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July 11, 1991

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Subject: **Consent Decree Requirement**
Civil Action No. 87-1073-jb
General Electric, Albuquerque, N.M.

Attached is the report on the supplemental soil assessment performed in the vicinity of Drywell No. 2. Data validation on the analyses is scheduled to be completed by July 18, and will be submitted at that time.

Changes in the Corrective Measures Study are not planned based on the data obtained in the supplemental soil assessment.

Very truly yours,

Barry R. York
Environmental Project Manager

albuqsup.wp
attachment

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LAW ENVIRONMENTAL

SUPPLEMENTAL SOIL ASSESSMENT

GENERAL ELECTRIC COMPANY

APPARATUS SERVICE SHOP

ALBUQUERQUE, NEW MEXICO

JULY 1991

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OBJECTIVE

The objective of the additional assessment was to collect and analyze soil samples from the area of Drywell No. 2 to further define the horizontal and vertical limits of soil contamination associated with past releases from the drywell. These data supplement those presented in the RFI dated November 1990.

Facility and Site Description

General Electric's Apparatus Service Shop is located at 4420 McLeod Road, NE, in Albuquerque, New Mexico, on a 2-acre site in a light industrial park. The facility is approximately 4 miles northeast of downtown Albuquerque and approximately 4.5 miles east of the Rio Grande (Figure 1). The service shop building is located in the northeastern quadrant of the subject property (Figure 2). The building has plan dimensions of 60 feet by 100 feet. A 20 by 36 foot concrete work slab is located at the rear (south end) of the building. Steam cleaning is performed in this area. Asphaltic pavement covers the area immediately north and northeast of the building. The remainder of the area to the east has a gravel cover. Gravel has also been placed in lesser amounts around the south and west sides of the building. The area south of the building is presently being used to store miscellaneous equipment. The southern 133± feet of the parcel has been fenced and is being leased by Miller Metal Company for vehicle parking.

The GE Service Shop was constructed in 1969 for the repair of industrial equipment, primarily electrical motors. Transformers filled with askarels and insulating oils containing

PCBs, were also repaired at the service shop. Until 1983, wastewater from steam cleaning operations was disposed of in an on-site drywell(s). A more detailed description of the facility and of historic facility operations is presented in Task I: Description of Current Conditions - August 1988.

SCOPE OF WORK

Data Collection

To further define the vertical limits of the detected constituents in the area of Drywell No. 2, one soil test boring (7B-A) was advanced adjacent to boring B-7 (Figure 3). Split-spoon soil samples were collected at 5-foot intervals, starting at a depth of 35 feet and terminating at a depth of 60 feet. The soil samples collected from depths of 35, 40, 45, 50, 55, and 60 feet were analyzed using the methods listed on Table 1. Additional sample from a depth of 60 feet was split and analyzed using EPA Methods 8240 and 418.1. The split sample was analyzed on a rapid turnaround basis to determine if sufficient depth to define the vertical extent of constituents in soil had been reached prior to termination of the boring.

The soil samples collected on 5-foot centers were placed in appropriate containers and shipped overnight, under chain-of-custody protocol, to Law Environmental National Laboratories (LENL) in Pensacola, Florida, for analyses.

To further define the horizontal extent of constituents detected in borings B-12, B-13, and B-14, split-spoon samples were collected from two preliminary borings drilled at locations approximately 10 feet beyond the radius from Drywell No. 2 defined by borings B-12, B-13, and B-14 (Figure 3). Based on a review of the results of the analyses of samples from borings B-12, B-13, and B-14, the preliminary borings (7B-1 and 7B-2) were advanced to a depth of 35 feet. Soil samples were collected from depths considered to be most indicative of the possible migration of constituents from the drywell. Samples were collected and analyzed from depths of 20 and 25 feet (for consideration of lateral migration) and from 35 feet (for consideration of vertical migration). Soils were analyzed on a rapid turnaround basis by LENL in Pensacola for constituents using the methods listed on Table 2. Results of these analyses were used to determine the locations of four additional perimeter soil borings. The results were also used as the basis for extending boring 7B-2 to a depth of 60 feet. Additional samples were collected and analyzed from this boring at depths of 50 and 60 feet for analysis by EPA Method 418.1.

The four additional perimeter soil borings (Figure 3) were advanced and split-spoon samples were collected every 5 feet from 10 feet to 30 feet and at 40 feet (7B-3, 7B-4, 7B-5, and 7B-6). Additional samples from 50 and 60 feet were also collected from borings 7B-4 and 7B-5. Soils were analyzed by LENL in Pensacola for constituents using the methods listed on Table 3.

