located at ground level with vehicle access. All conveyors will be housed in fully-enclosed galleries with single sided walkways and designed with ample access to tail pulleys and other critical areas for maintenance.

9.3.2 Pipe Conveyors

Pipe conveyors will transport material from the railcar dumper to storage. The pipe conveyor will be ø23 in., equipped with electric drive units and gravity take-ups. The pipe conveyor will be of a self-carrying design that includes a single-sided walkway, top cover and expanded metal guarding along each side.

9.3.3 High-Angle Conveyors

High angle conveyors will be used to move material from the unloading pit to the pipe conveyors. The high-angle conveyors will be approximately 72 in. wide with 16 in. tall side walls equipped with electric drive units, automatic take-up and will be fully enclosed.

9.4 Contaminated Material

Contaminated product diverters will be included to remove material from the reclaim belts, between the storage buildings and shiploaders.

9.5 Storage

9.5.1 Commodity A

Material will be stored in a series of covered longitudinal stockpiles. Stacking to the longitudinal stockpiles will be accomplished by the use of an overhead conveyor and tripper.

The Commodity A storage capacities are:

1. Pile 1 105,000[1] tonnes total
   105,000[1] tonnes live

2. Pile 2 75,000[1] tonnes total
   75,000[1] tonnes live

Material will be manually reclaimed from the longitudinal stockpiles by dozers into a series of dozer traps.

[1] In the case of segregated storage piles within the storage building, storage building 1 will have an estimated capacity of 84,000 tonnes, building 2 will have an estimated capacity of 55,000 tonnes.

9.5.2 Commodity B

Material will be stored in a concrete storage dome(s). The storage dome(s) will be filled from the top and include a dust collection system.

The Commodity B storage capacities are:

1. Dome 1 60,000 tonnes total
   50,000 tonnes live

Material will be reclaimed from the storage dome(s) by gravity onto a series of reclaim conveyors in above ground tunnels underneath the dome(s).

9.6 Sampling

9.6.1 Commodity A

Three-stage automatic sampling will take place on the outgoing product flows at the East shiploader.

9.6.2 Commodity B

Automatic sampling is not required for the Commodity B system.

9.7 Shiploading

9.7.1 Commodity A

Shiploading will be accomplished with the use of dual telescoping quadrant shiploaders. Each shiploader will be equipped with loading spoons for hatch trimming. The shiploaders will be design to accommodate wash down of system between shipments.

9.7.2 Commodity B

Shiploading will be accomplished with the use of a fixed, shuttling, slewing shiploader, utilizing a cascade type loading chute.

9.7.3 Shiploader control

Shiploaders will be controlled by remote control boxes from the decks of the ships, with backup control stations located on the shiploaders.

9.7.4 Shiploader Chute/Spout Maintenance

Over the dock access will be provided for cleaning and maintaining loading chutes and spouts.

9.8 Dust Control

9.8.1 Commodity A

Dust will be controlled by:

- Dry fog and/or water sprays at the covered railcar dumper building.
- Covered bulk material storage buildings.
- Enclosed transfers.
- Enclosed/Covered conveyors.
- Dry fog and/or water sprays at transfer points and stockpiles.

9.8.2 Commodity B

Dust will be controlled by cartridge style, pulse-jet, dust collectors or bin vents:

- Unloading boots, enclosed hopper and dust collection at the covered railcar dumper building.
- Enclosed storage domes with dust collection.
- Enclosed conveyor transfers.
- Covered conveyors.
- Dust Collection at transfer points and shiploader, as required.
- Dust collectors will be provided with rotary air locks.

10 Structural

10.1 General

Structural design and development of loads will be based on the California Building Code and ASCE 7. It is anticipated that soil conditions will require ground improvements and pile supported foundations for all major equipment and storage buildings to mitigate settlement and seismic hazards associated with liquefaction.

Design of the marine structures will be in accordance with ASCE/COPRI 61-14 and utilize non-linear seismic analysis methods in the detailed design phase. It is assumed that any construction activities utilizing or affecting the existing wharf will be further investigated, and may include the need for a structural condition assessment and analysis of the existing elements for the temporary loads associated with mobile crane outriggers and any other construction loads. It is also anticipated that some lighter structures may be supported directly by the existing wharves which could potentially require wharf repairs depending on the outcome of the condition assessment.

