



NATURAL RESOURCES DEFENSE COUNCIL

June 21, 2011

Union Pacific Railroad
1400 Douglas Street
Omaha, NE 68179

BNSF Railway Corporate Headquarters
2650 Lou Menk Drive
Fort Worth, TX 76131-2830

Re: 90-Day Notice of Intent to Initiate Action Under the Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901 *et seq.*

Dear Union Pacific Corporation, Burlington Northern Santa Fe, LLC, and BNSF Railway Company:

This letter provides notice to Union Pacific Corporation ("UP") and to Burlington Northern Santa Fe, LLC, and BNSF Railway Company ("BNSF") under 42 U.S.C. § 6972(b) of the intent of East Yard Communities for Environmental Justice, the Center for Community Action and Environmental Justice, and the Natural Resources Defense Council, for themselves and on behalf of their members who live or work near the rail yards identified below, or who are affected by the rail yards' improper disposal of solid wastes, to file a complaint under the Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901 *et seq.* ("RCRA"), to remedy the imminent and substantial endangerment to public health and the environment caused by disposal of arsenic, cadmium, nickel, inorganic lead, antimony compounds, beryllium compounds, cobalt compounds, manganese compounds, mercury compounds, phosphorus, selenium, and other compounds onto the land and into water while attached to or associated with diesel particulate matter (collectively referred to as "diesel particulate hazardous waste" or "diesel PM") that the rail yards are allowing to be disposed of through their operations. Unless we are confident that the rail yards have eliminated the substantial and imminent endangerment to public health and the environment caused by such disposal, we will file suit in federal court after 90 days have expired from the date of this letter.

The California Rail Yards Subject To This Letter

Here is a list of the rail yards that are the subject of this letter:

UP Dolores
UP ICTF
UP Commerce
UP Roseville
UP Oakland
UP LATC
UP Colton
UP Industry
UP Stockton
UP Mira Loma

BNSF Hobart
BNSF San Bernardino
BNSF Commerce
BNSF Stockton
BNSF Watson
BNSF Richmond
BNSF Barstow

The Rail Yards Emit Dangerously High Levels of Diesel Particulate Hazardous Waste

Diesel particulate hazardous waste emanating from operations at the rail yards listed above are exacting a huge toll on local residents and the environment. “Particulate matter” (“PM”) is the generic term for a type of pollution that consists of varying and complex mixtures of solid and liquid particles discharged into the air¹ and deposited onto land and water.² Diesel particulate matter (“DPM”) is formed when diesel fuel is combusted.³ Particulate matter that is less than 10 microns in diameter is referred to as “PM₁₀”; particulate matter less than 2.5 microns in diameter is referred to as “PM_{2.5}”; and particulate matter that is less than 0.1 microns is referred to as “ultrafine”.⁴ As a point of reference, a human hair is 50 to 70 microns in diameter.⁵ The small

¹ U.S. Environmental Protection Agency’s particulate matter research website:

<http://www.epa.gov/airsience/quick-finder/particulate-matter.htm>

² U.S. Environmental Protection Agency (2009) “Integrated Science Assessment for Particulate Matter (Final Report)”, pp 3-14 to 3-20 and p 9-167, available online at:

<http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=216546>

³ U.S. Environmental Protection Agency (2002) “Health Assessment Document for Diesel Engine Exhaust”, p 1-1, available online at:

<http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=29060#Download>

⁴ U.S. Environmental Protection Agency (2009) “Integrated Science Assessment for Particulate Matter (Final Report)”, p 3-1, available online at:

<http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=216546>

size of DPM particles, comprised mostly of PM_{2.5} and ultrafine particles, allows them to be inhaled deeply into the lungs where they can be absorbed into the bloodstream.⁶⁻⁷ Also, these particles have a relatively large surface area which makes them an excellent medium for adsorbing solid organic compounds, including heavy metals and polycyclic aromatic hydrocarbons, many of which may have carcinogenic and other negative health effects on humans.⁸

