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WORKPLAN . HW 915152 . 1993-10-15 . Saginaw-Lead-Sampling .pdf

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Project Site numbers will be proceeded by the following:

Municipal Brownfields - B
Superfund - HW
Spills - SP
ERP - E
VCP - V
BCP - C

915152

WehranEnviroTech

LEAD SAMPLING PLAN

NYSDEC SITE NO. 915152

Prepared For

GENERAL MOTORS CORPORATION

SAGINAW DIVISION

Buffalo, New York

October 1993

WEHRAN - NEW YORK, INC.

Grand Island, New York

Environmental Engineers • Scientists • Constructors

GM - Saginaw
Technical
F - Y
D - Y ?

WehranEnviroTech

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345 Lang Boulevard
Suite 1
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Tel: 716-773-1801
Fax: 716-773-1828

October 8, 1993

Edward J. Feron, Jr., P.E.
New York State Department of
Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: GM-Saginaw
Lead Sampling Plan
NYSDEC Site No. 915152
WE Project No. 03756.SP

Dear Mr. Feron:

On behalf of the Saginaw Division of General Motors Corporation, (GM-Saginaw) Wehran-New York, Inc (Wehran) is pleased to submit three copies of this Sampling Plan to the New York State Department of Environmental Conversation (NYSDEC). At our September 22, 1993 meeting, we discussed submittal of a Sampling Plan for lead by October 12, 1993 with the understanding that we would receive the NYSDEC comments by October 19, 1993.

We trust you find this Plan agreeable and look forward to your response. Should you have any questions, please contact Mr. Anthony Glieco at (716) 891-7078.

Very truly yours,

WEHRAN-NEW YORK, INC.

Raymond F. Laport, P.E.
Project Manager

/jmv
Attachments
cc: A. Glieco, D. Seamans, J. Braun, J. Medved - GM
B. Kogut - Bond, Schoeneck and King

LEAD SAMPLING PLAN

NYSDEC SITE NO. 915152

Prepared for

GENERAL MOTORS CORPORATION
Saginaw Division
Buffalo, New York 14240

Prepared by

WEHRAN-NEW YORK, INC.
345 Lang Boulevard, Suite 1
Grand Island, New York 14072

WE Project No. 03756.SP

October 1993

1.0 INTRODUCTION

Wehran-New York, Inc. (Wehran) was retained by the Saginaw Division of General Motors Corporation (GM-Saginaw) to prepare a Sampling Plan to further evaluate the extent of lead contamination near the Oil Containment Area near the Oily Wastewater Treatment Plant at the GM-Saginaw Facility in Buffalo, New York.

1.1 BACKGROUND

Four samples of "ash" contaminated with PCBs and oil were collected from an area near test pit TP-2 adjacent to the Oil Containment Area. The samples were analyzed for lead via the Toxic Characteristic Leaching Procedure (TCLP). Results indicated that lead concentrations in the extract ranged from approximately 0.1 to 5.1 milligrams per liter. Consequently, additional investigations were deemed appropriate at a meeting with the New York State Department of Environmental Conservation (NYSDEC) on September 22, 1993 to better define the extent of lead. At this meeting, borings on a 50 foot center grid interval were discussed.

To enable a better understanding of the fill at the site, a map of the fill thickness was prepared as Figure 1. This figure presents the fill thicknesses at the borings and test pits completed between 1987 and 1993 in the vicinity of the Oil Containment Area. Additionally, this map shows the areal extent of the "ash" thickness.

As shown on this figure, the fill thicknesses range from about four to eight feet and appear on average to be about five to six feet thick. The "ash" materials appear to be about two to five feet thick and appear on average to be about three to four feet thick. These results were used to assist in locating the grid as discussed in the Scope of Work (see Section 2.0).

1.2 PURPOSE

The purpose of this Sampling Plan is to obtain samples of fill materials to evaluate the lateral and vertical extent of lead in fill materials near the Oil Containment Area. The outcome of this study is to assess whether lead is a localized issue limited to the area near the Oil Containment Area or if a more widespread problem exists.

2.0 SCOPE OF WORK

TASK 1.0 – BORINGS

Twenty-five (25) borings (BL-1 to BL-25) are proposed to assist in evaluating the extent of lead and PCB contamination (see Figure 2). Eighteen (18) of these borings, BL-1 to BL-18, are located on a 50-foot grid spacing based on the extent of fill materials (see Figure 1). The grid boring locations are modified so that borings are completed outside of the Oily Wastewater Treatment Plant Building and structures. Further modification to boring locations may be necessary in the field due to utility locations or other physical site features.