10.2 Live Loads

The vehicular/access lanes of the dock and trestle will be designed to an HS20-44 highway load, or a 20T mobile crane (whichever controls based on span length). Conveyor galleries and access platforms will be designed for a 60psf live load.

10.3 Wind Loads

Design wind speed: V_{ult}=110 mph (Exp. C, Risk Category II) per Figure 1609A of the California Building Code.

10.4 Vessel Loads

Mooring and berthing loads for the dock and fender system will be based on Capesize vessels (Approximately 180,000 DWT) Mooring and spring line loads for detailed design will be based on specialized mooring analysis software (OPTIMOOR or similar).

Berthing loads for the fender system and breasting dolphins will assume a vessel approach speed of 0.50 fps (normal to the berth face) and 10 degree approach angle.

10.5 Seismic Loads

Seismic design of the upland structures and foundations will be based on the International Building Code (IBC) and ASCE 7. The following site-specific design parameters were included in the 65% geotechnical report by Berlogar Stevens & Associates listed in Section 3.2:

- S_s: 1.5
- S_1: 0.6
- S_{MS}: 1.35
- S_{M1}: 1.44
- S_{DS}: 0.9
- S_{D1}: 0.96

**Above seismic parameters based on Site Class 'E'*

Seismic design of the marine structures will be based on the performance-based analysis methods of ASCE/COPRI 61-14. The three seismic performance levels will be as follows:

- Operating Level Earthquake (OLE):
  - 1 in 72 year event (50% probability of exceedance in 50 years)
- Contingency Level Earthquake (CLE):
  - 1 in 475 year event (10% probability of exceedance in 50 years)
- Design Earthquake (DE):
  - 2/3 of Full Maximum Considered Earthquake (MCE); MCE defined as (2% probability of exceedance in 50 years) per ASCE 7

11 Electrical and Controls

11.1 Electrical

Utility electrical power will be delivered to the site by two independent 12.47kV three-phase systems owned by the Port of Oakland or PG&E. At the Point-of-Delivery on the site, utility power will be received at main service electrical room with metering and isolation/protection. Electrical power will be distributed on site at 12.47kV three-phase in an open-loop system (site electrical distribution loop) to area electrical rooms located throughout the site.

Each area electrical room will distribute electrical power to equipment, motors, lighting etc. through unit substation transformers that will step down the voltage to service voltages required.

Electrical Shore Power and Communications will be provided at a vault mounted on the wharf to interface with docked ships, allowing them to connect to the electrical grid (cold ironing).

Power and control cable will be jacketed armored cable suitable for heavy industrial environments. Non-armored cable may be used where installed in cable duct or other enclosed raceway. Cables will be distributed in cable tray where possible.

Uninterruptible Power Supplies (UPSs) will be used to power the Site Control System, select lighting and other services required to be in service after the loss of electrical power.

Drives for conveyors and selected other equipment will include AC motors controlled by Variable Frequency Drives (VFDs).

Generators will be used as the back-up or emergency power source for services that are required to be in service under loss of electrical power, which are too large for a UPS system.

LED lighting will be the primary technology used for lighting throughout the site.

11.2 Controls

The Site Control System will be based on a PLC/SCADA system. A dual-redundant hot backup processor system will be used for the PLC. The SCADA system will provide a graphical and data analysis interface for operation.

The PLC system will utilize remote input/output racks closed to the field instruments, devices and final control elements. The control system will communicate via Ethernet over fiber optic cables to remote racks.

Input/output (I/O) devices will be 4-20mA for analog signals, 24VDC or 120VAC for discrete (on/off) signals. Specialty devices such as RTDs to measure temperature will use RTD signal directly to the PLC I/O.

The SCADA system main Graphical User Interfaces (GUIs) will be located in a Central Control Room located at the Administration Building. Operator Interface Terminals (OITs) will be provided at site area locations where required.

Control will be either Remote or Local. Remote control is operational control through the PLC/SCADA system via the GIUs or OITs. Local control is manual control through Local Control Panels (LCPs) that may include pushbuttons, selector switches, pilot lights, drive interface terminals, etc.