Soil samples from borings 7B-3, 7B-4, 7B-5 and 7B-6 were split with representatives of PRC Environmental Management, Inc. under subcontract to EPA. Sample splits came from depths of 15, 25, and 40 feet in each of the four perimeter borings.

Decontamination

Decontamination procedures were as described in the RFI Workplan dated September 1989. Prior to commencing drilling and between each boring, all downhole equipment was steam cleaned. Decontamination water was collected for discharge into GE's outlet to the public sewer system. All soil cuttings were placed in appropriately labeled drums for proper disposal.

Sampling equipment was decontaminated between each sample collection using the following procedures:

- Scrubbing with a brush and potable water;
- Cleaning with solution of Liquinox;
- Steam cleaning with potable water;
- Rinsing with reagent grade hexane; and
- Rinsing with distilled water.

Quality Assurance and Quality Control

Quality Assurance and Quality Control Procedures were as described in the RFI Workplan dated September, 1989. To provide quality assurance and quality control, the following procedures were performed:

- A trip blank of laboratory reagent water was prepared for each day of sampling (one of the trip blanks from 1 days sampling consisted of laboratory-prepared organic free soil instead of laboratory reagent water). Trip blanks were analyzed for the same volatile organic compounds as were the soil samples.

- An equipment blank of laboratory-prepared organic-free soil was prepared each day soil samples were collected. The equipment blanks were analyzed for the same volatile organic compounds as were the soil samples.

- A replicate sample was collected for each day of soil sampling. The replicates were analyzed for the same constituents as were the soil samples.

Data validation is being performed in the same manner as was performed for the samples collected during the RFI. A discussion of data validation (including laboratory deliverables) will be submitted under separate cover.

SUMMARY OF FINDINGS

Between April 25 and May 2, 1991, seven soil borings (7B-A, 7B-1, 7B-2, 7B-3, 7B-4, 7B-5, and 7B-6) were drilled in the area of Drywell No. 2 (Figure 3). The drilling was performed by Sergent, Hauskins and Beckwith, the same drilling subcontractor used previously for test drilling and sampling at this site. Drilling and sampling procedures are presented in Appendix A. Results of the laboratory analyses performed on the soil samples collected from the borings are summarized on Table 4 and on Figure 4. Figure 4A summarizes the laboratory analytical results for each of the temporary soil borings installed near Drywells No. 1 and 2. Complete laboratory analytical test reports are presented in Appendix B.

PCBs

PCBs were detected in samples from three of the supplemental borings (7B-2, 7B-5, and 7B-6) at concentrations ranging from .042 to 3.9 mg/kg (Table 4). The vertical extent of soil containing concentrations of PCBs was a depth of 20 feet in boring 7B-2, 10 feet in boring 7B-5, and 25 feet in boring 7B-6. Borings 7B-5 and 7B-6 are peripheral borings; PCBs were not detected in the other peripheral borings 7B-3 and 7B-4.

Volatile and Semi-Volatile Organic Compounds

Volatile Organic Compounds (VOCs) were detected in samples from three of the supplemental borings (7B-A, 7B-2, and 7B-6) at total concentrations ranging from 3.3 to 2,782 ug/kg (Table 4). Tetrachloroethene was detected in the 20-foot sample from boring 7B-2 at a concentration of 3.3 ug/kg. Several VOCs, principally xylenes and toluene at 14

and 15 ug/kg, respectively, were detected in the 10-foot sample from boring 7B-6. No VOCs were detected in any samples from the remaining borings drilled at locations radial to Drywell No. 2 (borings 7B-1 through 7B-6). These results indicate that only very limited migration of VOCs has occurred laterally from Drywell No. 2 to the locations of these borings, and that where VOCs were detected their vertical migration limits have been delineated.

Volatile organic compounds were detected in two of the soil samples collected from boring 7B-A, drilled adjacent to the drywell. Total VOC's in the 35-foot sample were 2782 ug/kg, of which the xylene concentration was 2600 ug/kg. Six ug/kg of xylenes was also detected at 45 feet. No VOCs were detected in the 40-foot sample and in those collected at 50, 55, and 60 feet, the boring's termination depth.

No semi-volatile compounds were detected in any of the soil samples collected in the supplemental borings.

