

Black Oak Landfill

The Black Oak Landfill is located in Wright County, approximately 5 miles east of Hartville, MO. It is owned and operated by Waste Management Inc. The disposal facility covers 82 acres and is permitted to accept all municipal solid waste (MSW) and some other wastes such as asbestos, contaminated soils and waste water treatment sludge.

The Black Oak Landfill accepted 234,846 tons in 1996, 244,174 tons in 1997 and 283,475 tons in 1998. The landfill operation was observed from Monday April 12th through Thursday April 15th, 1999. The weather was fair for the first two days but rained and turned cold on Wednesday and Thursday. Observation took place from 7 AM till 4:30 PM on the above dates. The composition of the waste was so predictable that the observation period was shortened from five days down to four days. During the four-day observation period 249 trucks, delivered 3,735 tons of waste to the landfill. The landfill staff felt the material received during the observation period was typical of material received year round. They occasionally receive small quantities of asbestos and contaminated soil but those quantities are statistically nil.

All loads could be classified visually, without any driver data.

The Total Waste Stream - 3,735 tons

The total waste stream was overwhelmingly Municipal Solid Waste (MSW). The source of the MSW portion is primarily residential, institutional, and light commercial waste. The MSW was delivered to the landfill in trailers from company owned transfer stations and local packer trucks.

Total waste received during the observation period was 3,735 tons. The components of the waste stream were estimated as they were unloaded. These components are listed below.

Waste Stream Components

| MSW | Const. | Demo | Industrial | Other |
|------------|---------------|-------------|-------------------|--------------|
| 95.4% | 0.5% | 1.0% | 1.6% | 1.4% |
| 3565 tons | 18 tons | 38 tons | 61 tons | 53 tons |

Municipal Solid Waste - 3,565 Tons

Municipal Solid Waste (MSW) accounted for 95% of the total waste stream. MSW materials were not estimated during the observation period because the items are very small and normally contained within plastic bags. However, MSW was sorted and recorded at 19 landfills and transfer stations as part of this study in 1996 and 97. During the 56 sorts 632 samples, weighing

an average of 222 pounds each, were examined. Each of these samples were hand sorted into six major categories and 26 sub categories. The sorted materials were recorded by weight and volume. Further details are available in the *Missouri Waste Composition Study: Municipal Solid Waste*.

The total MSW received during the observation period was 3,565 tons. The average percentage of each major material category found in the 1996-97 waste sorts was applied to the tonnage received during the observation period and is displayed below.

Municipal Solid Waste Components

| | | | | | |
|-----------|----------|----------|----------|-----------|------------|
| Paper | Glass | Metals | Plastics | Organics | Inorganics |
| 37.3% | 5.8% | 6.9% | 14.4% | 30.8% | 4.8% |
| 1330 tons | 207 tons | 246 tons | 513 tons | 1098 tons | 171 tons |

Construction Waste - 18 Tons

Only about 0.5% of the total waste received was from new construction sources. Construction waste loads are typically transported to the landfill in open top roll-off containers, dump trucks, or open trailers. Only two roll-off trucks delivered construction waste during the observation period. One was primarily masonry materials (bricks, concrete blocks, and gravel). The other was a combination of wood dry wall and cardboard.

Total construction waste received during the observation period was 18 tons. The materials within the construction waste stream were estimated as they were unloaded. These estimated materials are listed below.

Construction Waste Components

| | | | | | | |
|-------------|-----------------|----------------|--------------|--------------|----------------|--------------|
| Wood | Dry Wall | Masonry | Metal | Plas. | Cardbrd | Other |
| 20% | 4% | 72% | 0% | 0% | 4% | 0% |
| 4 tons | 1 ton | 12 tons | 0 tons | 0 tons | 1 ton | 0 tons |

Demolition Waste - 38 Tons

About 1% of the total waste was from demolition sources. Demolition waste loads are usually transported to the landfill in open top roll-off containers, dump trucks, or open trailers. However at this landfill most demolition materials were received in the transfer trailers and those materials were estimated and recorded as part of the demolition component. Two roofing waste loads were delivered to the landfill by independent contractors and were not mixed with other materials. The remaining demolition loads contained more mixed materials. The other category was primarily wet insulation brought in by a local packer.

Total demolition waste received during the observation period was 38 tons. The materials within the demolition waste stream were estimated as they were unloaded. These estimated materials are listed on page 11.