Borings, BL-19 and BL-20, are positioned to provide samples of oil and "ash" fill. Results of these borings will be used to assist in assessing whether the oil or "ash" fill is the major contributor to lead.

Borings BL-21 to BL-25 are located to assess PCB concentrations near the abandoned clay tile pipe.

The sequence of borings proposed to be drilled and sampled is as follows:

ORDER	BORING NOS.	PURPOSE
1	BL-1, BL-2, BL-16 and BL-18	Drill and sample these borings first to assess whether the fill materials contain significant lead levels at the limits of the grid.
2	BL-19 and BL-20	Drill and sample borings to assess whether oil is a major contributor to lead contamination.
3	BL-21 to BL-25	Drill and sample these borings to assess extent of PCBs near the Clay Tile Pipe.

If results from these borings suggest lead is a more widespread issue than the area covered by the grid, work will be ceased and re-evaluated. Otherwise, the boring program will be continued. The order of the remaining borings will be completed from the "outer" borings, (i.e., those furthest from the Oil Containment Area) to those closer to the containment area.

Prior to drilling and between borings, steam cleaning of the equipment will be completed to limit potential cross-contamination. Decontamination water will be containerized in 55-gallon drums. The drummed water will be sampled and tested. The water will be disposed to the Buffalo Sewer Authority (BSA), if approved, or another off-site facility. Drill spoils will be placed into the boring upon completion. The upper six inches of the borehole will be capped with concrete.

TASK 2.0 – SOIL SAMPLING

The goal of the soil sampling is to obtain representative samples of fill materials to characterize the areal and vertical extent of lead. The areal extent of lead will be addressed by the physical boring location. The vertical extent of lead will be evaluated as described below.

Excluding the pavement, it is expected that four layers of fill material could be present at any boring location based on borings TB-93-1 to TB-93-4 completed in April 1993 near test pit TP-2. It is possible, however, that fewer or more layers could also exist. The four fill layers include: a pavement subgrade; slag; sand and gravel fill; and an "ash" layer. At these borings, underlying the "ash" layer is the natural soils. Assuming these layers exist throughout the area of investigation, samples would be collected from each boring as follows:

- Slag;
- Sand and gravel fill; and
- "Ash".

If fewer layers exist, then a reduced number of samples would be collected. Furthermore, to assess whether the major contributor to the lead is from the oil or the fill, samples of fill without oil will be segregated from oil contaminated fill. As such, three to four samples (if oil is present) will be collected from each boring. Finally at three boring locations, a sample of the upper six inches of the natural material will be collected for testing. [Note: If additional layers of fill materials are identified below the pavement bedding, then a sample will be obtained for analytical testing.]

The above approach is intended to assess the nature of the fill materials relative to lead, and will be applied to the initial set of borings (BL-1, BL-2, BL-16, BL-18, and BL-19 to BL-25). The outcome of sampling and testing soils for lead will provide insight regarding which layer(s) of fill or whether the oil is the major contributor to lead. Consequently, after the initial borings are complete, it is intended to have an on-site field meeting with the NYSDEC to discuss the findings. At this meeting, the fill materials of interest and/or oil should be focused upon, thereby reducing the number of samples required for analytical testing.

Fill samples will be collected following ASTM D-1586 "Split Barrel Sample Collection". Samples will be collected directly from the split spoon sample using a pre-cleaned stainless steel spoon. The spoon will be cleaned using soap and water prior to reuse. Sample handling, containers, preservatives, and chain-of-custody protocols will be followed pursuant to GM-Saginaw's Workplan and QAPP dated December 1992.

TASK 3.0 – ANALYTICAL TESTING

From the initial 11 borings (BL-1, BL-2, BL-16, BL-18, and BL-19 to BL-25), it is expected that 33 to 44 samples will be collected for testing plus three additional samples of the natural materials. Also, as discussed previously, samples from other fill layers will be collected, if identified.

The samples will be analyzed for lead via USEPA Method 7421 or 6010 (reference "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods: SW-846 Third Edition"). Analyses will be completed so that results will be available 24 to 48 hours from time of sample collection. In addition, samples exhibiting oil contamination will be tested for PCBs via USEPA Method 8080. Finally, five samples exhibiting the total lead concentrations in excess of 100 mg/kg (if any), will be subjected to TCLP and the extract will be analyzed for lead using Method 7421 or 6010.

