

S
604.6
A2F

Montana State Library



Forward

Solid Waste Management Bureau
A Division of Department of Health and Environmental Sciences

a bi-monthly publication
August 1975 Vol. I No. 2

A Small Town's Search For The Right Solution

Paying to dispose of trash is an unwelcome idea when people have been dumping it over a bank for free over 75 years. Unfortunately, sometimes change is difficult.

In May 1972, the solid waste disposal situation in the state was reviewed at a Montana State Board of Health meeting. With all communities of over 2,500 people complying with the regulations for refuse disposal sites, it was decided to ask all communities of greater than 1,000 people to bring their operations into compliance by July 1, 1973. By that date all but five of these towns were in compliance. Philipsburg was one of these.

The Philipsburg City Council didn't see how it could afford to operate a sanitary landfill when comparing that cost to that of having its open burning dump. To evenly distribute the associated costs, the Council approached the Granite County Commissioners about setting up a refuse disposal district to include the surrounding rural residents who were also using the site. The Commissioners began the preliminary steps required to form such a district.

However, public opinion was opposed to the idea and the district was voted down. Philipsburg was then forced to go it alone. After several more City Council and public meetings, an impasse was reached. It was decided to let the courts determine whether or not the town could retain the open dump.

On October 24, 1974, a show cause hearing was held in Philipsburg before the district judge. The judge ruled that Philipsburg must comply with state law in its operation of a refuse disposal site.

By November 19, the town had converted its dump to a land-fill operation. There is a caretaker on duty during the restricted hours of operation and the refuse is covered at the end of each operating day by the city crew using a rubber tired loader/backhoe.

This is not the end of the story. Philipsburg and Drummond (also in Granite County) city officials as well as Granite County Commissioners are still investigating possible solutions to their solid waste disposal problems. They are considering another attempt at creating a countywide refuse district.

One of the possible solutions is hauling the garbage to Missoula (50 miles from Drummond). City Disposal Co. of Missoula has suggested a plan to the two communities for pickup of garbage from 40 cubic yard containers to be hauled to the firm's landfill dump northwest of Missoula.

If the county wide district is not formed, the city of Drummond may accept this solution to its local problem as the most economical answer.

Firm Chosen For Resource Recovery Program

The firm of Henningson, Durham & Richardson (HDR) has been selected to conduct the year-long study of Montana's resource recovery potential. The firm which offers engineering, architectural and planning services on a world wide basis is headquartered in Omaha, Nebraska with offices in 14 locations throughout the United States including Helena. It has grown from a small Midwest engineering firm which started in 1917 to one employing more than 500 experienced highly qualified engineers, architects, planners and technicians to handle a project from conception to successful completion.

The company has extensive background in solid waste management studies and in the design of solid waste handling and processing facilities. The following is some of the highlights of that experience:

— Study and Investigation of Solid Waste Control - A state-wide management study completed for the State of Minnesota.

— Disposal and Reuse of Abandoned and Retired Automobiles - A state-wide study for the State of Minnesota which culminated in legislation and an ongoing program for collection, transportation and recycling of old vehicle hulks.

— Study, design and construction of the 200 ton-per-day solid waste supplemental fuel plant for the City of Ames, Iowa. This plant was described in *Power* magazine as "probably the most advanced utility system of its type in operation or under construction". The plant, which processes raw refuse, produces a high-quality solid waste fuel and recovers ferrous and other metals, was completed in June. It is the first completed resource recovery facility of its type in the United States.

— Study and design of a 2,000 ton-per-day solid waste processing plant for the City of Dallas, Texas. The processed refuse will either be directly fired to produce steam for a major industry or will be pyrolyzed to produce a low BTU gas which can be used by a combination of commercial, industrial or utility concerns. The design of this "frontend" facility is currently 50% complete.

— The ongoing Hennepin County (Minneapolis Area) Solid Waste Energy and Materials Recovery Study. This study is in its final stage and will recommend use of processed solid waste as an energy source in the inner city area for direct firing to produce steam for commercial and industrial heating and cooling. Initial plant size will be up to 2,000 tons-per-day of solid waste to produce 4000,000 pph of steam. Ferrous and other metals will also be recovered.

— Other ongoing energy and resource recovery projects in Dubuque, Iowa; Springfield, Missouri; Norfolk, Virginia; Garland and Richardson, Texas; Omaha, Nebraska; and St. Cloud, St. Paul and Rochester, Minnesota.

Tasks included under the Montana study include: Assembling available population and employment data; determining present waste generation and project future quantities; identifying and evaluating special potentially recoverable wastes; identifying and evaluating potential markets for utilizing solid waste as an energy source; identifying and evaluating potential markets for raw or recoverable waste components; and evaluating applicable alternative technologies for energy and materials recovery.

Personnel with HDR who will be directly involved with the study are Warren G. Heen, P.E., project manager; Frank Borchardt, P.E., principal in charge; and Barry Damschen, project engineer.

Heen is Assistant Vice President of the company and Manager of the Helena office. Borchardt was Regional Engineer for the Montana State Department of Health at Billings before joining HDR in 1968. He was Project Manager of HDR's North Central Texas solid waste management study and the Dubuque, Iowa and Springfield, Missouri, energy and resources recovery studies. Damschen is a native of Montana and joined HDR following graduation from M.S.U. in 1972. He has been continuously involved in solid waste energy and materials recovery projects. His recently completed assignment as Project Engineer for the Springfield, Missouri Study and his current involvement in the St. Cloud and Rochester, Minnesota Studies are testimony of his emergence as a capable and knowledgeable engineer in this new field.

