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29 September 1997
EA Project No. 296.0048.3100

Ms. Donna Gaffigan
Bureau of Federal Case Management
New Jersey Department of Environmental Protection
401 E. State Street
CN 028
Trenton, New Jersey 08625

Re: Draft Environmental Baseline Survey (EBS) Phase II Supplemental Work Plan for Naval Air Warfare Center (NAWC), Trenton, New Jersey

Dear Ms. Gaffigan:

This letter details the Navy's scope of work for additional investigation at NAWC Trenton. The Navy performed an EBS Phase II investigation (September 1996 to March 1997) at 37 Areas of Concern (AOCs) to confirm the absence or presence of hazardous substances or petroleum products at Confirmatory Sampling Sites, and to evaluate the nature and extent of hazardous substances or petroleum products at Full Sampling Sites. The results of this investigation are reported in the Draft EBS Phase II Report for Parcels A and C (EA, 1997a) and the Draft EBS Phase II Report for Parcel B (EA, 1997b). Based on the results of the EBS Phase II investigation, further investigatory work was recommended for one AOC in Parcel A and ten AOCs in Parcel B. Also, additional AOCs requiring investigation have been identified by the Navy based on recent information.

The additional scope of work described in this Supplemental Work Plan will further evaluate potential impacts to soil and/or ground water that were identified at AOCs during the EBS Phase II investigation, and will evaluate the potential impacts to soil at those AOCs recently identified by the Navy. Site location maps for these AOCs are included as Figures 1-1 through 14-1.

The following existing AOCs were recommended for further investigatory work in the Draft EBS Phase II Reports.

- AOC No. 6: Coal Boiler Plant
- AOC No. 11: Fuel Oil Unloading Pads
- AOC No. 20h: Brine Houses
- AOC No. 20i: Structure S-32
- AOC No. 29: Building 43 Vault
- AOC No. 32: Building 62 Exterior
- AOC No. 33: Electrical Substations A, B, and K
- AOC No. 35: Building 31 Wash Rack
- AOC No. 36: Building 31 Southern Exterior
- AOC No. 60: Electrical Substations E, H, R (located in Parcel B), I, and S (located in Parcel A)

The following AOCs have recently been identified by the Navy and are included in this scope of work.

- AOC No. 69: Substation M and Transformer Oil
- AOC No. 70a and 70b: Exhaust Control Valves (CVs) for Test Cells

- AOC No. 71: West Ditch Area
- AOC No. 72: Area near monitoring wells BRP-1 and MW-47BR (free-phase jet fuel found during the BRP-1 pump test)

The work described in this Supplemental Work Plan is an extension of the work previously implemented during the EBS Phase II investigation at NAWC Trenton; therefore, the existing project plans will be used to perform the additional work at the AOCs identified above. Field activities will be performed in accordance with procedures in the approved EBS Phase II project plans (Work Plan, QAPjP, and SSHERP) and in accordance with the NJDEP Technical Requirements for Site Remediation (N.J.A.C. 7:26E), the NJDEP Field Sampling Procedures Manual (May 1992), and the NJDEP Field Analysis Manual (July 1994).

Field Sampling Plan

The following sections detail the field sampling plan for the additional investigations. A description of each AOC and the results of the previous investigation (if applicable) are provided, followed by a description of the proposed investigation activities at the particular AOC. Sampling strategies (unless otherwise noted) will be in accordance with the EBS Phase II Work Plan (EA, 1996a). Table 1 provides an outline of the sampling scheme by AOC. Tables 2, 3, and 4 present a summary of the proposed soil analyses, ground-water analyses and oil analyses, respectively. Proposed sampling locations shown on Figures 1-1 through 14-1 are approximate and are based on previous sampling locations, previous analytical results, and professional judgement.

1. AOC No. 6: Coal Boiler Plant - Confirmatory Sampling

Description and Previous Investigation

Area of Concern No. 6 consists of the area occupied by the former coal plant which was demolished by the Navy and includes the area covered by the walkway between Buildings 21 and 22 (Figure 1-1). This AOC was initially recommended for confirmatory sampling to evaluate the potential presence of any coal ash in the soil resulting from coal burning operations. Two soil borings (6-BH1 and 6-BH2) were advanced in this area on 13 September 1996 during the initial EBS Phase II investigation. There was no visual evidence of coal or ash (e.g. stained or discolored layers) in soil boring 6-BH1, and no samples were collected for laboratory analyses (EA, 1997b). In soil boring 6-BH2, black coal ash was identified in the surface soil at approximately 0.8-1.2 ft below ground surface (bgs), and analytical results of the soil sample collected from this interval reported arsenic (94.2 mg/kg) at a concentration above NJDEP Non-Residential soil criteria (20 mg/kg) (EA, 1997b). It is recommended that additional investigations be performed at AOC 6 to evaluate the extent of the coal ash identified in the surface soil there.

Investigation Activities

Initially, six soil borings will be advanced by hand auger in the locations shown on Figure 1-1. The borings will be advanced to a maximum depth of 2 ft below the ground surface. Samples will be collected, and each 6-inch interval will be visually inspected for any evidence of coal or ash (e.g. stained or discolored layers). Based on visual observations from the first six borings, additional soil borings (2 maximum) may be advanced at locations selected by the field geologist to further evaluate the extent of the coal ash.

2. AOC No. 11: Fuel Oil Unloading Pads - Full Sampling

Description and Previous Investigation

Area of Concern No.11 includes the fuel oil unloading pads outside Building 24 (Figure 2-1). These off-loading headers include Structure S-45 (unused header south of Building 25) and Structure S-51 (current off-loading header east of Building 25). This site was initially recommended for full sampling since releases were reported and staining was observed. During the initial EBS Phase II investigation, a SVA survey was conducted in the vicinity of the off-loading headers to identify potential hydrocarbon vapors in the subsurface. A total of 15 SVA sample points (11-SV1 to 11-SV15) were installed on 22 and 23 August 1996. No anomalous areas (i.e., reported soil vapor concentrations greater than 6 ppm total VOCs; see Section 2.2.3 of the Draft EBS Phase II Report for Parcel B; EA, 1997b) were identified by the survey. However, as specified in the EBS Phase II Work Plan (EA, 1996a), two soil borings (11-BH1 and 11-BH2) were advanced through the concrete off-loading headers on 18 September 1996. Sample analytical results of soil previously collected at AOC 11 were below NJDEP criteria (EA, 1997b).

Ground-water samples were collected from a temporary well point installed immediately downgradient of Structure S-51 and from a temporary well point installed through Structure S-45 on 5 and 6 March 1997 (2 total) to evaluate potential impact to ground water. Analytical results indicated that ground water in this area is impacted by VOCs, with concentrations for TCE, 1,2-DCE, benzene, and 2-butanone exceeding NJDEP ground-water criteria. Since the method used to collect ground-water samples yielded turbid samples that may have resulted in various analyte concentrations being biased high, additional investigation is recommended to obtain a more representative ground-water sample from this area.

Investigation Activities

A shallow monitoring well will be installed adjacent to the previous direct push (DP) ground-water sample location (Figure 2-1). Monitoring well installation/construction and development will be in accordance with procedures outlined in Section 5 of the EBS Phase II QAPjP (EA, 1996b). One ground-water sample will be collected from the newly installed monitoring well and analyzed for TCL VOCs (Tables 1 and 3). Ground-water sampling will be performed in accordance with low-flow procedures used during the June 1997 ground-water sampling event, which was conducted for the Installation Restoration Program (IRP) Site 1 Focused Feasibility Study.

3. AOC No. 20h: Brine Houses - Full Sampling

Description and Previous Investigation

Area of Concern No. 20h includes the brine houses (Buildings 44, 45, 46, and 47) (Figure 3-1). The brine houses contain pumps for TCE and ethylene glycol, and are located south of Building 41 along an asphalt driveway. Staining was observed on the southern side of the brine houses, and around the roofs. Releases of TCE and ethylene glycol have been reported in the brine houses. It was recommended that any residual TCE on the interior of the buildings be addressed during closure and cleaned accordingly. Full sampling was initially recommended outside the brine houses in areas of staining to evaluate the nature and extent of potential contamination. During the initial EBS Phase II investigation, one boring was installed on the south side of each brine house on 11 December 1996 in the locations shown on Figure 3-1. As reported in the Draft EBS Phase II Report for Parcel B (EA, 1997b), there were no VOCs, SVOCs, or TPH detected in soil at concentrations exceeding the

NJDEP Non-Residential soil criteria. Therefore, no further action was recommended for this AOC. However, recent information obtained by the Navy indicates the possibility that PCB-containing hydraulic fluid was used in the past at Control Valves (CVs) located above the stained soil areas south of the four Brine Houses. Additional soil sampling is recommended at AOC 20h to evaluate the presence or absence of PCBs in the soil beneath the CVs.

Investigation Activities

A total of five soil borings will be advanced by hand auger in front of the brine houses as shown on Figure 3-1. The borings will be located based on staining, as determined by the onsite geologist, with four of the five borings located adjacent to the previously installed soil borings. Borings will be advanced to a maximum depth of 10 ft bgs or until reaching ground water or until hand auger refusal, whichever is encountered first (EA, 1996a). Samples will be collected continuously and field-screened with a PID. One surface sample (0-6 in. bgs) will be collected and submitted for laboratory analyses. A second subsurface sample from each boring will be selected for analyses based on PID screening results. If PID measurements are equal and there are no indications of contaminants being present (i.e., staining or odor), the second sample will be collected from the 6-in. interval immediately above the water table or above the bottom of the boring. The onsite geologist will make that determination in the field. For planning purposes, it is assumed that 5 borings will be installed and 10 soil samples will be collected and analyzed for TCL PCBs (Tables 1 and 2).

4. AOC No. 20i: Structure S-32 - Confirmatory Sampling

Description and Previous Investigation

IRP site 4

Area of Concern No. 20i consists of Structure S-32, a 20,000 gallon above ground storage tank and sump (Figure 4-1). The tank contains closed circuit water for the cooling system. Confirmatory Sampling was initially recommended for this AOC to confirm the presence or absence of potential contamination resulting from the storage tank in the vicinity of the sump. During the EBS Phase II investigation, four soil borings were installed around Structure S-32 (one boring per side) on 13 December 1996. Soil analytical results reported only benzo[a]pyrene at boring location 20i-BH4 at a concentration exceeding NJDEP Non-Residential soil criteria. Soil boring 20i-BH4 is located in the vicinity of IRP Site 4 (Building 41 Overhead Fuel Lines Leakage Area); however, it can not be determined at this time whether the elevated concentration of benzo[a]pyrene in the soil is from IRP Site 4 or AOC 20i. It is recommended that additional soil samples be collected to evaluate the nature and extent of impacted soil in this area.

Investigation Activities

Four soil borings will be advanced by DP or hand auger (if access is limited) in the areas shown on Figure 4-1. The borings will be advanced to a maximum depth of 10 ft bgs or until reaching ground water or until DP refusal, whichever is encountered first (EA, 1996a). Samples will be collected continuously and every 2-ft interval will be screened with a PID. One surface sample (0-24 in. bgs) will be collected, and the 6-in. interval with the highest PID measurement will be sub-sampled and submitted for laboratory analyses. If PID measurements are equal, then the sub-sample will be collected from the 18-24 in. below grade interval. A second subsurface sample from each boring will be selected for analyses based on PID screening results. If PID measurements are equal and there are no indications of contaminants being present (i.e., staining or odor), the second sample will be collected from the 6-in. interval immediately above the water table or above the bottom of the boring. The onsite geologist will make that determination in the field. For planning purposes, it is assumed

that four borings will be installed and eight soil samples will be collected and analyzed for TCL VOCs and B/Ns (Tables 1 and 2).

5. AOC No. 29: Building 43 Vault - Full Sampling

Description and Previous Investigation

oil drum over vault

Area of Concern No. 29 includes a vault located within Building 43 (Figure 5-1). This 2-story brick building contains cooling tower water (CTW) pumps and closed circuit water (CCW) pumps. This AOC was initially recommended for full sampling since EA personnel observed an oily sheen on the water contained in a 10-ft vault. As part of the initial EBS Phase II investigation, soil samples were collected adjacent to the northeast and northwest corners of Building 43, and a water sample was to be collected from the water contained within the vault. However, the sample was not collected due to the presence of large equipment covering the vault. It is recommended that a water sample be collected from the vault after equipment is moved to allow access to the vault.

