M E M O R A N D U M

TO: Nancy McClintock, Division Manager
Environmental Resource Management Division

FROM: Mike Lyday, Environmental Quality Specialist, Field Operations
Environmental Resource Management

DATE: April 25, 1994

SUBJECT: Lead Content In Sediments Deposited Below A Storm Sewer

Roger Baker, a director of Save Barton Creek Association, requested assistance from our department in analyzing the lead content from sediment deposited in a small ponded area directly below a storm sewer outfall feeding Gaines Creek from MoPac Highway and Highway 290 West.

The sediment sample was delivered to the City's Walnut Creek Laboratory for analysis, and 66 mg/kg of lead content was reported to me today. This is an analysis of only one sample, but it serves to make some interesting comparisons. The establishment of toxic sediment criteria or standards is a relatively new area, and several different criteria have been proposed by the scientific community. Five of these criteria, all based on statistically significant adverse effects on biological indicators, are considered in the context of the 66 mg/kg lead found in the sediment sample of concern:

1) NOEL (No Observable Effects Level) = 21 mg/kg lead

2) PEL (Probable Effects Level) = 160 mg/kg lead

3) ERL (Effects Range Lower) = 35 mg/kg lead

4) ERM (Effects Range Medium) = 110 mg/kg lead

5) AET (Apparent Effects Threshold) = 300 mg/kg lead (for benthics)
This is level at which adverse effects always occur.

The 66 mg/kg from stormwater outfall sediment tends to fall between the ERL and ERM levels. This lead content can be put into further perspective by comparing it to lead concentrations associated with sediment analyzed from other sources. For instance, sediment sampled by ECSD (Town Lake Study, Diagnostic) in Town Lake at the mouths of urban creeks ranged from no detection at the mouth of Barton Creek to 59.64 mg/kg at the mouth of Harper's Branch. However, a better comparison for a stormwater outlet sediment sample may be sediment recently sampled by ECSD (Contaminated

Sediment Grant) from a downtown inlet filter (204 mg/kg) and a Barton Springs Road inlet filter (15 mg/kg). Furthermore, sediment which exceeded the AET level was found at a gas station oil/grit separator near Waller Creek (386 mg/kg).

The lead concentration of the sample analyzed for Roger Baker is not surprising considering the above comparisons, but it indicates that lead coming from this stormwater outfall is detectable at a level above the ERL and may represent the level of lead which may be removed from this area using water quality control structures.

If you have any questions regarding this investigation please call me at 499-2956.

Mike Lyday

Mike Lyday
Environmental Resource Management

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