Total Recoverable Petroleum Hydrocarbons

Total Recoverable Petroleum Hydrocarbons (TRPHs) were detected in soil samples from five of the supplemental borings (7B-A, 7B-1, 7B-2, 7B-4, and 7B-6) at concentrations ranging from 20 to 48,000 mg/kg (Table 4). TRPH was detected in only one of the samples collected in boring 7B-1 (70 mg/kg in the 25-foot sample) and in none of the samples collected from boring 7B-3, drilled 5 feet farther away from the drywell than was boring

7B-1 (see Figure 4). Initial boring 7B-2 was extended to a depth of 60 feet based on elevated concentrations of TRPH initially detected in soils at shallower depths. Additional soil samples obtained from this boring at depths of 40, 50, and 60 feet indicated the presence of TRPH at concentrations ranging from 510 mg/kg at 50 feet to 20 mg/kg at 60 feet. Perimeter soil borings 7B-4 and 7B-5 were extended to below the initially planned depth of 40 feet, to a depth of 60 feet, based on the TRPH findings from boring 7B-2. Perimeter soil boring 7B-6 was extended beyond a depth of 40 feet; however, auger refusal at a depth of 50 feet prevented any additional soil sampling.

TRPH concentrations reported for soil samples from radial borings 7B-1, 7B-2, 7B-4, and 7B-6 below a depth of 25 feet ranged from 20 to 510 mg/kg. Gas chromatographic analysis of selected samples (see Appendix C) indicated that the TRPH content of these samples consists of heavy-range hydrocarbons (residuum). Although these samples were analyzed out of holding time, due to the nature of the hydrocarbon constituents detected, it is unlikely that the test results were significantly affected. The principal components of residuum are some of the very heavy oils, resins, asphaltenes, and high-molecular-weight waxes. These constituents are heavier than those hydrocarbons incorporated into the Appendix IX listing of hazardous compounds (40 CFR Part 264). Constituents having high molecular weights ($C_{35}+$) do not readily migrate through soil strata. The constituents being detected as TRPH appear to represent a range of compounds that are not regulated under RCRA.

Summary

Based on the laboratory data obtained from soil samples collected and analyzed from the supplemental borings in the area of Drywell No. 2, releases of constituents to the soils (with the exception of TRPH) has generally been limited vertically to no deeper than 25 feet and horizontally to the approximate limits of the area evaluated by the supplemental perimeter drywell borings. Limited constituent migration appears to have been in a generally southwesterly direction from Drywell No. 2. Concentrations of TRPH exceeding 510 mg/kg were not detected below a depth of 20 feet in any of the supplemental perimeter borings. TRPH constituents appear to be heavy-range hydrocarbons which are not incorporated into the Appendix IX listing.

TABLES

TABLE 1
EPA APPROVED METHODS - BORING 7B-A
GENERAL ELECTRIC SERVICE SHOP
ALBUQUERQUE, NEW MEXICO

SAMPLE DEPTH (ft)	EPA APPROVED METHOD (1)
35	8010, 8020, 8270 and 418.1
40	8010, 8020, 8270 and 418.1
45	8010, 8020, 8270 and 418.1
50	8010, 8020, 8270 and 418.1
55	8010, 8020, 8270 and 418.1
60	8010, 8020, 8270 and 418.1
60 (2)	8240 and 418.1

NOTE: 1) 8010 - Halogenated Volatile Organic Compounds
8020 - Aromatic Volatile Organic Compounds
8240 - Volatile Organic Compounds
8270 - Semi-volatile Organic Compounds
418.1 - Total Recoverable Petroleum Hydrocarbons

2) Sample at 60 ft. split. Rapid turnaround analyses performed on one of the splits by Methods 8240 and 418.1.

TABLE 2
EPA APPROVED METHODS - BORING 7B-1 and 7B-2
GENERAL ELECTRIC SERVICE SHOP
ALBUQUERQUE, NEW MEXICO

SAMPLE DEPTH (ft)	EPA APPROVED METHOD (1)
20	8240, 8080, 8270 and 418.1
25	8240, 8080, 8270 and 418.1
35	8240, 8080, 8270 and 418.1
40 (2)	418.1
50 (2)	418.1
60 (2)	418.1

NOTE: 1) 8240 - Volatile Organic Compounds
8080 - Polychlorinated Bifenols
8270 - Semi-Volatile Organic Compounds
418.1 - Total Recoverable Petroleum Hydrocarbons

2) Samples for analysis from 40, 50, and 60 feet obtained from an extention of boring 7B-2.

3) Rapid turnaround analyses obtained from all sample depths.