Investigation Activities

One ground-water sample will be collected from the vault (Figure 5-1), as described in the EBS Phase II Work Plan (EA, 1996a), and analyzed for TCL VOCs and B/Ns (Tables 1 and 3).

6. AOC No. 32: Building 62 Exterior - Confirmatory Sampling

Description and Previous Investigation

Area of Concern No. 32 includes the areas exterior to Building 62 (Figure 6-1). Two areas were identified: the first area was west of Building 62 where, according to interviews with Activity personnel (Wolfarth, 1995), several fuel piping leaks occurred. The second area, identified through an aerial photograph review, was an area of apparent staining to the east of Building 62 (which is now revegetated). A leaking 55-gallon drum previously buried east of Building 62 was removed from this area. This AOC was initially recommended for confirmatory sampling since fuel leaks had been reported, and apparent staining was observed in the aerial photograph review. During the initial EBS Phase II investigation, 17 SVA samples were collected from the two areas of AOC 32 on 25 and 27 September 1996. Results of the SVA survey are reported in the Draft EBS Phase II Report for Parcel B (EA, 1997b). Two soil borings were attempted on 19 December 1996. Boring 32-BH1 was attempted beneath the floor of Building 62, as per the approved EBS Phase II Work Plan (EA, 1996a). No samples were collected due to limited access around equipment in the building. Boring 32-BH2 was attempted adjacent to SVA point 32-SV12, as elevated soil vapor concentrations (greater than 6 ppm) were reported. No samples were collected from this boring since the ground-water table was within 1.5 ft of the ground surface during the time of boring installation. It is recommended that a second attempt be made to collect soil samples at these two locations to evaluate whether soil has been impacted.

Investigation Activities

A total of two soil borings will be installed by hand auger at the locations described above and as shown on Figure 6-1. One boring will be installed through the concrete floor in the eastern portion of Building 62. A second boring will be installed adjacent to SVA point 32-SV12. The borings will be advanced to a maximum depth of 10 ft bgs or until reaching ground water or until auger refusal, whichever is encountered first (EA, 1996a). Samples will be collected continuously and field-

screened with a PID. For the first 2 ft bgs, samples will be collected in 6-in. intervals and the interval with the highest PID measurement will be submitted for laboratory analyses. If PID measurements are equal, then the laboratory sample will be selected from the 18-24 in. below grade interval. A second subsurface sample from each boring will be selected for analyses based on PID screening results. If PID measurements are equal and there are no indications of contaminants being present (i.e., staining or odor), the second sample will be collected from the 6-in. interval immediately above the water table or above the bottom of the boring. The onsite geologist will make that determination in the field. For planning purposes, it is assumed that two borings will be installed and four soil samples will be collected and analyzed for TCL VOCs and TPH (Tables 1 and 2).

7. AOC No. 33: Electrical Substations A, B, and K - Confirmatory Sampling

Description and Previous Investigation

Area of Concern No. 33 includes the grassy areas surrounding Substations A, B, and K. Substation A is located near Building 40, Substation B is near Building 42 (Figure 7-1), and Substation K is near Building 41. This AOC was initially recommended for confirmatory sampling since oil, possibly containing PCBs, was reportedly poured along the substations' fence lines for weed control (Stephens, 1995). Soil borings were installed along the fence line of Substation A (18 September 1996), Substation B (17 October 1996), and Substation K (17 October 1996) during the initial EBS Phase II investigation. There were no PCBs detected in soil collected from Substations A and K, and therefore, no further action was recommended (EA, 1997b). At Substation B, immunoassay results indicated that PCB concentrations exceeding NJDEP Non-Residential soil criteria were detected in one soil sample (5.5-6.0 ft bgs) from boring 33-BH5. However, no PCBs were detected above method detection limits in a duplicate analytical laboratory sample. Therefore, it is recommended that an additional soil sample be collected from the same depth interval (5.5-6.0 ft bgs) immediately adjacent to soil boring 33-BH5 to confirm the levels of PCBs, if any, in the soil near Substation B.

Investigation Activities

One soil boring will be advanced by DP immediately adjacent to the previously installed soil boring 33-BH5 (Figure 7-1). One soil sample will be collected from 5.5-6.0 ft bgs and submitted for laboratory analysis for TCL PCBs (Tables 1 and 2).

8. AOC No. 35: Building 31 Wash Rack - Full Sampling

Description and Previous Investigation

Area of Concern No. 35 includes the Building 31 wash rack (Figure 8-1). The wash rack/wash pad is used for vehicle, equipment, and container washing. Full sampling was initially recommended to evaluate the nature and extent of potential contamination resulting from possible releases during operations. During the initial EBS Phase II investigation, four soil borings were installed on 20 December 1996. One DP ground-water sample was collected on 05 March 1997. Based on soil sample results, it was concluded that surface soil at AOC 35 was impacted by pesticides and that surface and subsurface soil was impacted by arsenic (EA, 1997b). Results from the downgradient ground-water sample (35-DP1) indicated that ground water has been impacted by VOCs (specifically TCE). It is recommended that additional investigations be conducted at this AOC to evaluate the extent of pesticides and metals in the soil and VOCs in the ground water.

Investigation Activities

Four soil borings will be advanced by DP in the locations shown on Figure 8-1. Soil borings will be installed and soil samples collected in accordance with Section 3.1 (Sampling Strategies) of the approved EBS Phase II Work Plan (EA, 1996a). For planning purposes, it is assumed that 4 borings will be installed and 12 soil samples will be collected and analyzed for TCL PCBs and TAL metals (Tables 1 and 2). In addition, two monitoring wells will be installed in the locations shown on Figure 8-1. One ground-water sample will be collected from each newly installed monitoring well and analyzed for TCL VOCs (Tables 1 and 3). Ground-water sampling will be performed in accordance with low-flow procedures used during the June 1997 ground-water sampling event which was conducted for the IRP Site 1 Focused Feasibility Study.

9. AOC No. 36: Building 31 Southern Exterior - Confirmatory Sampling

Description and Previous Investigation

Area of Concern No. 36 includes the area south of Building 31 (Figure 9-1). This area was identified by aerial photograph review as an area where a coal boiler plant and coal piles were previously located. This AOC was initially recommended for confirmatory sampling to address the potential presence of coal or coal ash in the subsurface. Two soil borings were attempted through the asphalt driveway south of Building 31 on 13 December 1996. Due to DP refusal at 2.5 ft bgs (concrete encountered in both boreholes) and lack of sample recovery above 2.5 ft bgs, soil samples were not collected. The concrete and asphalt serves as an in-place cap/barrier preventing rain water infiltration into the subsurface, thereby minimizing the potential for coal ash constituents to leach to the ground water. The concrete also limits the potential for exposure to the soil through direct contact. However, it is recommended that additional investigation be performed to evaluate the presence or absence of coal ash material in the grass-covered area south of Building 31.

Investigation Activities

Initially, one soil boring will be advanced by DP in the grass-covered area south of the previous boring locations as shown on Figure 9-1. The boring will be advanced to a maximum depth of 4 feet bgs. Samples will be collected, and each 6-inch interval will be visually inspected for any evidence of coal or ash (e.g. stained or discolored layers). If coal ash material is suspected in the initial boring, additional borings (3 maximum) will be installed (in conjunction with additional borings installed as part of the additional investigation at AOC 35) at locations selected by the field geologist to further evaluate the extent of the coal ash material. Suspect coal ash layers will be sampled and analyzed for TCL B/Ns and TAL metals (Tables 1 and 2). For planning purposes, it is assumed that four borings will be installed and four samples will be submitted for laboratory analyses.

10. AOC No. 60: Electrical Substations E, H, I, R, and S - Confirmatory Sampling

Description and Previous Investigation

Area of Concern No. 60 includes Substations E, H, R (Parcel B) I, and S (Parcel A) (Figures 10-1 and 10-2). Substation E has reportedly been removed. Substation H is located by Building 24, Substation I is located by the fuel farm, Substation R is located by Building 22, and Substation S is located by Building 27. This AOC was initially recommended for Confirmatory Sampling since oil, possibly containing PCBs, was reportedly poured along the substations' fence lines for weed control (Stephens, 1995). During the initial EBS Phase II investigation, soil borings were advanced along

the substations' fence lines to evaluate the presence or absence of PCBs in the soil. No PCBs were detected in soil collected from Substation R or Substation S, and no further action was recommended. Immunoassay results from one surface sample (0.0-1.5 ft bgs in boring 60-BH8) collected from Substation E and from two surface samples (0.0-1.0 ft and 0.0-1.5 ft bgs in borings 60-BH5 and 60-BH7, respectively) collected from Substation H reported PCB concentrations greater than NJDEP Non-Residential soil criteria (EA, 1997b). Duplicate laboratory analytical results from two of the samples (60-BH8-0.0-1.5 and 60-BH5-0.0-1.0) reported PCBs below NJDEP Non-Residential soil criteria. Immunoassay results from one surface sample (0.0-1.5 ft bgs) and one subsurface sample (4.5-5.0 ft bgs) collected from Substation I (60-BH1) reported PCB concentrations greater than NJDEP Non-Residential soil criteria (EA, 1997a). It is recommended that additional soil samples be collected from the same locations and depth intervals at which immunoassay results reported PCB concentrations exceeding NJDEP soil criteria. Samples should be submitted for laboratory analyses to confirm the levels of PCBs in the soil.

Investigation Activities

Three soil borings (one at Substation E and two at Substation H) will be advanced by hand auger at the locations shown on Figure 10-1. One additional boring will be advanced by DP at Substation I (Figure 10-2). The soil borings will be located immediately adjacent to previously installed borings, and soil samples will be collected at the same depth intervals at which elevated PCB concentrations were detected using immunoassay methods (as described above). For planning purposes, it is assumed that four borings will be installed and five soil samples will be collected and submitted for laboratory analyses for TCL PCBs (Tables 1 and 2).

11. AOC No. 69: Substation M and Transformer Oil - Confirmatory Sampling

Description

Area of Concern No. 69 includes Substation M, which is located off-site north of the Activity (Figure 11-1) near the intersection of Ridge Road and Scotch Road. The substation consists of six transformers enclosed within a fence. Adjacent to the substation is a control house containing an oil 'make-up' tank for an underground electrical cable. This AOC was recommended for Confirmatory Sampling since oil, possibly containing PCBs, was reportedly poured along the substations' fence line for weed control. Sampling and analysis of the transformer oil is also recommended to confirm that the oil no longer contains PCBs

Investigation Activities

Four soil borings will be advanced by DP along the fence line (one boring per side) of the substation (Figure 11-2). The borings will be advanced to a maximum depth of 10 ft bgs or until reaching ground water or until DP refusal, whichever is encountered first. Samples will be collected continuously and every 2-ft interval will be screened with a PID. One surface sample (0-6 in. bgs) will be collected and submitted for laboratory analyses. A second subsurface sample from each boring will be selected for analyses based on PID screening results. If PID measurements are equal and there are no indications of contaminants being present (i.e., staining or odor), the second sample will be collected from the 6-in. interval immediately above the water table or above the bottom of the boring. The onsite geologist will make that determination in the field. For planning purposes, it is assumed that four borings will be installed and eight soil samples will be collected and submitted for laboratory analyses for TCL PCBs (Tables 1 and 2). In addition, oil samples will be collected from

the transformers and the oil tank within the control house (seven samples total) and submitted for laboratory analyses for TCL PCBs (Tables 1 and 4).

12. AOC Nos. 70a and 70b: Exhaust Control Valves for Test Cells - Confirmatory/Full Sampling

Description

Area of Concern Nos. 70a and 70b include the soil around Control Valves (CVs) for the exhaust pipes at two locations between Buildings 41 and 42 (Figure 12-1). Recent information obtained by the Navy indicates the possibility that PCB-containing hydraulic fluid was used in the past in the CVs. AOC 70a consists of a CV adjacent to the west side of Building 43. This AOC is recommended for Confirmatory Sampling to evaluate the presence or absence of PCBs in the surrounding soil. AOC 70b consists of a CV and hydraulic unit west of monitoring well MW-38BR (Figure 12-1) at which previous testing reported PCBs in the soil. Full sampling is recommended for AOC 70b to further evaluate the nature and extent of soil impacted by PCBs.