The Demolition Waste Component

| Wood | Dry Wall | Roof | Masonry | Metal | Carpet | Other |
|---------|----------|---------|---------|-------|--------|--------|
| 26% | 9% | 27% | 4% | 4% | 16% | 14% |
| 10 tons | 3 tons | 11 tons | 2 tons | 1 ton | 6 tons | 5 tons |

Industrial Waste - 61 Tons

About 1.6% of the total waste was from industrial sources. Almost all industrial materials came in on transfer trailers. Large quantities of industrial paper, cardboard and wood within the transfer trailers were identified as part of the industrial component and materials were estimated and recorded as a portion of the total weight of the trailer. Most wood was in the form of pallets and crates.

Total industrial waste received during the observation period was 61 tons. The materials within the industrial waste component were estimated as they were unloaded. These estimated materials are listed below.

The Industrial Waste Component

| Cardbrd | Paper | Food | Metal | Wood | Plas. | Tex. | Rbr. | Other |
|---------|---------|--------|--------|---------|--------|--------|--------|--------|
| 40% | 18% | 0% | 0% | 36% | 6% | 0% | 0% | 0% |
| 25 tons | 11 tons | 0 tons | 0 tons | 21 tons | 4 tons | 0 tons | 0 tons | 0 tons |

Other Waste - 53 Tons

Other wastes were defined as waste which did not fit into one of the above categories or was handled differently at the landfill (i.e. soil-like materials used for daily cover, asbestos, etc.). Bulky items were the only other waste observed. They include furniture, mattresses, appliances, bicycles, etc. Most of these bulky items were received in transfer trailers.

Total other waste received during the observation period was 53 tons. The materials within the other waste stream were estimated as they were unloaded. These estimated materials are listed below.

The Other Waste Component

| Bulky Items |
|-------------|
| 100% |
| 53 tons |

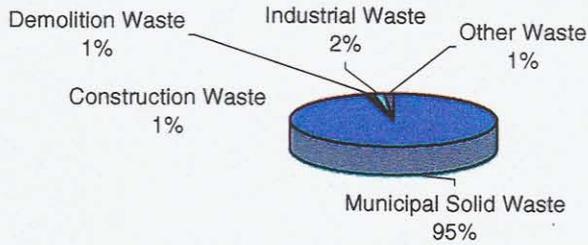
BLACK OAK LANDFILL

283,475 TONS IN 1998

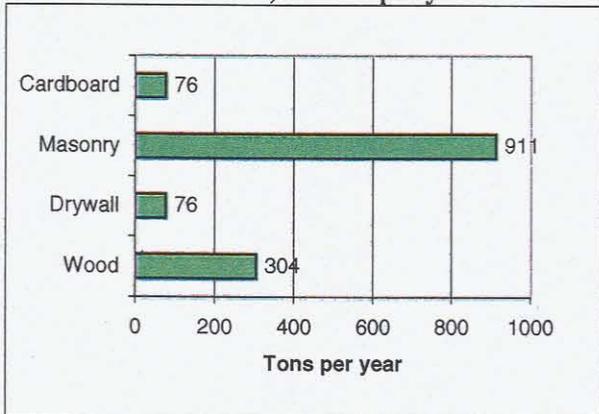
| MATERIAL | Tons received during observation period | Percent of each material received | Estimated tonnage received in 1998 based on observation |
|---------------------------|---|-----------------------------------|---|
| MSW Component | | | |
| Paper | 1330 Tons | 35.6% | 100,943 Tons |
| Glass | 207 Tons | 5.5% | 15,711 Tons |
| Metals | 246 Tons | 6.6% | 18,671 Tons |
| Plastics | 513 Tons | 13.7% | 38,935 Tons |
| Organics | 1098 Tons | 29.4% | 83,335 Tons |
| Inorganics | 171 Tons | 4.6% | 12,978 Tons |
| TOTAL MSW | 3565 Tons | 95.4% | 270,573 Tons |
| Construction Waste | | | |
| Wood | 4 Tons | 0.1% | 304 Tons |
| Dry Wall | 1 Tons | 0.0% | 76 Tons |
| Masonry | 12 Tons | 0.3% | 911 Tons |
| Metal | 0 Tons | 0.0% | - Tons |
| Plastic | 0 Tons | 0.0% | - Tons |
| Cardboard | 1 Tons | 0.0% | 76 Tons |
| Other | 0 Tons | 0.0% | - Tons |
| TOTAL CONSTRUCTION | 18 Tons | 0.5% | 1,366 Tons |
| Demolition Waste | | | |
| Wood | 10 Tons | 0.3% | 759 Tons |
| Dry Wall | 3 Tons | 0.1% | 228 Tons |
| Roofing | 11 Tons | 0.3% | 835 Tons |
| Masonry | 2 Tons | 0.1% | 152 Tons |
| Metal | 1 Tons | 0.0% | 76 Tons |
| Carpet | 6 Tons | 0.2% | 455 Tons |
| Other | 5 Tons | 0.1% | 379 Tons |
| TOTAL DEMOLITION | 38 Tons | 1.0% | 2,884 Tons |
| Industrial Waste | | | |
| Cardboard | 25 Tons | 0.7% | 1,897 Tons |
| Paper | 11 Tons | 0.3% | 835 Tons |
| Food | 0 Tons | 0.0% | - Tons |
| Metal | 0 Tons | 0.0% | - Tons |
| Wood | 21 Tons | 0.6% | 1,594 Tons |
| Plastic | 4 Tons | 0.1% | 304 Tons |
| Textiles | 0 Tons | 0.0% | - Tons |
| Rubber | 0 Tons | 0.0% | - Tons |
| Other | 0 Tons | 0.0% | - Tons |
| TOTAL INDUSTRIAL | 61 Tons | 1.6% | 4,630 Tons |
| Other Wastes | | | |
| Bulky Items | 53 Tons | 1.4% | 4,023 Tons |
| Soil and Inert Materials | 0 Tons | 0.0% | - Tons |
| Asbestos | 0 Tons | 0.0% | - Tons |
| Commercial yard waste | 0 Tons | 0.0% | - Tons |
| TOTAL OTHER WASTE | 53 Tons | 1.4% | 4,023 Tons |
| TOTAL WASTE STREAM | 3735 Tons | 100% | 283,475 Tons |

