

Information from Battelle

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RICHLAND, Washington---Turning sewage sludge into asphalt is not the same as turning lead into gold, but it could be a "gold mine" for Hawaiians.

Researchers at Battelle's Pacific Northwest Laboratories are examining a process for converting sewage sludge to synthetic asphalt. The work is sponsored by the City and County government of Honolulu and funded by the U.S. Environmental Protection Agency and the Hawaii State government.

According to Battelle's Jon M. Donovan, project manager, most of Hawaii's sewage sludge is incinerated or buried in landfills. Land available for landfills in Hawaii is becoming scarce. He also said that Hawaii imports all its asphalt petroleum from the mainland for about \$130 per ton.

"If the concept proves feasible," Donovan said, "it could benefit Honolulu in several ways. It could be a way of producing lower-cost, synthetic paving material and disposing of sewage sludge in an environmentally acceptable manner. The accompanying synthetic oil product could also be used as fuel oil."

The composition of sewage sludge varies from site to site. For that reason, the Battelle study uses Honolulu sludge.

"Our previous studies showed promise that cellulose -- a major constituent in sewage sludge -- could be converted to an oil similar to asphalt grade petroleum.

"We ran tests on synthetic asphalt made from pure cellulose-derived oil, on 100 percent petroleum asphalt and on a 35-65 percent combination," said Donovan. When wet, the blend seemed to retain its tensile and compression strength even better than regular asphalt.

"Our laboratory research involves converting the sewage sludge to synthetic asphalt. Then we run a series of tests to determine its specific chemical and physical properties.

"As with processing normal asphalt, this stuff smells unpleasant," Donovan said. "And we're investigating methods to remove the smell before it is laid down on a roadbed. Ideally, it won't smell any different than regular asphalt--even on a hot day."

Researchers expect to complete the one-year study in early 1981. However, Donovan said they expect to have some preliminary results in about three to four months regarding the project's ultimate feasibility.

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