Investigation Activities

A total of five soil borings will be advanced using DP around the CVs between Buildings 41 and 42 (Figure 12-1). At AOC 70b, three soil borings will be advanced around the hydraulic unit west of MW-38BR, and one soil boring will be advanced immediately adjacent to the hydraulic unit. One additional boring will be advanced adjacent to the west side of Building 43 (AOC 70a). Borings will be located in areas of staining, as determined by the onsite geologist. Each boring will be advanced to a maximum depth of 10 ft bgs or until reaching ground water or until DP refusal, whichever is encountered first. Samples will be collected continuously and every 2-ft interval will be screened with a PID. One surface sample (0-6 in. bgs) will be collected and submitted for laboratory analyses. A second subsurface sample from each boring will be selected for analyses based on PID screening results. If PID measurements are equal and there are no indications of contaminants being present (i.e., staining or odor), the second sample will be collected from the 6-in. interval immediately above the water table or above the bottom of the boring. The onsite geologist will make that determination in the field. For planning purposes, it is assumed that 5 borings will be installed and 10 soil samples will be collected and submitted for laboratory analyses for TCL PCBs (Tables 1 and 2).

13. AOC No. 71: West Ditch Area - Full Sampling

Description

Area of Concern No. 71 includes an area of recent excavation to remove a storm sewer pipe west of Structure S-85 in the southwestern portion of the Activity (Figure 13-1). Stained soil from the excavation was sampled for TPH, and sample results indicated that petroleum hydrocarbons have impacted soil at this AOC (TPH concentrations greater than the NJDEP soil criteria of 10,000 ppm). The highest concentrations were reported from a portion of the excavation west of the northern part of Building 55. Full sampling is recommended for this AOC to evaluate the nature and extent of impacted soil in the vicinity of the excavation.

Investigation Activities

Six soil borings will be advanced by DP in the locations shown on Figure 13-1. Four borings will be advanced east of the recent excavation and adjacent to the concrete pad (Structure S-85), and two borings will be advanced immediately west of the excavation. The borings will be advanced to a

maximum depth of 10 ft bgs or until reaching ground water or until DP refusal, whichever is encountered first (EA, 1996b). Samples will be collected continuously and every 2-ft interval will be screened with a PID. One bottom-of-hole (6-in. interval immediately above the water table or bottom of the borehole) sample will be collected and submitted for laboratory analyses. A second sample from each boring will be selected for analyses based on PID screening results. If PID measurements are equal and there are no indications of contaminants being present (i.e., staining or odor), the second sample will be collected from a depth of approximately 5 to 6 ft bgs (approximate depth of the bottom of the pipe which was excavated). The onsite geologist will make that determination in the field. For planning purposes, it is assumed that 6 borings will be installed and 12 soil samples will be collected and analyzed for TCL VOCs and TPH (Tables 1 and 2).

14. AOC No. 72: Area Near BRP-1 and MW-47BR (Free-phase jet fuel found during the BRP-1 pump test) - Full Sampling

Description

Area of Concern No. 72 includes the grassy area in the vicinity of monitoring wells BRP-1 and MW-47BR (Figure 14-1). Free-phase hydrocarbon product (jet fuel) was reported in BRP-1 following pumping during an aquifer test conducted by EA in August 1995. Following the discovery, the product was pumped from the well, and has not been reported in BRP-1 since that event. Monitoring well MW-47BR was installed during the Focused Feasibility Study field investigation for IRP Sites 1 and 3 to further evaluate the presence of possible free phase product, if any, in the vicinity of BRP-1. During ground-water sampling conducted by EA in June 1997, an oily sheen was observed on water collected from MW-47BR. Sample results indicated similar constituents as are detected in other wells in this portion of the Activity (1,2-dichloroethene, trichloroethene, and vinyl chloride) and are attributed to IRP Site 1. It is recommended that additional investigation be performed to evaluate the nature and extent of impacted soil, if any, in the vicinity of BRP-1 and MW-47BR.

Investigation Activities

Six soil borings will be advanced by DP at the locations shown on Figure 14-1. The borings will be advanced to a maximum depth of 10 ft bgs or until reaching ground water or until DP refusal, whichever is encountered first (EA, 1996a). Samples will be collected continuously, and every 2-ft interval will be screened with a PID. One surface sample (0-24 in. bgs) will be collected, and the 6-in. interval with the highest PID measurement will be sub-sampled and submitted for laboratory analyses. If PID measurements are equal, then the sub-sample will be collected from the 18-24 in. below grade interval. A second bottom-of-hole (6-in. interval immediately above the water table or bottom of the borehole) sample will be collected and submitted for laboratory analyses. The depth at which the subsurface samples are selected may be modified based on PID screening results or other indications (i.e., staining or odor) of contaminants being present in the soil. The onsite geologist will make that determination in the field. For planning purposes, it is assumed that 6 borings will be installed and 12 soil samples will be collected and analyzed for TCL VOCs (Tables 1 and 2).

This letter and the enclosed figures and tables comprise the EBS Phase II Supplemental Work Plan and are submitted as such for NJDEP approval. The scope of work outlined above will be performed in accordance with the approved EBS Phase II project plans, as amended above, in lieu of submitting separately bound plans for this supplemental work. Implementation of this scope of work is scheduled to begin on 22 October 1997, pending NJDEP approval.

If you have any questions, or need further information, please call me at (908) 665-2440.

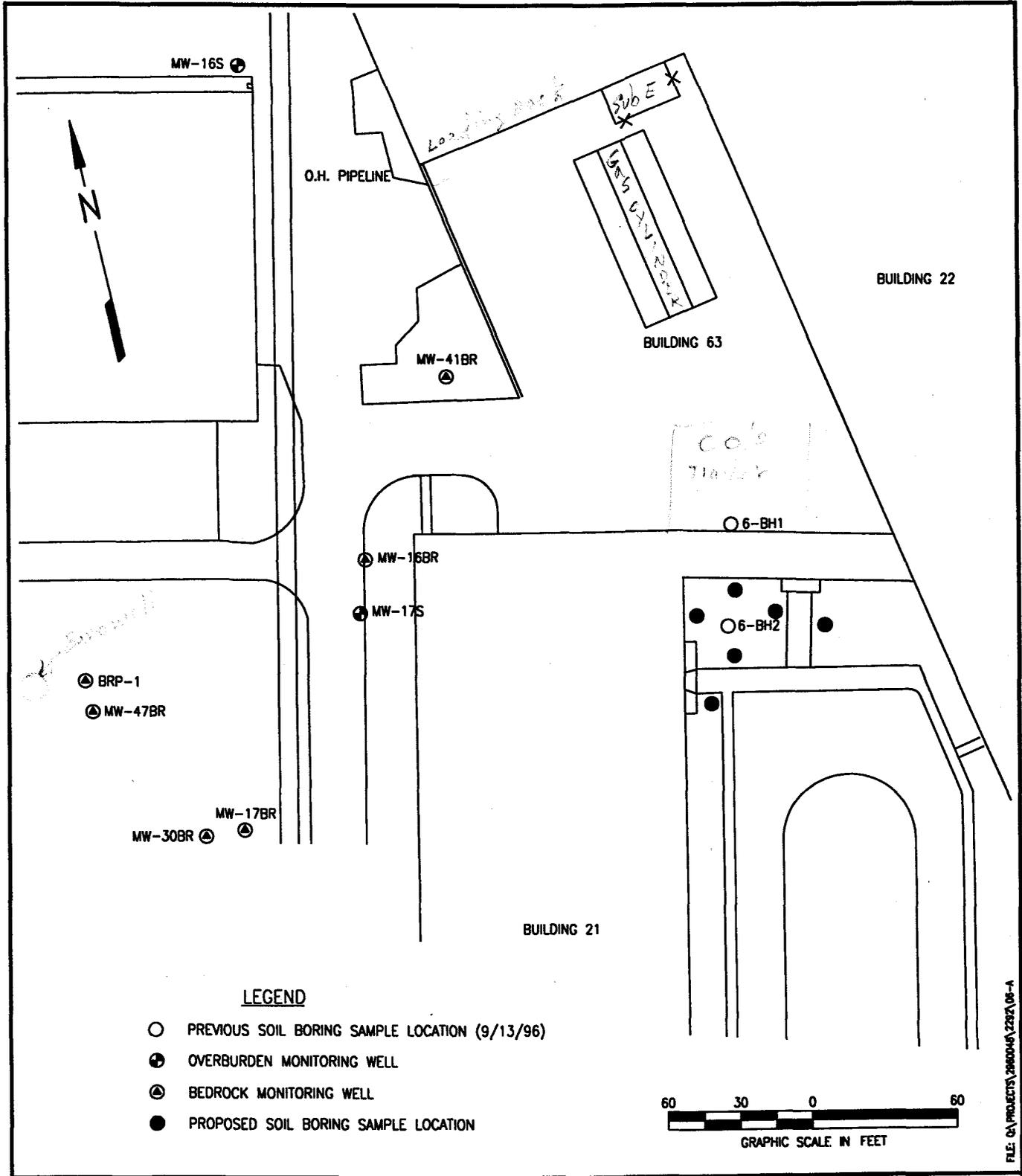
Sincerely,



Ronald A. Harwood
Task Manager

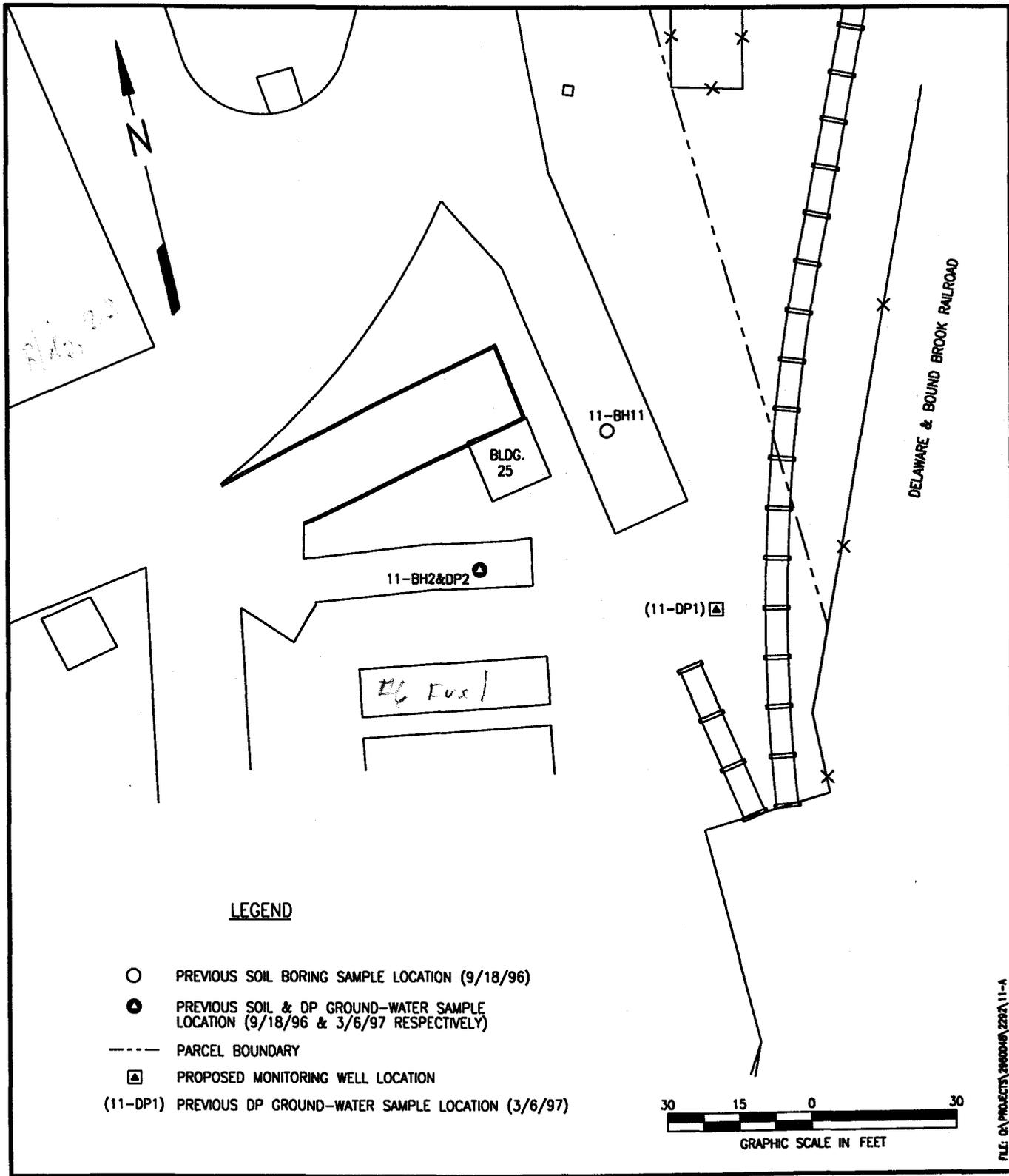
RAH/pmy
Attachments

cc: S. Beebe, Northern Division
J. Dale, Northern Division
D. Rule, Northern Division
G. Hicks, Northern Division
K. Smith, NAWC Trenton
W. Lawler, USEPA
S. Morekas, EA
S. Tyahla, EA
S. Feldmann, EA



