



Mesa, WA coal train derailment on July 2, 2012. Photo courtesy of Tony Eveland.

# THE DIRTY TRUTH ABOUT COAL DUST

The pollution spewing from Colorado's coal plants isn't the only way the coal industry endangers our air, water, and land. Trains carrying dirty coal pass through local communities at all hours, releasing toxic coal dust into the air. Coal dust harms human health, raises the risk of train derailments, and hurts farms and small businesses along rail routes.

## COAL TRAINS EMIT SIGNIFICANT AMOUNTS OF COAL DUST

Companies transport coal in uncovered open-top rail cars. This allows significant amounts of coal dust to blow over residential and agricultural areas, and pollute waterways, crops, and the air we breathe.

Each car on a coal train releases 500 to 2,000 pounds of coal dust over the course of its journey, according to a study by Burlington Northern Santa Fe Railway. Thus, a typical 125-car coal train could release up to 250,000 pounds of coal per trip.<sup>1</sup>

Chemical sprays called surfactants, which may pose a threat to human health, are sometimes applied to help prevent some dust from escaping rail cars. But no spray is 100 percent effective.<sup>2</sup>

Experts say surfactants may not only threaten human health, but also potentially contaminate surface water, groundwater, and soil; pollute the air; and harm native flora and fauna.<sup>3</sup>

Currently, there is no binding requirement for shippers to apply surfactants—a utility coalition estimates that only 30 percent of coal shippers now do so.<sup>4</sup>

## COAL DUST IS HARMFUL TO OUR HEALTH

Coal dust dirties the air and contaminates crops and drinking water. Tests show that coal dust contains arsenic, lead, mercury, chromium, nickel, selenium, and other toxic heavy metals.<sup>5</sup> Exposure to coal dust is linked to decreased lung capacity, increased childhood bronchitis, asthma, pneumonia,<sup>6</sup> emphysema and heart disease.<sup>7</sup> In

a community near a large coal terminal in Virginia, the number of residents suffering from asthma was found to be more than twice the city and state average.<sup>8</sup> Areas with high levels of coal dust pollution have increased infant mortality rates and decreased life expectancies.<sup>9</sup>

## COAL DUST COMPROMISES SAFETY

Coal dust causes deadly train derailments and fires, and decreases visibility for those driving vehicles near tracks. Coal dust clogs spaces in the rail ballast and turns into a solid, plastic-like substance when wet. This reduces the friction needed for safe rail operation, decreases track stability, and can lead to train derailments.<sup>10</sup> The Vice President of Transportation at Burlington Northern Santa Fe Railway testified that coal dust was “absolutely a contributing factor” for back-to-back train derailments in 2005.<sup>11</sup> In 2015, seven rail cars carrying ammonium





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sulfate derailed right next to the Martin Drake coal plant in downtown Colorado Springs.<sup>12</sup>

More than 40 percent of the coal burned in our nation's remaining coal plants is strip-mined on federal public lands in the Powder River Basin (PRB) of northeastern Wyoming and southeastern Montana. Coal from the Powder River Basin is highly flammable.<sup>13</sup> Trains carrying PRB coal have been known to arrive at their destinations

with rail cars partially on fire.<sup>14</sup> Coal piles at terminals and ports have been known to spontaneously combust.<sup>15</sup> Trains carrying coal raise the likelihood of starting fires on properties along routes. Clouds of coal dust reduce visibility for drivers on roads near railroad tracks.

## COAL DUST POLLUTES THE ENVIRONMENT

Coal dust and its toxic components have been found at high levels near coal terminals. Wind carries coal dust long distances, dispersing toxins such as arsenic and mercury into soil<sup>16</sup> and waterways.<sup>17</sup> Coal dust pollutes soil. At a coal terminal in Norfolk, Virginia, soil samples one kilometer away contained up to 20 percent coal dust.<sup>18</sup> Stormwater and wastewater released from coal storage facilities are typically acidic, and coal runoff may contain high concentrations of copper, iron, aluminum, and nickel.<sup>19</sup> This can devastate the delicate chemistry of aquatic environments.

Coal dust is one part of a long list of health, safety, economic, and environmental impacts of burning coal in Colorado. For more information on the impacts of coal dust, email [anna.mcdevitt@sierraclub.org](mailto:anna.mcdevitt@sierraclub.org) or visit [www.beyondcoal.org](http://www.beyondcoal.org).

## ENDNOTES

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