Additionally, approximately ten percent of the samples will be collected in duplicate (i.e., if 33 samples are analyzed for lead, then four duplicates will be analyzed). This will be done to assess the quality of the data (precision and accuracy of the results). The analytical protocols will be in accordance with the QAPP dated December 1992, and will be followed to include NYS ASP (1991).

TASK 4.0 – SURVEY

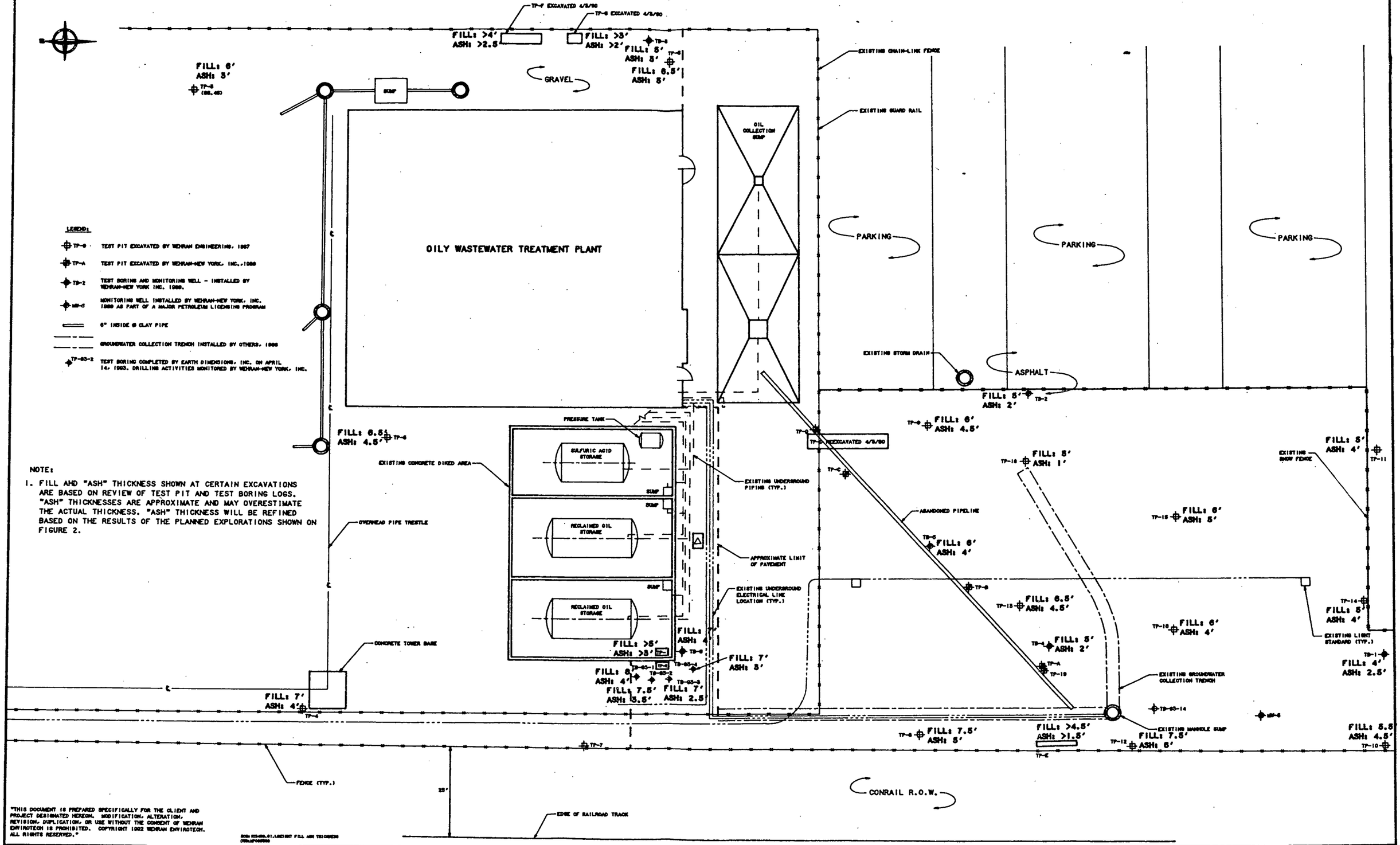
A survey will be completed to measure the elevation of the borings and their location relative to physical site features. Survey data will be used to assess the continuity of fill layers throughout the boring network via preparation of cross-section(s).