Major equipment, for example shiploaders, may have on-board, stand-alone control systems. These control systems will be specified to be compatible with the Site Control System. Communications to stand-alone equipment will be Ethernet over fiber optic cable. The Site Control System will monitor and/or provide supervisory control through the communications link. Exceptions would be any emergency signals that would require hard-wiring.

The rail unloading facilities will have an independent control system. This system will be compatible with and linked to the downstream control system. Only when the downstream control system is configured for material transfers, and verified, will the rail unloading system be allowed to initiate transfers.

12 Infrastructure

12.1 Rail Systems

A rail system, designed to meet with BNSF and UP Industrial Track Standards will be used for receipt and processing of unit trains. There will be an arrival and departure spur from the mainline to the facility. Unit trains will be processed in approximately 26-car segments through discharging into a below grade dumping pit and conveyance system. The 26-car segments will be pulled or pushed through the dumping stations either by a switching locomotive or an indexer, which will be evaluated during preliminary engineering.

12.1.1 Train and Railcar Data

The design calls for incoming trains of 104 railcars to be split in and handled on 26 railcars “ladder type” storage tracks. Commodity A railcars are expected to be bottom dump aluminum construction, closed top hopper cars, with gross weight of 130 tonnes, cargo capacity of approximately 110 tonnes. Commodity B railcars are expected to be steel construction, closed top, bottom dump hopper cars, each with approximately 90 tonnes of cargo capacity.

Commodity A cars will be bottom hopper, rapid discharge style cars, with removable, fiberglass covers.

Commodity B cars will be 60 ft. long, closed top hopper cars. Variable configurations and numbers of hoppers are anticipated. The Commodity B cars will be unloaded in a stationary position. Pneumatic gate opening/closing devices will be used.

12.2 Site Preparation

12.2.1 Clearing and Grubbing

Clearing, grubbing and top soil stripping is to be done only where required leaving as much of the existing vegetation as practicable. The design will:

- Establish vegetation clearing, grubbing, and over-stripping requirements.
- Determine the applicable regulations and restrictions for disposal of materials through discussions with appropriate authorities.

12.2.2 Temporary Spill Containment and Erosion Control

The design will:

- Establish the regulations surrounding the disposal of site runoff into off-site water courses through discussions with the appropriate authorities.
- Provide the necessary containment facilities for products of erosion and oil spills originating from construction activities and equipment operation, etc.
- Provide appropriate best management practices to treat site runoff and prevent siltation of natural water courses.

12.2.3 Ground Improvement

Ground improvements will be based on Geotechnical Engineers recommendations, it is assumed that some type of ground improvement will be required for the Commodity A storage building for support of the Commodity A stockpile. An appropriate recommendation for the type and extent of ground improvement will be determined, after additional geotechnical studies, during detail engineering.

12.2.4 Demolition

Demolition is being done by the Owner and is assumed to be completed prior to the start of site work

12.2.5 Earthworks

Re-grading of the site to create appropriate base grades for the new facilities. It is assumed that grading will be driven by the requirements of operations of the new facilities and other design constraints rather than trying to achieve an earthwork balance.

The design will establish the approximate extent of excavation, import and export required in accordance with the recommendations of the Owner's Geotechnical Engineer. Surplus material will be disposed of as directed by the Owner's representative. Disposal of contaminated soil is not anticipated.

12.2.6 Hazardous Materials

The site may contain toxic or hazardous materials. If present, these materials and subsequent mitigation strategies will be established by others, with a specific focus on

determining areas of potential soil contamination and establishing the nature and extent of remediation required.

The design will assume no hazardous materials findings.

12.3 Surfacing

The design will account for surfacing materials in and around the new facilities to allow for the movement of personnel and equipment, and to direct surface runoff water away from facilities to drains and ditches. In general, the surfacing will include:

- Pavement where vehicular or access ways warrant.
- Gravel for pedestrian paths and maintenance areas.
- Grass or vegetation for low use areas and landscaped areas.