TABLE 3
EPA APPROVED METHODS -
BORINGS 7B-3, 7B-4, 7B-5, AND 7B-6
GENERAL ELECTRIC SERVICE SHOP
ALBUQUERQUE, NEW MEXICO

SAMPLE DEPTH (ft)	EPA APPROVED METHOD (1)
10	8010, 8020, 8080, 8270, and 418.1
15	8010, 8020, 8080, 8270, and 418.1
20	8010, 8020, 8080, 8270, and 418.1
25	8010, 8020, 8080, 8270, and 418.1
30	8010, 8020, 8080, 8270, and 418.1
40	8010, 8020, 8080, 8270, and 418.1
50 (2)	8010, 8020, 8080, 8270, and 418.1
60 (2)	8010, 8020, 8080, 8270, and 418.1

NOTE: 1) 8010 - Halogenated Volatile Organic Compounds
8020 - Aromatic Volatile Organic Compounds
8080 - Polychlorinated Bifenols
8270 - Semi-Volatile Organic Compounds
418.1 - Total Recoverable Petroleum Hydrocarbons

2) Samples at 50 and 60 feet collected from Borings 7B-4 and 7B-5. Samples initially analyzed for TRPH by Method 418.1. Remaining analyses performed on samples from boring 7B-4 only.

TABLE 4
SUMMARY OF ANALYTICAL RESULTS
SUPPLEMENTAL SOIL ASSESSMENT
GE SERVICE SHOP
ALBUQUERQUE, NEW MEXICO
LAW ENVIRONMENTAL, INC. JOB NO. 55-4342

	CONSTITUENT CONCENTRATION					
SAMPLE NO.	BENZENE	ETHYLBENZENE	TOLUENE	XYLENES	AROCLOR 1254	TRPH
7B-1 - 20'	<2.4	<3.6	<6.0	<6.0	<.19	<20
7B-1 25'	<2.0	<3.0	<5.0	<5.0	<.17	70
7B-1 - 35'	<2.0	<3.0	<5.0	<5.0	<.17	<20
* 7B-2 20'	<2.2	<3.3	<5.5	<5.5	3.4	32000
7B-2 25'	<2.0	<3.0	<5.0	<5.0	<.17	300
7B-2 35'	<2.0	<3.0	<5.0	<5.0	<.17	420
7B-2 40'	NA	NA	NA	NA	NA	200
7B-2 50'	NA	NA	NA	NA	NA	510
7B-2 60'	NA	NA	NA	NA	NA	20
Replicate 7B-A (7B-1 20')	<3.0	<4.0	<6.0	<11.0	.59	<10

NOTES: Analyses performed by Law Environmental Laboratories in Pensacola, Florida.
Samples collected on April 25, 1991.
* Sample 7B-2 20' also contained 3.3 ug/kg Tetrachloroethene.
Volatile organic compounds (benzene, ethylbenzene, toluene, and xylene) reported in units of ug/kg.
PBCs (Aroclor 1254) and TRPH reported in units of mg/kg.
See Appendix C for explanation of results with respect to sample 7B-1 20' and its replicate.

TABLE 4 - CONTINUED
SUMMARY OF ANALYTICAL RESULTS
SUPPLEMENTAL SOIL ASSESSMENT
GE SERVICE SHOP
ALBUQUERQUE, NEW MEXICO
LAW ENVIRONMENTAL, INC. JOB NO. 55-4342

	CONSTITUENT CONCENTRATION					
SAMPLE NO.	BENZENE	ETHYLBENZENE	TOLUENE	XYLENES	AROCLOR 1254	TRPH
7B-A 35'	1	130	51	2600	NA	48000
7B-A 40'	<0.2	<0.5	<1.0	<1.0	NA	640
7B-A 45'	<0.2	<0.5	<1.0	6	NA	530
7B-A 50'	<0.2	<0.5	<1.0	<1.0	NA	250
7B-A 55'	<0.2	<0.5	<1.0	<1.0	NA	60
7B-A 60'	<0.2	<0.5	<1.0	<1.0	NA	100 (40)*
Replicate 7B-A-A (7B-A 45)	.5	<0.5	1	4	NA	5900
Equip. Blank	<0.2	<0.5	<1.0	<1.0	NA	NA
Trip Blank	<0.2	<0.5	<1.0	<1.0	NA	NA
7B-3 10'	<0.2	<0.5	<1.0	<1.0	<.02	<10
7B-3 15'	<0.2	<0.5	<1.0	<1.0	<.02	<10
7B-3 20'	<0.2	<0.5	<1.0	<1.0	<.02	<10
7B-3 25'	<0.2	<0.5	<1.0	<1.0	<.019	<10
7B-3 30'	<0.2	<0.5	<1.0	<1.0	<.019	<10
7B-3 40'	<0.2	<0.5	<1.0	<1.0	<.019	<10
Replicate 7B-3A (7B-3 30')	<0.2	<0.5	<1.0	<1.0	<.019	<10
Equip. Blank	<0.2	<0.5	<1.0	<1.0	<.019	<10
Trip Blank	<0.2	<0.5	<1.0	<1.0	NA	NA

