



THREE HAWTHORN PARKWAY  
VERNON HILLS, ILLINOIS 60061  
PHONE: 708-918-4000

13 December 1990

RECEIVED

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Region III Headquarters

Mr. Ben Hall  
Environmental Response Division  
Michigan Department of Natural Resources  
Region III Headquarters  
P.O. Box 30028  
Lansing, Michigan 48909

Subject: Linden Road Landfill Site Investigation and Interim  
Remedial Measures Evaluation, Flint, Michigan

Dear Mr. Hall:

This letter is to document our telephone conversation on 4 December 1990 on issues regarding the Linden Road Landfill investigations. During the above conversation, the following items were discussed and agreed to by the Michigan Department of Natural Resources (MDNR):

1. As indicated in WESTON's previous letter dated 26 November 1990, both a photoionization detector (PID) and a flame ionization detector (FID) will be used for field screening and during the soil gas survey.
2. The installation of both the shallow and deep wells were approved per approaches presented in the Site Investigation Work Plan and as clarified in WESTON's 26 November 1990 letter to MDNR. However, MDNR will retain the option to require deep wells even if a significant confining layer is encountered.
3. Only groundwater samples will be split with MDNR. It is not anticipated that MDNR will require split samples for other environmental media.
4. Approximately 10-20 percent of all samples will be analyzed using Tier II quality assurance/quality control (QA/QC) procedures. Standard Commercial data packages will be provided for the remaining 80-90 percent of the samples. A listing of items that will be included in Standard Commercial data packages and Tier II data packages is included in Attachment A.
5. The pesticide and PCBs analyses will be performed to determine their respective total concentrations.



Mr. Ben Hall

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Attached to this letter (Attachment B) is a revised version of Table 3-1, Appendix B of the IRME Work Plan that reflects the change in pesticide/PCB analysis. Please also note that all the surface sludge samples will be analyzed for semi-volatile organics TCLP analysis. Corrosivity, ignitability, and reactivity tests will be performed on all the drum and surface sludge samples.

The Sampling Locations Map, identified as Figure 2-1 in Appendix B of the IRME Work Plan also has been revised due to errors in the numbering sequence of sampling locations. A corrected version of this map is included as Attachment C to this letter.

The sampling of surficial materials related to the IRME was completed on 30 November 1990. A detailed inspection of the site prior to sampling did not reveal the presence of any surficial features other than those documented in the Phase I Investigation Report.

If you have any questions or need additional information, please call either of the undersigned at (708) 918-4000.

Very truly yours,

ROY F. WESTON, INC.

A handwritten signature in black ink, appearing to read "S. Babusukumar".

S. Babusukumar  
Project Manager

A handwritten signature in blue ink, appearing to read "Scott D. Springer".  
Scott D. Springer  
Project Director

SB:SDS:djh

cc: R. Eisenman - AC Rochester  
R. Neahusan - AC Rochester

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ATTACHMENT A

ITEMS INCLUDED IN A STANDARD COMMERCIAL DATA PACKAGE

Inorganic

1. Cover letter with Project Manager/Unit Leader sign-off.
2. Chain of Custody.
3. Case narrative if any technical problems occurred.
4. "Flag" sheet describing data qualifiers used.

Organics - Pesticides, PCBs, GC/MS

1. Cover letter with Project Manager/Unit Leader sign-off.
2. Chain of Custody.
3. Case narrative if any technical problems occurred.
4. "Flag" sheet describing data qualifiers used.
5. Lab Chron describing sample date, extraction/prep date and analysis date.
6. Sample data summaries including laboratory blanks (spreadsheet).
7. Ten peak library search report for GC/MS Volatiles and semivolatiles.

## ITEMS INCLUDED IN A TIER II DATA PACKAGE

### Inorganic

1. Cover letter with project manager/unit leader sign-off.
2. Chain off custody.
3. Case narrative.
4. "Flag" sheet describing data qualifiers used.
5. Quality control summary report of method blanks, laboratory control samples (LCS), matrix spikes (accuracy), and duplicates (precision).

