Converting C&D Debris from Volume to Weight
A Fact Sheet for C&D Debris Facility Operators

Background: Florida regulations require that permitted C&D facilities in the State report to the Florida Department of Environmental Protection (FDEP), by April 1 of each year, the amounts and types of wastes managed during the previous year. This requirement for C&D facilities was developed, as with the certification of recyclers program, to help determine if Counties over a population of 75,000 will meet the 30 percent waste reduction goal set forth in the law.

Problem: The FDEP tracks the amount of waste managed by weight (in tons). Many C&D facilities do not have scales though and only measure their waste by volume (in cubic yards).

Solution: A simple equation can be used to convert the volume of C&D debris (in cubic yards or yd^3) to weight (in tons):

Weight of C&D Debris **=** *Volume of C&D Debris* ***X*** *0.24 tons/yd^3*

Example Calculation:

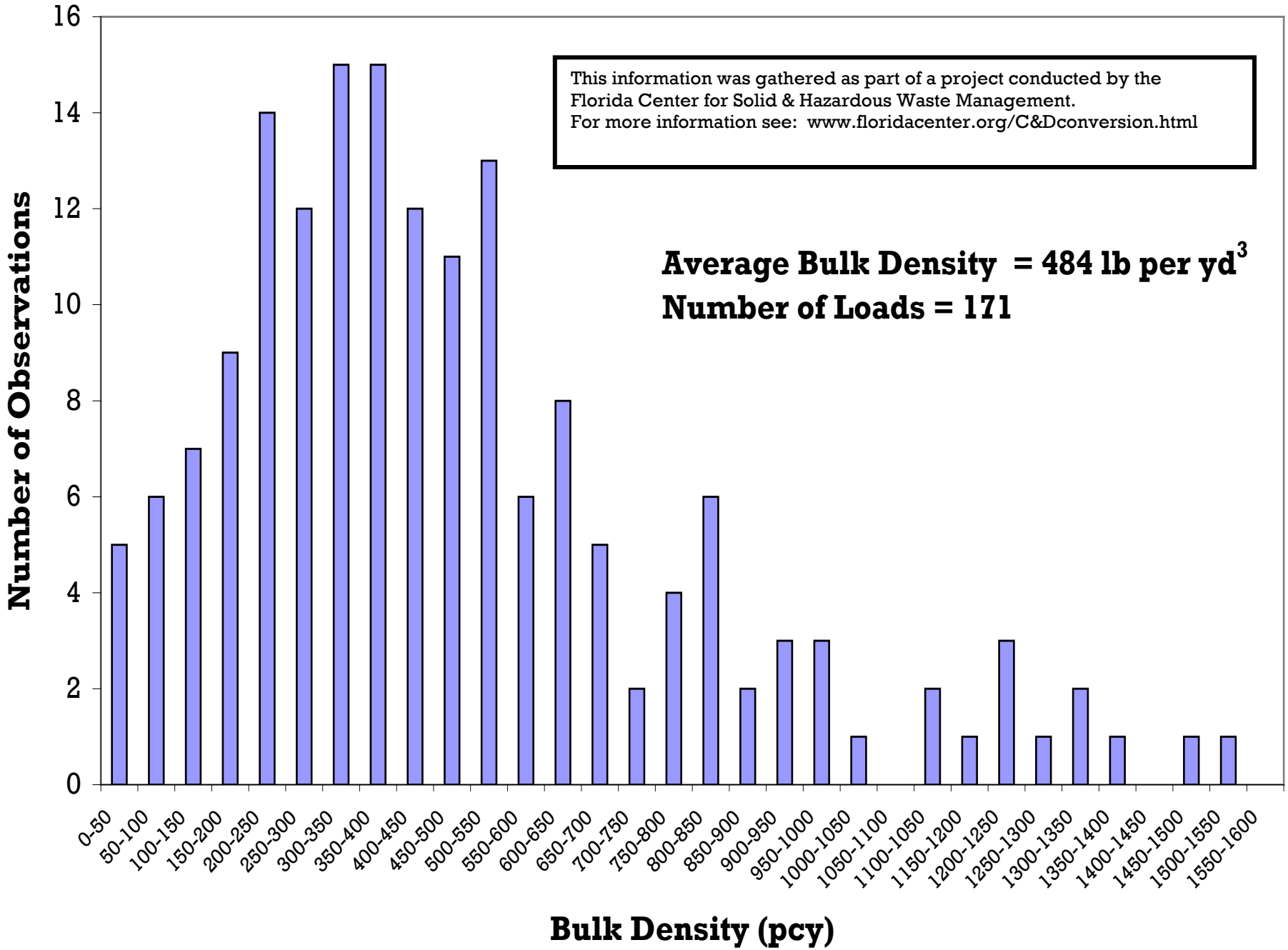
A C&D disposal facility receives 100,000 cubic yards of C&D debris in one year. The number of tons of C&D debris is calculated as follows:

Weight of C&D Debris = 100,000 yd^3 **X** 0.24 tons/yd^3 of C&D

Weight of C&D Debris = 24,000 tons

How was the conversion factor calculated?

The conversion factor, or average bulk density, was calculated by measuring the actual weights of loads of mixed C&D from facilities in Florida and comparing those weights to the volumes of the loads. Specifically, researchers at the University of Florida measured the weights, in tons, of 171 different loads of C&D debris at 10 facilities in the State and recorded the volume, in cubic yards, of each truck or container weighed. The conversion factor was then calculated by dividing the total weight by the total volume. For mixed C&D loads in Florida, the average bulk density was measured to be 484 pounds per cubic yard or approximately 0.24 tons of C&D per cubic yard. The graph on the back shows the distribution of C&D bulk densities that were measured by the researchers.


This information was gathered as part of a project conducted by the
Florida Center for Solid & Hazardous Waste Management.
For more information see: www.floridacenter.org/C&Dconversion.html
Average Bulk Density = 484 lb per yd3
Number of Loads = 171
Number of Observations
0
2
4
6
8
10
12
14
16
0-50
50-100
100-150
150-200
200-250
250-300
300-350
350-400
400-450
450-500
500-550
550-600
600-650
650-700
700-750
750-800
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1050-1100
1100-1050
1150-1200
1200-1250
1250-1300
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1450-1500
1500-1550
1550-1600
Bulk Density (pcy)