12.4 Roads/Vehicular Access

The design will specify on-site access roads that connect buildings and maintained facilities. Roads will be designed in accordance with the following specifications:

- Maximum grade: 10%
- Minimum centerline radius: 50 ft.
- Minimum traffic (traveled way) width (2 lanes): 16.5 ft.
- Minimum vertical clearance: 16 ft.
- Cross slopes: 2%

Pavement thickness design is to be provided by Owner's Geotechnical Engineer. Additional turning radii accommodations for large delivery equipment and mobile maintenance equipment may be considered for access ways depending on operations requirements identified to the Engineer by the Owner.

12.5 Site Drainage

Site drainage for stormwater surface runoff will be facilitated through the use of stormwater management facilities that could include open channel and underground gravity conveyance systems, stormwater pump stations/force main systems, and stormwater detention/infiltration and treatment systems. The design will establish the appropriate methodologies for sizing stormwater management facilities based on local requirements for stormwater quality and flow control.

Low Impact Development (LID) techniques will be considered for accomplishing local stormwater quality and flow control standards. LID techniques may include reducing impervious surfaces where practical and utilizing infiltration where feasible as determined by the Owner's Geotechnical Engineer. Excess stormwater will discharge through an approved and permitted outlet. Opportunities for storing and reusing stormwater for process or dust suppression may be considered depending economic feasibility.

The drainage design will evaluate and select best management practices for site specific source controls where appropriate. Process water contacting bulk materials or used for facility maintenance will have drainage collection systems separate from stormwater runoff collection facilities. Bulk materials handled on site will be covered in storage buildings and enclosed/covered conveyors to provide environmental protection during material transfers.

12.6 Water Systems

The design will include water systems for Potable Water, Process Water, and Fire Water.

- Potable Water will be sourced by a metered connection from the local purveyor. All pipe and materials for the potable water system will conform to requirements of the local purveyor and health authority. Potable water supply and metering for arriving ships will be provided.
- Process Water will be sourced from potable water by an approved backflow prevention device. Process water may also include treated water from onsite recycling operations and from collected stormwater where connected internal to the process water system and protected by backflow prevention device.
- Fire Water will be sourced from potable water following an approved backflow prevention device.
- The design of all water mains, including those not designed to provide fire protection, will be subject to hydraulic analysis and sized based on flow demands and pressure requirements.

12.6.1 Materials

Pipe, fitting, valve and fire hydrant materials will conform to the latest industry standards and local requirements. Plastic pipe may not be used in locations with potential exposure to petroleum products.

Packing and jointing materials will meet applicable standards. Pipes having mechanical joints or slip-on joints with rubber gaskets are preferred. Normally:

- Cement mortar-lined, push-on joint, ductile iron will be used for areas subject to mostly truck traffic and heavier, off-road wheel loads, or where cover is less than 3 ft.
- C900 polyvinyl chloride pipe will be used elsewhere, to a maximum 12 in. diameter.
- Galvanized Steel Pipe Schedule 40 will be used for process water.

12.6.2 Valves

- The design will provide shut-off valves on water mains to provide appropriate shut down for maintenance and operations activities.
- The design will provide means of removing air, such as hydrants or air relief valves, where air can accumulate at high points within water mains.
- A combination air/vacuum relief valve will be provided at the crest (highest) point of the water main.

12.6.3 Cross-Connections and Inter-Connections

The design will not connect the water distribution system to any pipes, pumps, hydrants or tanks that may contain unsafe water or other contaminating materials and that may be discharged or drawn into the distribution system.

12.7 Vacuum Systems

Locations in the facility that handle Commodity B will be equipped with vacuum collection headers to allow for dry clean up of fugitive materials. These vacuum systems will consist of hose connections in process areas that connect to a main header leading to a vacuum-truck accessible location.

12.8 Fire Protection

12.8.1 General

The fire protection system will be designed, installed, tested and inspected to NFPA standards. Materials and equipment used in the fire protection system will meet Underwriters Laboratory and Factory Mutual requirements.

The local fire authority will approve the final design, equipment selection, and layout of the fire protection system.

12.8.2 Piping, Fire Hydrants and Hose Cabinets

Fire protection system water mains will conform to NFPA 24, with a minimum size of NPS 6, a minimum operating pressure of 55 psi, and a pressure drop as described in NFPA 24.