NOTES: Analysis performed by Law Environmental National Laboratories in Pensacola, Florida.
Samples collected on April 25 and 30, 1991.
NA - Not Analyzed
* Value of 40 mg/kg obtained from split sample obtained at 60 ft. split analyzed on a rapid turnaround basis.
Volatile organic compounds (benzene, ethylbenzene, toluene, and xylene) reported in units of ug/kg.
PBCs (Aroclor 1254) and TRPH reported in units of mg/kg.
See Appendix C for explanation of results with respect to sample 7BA 45' and its replicate.

TABLE 4 - CONTINUED
SUMMARY OF ANALYTICAL RESULTS
SUPPLEMENTAL SOIL ASSESSMENT
GE SERVICE SHOP
ALBUQUERQUE, NEW MEXICO
LAW ENVIRONMENTAL, INC. JOB NO. 55-4342

	CONSTITUENT CONCENTRATION					
SAMPLE NO.	BENZENE	ETHYLBENZENE	TOLUENE	XYLENES	AROCLOR 1254	TRPH
7B-4 10'	<0.2	<0.5	<1.0	<1.0	<.036	<10
7B-4 15'	<0.2	<0.5	<2.0	<2.0	<.035	<10
7B-4 20'	<0.2	<0.5	<1.0	<1.0	<.035	<10
7B-4 25'	<0.2	<0.5	<1.0	<1.0	<.035	<10
7B-4 30'	<0.2	<0.5	<1.0	<1.0	<.034	<10
7B-4 40'	<0.2	<0.5	<1.0	<1.0	<.034	<10
7B-4 50'	<0.2	<0.5	<1.0	<1.0	<.035	80
7B-4 60'	<0.2	<0.5	<1.0	<1.0	<.035	390
Replicate 7B-45R (7B-4 20')	<0.2	<0.5	<1.0	<1.0	<.035	<10
7B-5 10'	<0.2	<0.5	<1.0	<1.0	.56	<10
7B-5 15'	<0.2	<0.5	<1.0	<1.0	<.034	<10
7B-5 20'	<0.2	<0.5	<2.0	<2.0	<.037	<10
7B-5 25'	<0.2	<0.5	<0.9	<0.9	<.034	<10
Equipment Blank	<0.2	<0.5	<1.0	<1.0	<.033	<10
Trip Blank	<0.2	<0.5	<1.0	<1.0	NA	NA