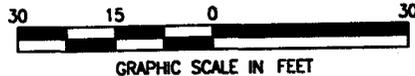
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		EBS PHASE II NAWC TRENTON TRENTON, NEW JERSEY		AREA OF CONCERN 6 (COAL BOILER PLANT AREA) PROPOSED SOIL SAMPLE LOCATIONS			
PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT NO	FIGURE
SF	JD	MM/DM	RH	AS SHOWN	9-19-97	29600.48	1-1



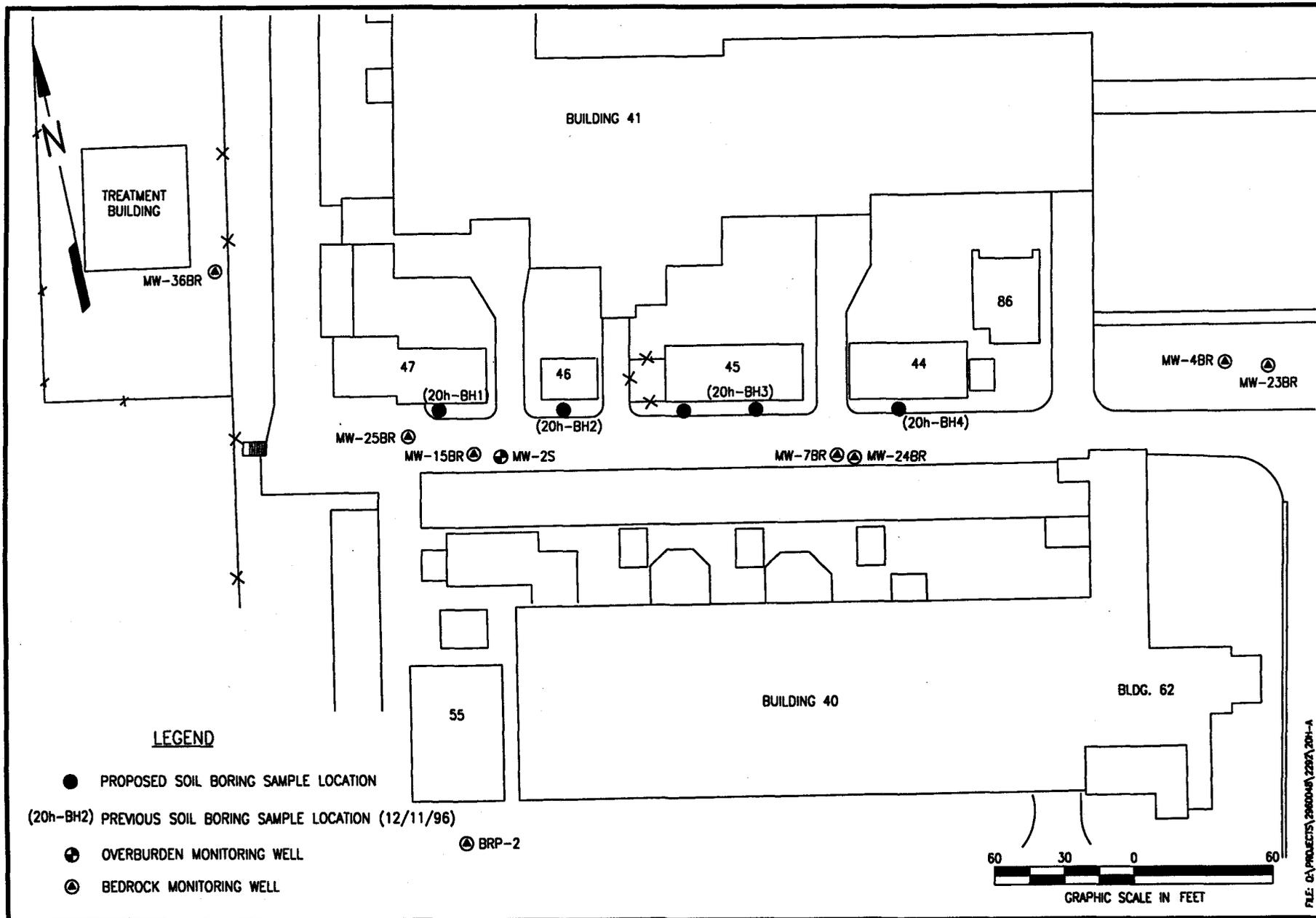
LEGEND

- PREVIOUS SOIL BORING SAMPLE LOCATION (9/18/96)
- PREVIOUS SOIL & DP GROUND-WATER SAMPLE LOCATION (9/18/96 & 3/6/97 RESPECTIVELY)
- PARCEL BOUNDARY
- ▣ PROPOSED MONITORING WELL LOCATION
- ▣ (11-DP1) PREVIOUS DP GROUND-WATER SAMPLE LOCATION (3/6/97)

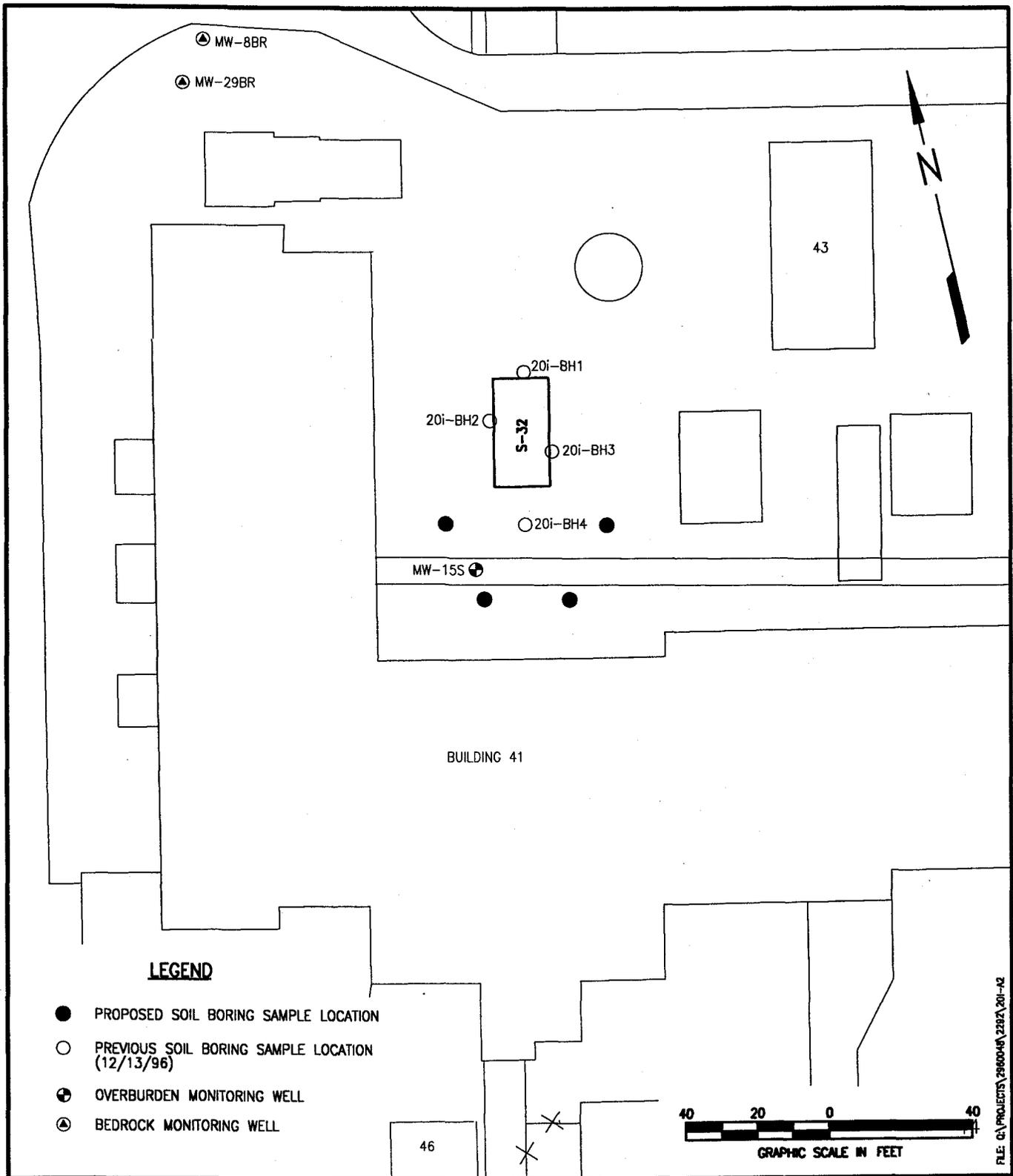


FILE: CA\PROJECTS\2960048\2960111-A

			EBS PHASE II NAWC TRENTON TRENTON, NEW JERSEY			AREA OF CONCERN 11 (FUEL OIL UNLOADING PADS OUTSIDE BUILDING 24) PROPOSED MONITORING WELL LOCATION		
PROJECT MGR SF	DESIGNED BY JD	DRAWN BY MM/DM	CHECKED BY RH	SCALE AS SHOWN	DATE 9-18-97	PROJECT NO 29600.48	FIGURE 2-1	

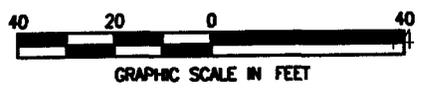


	EBS PHASE II NAWC TRENTON TRENTON, NEW JERSEY	AREA OF CONCERN 20h (BRINE HOUSES) PROPOSED SOIL SAMPLE LOCATIONS	DESIGNED BY	DRAWN BY	DATE	PROJECT NO.
			JD	MM/DM	9-18-97	29600.48
			CHECKED BY	PROJECT MGR.	SCALE	FIGURE
			RH	SF	AS SHOWN	3-1