The design will specify approved fire hydrants where required by code. In accordance with NFPA 307, fire hydrants will be located no closer than 40 ft. from any major building, at intervals no greater than 300 ft., no less than 150 ft. from a dead head, and such that each facility is within reach of at least two hydrants. The hydrant opening size will be 2.5 in. and the most remote hydrant will have a minimum residue pressure of 20 psi with a minimum flow rate of 1000 gpm.

12.9 Wastewater Systems

The design will include water systems for Sanitary Waste Water and Process Waste Water.

- Sanitary Waste Water will be discharged to the sewer system operated by the local purveyor and will comply with the permit regulations associated with discharge. All pipe and materials for the Sanitary Waste Water system will conform to requirements of the local purveyor and health authority.
- Process Waste Water will be conveyed to an onsite treatment facility for either recirculation onsite as Process Water or for discharge as appropriate, either as stromwater or sanitary wastewater.

- The design of all wastewater mains will be subject to hydraulic analysis and sized based on flow demands and pressure requirements.
- Underground wastewater pipelines will be designed with at least 3 ft. of cover.

12.9.1 Pipe Materials

The design will use the following pipe materials, which will be selected to suit the physical and chemical properties of the liquids they convey:

- Fiberglass reinforced plastic pipe: Pipe lengths will be joined using bell-and-spigot joints or a butt-and-strap technique. Bell-and-spigot pipe joint gaskets will be made of appropriate synthetic materials to suit the liquid being carried by the pipe.
- High-density polyethylene pipe: Pipe lengths will be joined using butt fusion methods or flanges.
- Polyvinyl chloride pipe: Pipe lengths will be joined using bell-and-spigot gasketed joints or solvent welds.
- Stainless steel (SAE grade 304) or epoxy-lined and coated mild steel pipe (for exposed pipelines): Pipe lengths will be welded or joined using flanged or Victaulic couplings.
- Sewer pipelines will be designed with at least 2 ft. of cover below sub-grade where they pass under heavily traveled roads.

12.9.2 Force Mains

Force mains will be designed to maintain a minimum fluid velocity of 3 ft/s and a maximum velocity of 11.5 ft/s. Force mains will aim to rise continuously toward an outlet without local high points. An automatic air relief valve will be provided at each high point in the force main to prevent air locks.

A combined air/vacuum relief valve will be provided at the crest (highest point) of each force main. Force mains will enter the gravity system at a point not higher than 2 ft. above the flow line of the receiving manhole.

12.9.3 Water Pumping

Pumps shall be provided for locations where pumping is required.

Submersible pumps shall be used where possible and designed to handle slurry flow with a solid weight concentration of up to 1%.

Pumps shall be controlled by level instruments and preference shall be given to pumps that can run dry.

12.10 Cable Trenches

It is assumed that duct banks will convey main underground systems outside of areas where they can be conveyed by above ground structures on cable trays.

12.11 Security and Fencing

To the west side of the facility is a public access area. There will be fencing and screening placed along this area to provide control access and provide visual separation.

12.11.1 Parking

Parking for ILWU, administrative staff and visitors will be provided outside of secure facility.

12.12 Office and Maintenance Facility

There will be an administration/maintenance building located between the entrance and the stockpile area. The administration/maintenance building will be approximately 7,500 ft^2.

12.13 Dock Office

An approximate 200 ft^2 dock office with Internet, Ethernet, HMI and phone access.

12.14 Gangway Access

Gangway access to provide safe access to all ships will be provided.

12.15 Operating and Maintenance Vehicles

Mobile equipment such as forklifts, wheel loaders, boom trucks, welders, service trucks, pickups, and light utility vehicles are assumed to be required, but will be specified and provided by the terminal.

Office: 510-908-6270
Fax: 510-338-6306

September 8, 2015

Ms. Sabrina Landreth, City Administrator
CITY OF OAKLAND
1 Frank Ogawa Plaza
Oakland, California 94612

RECEIVED
9/8/15

Ms. Landreth,

Consistent with our letter to Mayor Schaaf (copy enclosed) we look forward to continued partnership with the City.