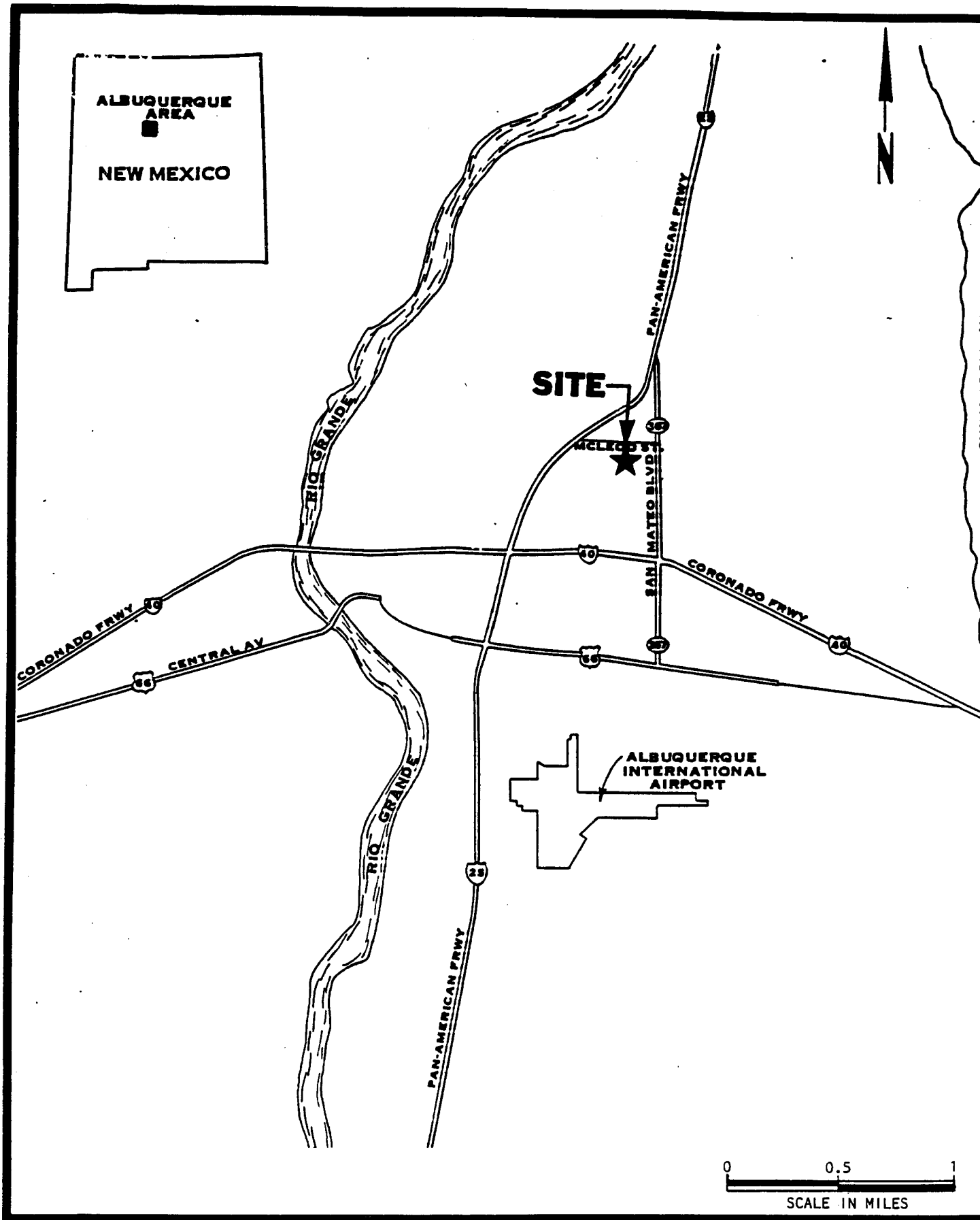
NOTES: Analyses performed by Law Environmental National Laboratories in Pensacola, Florida.
Samples collected on May 1, 1991.
NA - Not Analyzed
Volatile organic compounds (benzene, ethylbenzene, toluene, and xylene) reported in units of ug/kg.
PBCs (Aroclor 1254) and TRPH reported in units of mg/kg.

TABLE 4 - CONTINUED
SUMMARY OF ANALYTICAL RESULTS
SUPPLEMENTAL SOIL ASSESSMENT
GE SERVICE SHOP
ALBUQUERQUE, NEW MEXICO
LAW ENVIRONMENTAL, INC. JOB NO. 55-4342

	CONSTITUENT CONCENTRATION					
SAMPLE NO.	BENZENE	ETHYLBENZENE	TOLUENE	XYLENES	AROCLOR 1254	TRPH
7B-5 30'	<0.2	<0.5	<1.0	<1.0	<.034	<10
7B-5 40'	<0.2	<0.5	<1.0	<1.0	<.034	<10
7B-5 50'	NA	NA	NA	NA	NA	<10
7B-5 60'	NA	NA	NA	NA	NA	<10
7B-6 10'	4	2	15	14	3.9	1400
7B-6 15'	<0.2	<0.5	<1.0	<1.0	.33	420
7B-6 20'	<0.2	<0.5	<2.0	<2.0	.042	<10
7B-6 25'	<0.2	<0.5	<1.0	<1.0	.110	49
7B-6 30'	<0.2	<0.5	<1.0	<1.0	<033	<10
Replicate 7B-56 (7B-6 20')	<0.2	<0.6	<2.0	<2.0	.043	<10
7B-6 40'	<0.2	<0.5	<1.0	<1.0	<034	<10
Equipment Blank	<0.2	<0.4	<0.9	<0.9	<.034	<10
Trip Blank	<0.2	<0.5	<1.0	<1.0	NA	NA

NOTES: Analysis performed by Law Environmental National Laboratories in Pensacola, Florida.
Samples collected on May 2, 1991.
NA - Not Analyzed
Volatile organic compounds (benzene, ethylbenzene, toluene, and xylene) reported in units of ug/kg.
PBCs (Aroclor 1254) and TRPH reported in units of mg/kg.