### Organic - (Pesticides, PCBs)

1. Cover letter with project manager/unit leader sign-off.
2. Chain of custody.
3. Case narrative.
4. "Flag" sheet describing data qualifiers used.
5. Lab chron describing sample date, extraction/prep date and analysis date.
6. Sample data summaries.
7. QC summary (spreadsheets)
  - a. Surrogate % recovery
  - b. MS/MSD summary
  - c. Method blank
8. Sample data package
  - a. Results summary (Form 1)
  - b. Chromatograms/quant reports - primary column
  - c. Chromatograms/quant reports - confirmations
9. Standards data package
  - a. Chromatograms/quant reports
10. Raw quality control data package
  - a. Blank data
    - 1). Results summary (Form 1)
    - 2). Chromatograms/quant reports - primary column
    - 3). Chromatograms/quant reports - confirmation column
  - b. Matrix spike data
    - 1). Results summary
    - 2). Chromatograms - primary column
    - 3). Chromatograms - confirmation column

Organic - GC/MS

1. Cover letter with project manager/unit leader sign-off.
2. Chain of custody.
3. Case narrative.
4. "Flag" sheet describing data qualifiers used.
5. Lab chron describing sample date, extraction/pep date, extraction/pep and analysis date.
6. Data summaries.
7. QC Summary.
  - a. Surrogate % Summary (Form II)
  - b. Matrix spike (Form III)
  - c. Reagent Blank Summary (Form IV)
  - d. GC/MS Tuning and Calibration Standard (Form V)
8. Sample Data Package.
  - a. Sample data in order of analysis.
    1. Tabulated Results (Form I)
    2. Tentatively Identified Compound (Form 1B)
    3. Raw data in order:
      - a. Reconstructed Ion Chromatogram(s)
      - b. Quantitation Reports(s)
      - c. HSL Mass Spectra
      - d. TIC Mass Spectra
      - e. GC/MS Library Search for TIC
9. Standard Data Package.
  - a. Initial Calibration Data:
    1. Form VI
  - b. Continuing Calibration Data:
    1. Form VII
    2. Reconstructed Ion Chromatograms(s) and Quantitation Report(s)
10. Raw QC Data Package.
  - a. GC/MS Tuning and Calibration Standard: DFTPP
    1. Bar Graph
    2. Mass Listing
  - b. Blank Data
    1. Tabulated Results (Form I)
    2. TIC Results (Form IB)
    3. Raw Data
      - a. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)
      - b. HSL Spectra
      - c. TIC Spectra
      - d. GC/MS Library Search for TIC
  - c. Matrix Spike Data
    1. Tabulated Results (Form I)
    2. Raw Data
      - a. Reconstructed Ion Chromatogram(s)
      - b. Quantitation Report(s)