In furtherance of that relationship we are providing a copy of our basis of design package for inclusion in your city staff report for the upcoming hearing we have recently learned of. An electronic version is available at http://www.tlsoakland.com

TLS entered into an Exclusive Negotiating Agreement with OBOT in April 2014 to lease, construct purpose built bulk facilities, and operate the same at the Berth 7 facility at the Former Oakland Army Base.

In November of 2014 we entered into a lease option agreement with OBOT with an anticipated lease take down effective October 17, 2015.

We have solicited a large number of beneficial cargo owners, traders, brokers for their business representing over 20 different commodities. Each is dependent on the class I Railroads ability to allocate rail capacity and service to meet the export demand. We have not executed any commodity contracts as of this date but have enough commitments far enough along to proceed as planned.

As one might expect this is a busy time for us as we conclude our due diligence, financing, and prepare to take of basis of design forward to working drawings for permits prerequisite to operations.

Sincerely,

Jerry A. Bridges
President & CEO

Terminal Logistics Solutions
300 Frank H Ogawa Plaza, Suite 430 ● Oakland, CA 94612

July 15, 2015

The Honorable Mayor Libby Schaaf
One Frank H. Ogawa Plaza
3rd Floor
Oakland, CA 94612

Re: World Class Multi-Commodity Bulk Terminal

Dear Mayor Schaaf:

First, thank you for your time and for your forthright comments as you have expressed both your support for and your concerns about this potentially transformational project. Furthermore, thank you for providing us the opportunity to inform you, not only about the unique features (as measured against any terminal anywhere in the world), of our state-of-the-art multi-commodity bulk terminal facility, but about the misconceptions and disinformation that have apparently resulted in such opposition to what should be universally viewed as a win-win economic driver for our city.

You, other elected officials, and the citizens of Oakland at large have long awaited the promise of great economic benefits that would emanate from the optimized development of the Oakland Army Base. Terminal Logistics Solutions, LLC ("TLS") takes its role as the "Deliverer" on that promise, with the utmost seriousness.

To that end, TLS is in the process of investing over $250 million to make those benefits a reality and to generate (i) a construction payroll of $76 million, and (ii) annual and induced payrolls of $120 million, for the proposed 66 year life of the project (escalated by inflation). Upon completion, the Port of Oakland will solidify its' position as the economic engine to drive Oakland's economy forward for decades to come. The mission statement of our project is *"A Terminal to Feed, Clean and Power the World"*. We believe Oakland is the ideal location to build and operate such a best-in-class facility, and a huge driver in our design and operating strategy is to be the most environmentally sensitive and responsible multi-bulk commodity terminal in the world.

TLS proposes to build and operate its marine Terminal to receive multiple commodities from various parts of the Western United States via single line rail services provided by the Union Pacific and BNSF Railroads. To be economically viable, we must be able to transload raw materials such as corn, soy beans, borax, iron ore, pot ash, soda ash, and yes, coal. The first manifestation of our commitment toward unparalleled environmental responsibility is our mandate that these various commodities would be transported from their points of origin in newly designed covered railcars to our Terminal, and then transferred via a completely covered and contained system of domed storage and fully encapsulated conveyors to ships bound for other parts of the world. Our preeminent concern regarding the acceptance and handling of all commodities is the mitigation and elimination of fugitive dust such that ambient air quality would actually improve as a result of our operations, as further described below.

You candidly expressed your concern relating to the health and safety of the community vis-à-vis the inclusion of coal as one of our exported commodities. From the inception of this project, we have analyzed ports throughout the world, as well as here in West Oakland, where multiple commodities, including coal, may have been irresponsibly transported, handled and loaded. The awareness gained therefrom, regarding environmental stewardship (or the lack thereof), has actually served as a base line for our investment in designing our state-of-the-art marine Terminal and operation in a way that would actually improve the local environment and reflect our commitment to enhancing our community and the quality of life of all of its residents.

Having served as the Executive Director of the Port of Oakland, I want to express to you now, and to the entire City Council that I am personally committed and will hold myself and all TLS staff and operations to the highest possible standards of not only environmental responsibility but, overall safety, efficiency and productivity. Our steadfast commitment will be to benefit the entire community of Oakland without sacrifice.