As part of a Memorandum of Understanding entered into between the California Air Resources Board (“CARB”), BNSF and UP in 2005, CARB committed to produce health risk assessments of the major BNSF and UP rail yards in California. The resulting reports can be found at: http://www.arb.ca.gov/rail_yard/hra/hra.htm and are summarized below. The reports focused on the extra cancer risk caused in rail yard-adjacent communities as a result of the rail yards’ operations. Using the relatively generous metric of an excess risk of 10 in a million, the CARB studies found that over 1.8 Californians are at risk because of rail yard operations. Here is the CARB breakdown by rail yard at the 10 in a million excess risk level:

UP Dolores/ICTF:	309,000
UP Commerce:	187,000
UP Roseville:	140,000
UP Oakland:	130,000
UP LATC:	96,000
UP Colton:	60,000
UP Industry:	57,000
UP Stockton:	19,600
UP Mira Loma:	7,900
BNSF Hobart:	552,000
BNSF San Bernardino:	187,600
BNSF Commerce:	32,100
BNSF Stockton:	17,000
BNSF Watson:	12,600
BNSF Richmond:	6,200
BNSF Barstow:	6,100

⁵ U.S. Environmental Protection Agency’s particulate matter research website:

<http://www.epa.gov/airscience/quick-finder/particulate-matter.htm>

⁶ U.S. Environmental Protection Agency (2002) “Health Assessment Document for Diesel Engine Exhaust”, p 1-1, available online at:

<http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=29060#Download>

⁷ U.S. Environmental Protection Agency (2009) “Integrated Science Assessment for Particulate Matter (Final Report)”, p 5-17 to 5-18, available online at:

<http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=216546>

⁸ U.S. Environmental Protection Agency (2002) “Health Assessment Document for Diesel Engine Exhaust”, p 1-1 to p 1-2 for a summary and Chapters 4 and 5 for a detailed discussion available online at: <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=29060#Download>

Rail Yard Emissions Present an Imminent and Substantial Endangerment to Public Health and to the Environment

The RCRA hazardous wastes which the rail yards are allowing to be disposed of through their operations have well-documented, serious effects on human health and the environment. The following bullets are EPA's assessment of some of the human health impacts that result from some of the constituents of diesel particulate hazardous waste:

- *Lead*. "Lead is a very toxic element, causing a variety of effects at low dose levels. Brain damage, kidney damage, and gastrointestinal distress are seen from acute exposure to high levels of lead in humans. Chronic exposure to lead in humans results in effects on the blood, central nervous system, blood pressure, kidneys, and Vitamin D metabolism. Children are particularly sensitive to the chronic effects of lead, with slowed cognitive development, reduced growth and other effects reported. Reproductive effects, such as decreased sperm count in men and spontaneous abortions in women, have been associated with high lead exposure. The developing fetus is at particular risk from maternal lead exposure, with low birth weight and slowed postnatal neurobehavioral development noted."⁹
- *Arsenic*. "Acute high-level inhalation exposure to arsenic dust or fumes has resulted in gastrointestinal effects (nausea, diarrhea, abdominal pain); central and peripheral nervous system disorders have occurred in workers acutely exposed to inorganic arsenic. Chronic inhalation exposure to inorganic arsenic in humans is associated with irritation of the skin and mucous membranes. Chronic oral exposure has resulted in gastrointestinal effects, anemia, peripheral neuropathy, skin lesions, hyperpigmentation, and liver or kidney damage in humans. Inorganic arsenic exposure in humans, by the inhalation route, has been shown to be strongly associated with lung cancer, while ingestion of inorganic arsenic in humans has been linked to a form of skin cancer and also to bladder, liver, and lung cancer. EPA has classified inorganic arsenic as a Group A, human carcinogen."¹⁰
- *Cadmium*. "The acute effects of cadmium in humans through inhalation exposure consist mainly of effects on the lung, such as pulmonary irritation. Chronic inhalation or oral exposure to cadmium leads to a build-up of cadmium in the kidneys that can cause kidney disease. Cadmium has been shown to be a developmental toxicant in animals, resulting in fetal malformations and other effects, but no conclusive evidence exists in humans... EPA has classified cadmium as a Group B1, probable human carcinogen."¹¹
- *Nickel*. "Nickel dermatitis, consisting of itching of the fingers, hands, and forearms, is the most common effect in humans from chronic skin contact with nickel. Respiratory effects have also been reported in humans from inhalation exposure to nickel. Human and animal studies have reported an increased risk of lung and nasal cancers from exposure to nickel refinery dusts and nickel subsulfide... EPA has classified nickel

⁹ See <http://www.epa.gov/ttn/atw/hlthef/lead.html>.