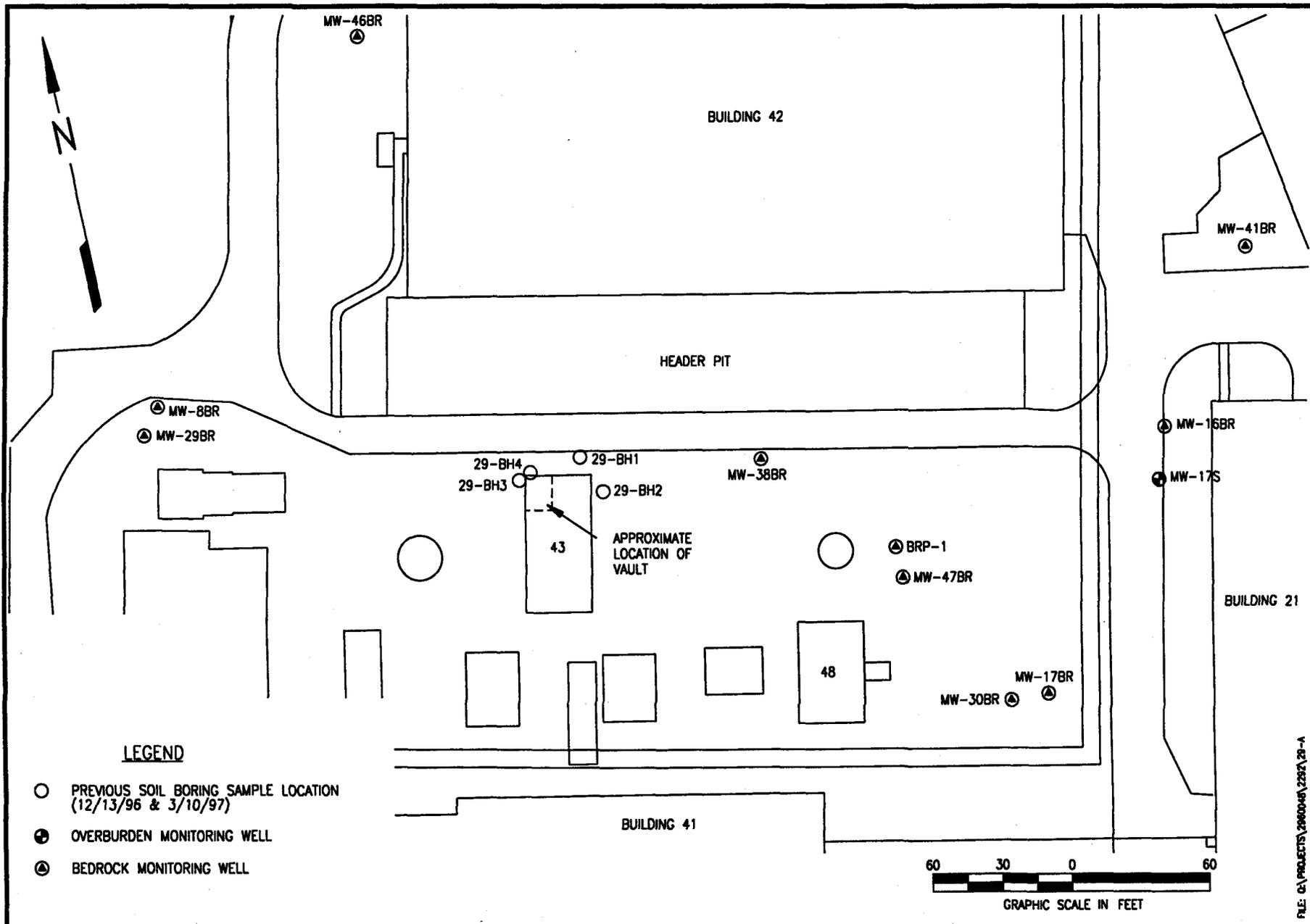
LEGEND

- PROPOSED SOIL BORING SAMPLE LOCATION
- PREVIOUS SOIL BORING SAMPLE LOCATION (12/13/96)
- ⊕ OVERBURDEN MONITORING WELL
- ▲ BEDROCK MONITORING WELL



FILE: G:\PROJECTS\2960048\2960048\20i-A2

			EBS PHASE II NAWC TRENTON TRENTON, NEW JERSEY			AREA OF CONCERN 20i (STRUCTURE S-32) PROPOSED SOIL SAMPLE LOCATIONS		
PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT NO	FIGURE	
SF	JD	DWM	RH	AS SHOWN	9-26-97	29600.48	4-1	



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EBS PHASE II
NAWC TRENTON
TRENTON, NEW JERSEY

AREA OF CONCERN 29
(BUILDING 43 VAULT)
PROPOSED WATER
SAMPLE LOCATION

DESIGNED BY
JD

CHECKED BY
RH

DRAWN BY
MM/DM

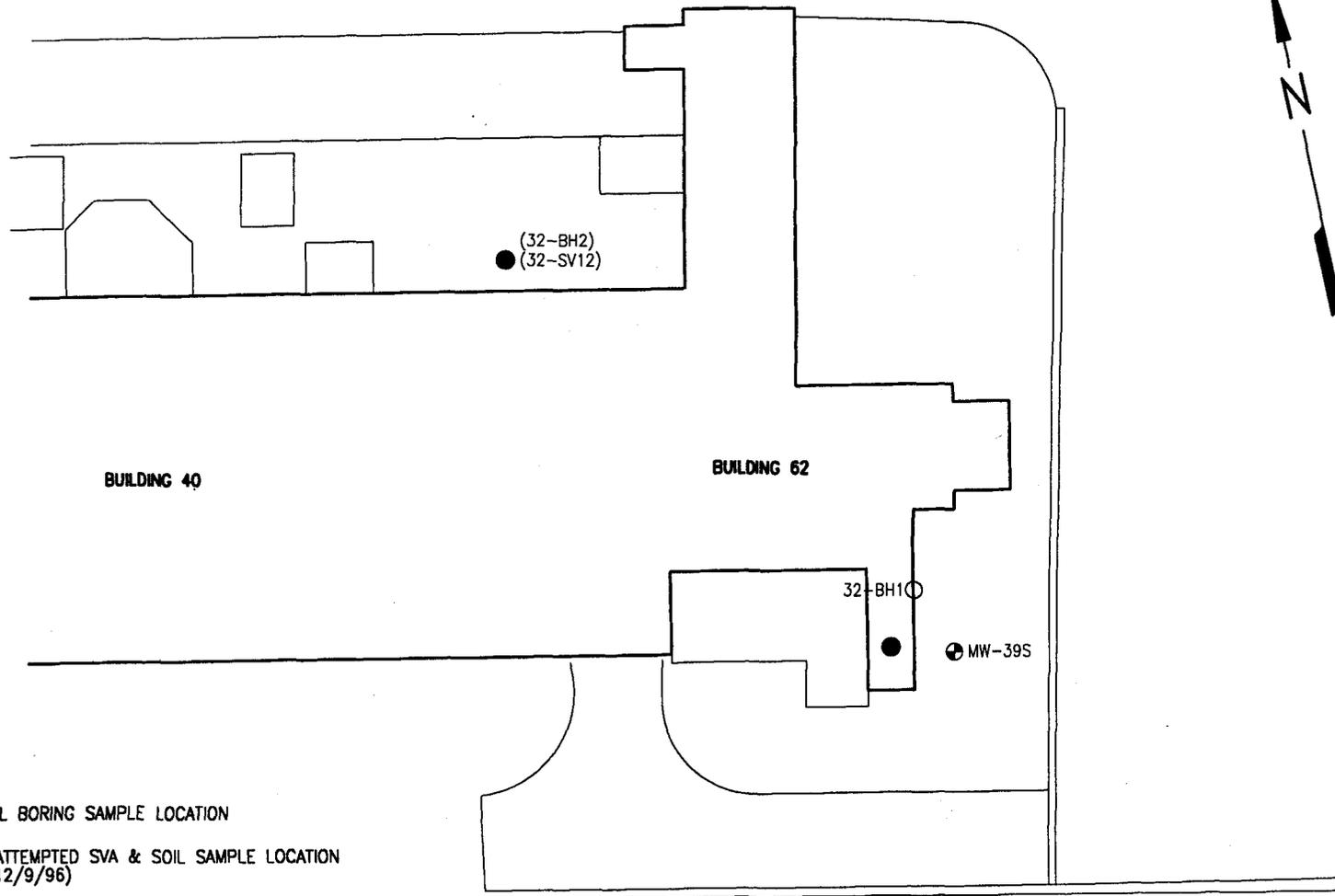
PROJECT MGR.
SF

DATE
9-18-97

SCALE
AS SHOWN

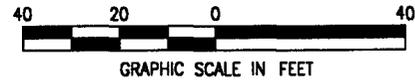
PROJECT NO.
29600.48

FIGURE
5-1



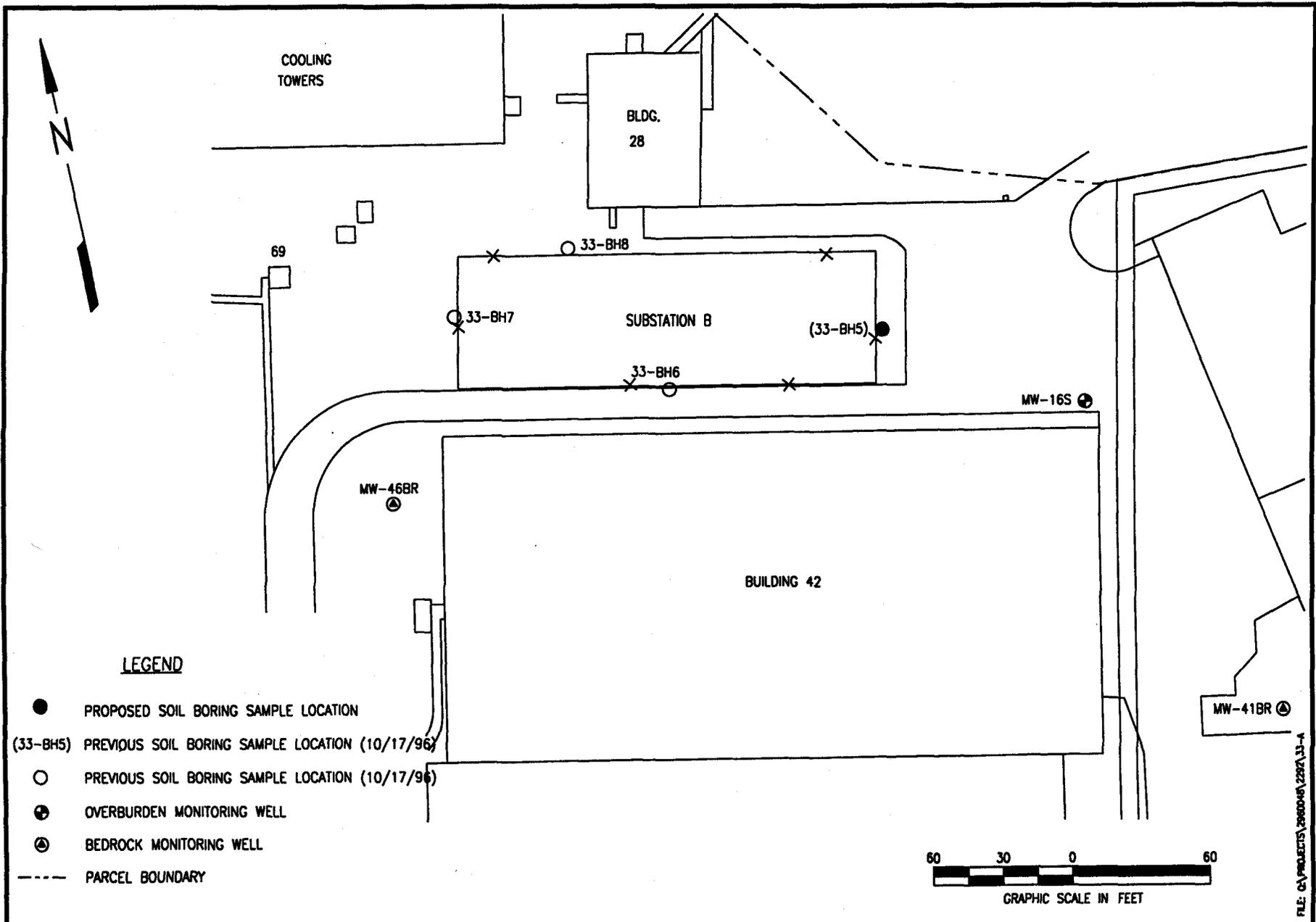
LEGEND

- PROPOSED SOIL BORING SAMPLE LOCATION
- (32-BH2) APPROXIMATE ATTEMPTED SVA & SOIL SAMPLE LOCATION (9/27/96 & 12/9/96)
- (32-SV12)
- PREVIOUS ATTEMPTED SOIL BORING LOCATION (12/19/96)
- ⊕ OVERBURDEN MONITORING WELL
- ⊙ BEDROCK MONITORING WELL
- - - - - PARCEL BOUNDARY