FIGURES



GENERAL ELECTRIC
SERVICE SHOP

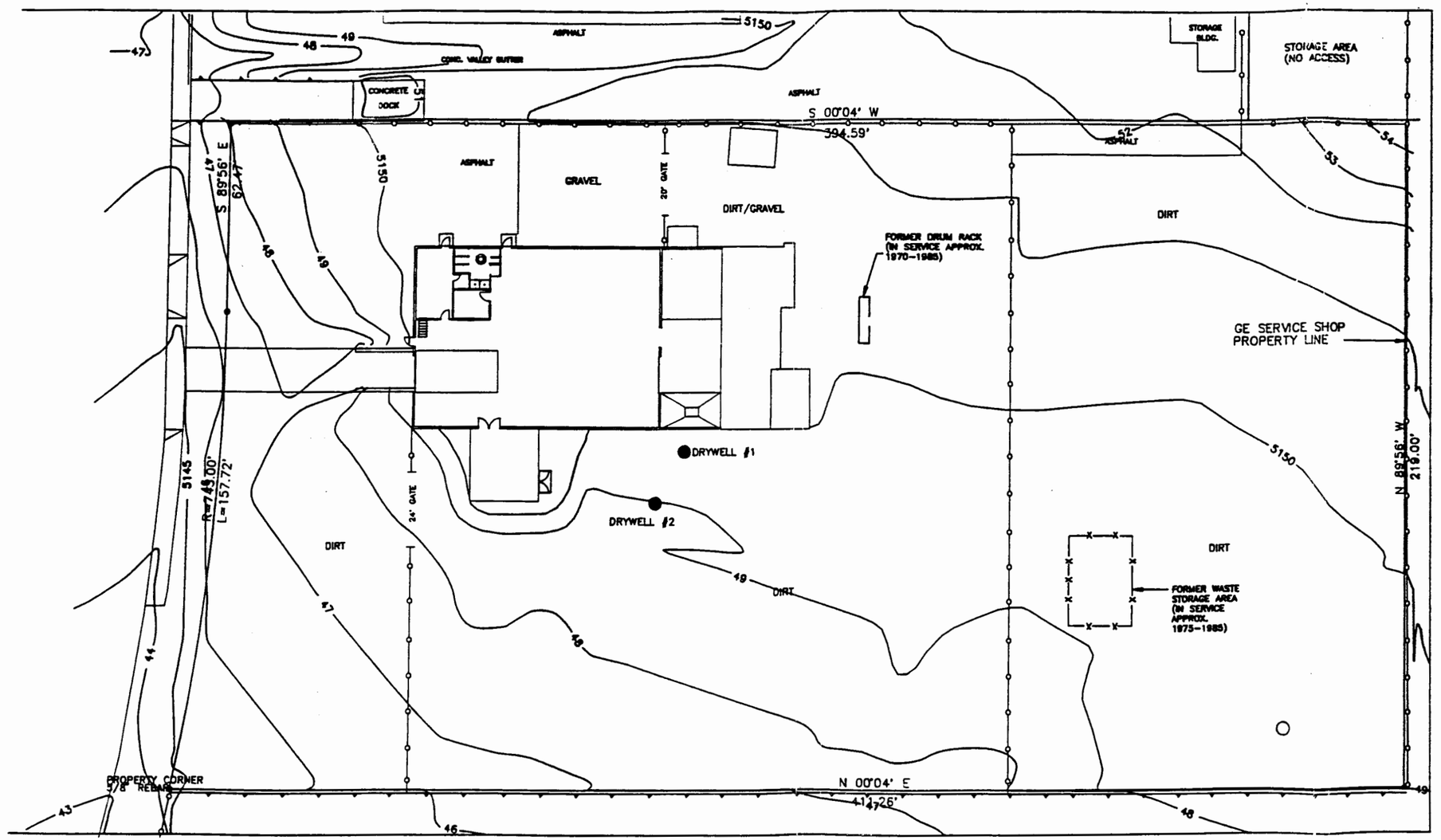
ALBUQUERQUE,
NEW MEXICO

LAW ENVIRONMENTAL
INC.