¹⁰ See <http://www.epa.gov/ttn/atw/hlthef/arsenic.html>.

¹¹ See <http://www.epa.gov/ttn/atw/hlthef/cadmium.html>.

refinery dust and nickel subsulfide as Group A, human carcinogens, and nickel carbonyl as a Group B2, probable human carcinogen.”¹²

- *Antimony*. “Acute exposure to antimony by inhalation in humans results in effects on the skin and eyes. Respiratory effects, such as inflammation of the lungs, chronic bronchitis, and chronic emphysema, are the primary effects noted from chronic exposure to antimony in humans via inhalation.”¹³
- *Beryllium*. “Acute inhalation exposure to high levels of beryllium has been observed to cause inflammation of the lungs or acute pneumonitis (reddening and swelling of the lungs) in humans; after exposure ends, these symptoms may be reversible. Chronic inhalation exposure of humans to beryllium has been reported to cause chronic beryllium disease (berylliosis), in which granulomatous lesions (noncancerous) develop in the lung... EPA has classified beryllium as a Group B1, probable human carcinogen.”¹⁴
- *Cobalt*. “Acute exposure to high levels of cobalt by inhalation in humans and animals results in respiratory effects, such as a significant decrease in ventilatory function, congestion, edema, and hemorrhage of the lung. Respiratory effects are also the major effects noted from chronic exposure to cobalt by inhalation, with respiratory irritation, wheezing, asthma, pneumonia, and fibrosis noted. Cardiac effects, congestion of the liver, kidneys, and conjunctiva, and immunological effects have also been noted in chronically-exposed humans.”¹⁵
- *Manganese*. “Chronic exposure to high levels of manganese by inhalation in humans may result in central nervous system (CNS) effects. Visual reaction time, hand steadiness, and eye-hand coordination were affected in chronically-exposed workers. A syndrome named manganism may result from chronic exposure to higher levels; manganism is characterized by feelings of weakness and lethargy, tremors, a mask-like face, and psychological disturbances. Respiratory effects have also been noted in workers chronically exposed by inhalation. Impotence and loss of libido have been noted in male workers afflicted with manganism.”¹⁶
- *Mercury*. “Mercury exists in three forms: elemental mercury, inorganic mercury compounds (primarily mercuric chloride), and organic mercury compounds (primarily methyl mercury). All forms of mercury are quite toxic, and each form exhibits different health effects. Acute exposure to high levels of elemental mercury in humans results in central nervous system effects such as tremors, mood changes, and slowed sensory and motor nerve function. Chronic exposure to elemental mercury in humans also affects the [central nervous system], with effects such as erethism (increased excitability), irritability, excessive shyness, and tremors... Acute exposure to inorganic mercury by the oral route may result in effects such as nausea, vomiting, and severe abdominal pain. The major effect from chronic exposure to inorganic mercury is kidney damage... Acute exposure of humans to very high levels of methyl mercury results in [central nervous system] effects such as blindness, deafness, and impaired level of consciousness. Chronic exposure to methyl mercury in humans also affects the central

¹² See <http://www.epa.gov/ttn/atw/hlthef/nickel.html>.

¹³ See <http://www.epa.gov/ttn/atw/hlthef/antimony.html>.

¹⁴ See <http://www.epa.gov/ttnatw01/hlthef/berylliu.html>.

¹⁵ See <http://www.epa.gov/ttn/atw/hlthef/cobalt.html>.