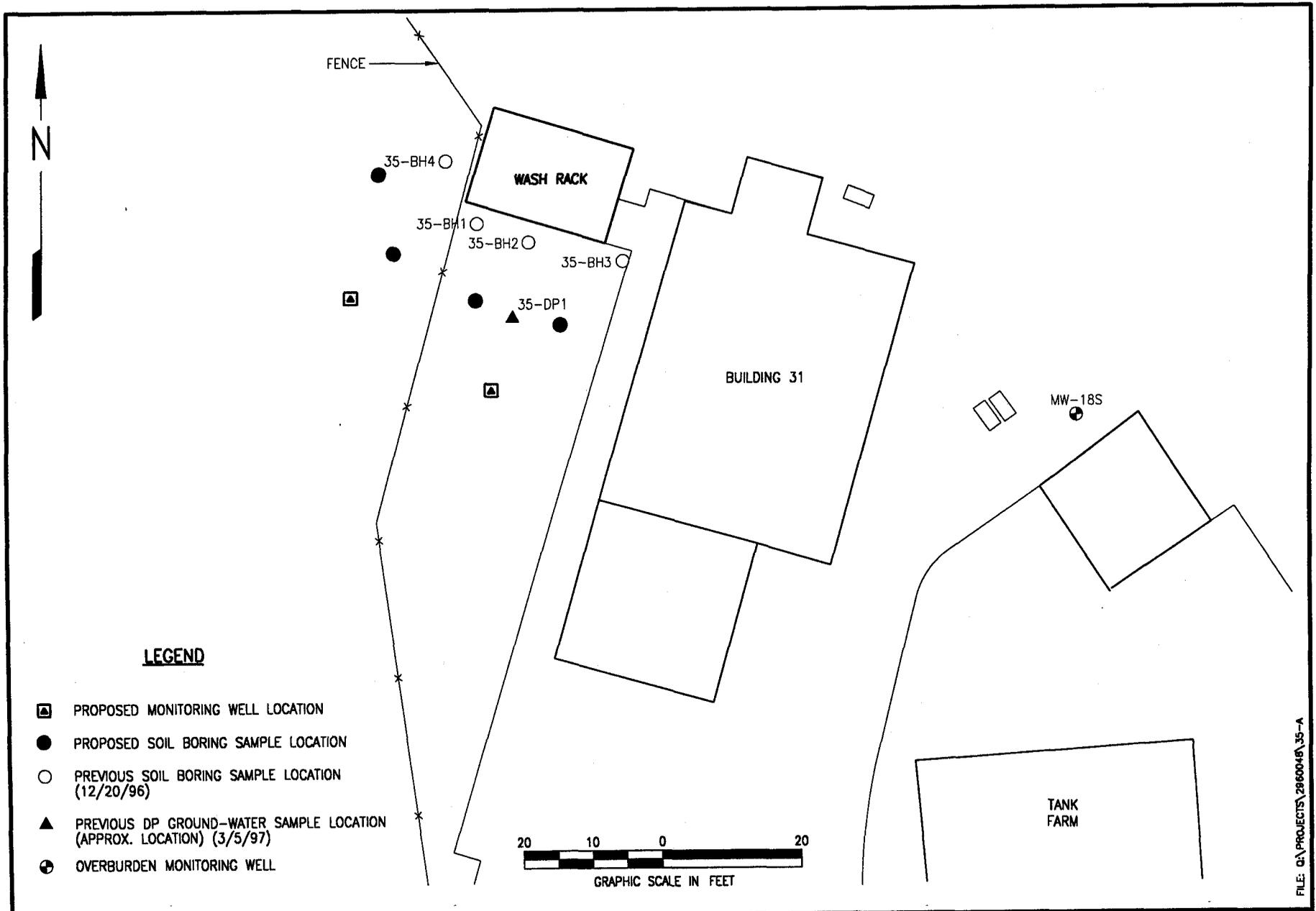
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	EBS PHASE II NAWC TRENTON TRENTON, NEW JERSEY	AREA OF CONCERN 32 (BUILDING 62 EXTERIOR) PROPOSED SOIL SAMPLE LOCATIONS	DESIGNED BY	DRAWN BY	DATE	PROJECT NO.
			JD	FV/DM	9-18-97	29600.48
			CHECKED BY	PROJECT MGR.	SCALE	FIGURE
			RH	SF	AS SHOWN	6-1



FILE: G:\PROJECTS\29600-48\29600-48-2292\33-4

 EA ENGINEERING, SCIENCE, AND TECHNOLOGY	EBS PHASE II NAWC TRENTON TRENTON, NEW JERSEY	AREA OF CONCERN 33 (ELECTRICAL SUBSTATION B) PROPOSED SOIL SAMPLE LOCATION	DESIGNED BY	DRAWN BY	DATE	PROJECT NO.
			JD	MM/DM	9-18-97	29600.48
			CHECKED BY	PROJECT MGR.	SCALE	FIGURE
			RH	SF	AS SHOWN	7-1



LEGEND

- ▣ PROPOSED MONITORING WELL LOCATION
- PROPOSED SOIL BORING SAMPLE LOCATION
- PREVIOUS SOIL BORING SAMPLE LOCATION (12/20/96)
- ▲ PREVIOUS DP GROUND-WATER SAMPLE LOCATION (APPROX. LOCATION) (3/5/97)
- ⊙ OVERBURDEN MONITORING WELL

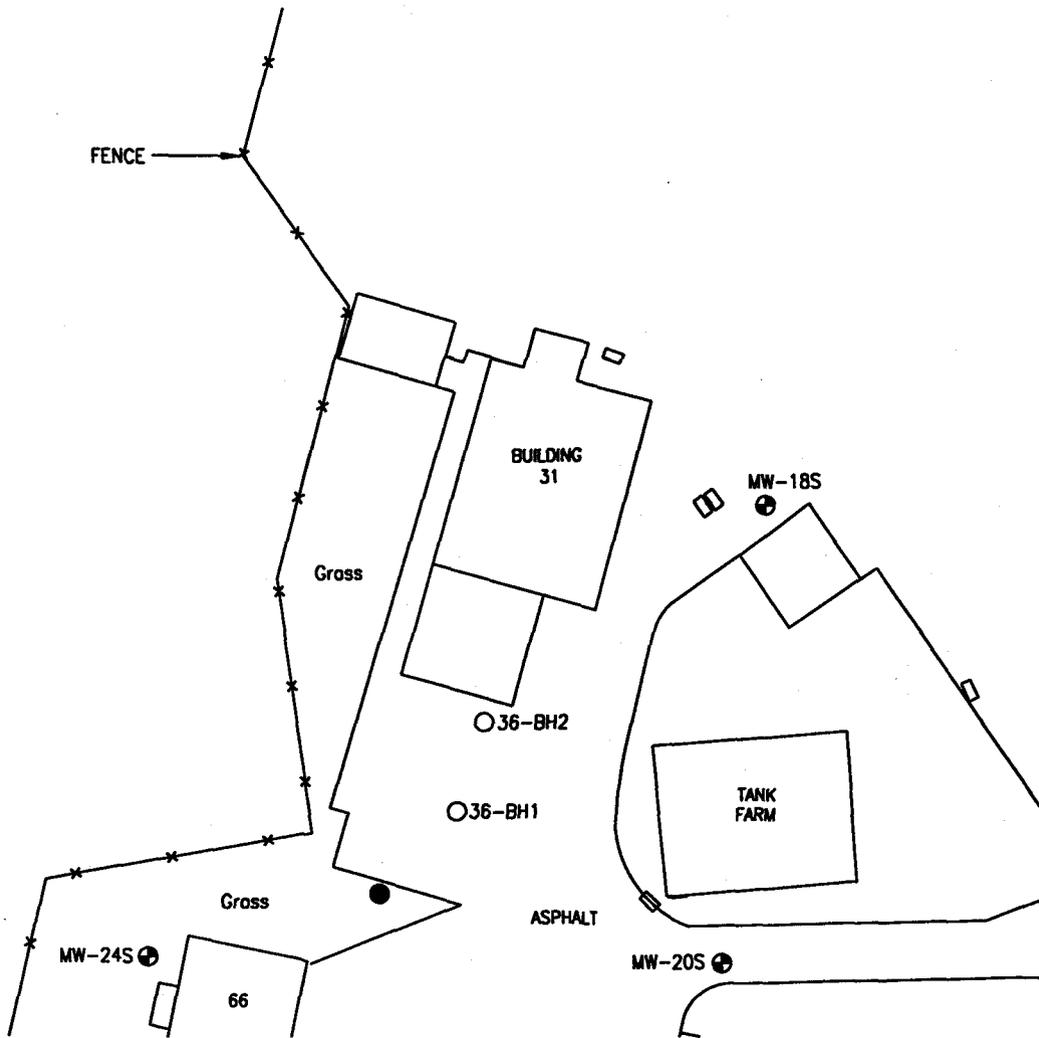
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**EBS PHASE II
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TRENTON, NEW JERSEY**

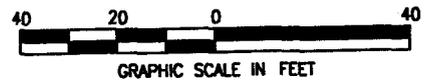
**AREA OF CONCERN 35
(BUILDING 31 WASH RACK)
PROPOSED SOIL SAMPLE AND
MONITORING WELL LOCATIONS**

DESIGNED BY JD	DRAWN BY MM/DM	DATE 9-18-97	PROJECT NO. 29600.48
CHECKED BY RH	PROJECT MGR. SF	SCALE AS SHOWN	FIGURE 8-1



LEGEND

- PROPOSED SOIL BORING SAMPLE LOCATION
- PREVIOUSLY ATTEMPTED SOIL BORING SAMPLE LOCATION (12/13/96)
- ⊕ OVERBURDEN MONITORING WELL



FILE: CA\PROJECTS\29600.48\36-1

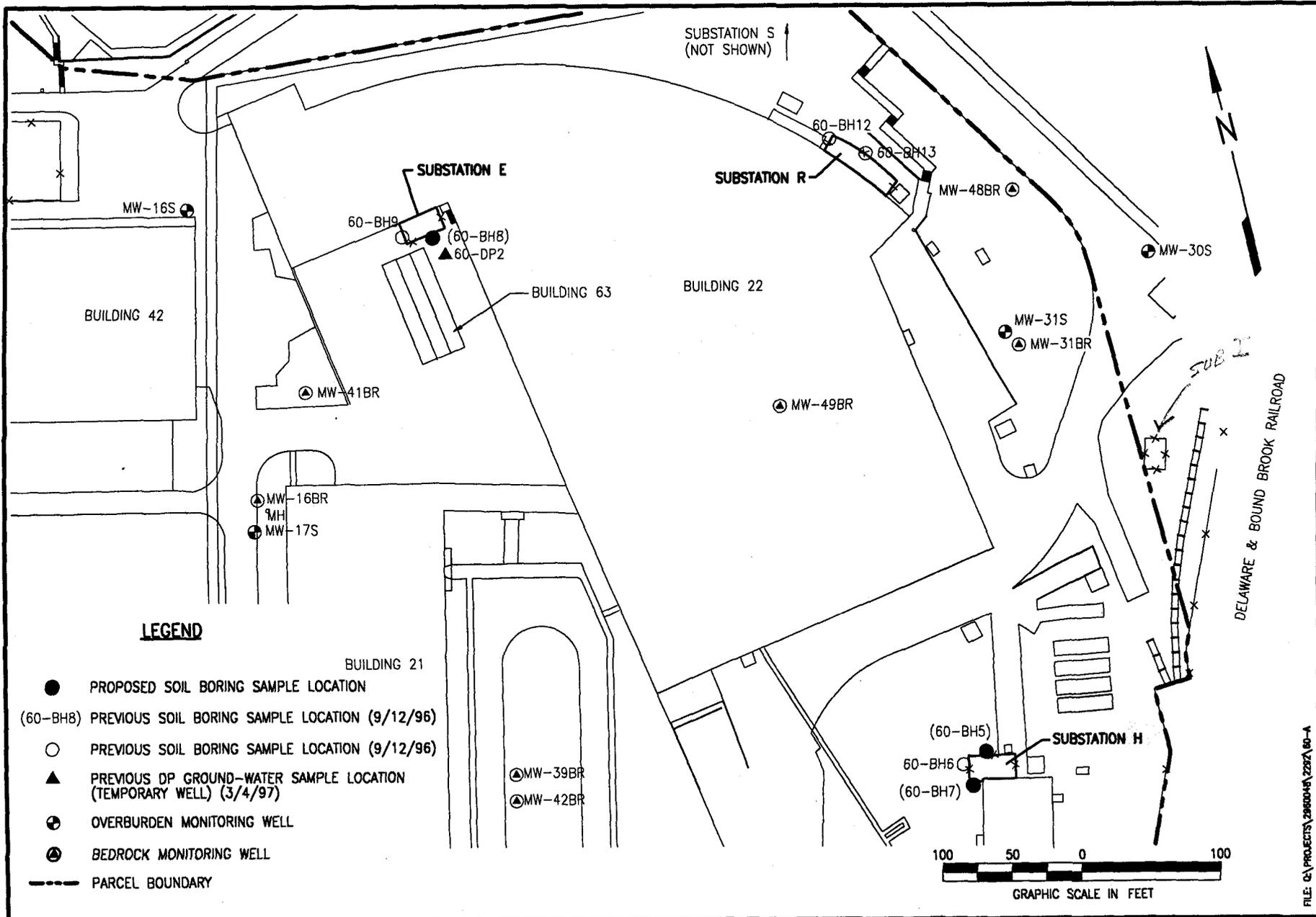


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NAWC TRENTON
TRENTON, NEW JERSEY