The Black Oak Landfill

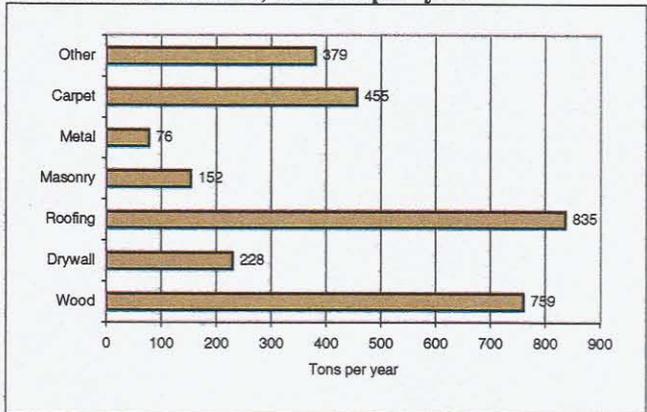
Total Waste Component - 283,475 tons per year



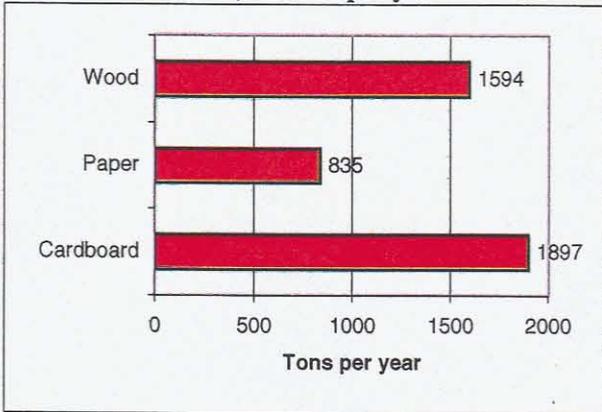
Construction Waste - 1,366 tons per year



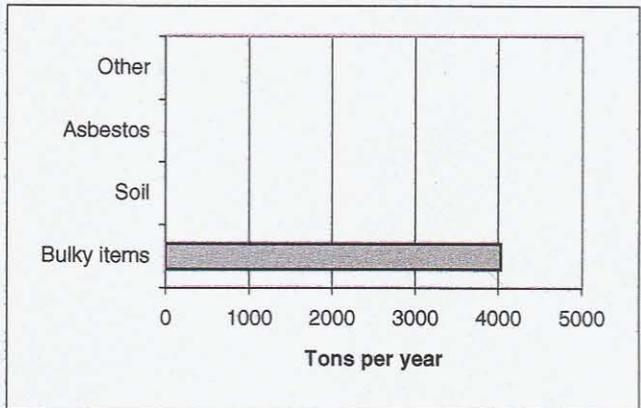
Demolition Waste - 2,884 tons per year



Industrial Waste - 4,630 tons per year



Other Waste - 4,023 tons per year



Black Oak Waste Components vs. Rural and State Averages