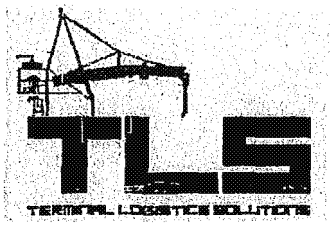
I seek to assuage your concerns regarding any perceived or alleged negative impact of the TLS operations as follows:

- First, be assured that the Terminal we are designing and plan to operate will meet or exceed ALL California Environmental Quality Act (CEQA) requirements. We will comply with Air Quality Monitoring requirements as established by the Bay Area Air Quality Management District and air quality monitors will be on site.

- TLS will NOT use nor allow open or uncovered rail cars to be used as a part of its operation. All rail cars will be covered from point of origin to and from our Terminal, protecting all communities along the transit route from any possibility of fugitive dust. This will eliminate fugitive dust and debris blowing off the train as it travels to or from our Terminal.

- TLS will use covered bottom-release rail cars designed to release the commodities, including coal, into a deep underground transfer compartment with dust collection systems installed for total dust mitigation.

- TLS will employ enclosed and covered conveyance systems that will transfer all commodities to covered and enclosed state-of-the-art storage facilities on the site. The commodities will be transferred and conveyed from those storage facilities via an encapsulated system designed to transfer the commodities *directly* into waiting ships. All commodities will be loaded onto the vessel using enclosed, state-of-the-art shiploaders with dust control/collection technology.



- No unsightly piles whatsoever (much less "mountains") of commodities will be seen; no bulldozers pushing, loading or unloading commodities from one site to another. We are designing and will use enclosed dome technology for storage of the commodities until actually transferred to a ship.

- TLS will use its reasonable commercial efforts to encourage other bulk commodity terminal operators to implement processes and procedures that mirror our operations here in Oakland.

Hopefully the above delineated commitments demonstrates the zero negative impact our operation would have on the local community, to your complete satisfaction.

Finally, regarding the notion of the City of Oakland as a transporter of a commodity that would "increase pollution and the global carbon footprint," the coal TLS is considering would emanate principally from Utah with smaller amounts from neighboring Western Bituminous states and would be "Compliance Coal". Compliance Coal is defined, pursuant to Phase II of the *Clean Air Act Amendments,* as "any coal that can be burned without pollution abatement equipment and emit less than 1.2 lbs. of sulfur dioxide per million BTU's." This product is also known as "low sulfur coal". Because of the unusually high heat value and low sulfur content of this Western Bituminous coal, it is among the cleanest burning coals in the world.

Thus, to the extent TLS were to secure contracts to transload this Utah based Compliance Coal, we would actually facilitate the supplanting of much dirtier (higher sulfur) coal such as lignite, or worse in some instances, wood, animal dung, and highly polluting feedstock that is burned, particularly in emerging countries around the world. As such, ironically enough, the City of Oakland would not only play a role in reducing pollution in those countries, but because of the efficient and clean burn (high heat) of the Western Bituminous Compliance Coal, would also play a role in reducing the global carbon footprint.

You have our absolute pledge to meeting each of the above enumerated operating standards, as they apply locally as well as globally. As designed, if allowed to operate without interference, the Terminal proposed by TLS will be financially successful generating significant revenues to be shared with the City of Oakland as a part of its master lease agreement terms. Jobs will be created and ancillary businesses, necessary to support such a massive undertaking as this Terminal will emerge and generate further economic benefits, growth and development for our city. This project can and will become the extraordinary economic engine for our community we both seek.

TLS is already making substantial investments of time, energy, and resources with a relentless sense of civic and corporate responsibility that will result in alliances with the local community to promote economic development and growth while improving the quality of life in Oakland and the communities in which we operate.

Technology, cooperation, and our commitment to do the right thing provides an opportunity for Terminal Logistics Solutions to deliver a project for Oakland that is truly innovative and a model for the nation. We view this project as an opportunity for you and the City of Oakland to be a leader and a model of how to use innovative technology, community programs and external partnerships to create solutions to environmental challenges. We are committed to designing a model project of which we can all be proud.

Respectfully,

Jerry A. Bridges
President & CEO