TASK 5.0 – DATA ANALYSIS AND REPORTING

Data generated from Tasks 1 through 4 will be integrated with the existing data to describe the nature and extent of the subsurface materials; potential or suspected source of the lead; and nature and extent of lead; and other chemical findings (PCBs, TCLP lead). These results will be tabulated and presented on figures including cross-sections to depict the findings. Cross-section will assist in describing the extent of the fill materials laterally. A report will be prepared summarizing the work methodologies, results of testing, findings and conclusions. Four copies of the report will be submitted for the NYSDEC's review.

3.0 SCHEDULE

Upon approval by the NYSDEC, field work will commence within one week. It is expected that drilling and sampling will require approximately one week. Results of total lead testing will be available within one to two business days from the date of sample collection. The PCB and TCLP lead analysis will be available within two weeks of sample collection. Data analysis and reporting will be completed within three weeks. Thus, within five to six weeks after approval, the report will be submitted to the NYSDEC.



LEGEND:

- TP-B — TEST PIT EXCAVATED BY WEHRAN ENGINEERING, 1987
- TP-A — TEST PIT EXCAVATED BY WEHRAN-NEW YORK, INC., 1988
- TP-2 — TEST BORING AND MONITORING WELL - INSTALLED BY WEHRAN-NEW YORK INC. 1988.
- MW-6 — MONITORING WELL INSTALLED BY WEHRAN-NEW YORK, INC. 1988 AS PART OF A MAJOR PETROLEUM LICENSING PROGRAM
- 6" INSIDE Ø CLAY PIPE
- GROUNDWATER COLLECTION TRENCH INSTALLED BY OTHERS, 1988
- TP-03-2 — TEST BORING COMPLETED BY EARTH DIMENSIONS, INC. ON APRIL 14, 1903. DRILLING ACTIVITIES MONITORED BY WEHRAN-NEW YORK, INC.

NOTE:

1. FILL AND "ASH" THICKNESS SHOWN AT CERTAIN EXCAVATIONS ARE BASED ON REVIEW OF TEST PIT AND TEST BORING LOGS. "ASH" THICKNESSES ARE APPROXIMATE AND MAY OVERESTIMATE THE ACTUAL THICKNESS. "ASH" THICKNESS WILL BE REFINED BASED ON THE RESULTS OF THE PLANNED EXPLORATIONS SHOWN ON FIGURE 2.

WehranEnviroTech
Wehran-New York, Inc.

	DATE
DESIGN BY:	
DRAWN BY:	
CHECKED BY:	
SUPV. BY:	
APP'VD BY:	