The philosophy and approach of HDR was presented in its introduction of the firm's proposal to the Solid Waste Management Bureau. It states in part:

"In recent years there has been a dramatic increase of interest in the concept of resource recovery from domestic solid wastes. This interest had been stimulated by widespread shortages of energy and materials and a realization that such resources are not unlimited in the United States or in the world.

"These shortages have resulted in significant increases in the prices of energy and materials. Thus, recovery of energy and secondary materials from solid wastes has become not just an 'ideal' but a realistic economic alternative to former disposal oriented practices.

(continued)

"It should be emphasized that there is no one best technical approach to resource recovery from solid wastes. Likewise resource recovery is not always a feasible alternative for solid wastes management. Each area or region is different in many respects: characteristics and quantities of refuse generated, population density and distribution, existing solid waste management practices, environmental considerations, existing or potential energy users, availability of markets for recovered materials, and so on. Thus, each area requires a feasibility study as proposed for the State of Montana."

EPA Finds BTU's In Trash

The overall heat content of a typical pound of refuse, including the moisture, ash, and metal fractions as well as the combustible material would be 5,260 BTU (British Thermal Units) per pound or slightly over 10.5 million BTU per ton, according to a study by the Environmental Protection Agency (EPA).

Analysing the composition of typical municipal refuse, the EPA found that paper products accounted for 53 percent of the weight; food wastes such as meat scraps and vegetable food waste accounted for 8 percent; glass comprised another 8 percent; ferrous and nonferrous metals made up 7 percent; and the remaining 24 percent consisted of grass clippings, rags, leather goods, and various other items.

Stated another way, the EPA study showed that 52.7 percent of the solid waste consisted of volatile matter; 7.3 percent was fixed carbon, 20 percent was ash and metals; and the final 20 percent was moisture. The combustible portion of the waste (volatile matter and fixed carbon), which made up 60 percent of the total weight, had a heat content of 8,766 BTU per pound.

This heat content is most nearly comparable to that of low-rank lignites which have a heat content of slightly less than 12 million BTU per ton. The refuse, however, has a lower moisture level (20 percent) compared with the average of 50 percent found in a low-rank lignite.

A desirable quality of solid waste is its low sulfur content, usually less than 0.12 percent by weight. A heat content of 5,260 BTU per pound and a sulfur level of 0.12 percent translates into 0.23 pound of sulfur per million. This means that refuse used as a fuel in new or modified steam plants would meet the federal emission standards for these plants. These standards essentially call for the use of coal with a sulfur content of 0.6 pound per million BTU. On an equivalent heat basis, the burning of refuse would be equivalent to burning bituminous coal with a sulfur content of 0.3 percent.

Stillwater County Abandons Sanitary Landfill

Stillwater County is the first Montana County to abandon its sanitary landfill and develop a countryside collection system to transport its solid waste to Billings for disposal.

According to a Eleven County Solid Waste Study by Central Montana Development Federation, many counties of sparse population cannot afford the cost of available land for disposal sites and the expense of maintenance equipment necessary to maintain adequate sanitary landfills.

Consequently, it was proposed that the eleven counties team up to develop a single system for collection. Although Stillwater County is the only one which accepted the invitation to participate in the multi-county collection system, county officials have indicated great satisfaction with the Eleven County Study. The proposal for a single solid waste district received only minor opposition in public hearings conducted in Stillwater County.

The new system will be operated by placing four and six-cubic yard green boxes throughout the county within one mile of 50% of the county residents and within five miles of 90% of Stillwater's population. A 30 yard packer will combine the contents of these boxes and deliver it to a 75 yard compactor trailer in Columbus.

The cost per household in the county for the pickup services will be approximately \$24.00 per year. The total budget is estimated at \$42,000 per year including equipment costs.

Other counties in the Eleven County Study include: Yellowstone, Carbon, Big Horn, Sweet Grass, Golden Valley, Musselshell, Wheatland, Judith Basin, Fergus and Petroleum.



Junk Yard Gets Wrong Car

Missoulian Ralph Kuhns came home from work one day to find his 1960 white Falcon station wagon missing.

Assuming the car was stolen, he promptly reported it to the police. Two days later, Kuhns was informed his car had fallen victim to the Missoula County junk car program.

A neighbor of Kuhns' had requested that her white Falcon sedan be hauled away by county junk car crews. But, before the county could pick the car up, she gave it away. When the county truck came, the crew assumed Kuhns' car was the junker, hauled it away and smashed it into a lump of metal.

"It was our second car," Kuhns said. "It was in good condition. I was replacing a switch on it at the time so it wasn't running."

Kuhns said the county was very apologetic and reimbursed him \$125 for the mistake. He simply thinks it was a funny incident now.

Kentucky Streamlines Landfill Regulations

General and specific requirements for construction and operation of landfills are proposed in one regulation by the Solid Waste Division of the Kentucky Department of Natural Resources and Environmental Protection. Four regulations were consolidated into one new one.

The regulation which will apply to new and existing sites, allows six months for landfills already having permits to meet changed construction specifications and 90 days to comply with changed operation requirements.

Permit applicants must demonstrate financial responsibility for the landfill's operation by posting bond with the state treasurer. There are nine specific standards which constitute a basis for permit denial.

In addition, the division may now require persons requesting permit renewal to submit additional information to determine if a landfill is suitable for continued operation.

The requirements for closing a landfill provide that an inspection be made before earth moving equipment is removed from the site. Permit holders must also notify the department 30 days before closing.

State Department of Health
and Environmental Sciences
Helena, Montana 59601

Application to mail
at 2nd Class
postage rate is
pending at
Helena, Montana