¹⁶ See <http://www.epa.gov/ttn/atw/hlthef/manganes.html>.

nervous system with symptoms such as paresthesia (a sensation of pricking on the skin), blurred vision, malaise, speech difficulties, and constriction of the visual field. Methyl mercury exposure, via the oral route, has led to significant developmental effects. Infants born to women who ingested high levels of methyl mercury exhibited mental retardation, ataxia, constriction of the visual field, blindness, and cerebral palsy.”¹⁷

- *Selenium.* “Hydrogen selenide is the most acutely toxic selenium compound. Acute exposure to elemental selenium, hydrogen selenide, and selenium dioxide by inhalation results primarily in respiratory effects, such as irritation of the mucous membranes, pulmonary edema, severe bronchitis, and bronchial pneumonia. Epidemiological studies of humans chronically exposed to high levels of selenium in food and water have reported discoloration of the skin, pathological deformation and loss of nails, loss of hair, excessive tooth decay and discoloration, lack of mental alertness, and listlessness... EPA has classified elemental selenium as a Group D, not classifiable as to human carcinogenicity, and selenium sulfide as a Group B2, probable human carcinogen.”¹⁸

With respect to diesel particulate hazardous waste, numerous scientific studies have documented the human health effects of exposure, including specific studies on the effects on people who live and work near the rail yards. Diesel particulate hazardous waste causes cancer risk, premature death, asthma attacks and other respiratory symptoms, among other health impacts.¹⁹ The most vulnerable populations are children and the elderly who may have other serious health problems.²⁰

There are a number of human exposure pathways for diesel particulate hazardous waste, including dermal contact and the eating of contaminated food. CARB found that:

Airborne pollutants can deposit onto surfaces and waterways, providing another source of exposure. For example, goods movement activities contribute to non-point source runoff that contaminates coastal and bay waters with a number of toxicants, including PAHs [polycyclic/polynuclear aromatic hydrocarbons], dioxins, and metals. Exposures to pollutants that were originally emitted into the air can also occur as a result of dermal contact, ingestion of contaminated produce, and ingestion of fish that have taken up contaminants from water bodies. These exposures can all contribute to an individual’s health risk. In some cases, the risks from these kinds of exposure can be greater than the risks from inhalation of the airborne chemicals.²¹

¹⁷ See <http://www.epa.gov/ttn/atw/hlthef/mercury.html>; see also <http://www.epa.gov/hg/effects.htm>.

¹⁸ See <http://www.epa.gov/ttn/atw/hlthef/selenium.html>.

¹⁹ See CARB, Health Effects of Diesel Exhaust Particulate Matter, available at <http://www.arb.ca.gov/research/diesel/diesel-health.htm>; see also EPA ANPR at 17-25.

²⁰ *Id.*

²¹ CARB, ERP, at A-42, available at <http://www.arb.ca.gov/planning/gmerp/gmerp.htm>.

In addition to increased cancer risk, numerous studies have documented a wide range of other adverse health impacts due to exposure to fine particulates. Such impacts include increased risk for cardiovascular disease such as atherosclerosis, increased heart attacks, increased emergency room visits for acute health events, birth defects, low birth weights, premature births, and increased rates of death.²² CARB has estimated that diesel exhaust from freight transport in California contributes to thousands of premature deaths statewide every year.²³

The Rail yards' Operations Violate the Resource Conservation and Recovery Act

The citizen suit provision of RCRA, 42 USC § 6972(a)(1)(B), provides for liability against: “any person . . . who has contributed or is contributing to the . . . handling, storage, treatment, transportation or disposal . . . [of] solid or hazardous waste . . . [that] may present an imminent and substantial endangerment to health or the environment.” We intend to prove at trial that each of these elements is present with respect to the rail yards:

- *Disposal*: “Disposal” is defined in RCRA § 1004(3), 42 USC § 6903(3), as follows: “the discharge, deposit, injection, dumping, spilling, leaking or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.” Here, the rail yards allow the discharge and placing of solid and hazardous diesel particulates into the air, from which it falls onto the ground and water nearby and is re-entrained into the air. This diesel particulate hazardous waste contains numerous RCRA hazardous wastes.
- *Contributing to*: The rail yards contribute to the disposal of RCRA hazardous wastes by allowing polluting diesel trains and trucks to use their property.
- *Solid or hazardous waste*: Diesel particulate hazardous waste contains the following substances in solid form, all of which are on the RCRA list of hazardous substances: arsenic, cadmium, nickel, inorganic lead, antimony compounds, beryllium compounds, cobalt compounds, manganese compounds, mercury compounds, phosphorus, and selenium compounds.
- *Imminent and substantial endangerment to health or the environment*: The documented health effects from diesel particulate hazardous waste through inhalation and through other exposure pathways easily satisfy the level of risk that courts have found may present an imminent and substantial endangerment. Moreover, the rail yards are permitting diesel particulate hazardous waste to enter the physical environment, including waters of the United States.

Remedies Available to the Rail yards

We recommend the following mitigation measures to clean up rail yards:

²² Driving on Fumes: Truck Drivers Face Elevated Health Risks from Diesel Pollution, at 5, fn.7-13 (December 2007) (citing numerous scientific studies documenting the health effects of PM, including the effects on Southern California residents).

²³http://www.arb.ca.gov/bonds/gmbond/docs/slides_only_for_apr2008_gmerp_board_update.pdf

- Use of cleaner locomotives: All line haul and switching locomotives should meet the equivalent of US EPA Tier 4 locomotive standards.
- Electrification of major rail lines: All rail lines in urbanized areas should be electrified.
- Use of cleaner yard equipment:
 - Cargo handling equipment should be electrified, including yard hostlers and large cranes such as rubber tired gantry cranes.
 - Plug-in electrification should be provided and required for all transportation refrigeration units.
- Locomotive idling should be limited to 15 minutes or less.
- Support for advanced technology: UP and BNSF should undertake a comprehensive technology review every five years and, if more health-protective measures are available, those measures should be implemented.
- Additional measures to reduce health risks:
 - Adjust site configuration to relocate the following high pollution areas away from sensitive receptors such as schools and homes:
 - Truck entrances of facilities,
 - Maintenance and load test areas,
 - Mainline stop areas where locomotives queue and idle, and
 - Fueling stations.
 - Create health protective buffers between residential areas and the facilities; we recommend 1,000-1,500 ft.
 - Provide filtration systems for homes and buildings in high health risk areas.
 - Create no-idle zones for locomotives within 50 feet of sensitive receptors and residential areas.
 - Restrict entry of heavy-duty diesel trucks that are not compliant with the most current EPA emission standards.
 - Install vegetative screens with monitoring and testing for efficacy.
 - Deploy the use of Advanced Locomotive Emissions Control System in all load test areas.
 - Create a fund and program to deploy community clinics and Breath Mobiles that could monitor the health of residents in high risk areas.
- Monitoring: Properly collecting data is critical to assessing the effectiveness of control measures and the pollution exposure of residents. We strongly recommend air monitoring with quantifiable baselines so that we can measure progress and effectiveness. All monitoring data should be available to the public.
- Accountability: An oversight or enforcement program is critical to assuring impacted residents that mitigation measures are being carried out as agreed.
- Enhanced truck, locomotive and equipment inspections are necessary to ensure the efficacy of mitigations.

Preliminary and Permanent Injunctions; Duty to Preserve Evidence

We invite UP and BNSF to discuss with us a resolution of the RCRA issues on a state-wide basis. Unless these issues are resolved within 90 days of the date of this letter, we will file suit in federal district court under RCRA seeking preliminary and permanent injunctive relief to end the

imminent and substantial endangerment of public health which the rail yards are allowing to occur.

This letter also serves to remind you of your obligations under federal law to preserve materials that you know, or reasonably should know, might be relevant to the matters discussed in this letter, could lead to the discovery of admissible evidence, or are likely to be requested during discovery. These materials include, without limitation, information now existing or existing in the future in electronic format.

Yours truly,



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Attorneys for East Yard Communities for Environmental Justice, the Center for Community Action and Environmental Justice, and the Natural Resources Defense Council.

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