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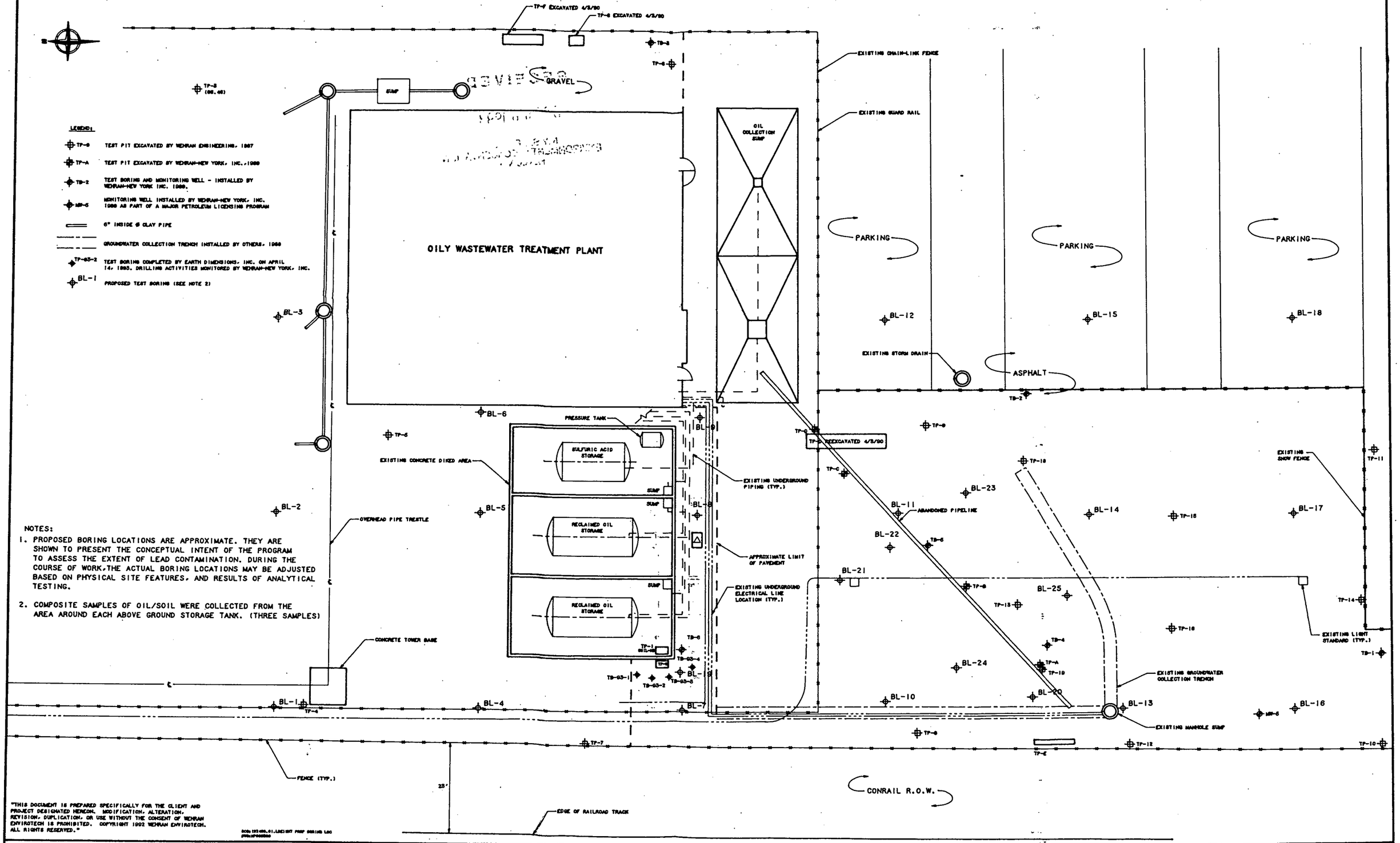
GENERAL MOTORS CORP. SAGINAW DIVISION
CITY OF BUFFALO ERIE COUNTY NEW YORK

FILL AND ASH THICKNESS MAP

Figure No. 1
Project No. 02408



LEGEND:

- TP-# — TEST PIT EXCAVATED BY WEHRAN ENGINEERING, 1987
- TP-A — TEST PIT EXCAVATED BY WEHRAN-NEW YORK, INC., 1988
- TB-2 — TEST BORING AND MONITORING WELL - INSTALLED BY WEHRAN-NEW YORK INC. 1988.
- MP-6 — MONITORING WELL INSTALLED BY WEHRAN-NEW YORK, INC. 1988 AS PART OF A MAJOR PETROLEUM LICENSING PROGRAM
- 6" INSIDE Ø CLAY PIPE
- GROUNDWATER COLLECTION TRENCH INSTALLED BY OTHERS, 1988
- TP-83-2 — TEST BORING COMPLETED BY EARTH DIMENSIONS, INC. ON APRIL 14, 1983. DRILLING ACTIVITIES MONITORED BY WEHRAN-NEW YORK, INC.
- BL-1 — PROPOSED TEST BORING (SEE NOTE 2)

NOTES:

1. PROPOSED BORING LOCATIONS ARE APPROXIMATE. THEY ARE SHOWN TO PRESENT THE CONCEPTUAL INTENT OF THE PROGRAM TO ASSESS THE EXTENT OF LEAD CONTAMINATION. DURING THE COURSE OF WORK, THE ACTUAL BORING LOCATIONS MAY BE ADJUSTED BASED ON PHYSICAL SITE FEATURES, AND RESULTS OF ANALYTICAL TESTING.
2. COMPOSITE SAMPLES OF OIL/SOIL WERE COLLECTED FROM THE AREA AROUND EACH ABOVE GROUND STORAGE TANK. (THREE SAMPLES)

WehranEnviroTech
Wehran-New York, Inc.

	DATE
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GENERAL MOTORS CORP. SAGINAW DIVISION
CITY OF BUFFALO ERIE COUNTY NEW YORK

PROPOSED BORING LOCATION PLAN

Figure No. 2
Project No. 02408