ATTACHMENT B

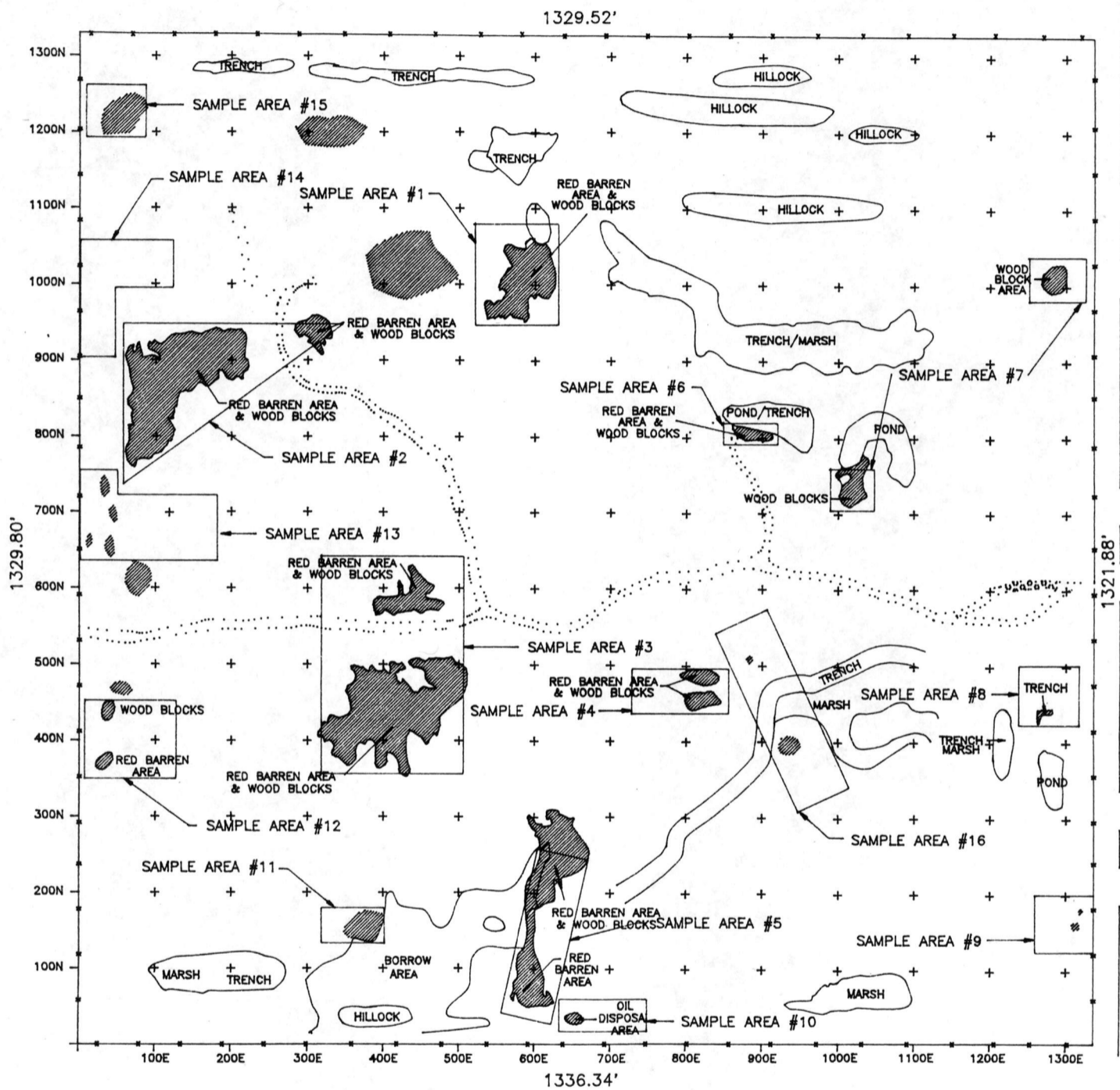
TABLE 3-1  
 LABORATORY ANALYTICAL PARAMETERS  
 BY WASTE TYPE  
 LINDEN ROAD LANDFILL  
 FLINT TOWNSHIP, MI

Parameter	Red Barren Areas (4 Samples)	Wood Blocks (4 Samples)	Oil Disposal Area Sludge and Soil (2 Samples)	Drum Contents (12 to 15 Samples)	Surface Sludges (6 Samples)
Volatile Organics, (TCLP)	X	X	X	X <sup>1</sup>	X <sup>1</sup>
Semi-Volatile Organics, (TCLP)	X	X	X	X <sup>1</sup>	X <sup>1</sup>
Pesticides/PCBs (Total)	X	X	X	X <sup>1</sup>	X <sup>1</sup>
RCRA Metals, (TCLP)	X		X	X <sup>1</sup>	X <sup>1</sup>
Corrosivity	X		X	X <sup>1</sup>	X <sup>1</sup>
Ignitability	X		X	X <sup>1</sup>	X <sup>1</sup>
Reactivity					
Cyanides	X		X	X <sup>1</sup>	X <sup>1</sup>
Sulfides	X		X	X <sup>1</sup>	X <sup>1</sup>
Paint Filter Test	X		X		X <sup>1</sup>
<u>Compatability Screening</u>					
H <sub>2</sub> O				X	X
Hexane				X	X
pH				X	X
Peroxides				X	X
Oxidizers				X	X
Halogens				X	X

TCLP Toxic Characteristic Leachate Procedure

<sup>1</sup>Analysis pertains to waste composites resulting from compatability screening only.

ATTACHMENT C



**LEGEND**  
 - - - - - FENCE LINE  
 [Hatched Box] SUBJECT AREAS OF SURFACE WASTE CHARACTERIZATION  
 + GRID LOCATION

0' 50' 100'  
 SCALE

NOTE: REFERENCE WORK PLAN TABLE 2-1 FOR NUMBER OF SAMPLES AND COMPOSING PLAN.

FIGURE 2-1  
 SAMPLING LOCATION MAP