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WORK PLAN FOR SUPPLEMENTAL FIELD AND LABORATORY INVESTIGATIONS
MILLINGTON SUPPACT TN
03/13/1987
HARDING LAWSON ASSOCIATES

WORK PLAN FOR
SUPPLEMENTAL FIELD AND LABORATORY INVESTIGATIONS
AT NAS MEMPHIS

Introduction

Additional field and laboratory investigations are required at the NX service station primarily to evaluate the feasibility of the recommended remedial technique and secondarily, to further confirm the nature and extent of subsurface contamination.

The HLA site safety plan originally submitted to, and approved by SODIV is still considered in effect. Previous field and laboratory investigations indicate no significant hazards not already covered by the plan and no need for modification of the plan.

Field Investigation

A. Borings

1. Drill two borings between Wells MEM-757-1 and -3, and MEM-757-2 using hollow stem auger drilling techniques.

2. Collect soil samples at approximately five-foot intervals, using split spoon sampling methods, in particular 3.5-5 feet and 8.5-10 feet.

3. Screen samples for volatile organic vapors using Photoionization Detector (PID).

4. Select samples with highest vapor concentrations for chemical and/or biological analysis.

5. Seal open borehole by filling with cement/bentonite grout.

B. Monitoring Well Installations

1. Drill four to six borings at locations parallel to Old Navy Road (north and south of road) using hollow stem auger drilling techniques.

2. Collect, screen and select soil samples as described in Sections A2 through A4 above.

3. Install four-inch diameter monitoring well in selected borings including PVC blank and slotted casing, coarse sand filter pack, bentonite seal, cement/bentonite grout, below-grade wellhead box and locking vented cap.

4. Develop new wells by hand bailing to remove cuttings and fine sediment.

C. Groundwater Level Measurements and Sampling

1. Survey top of casing (TOC) elevations for new monitoring wells.

2. Measure groundwater levels in existing (B-1 through B-4 and MEM-757-1 through MEM-757-6) and new (MEM-757-7 through MEM-757-10) monitoring wells.

3. Bail three well volumes from all existing and new wells, and then collect groundwater samples for chemical analysis.

D. Slug Tests

1. Perform two slug tests on selected new monitoring wells.

Laboratory Investigation

A. Chemical Analyses

1. Analyze five soil samples for hydrocarbon contamination (benzene, toluene, ethyl benzene and xylenes [BTEX]) by EPA Method 602..

2. Analyze three soil samples for inorganic nutrient potential (pH, major cations/anions, micronutrients).

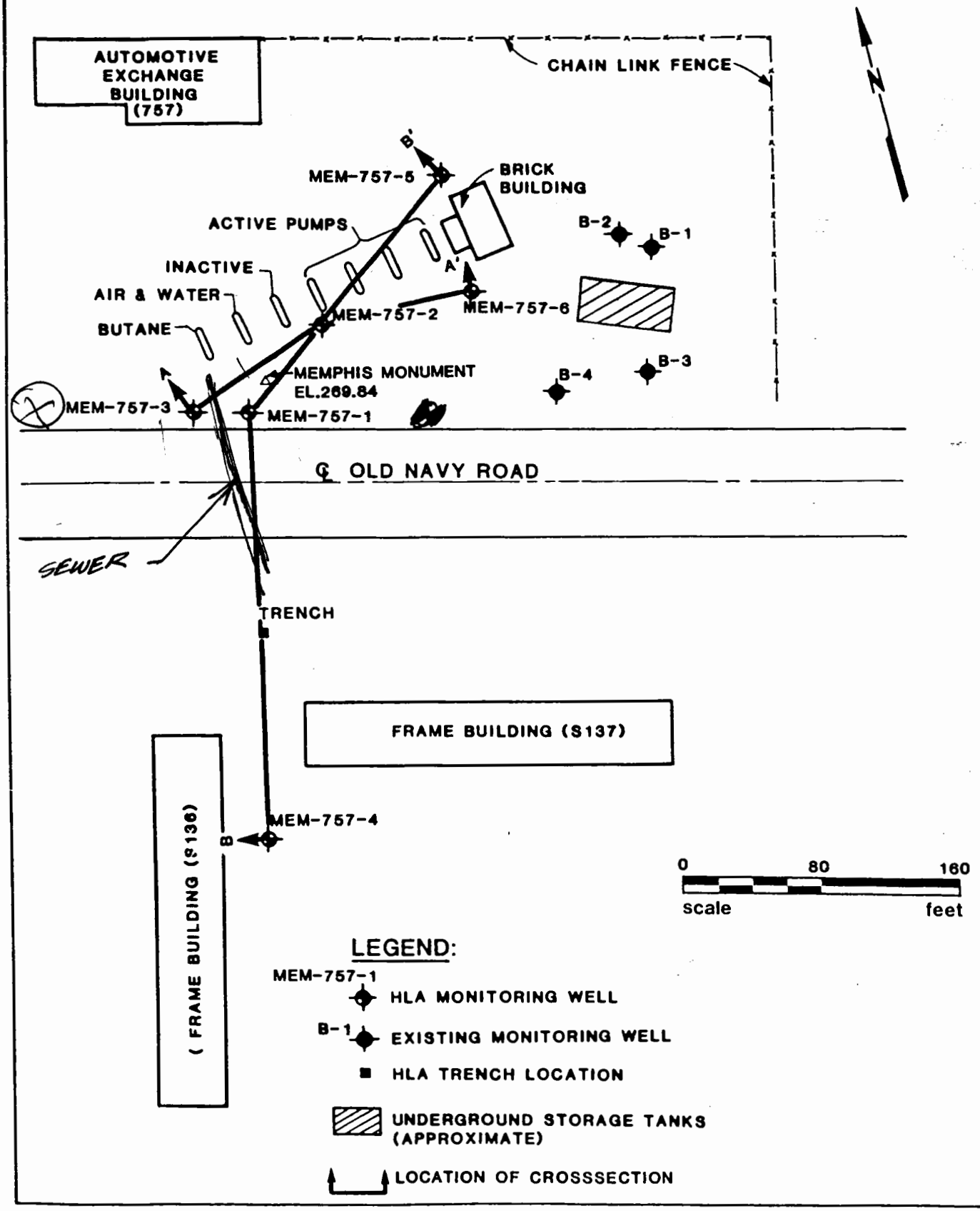
3. Analyze thirteen water samples for hydrocarbon contamination (BTEX) by EPA Method 602.

4. Analyze five water samples for inorganic nutrient potential as described in Section A2 above.

B. Biological Analyses

1. Analyze three soil samples for microbial population (number and type of indigenous microorganisms capable of degrading petroleum hydrocarbons).

2. Analyze three soil samples for biodegradation potential under natural and enhanced environmental conditions.



Harding Lawson Associates
Engineers Geologists & Geophysicists

SITE PLAN

NAS Memphis
Millington, Tennessee

PLATE 2

DRAWN	JOB / WBS	APPD	DATE	REVISED
ES	2176,111.12	BJT	3/13/87	