AREA OF CONCERN 36
(BUILDING 31 SOUTHERN EXTERIOR)
PROPOSED SOIL SAMPLE LOCATION

PROJECT MGR SF	DESIGNED BY RH	DRAWN BY MM/DM	CHECKED BY RH	SCALE AS SHOWN	DATE 9-18-97	PROJECT NO 29600.48	FIGURE 9-1
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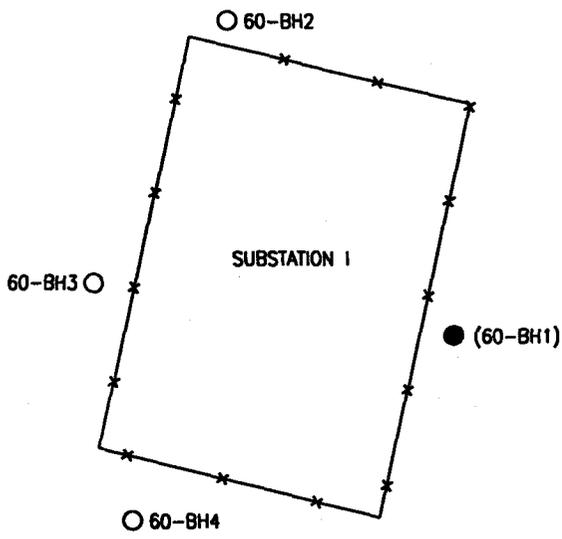


FILE: Q:\PROJECTS\2960048\2297A 80-A

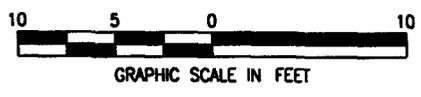
 EA ENGINEERING, SCIENCE, AND TECHNOLOGY	EBS PHASE II NAWC TRENTON TRENTON, NEW JERSEY	AREA OF CONCERN 60 (ELECTRICAL SUBSTATIONS E, H, & R) PROPOSED SOIL SAMPLE LOCATIONS	DESIGNED BY	DRAWN BY	DATE	PROJECT NO.
			CHECKED BY	PROJECT MGR.	SCALE	FIGURE
			JD	MM/DM	9-18-97	29600.48
			RH	SF	AS SHOWN	10-1

LEGEND

- PROPOSED SOIL BORING SAMPLE LOCATION
- (60-BH2) ○ PREVIOUS SOIL BORING SAMPLE LOCATION (9/12/96)
- PREVIOUS SOIL BORING SAMPLE LOCATION (9/12/96)
- ▲ PREVIOUS DP GROUND-WATER SAMPLE LOCATION (TEMPORARY WELL) (3/3/97)

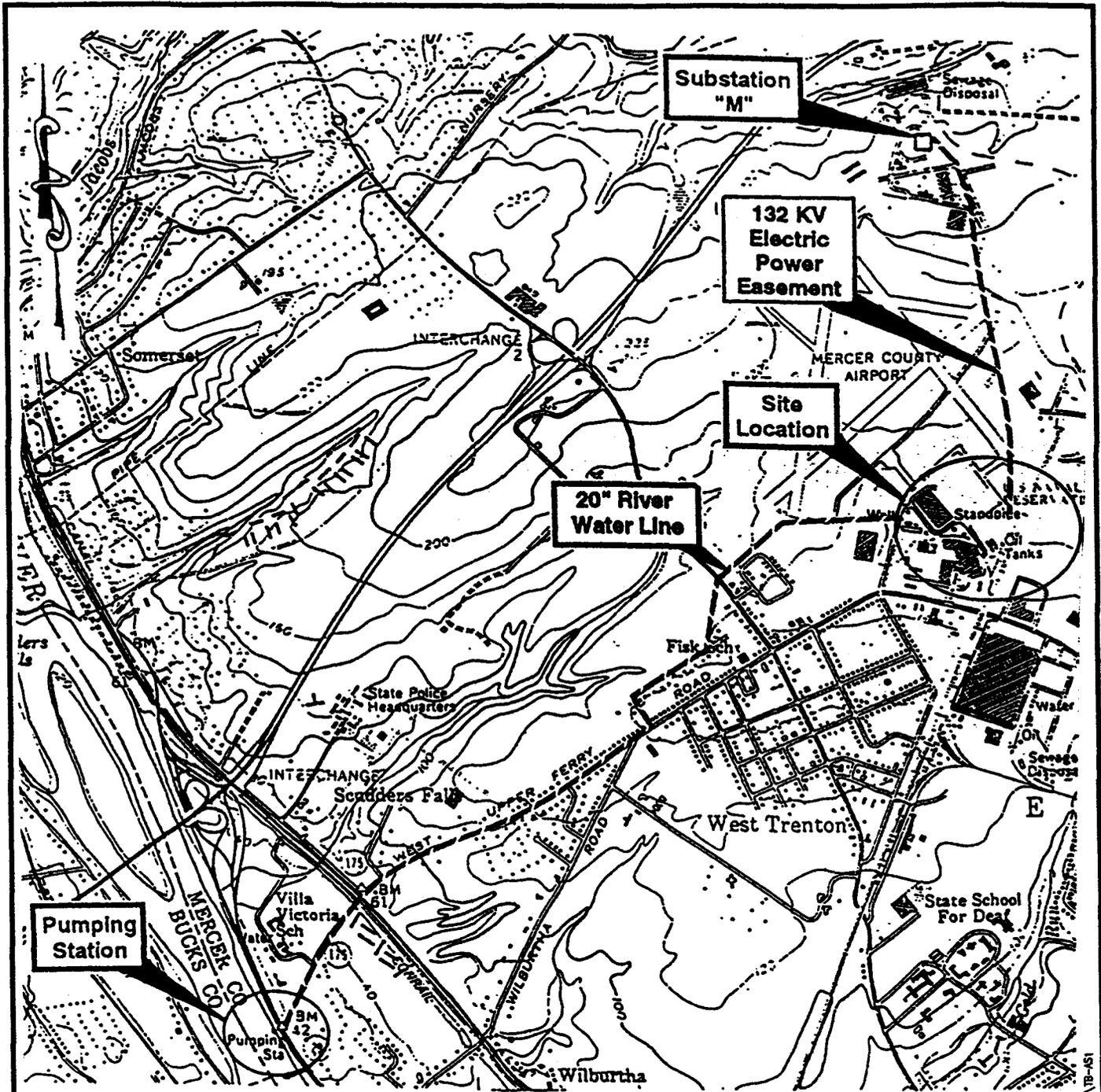


▲ 60-DP1



FILE: F:\PROJ\2960048\ESS-RPT\DWG\60-2

		EBS PHASE II NAWC TRENTON TRENTON, NEW JERSEY			AREA OF CONCERN 60 (ELECTRICAL SUBSTATION I) PROPOSED SOIL SAMPLE LOCATIONS		
PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT NO	FIGURE
SF	RH	MM/DM	SF	AS SHOWN	9-18-97	29600.48	10-2



(Source: USGS 7.5 Minute Series Topographic Map)



