## Appendix F

## BNSF Railway Carbon Estimator

Report for A created 12/11/2016 5:55 pm

|  | Shipment \#1 | Shipment \#2 | Shipment \#3 |
| :---: | :---: | :---: | :---: |
| Commodity |  |  |  |
| Commodity Group | Lumber / Paper | Lumber / Paper |  |
| Commodity Type | Lumber | Lumber |  |
| Tons per Unit | 92.9 | 92.9 |  |
| Rail Volume |  |  |  |
| Number of Rail Units: | 1,777 | 2,733 |  |
| Geography / Mileage |  |  |  |
| Origin: |  |  |  |
| Destination: |  |  |  |
| Rail Shipment Distance: | 119 | 119 |  |
| Comparable Truck Volume |  |  |  |
| Number of Trucks: | 6,219 | 9,565 |  |
| Truck Performance Assumptions |  |  |  |
| Highway / Long Haul MPG: | 6.5 | 6.5 | 6.5 |
| Highway / Long Haul Out-of-Route Miles Percentage: | 10\% | 10\% | 10\% |
| Highway / Long Haul Empty Miles Percentage: | 15\% | 15\% | 15\% |
|  | Shipment \#1 | Shipment \#2 | Shipment \#3 |
| Your Carbon Footprint and Comparison |  |  |  |
| Estimated Rail Carbon Footprint (Metric Tons $\mathrm{CO}_{2}$ equivalent): | 424.7 | 653.2 |  |
| Estimated Long Haul Truck Carbon Footprint (Metric Tons $\mathrm{CO}_{2}$ equivalent): | 1,475.90 | 2,270.00 |  |
| Using a carload or intermodal rail solution instead of truck only would reduce this shipment's estimated Carbon Footprint by: | 71\% | 71\% |  |

## Please Note:

Actual carbon emissions may vary from the results provided here as a result of variable factors such as topography, weather, unique product characteristics, etc. BNSF's carbon emission estimator was formed in collaboration with ClearCarbon Consulting, Inc. to illustrate the estimated environmental benefit that is obtained by utilizing rail as part of your company's supply chain. These carbon estimations rely on data sources including BNSF shipment history and internal shipping metrics, along with assumptions for route mileage calculation, trucking industry averages for empty miles, out-of-route miles, and fuel efficiency (Truck Assumption: 6.5 mpg highway, 6.1 mpg city), and other data sources such as the U.S. EPA's Climate Leaders program emission factors (Direct Emissions from Mobile Combustion Sources, May 2008).