SITE LOCATION MAP

JOB NO. 55-4342 FIGURE 1

315124



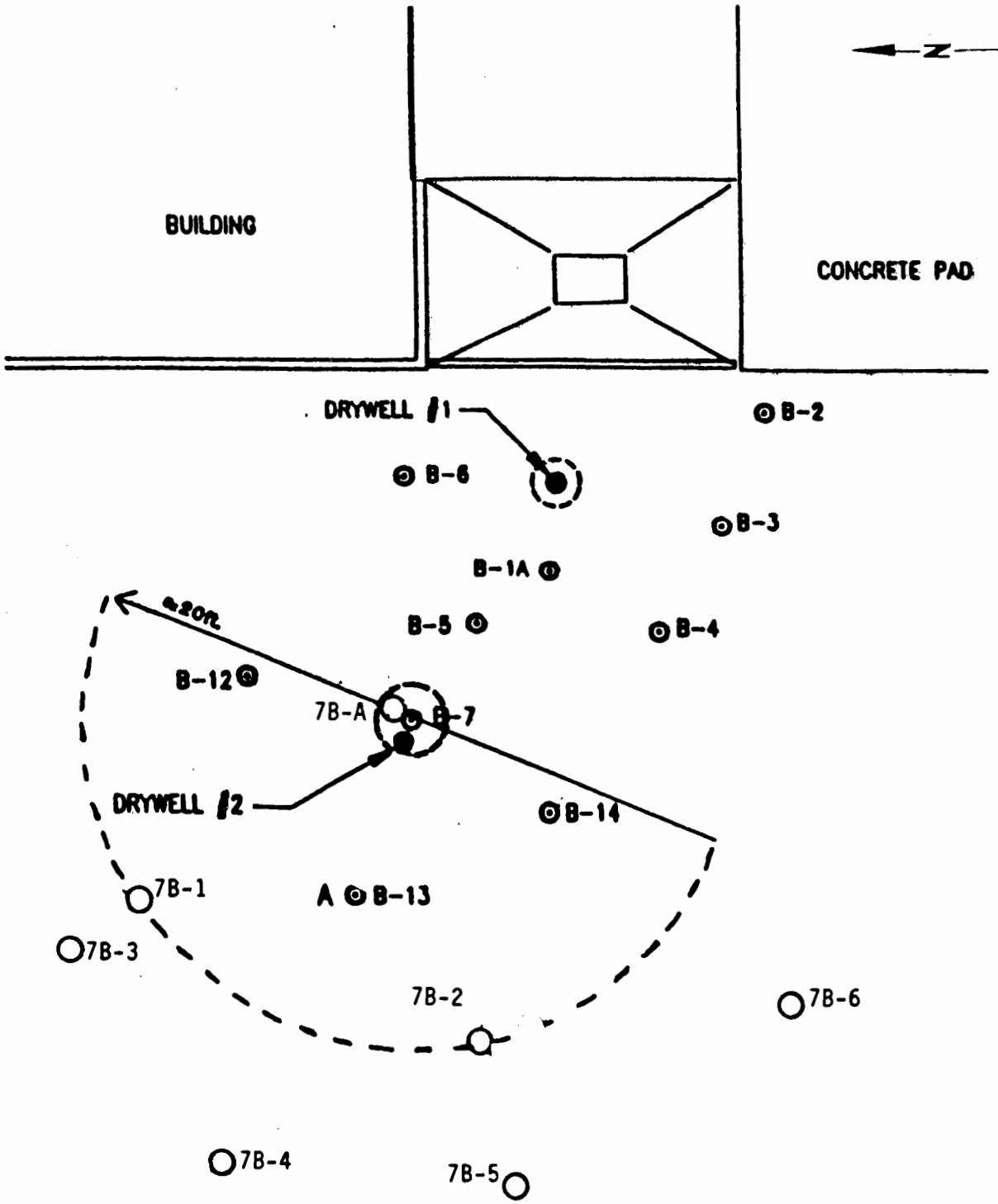
SCALE IN FEET
0 20 40

GENERAL ELECTRIC SERVICE SHOP
ALBUQUERQUE, NEW MEXICO

LAW ENVIRONMENTAL, INC.

SITE PLAN

JOB NO. 55-4342 FIGURE 2



GE SERVICE SHOP ALBUQUERQUE, NEW MEXICO	LAW ENVIRONMENTAL INC.	SUPPLEMENTAL BORING LOCATION MAP JOB NO. 55-4342 FIGURE 3

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TO VIEW THE MAP AND/OR MAPS WITH THIS DOCUMENT, PLEASE CALL THE HAZARDOUS WASTE BUREAU AT 505-476-6000 TO MAKE AN APPOINTMENT