FILE: G:\PROJECTS\2960048\1B-1

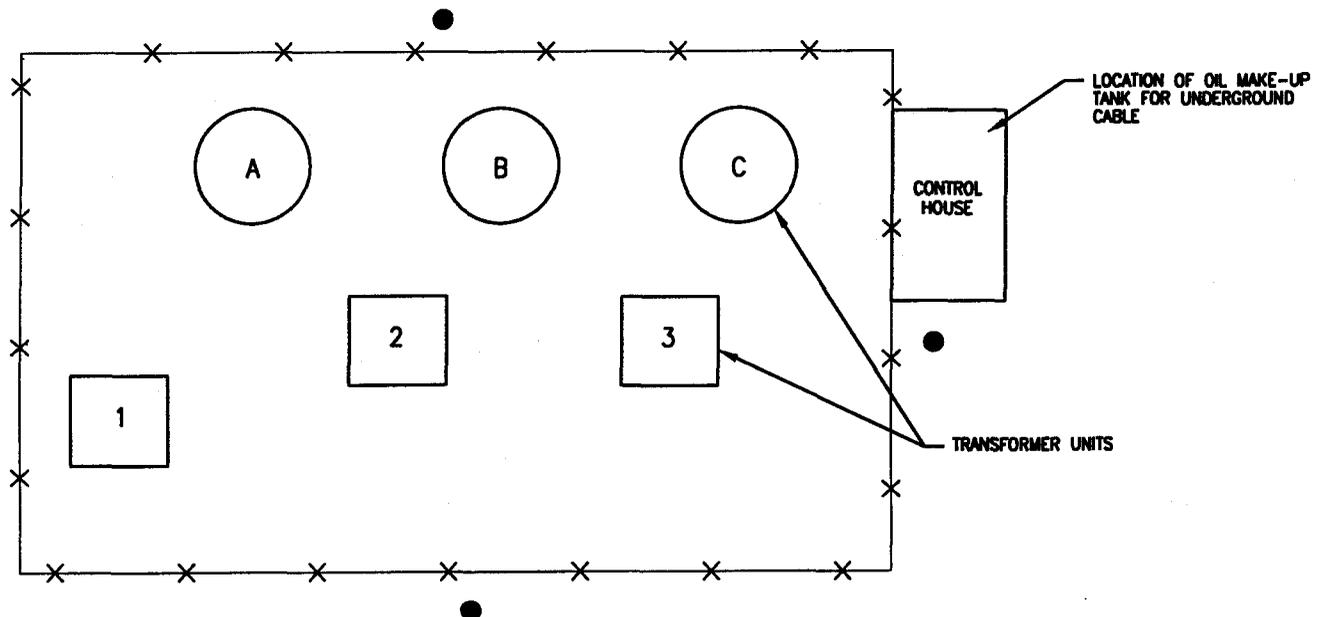


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TRENTON, NEW JERSEY

SUBSTATION M
LOCATION MAP

PROJECT MGR SF	DESIGNED BY RH	DRAWN BY MM	CHECKED BY SF	SCALE AS SHOWN	DATE 5-16-97	PROJECT NO 29600.48	FIGURE 11-1
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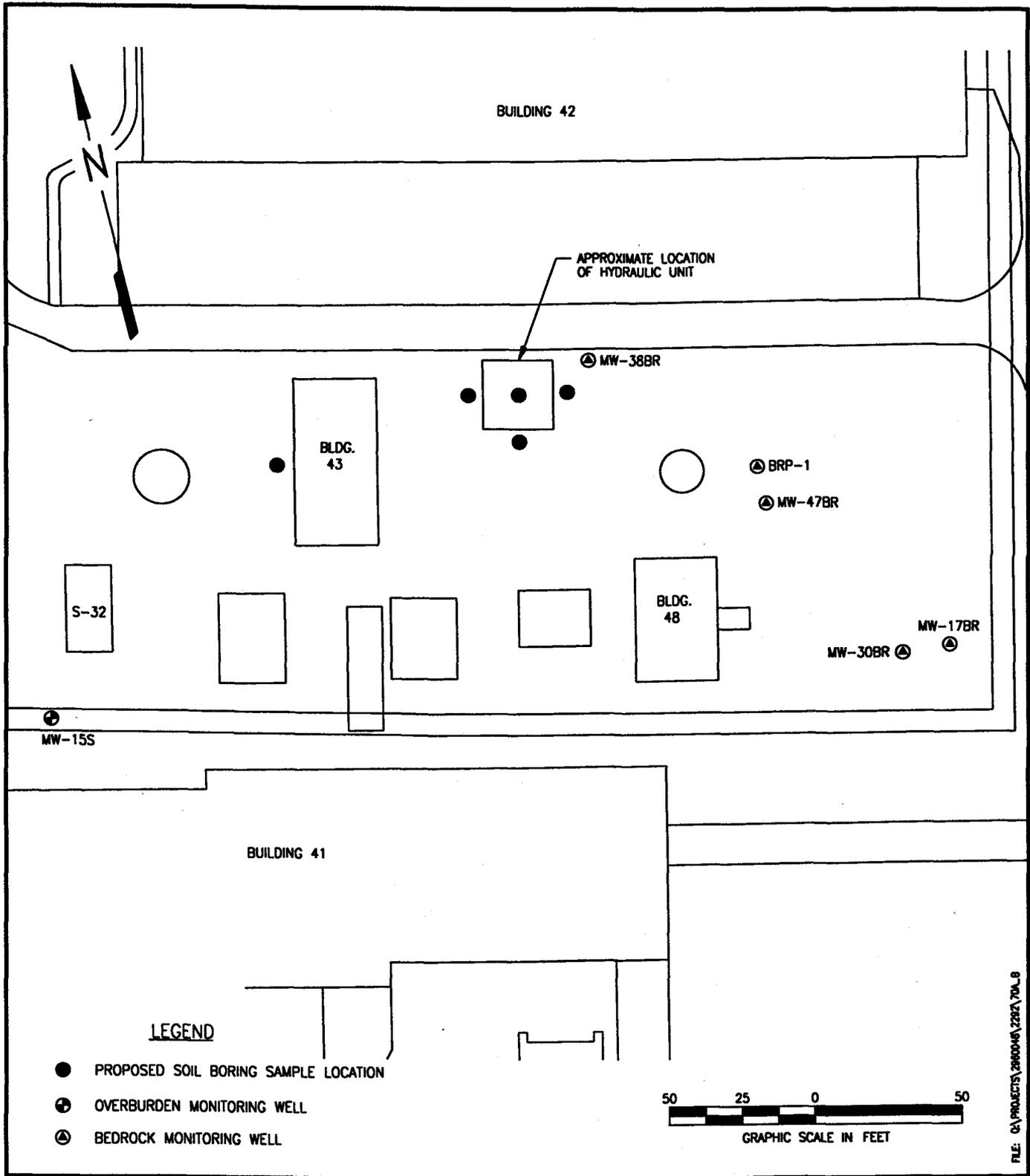


LEGEND

● PROPOSED SOIL BORING SAMPLE LOCATION

FILE: G:\PROJECTS\2960048\2282\69-1

 EA ENGINEERING, SCIENCE, AND TECHNOLOGY	EBS PHASE II NAWC TRENTON TRENTON, NEW JERSEY	AREA OF CONCERN 69 (ELECTRICAL SUBSTATION M) PROPOSED SOIL SAMPLE LOCATIONS	DESIGNED BY	DRAWN BY	DATE	PROJECT NO.
			CHECKED BY	PROJECT MGR.	SCALE	FIGURE
			JD	DM	9-18-97	29600.48
			RH	SF	NONE	11-2

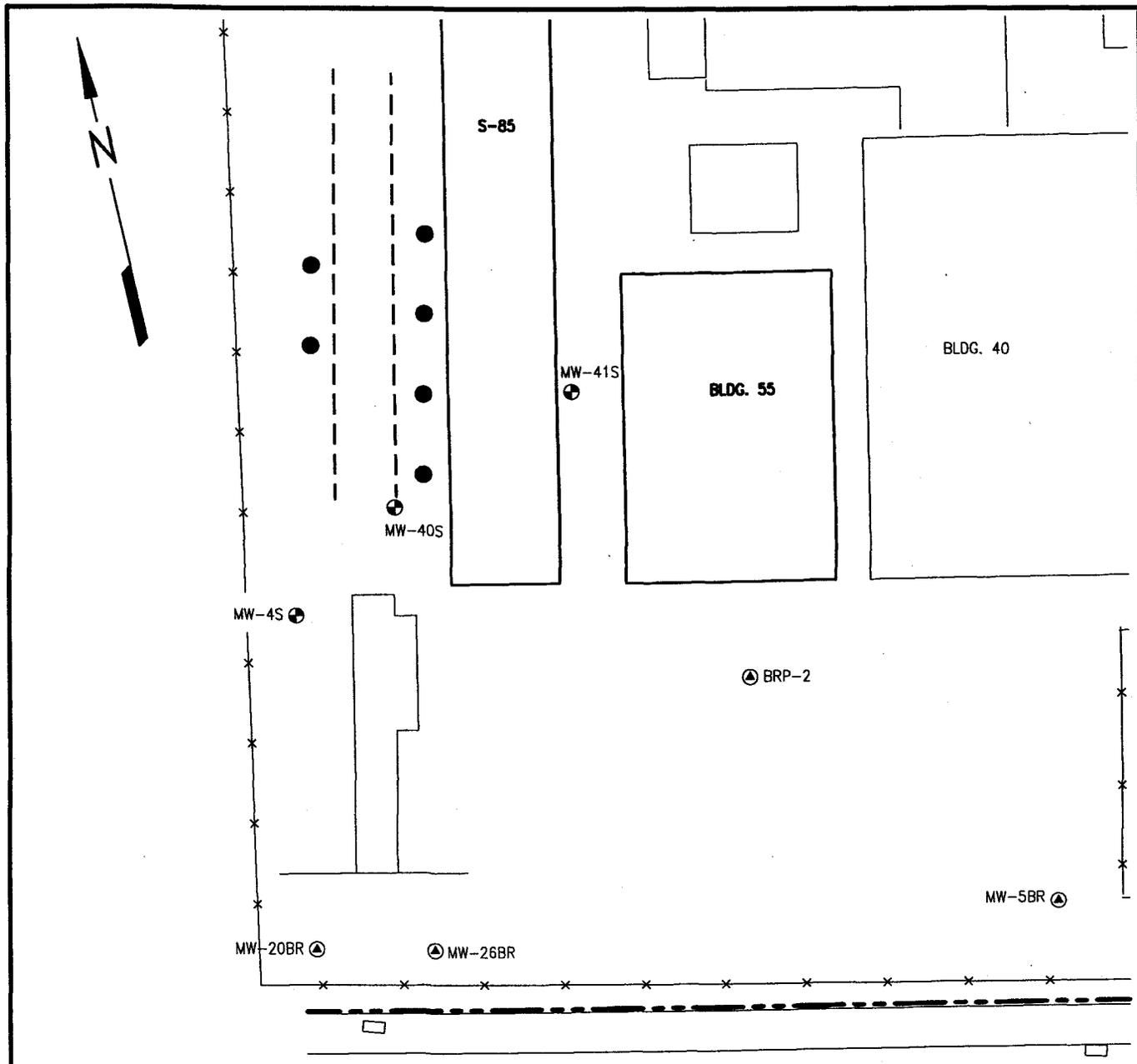


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TRENTON, NEW JERSEY

AREA OF CONCERN 70A AND 70B
(EXHAUST CONTROL VALVES FOR
TEST CELLS)
PROPOSED SOIL SAMPLE LOCATIONS

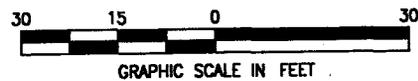
PROJECT MGR SF	DESIGNED BY JD	DRAWN BY DM	CHECKED BY RH	SCALE AS SHOWN	DATE 9-24-97	PROJECT NO 29600.48	FIGURE 12-1
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LEGEND

- PROPOSED SOIL BORING SAMPLE LOCATION
- ⊙ OVERBURDEN MONITORING WELL
- ⊕ BEDROCK MONITORING WELL
- APPROXIMATE LOCATION OF EXCAVATION

PARKWAY AVENUE



FILE: CA PROJECTS\29600.48\2202\01-A



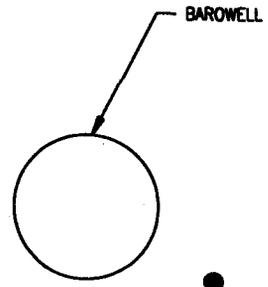
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**AREA OF CONCERN 71
(WEST DITCH AREA)
PROPOSED SOIL SAMPLE LOCATIONS**

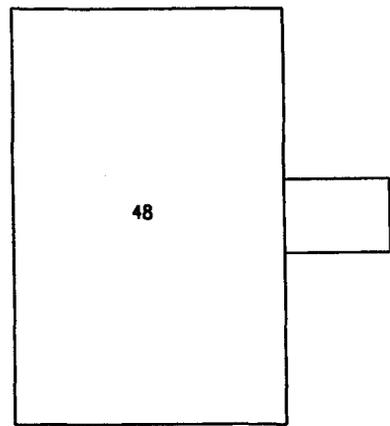
PROJECT MGR SF	DESIGNED BY JD	DRAWN BY MM	CHECKED BY RH	SCALE AS SHOWN	DATE 9-22-97	PROJECT NO 29600.48	FIGURE 13-1
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MW-38BR



BRP-1

MW-47BR

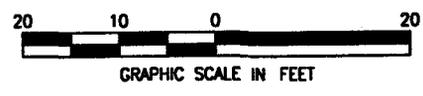


MW-17BR

MW-30BR

LEGEND

- PROPOSED SOIL BORING SAMPLE LOCATION
- ⊕ BEDROCK MONITORING WELL



FILE: CA\PROJECTS\2960048\2282\29-01

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AREA OF CONCERN 72
(AREA NEAR BRP-1 AND MW-47BR)
PROPOSED SOIL SAMPLE LOCATIONS

PROJECT MGR SF	DESIGNED BY JD	DRAWN BY DM	CHECKED BY RH	SCALE AS SHOWN	DATE 9-24-97	PROJECT NO 29600.48	FIGURE 14-1
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TABLE 1
AREA OF CONCERN (AOC) SAMPLING SCHEME

Area of Concern	DP Soil Borings (Samples)	Hand-Augered Soil Borings (Samples)	Monitoring Well Ground-Water Samples	Transformer Oil Samples	Other
6		8			
11			1		
20h		5 (10)			
20i	4 (8)				
29					1 water sample from vault
32		2 (4)			
33	1 (1)				
35	4 (12)		2		
36	4 (4)				
60	1 (2)	3 (3)			
69	4 (8)			7	
70a, 70b	5 (10)				
71	6 (12)				
72	6 (12)				
Total	35 (69)	18 (17)	3	7	1 water sample

TABLE 2
SUMMARY OF SOIL ANALYSES FOR PHASE II AREAS OF CONCERN
SUPPLEMENTAL FIELD WORK

Area of Concern No.	TCL VOCs Method SW-846 8260 + Library Search	TCL B/N Method SW-846 8270 + Library Search	TPH Method SW-846 8015-M	TCL PCBs Method SW-846 8080	TAL Metals SW-846
	Soil (std.TAT)	Soil (std.TAT)	Soil (std.TAT)	Soil (std.TAT)	Soil (std.TAT)
6					
20h				10	
20i	8	8			
32	4		4		
33				1	
35				12	12
36		4			4
60				5	
69				8	
70a, 70b				10	
71	12		12		
72	12				
Subtotal	36	12	16	46	16
QC samples					
Trip blanks					
Field Blanks	4	2	4	5	2
Duplicates	2	1	1	3	1
MS	2	1	1	3	1
MSD	2	1	1	3	1
Subtotal	10	5	7	14	5
Total	46	17	23	60	21
Notes: Field blanks - 10% of samples or a maximum of 1 per day. Duplicates, MS, MSD - 5% of samples.					

TABLE 3
SUMMARY OF WATER ANALYSES FOR PHASE II AREAS OF CONCERN
SUPPLEMENTAL FIELD WORK

Area of Concern No.	TCL VOCs Method SW-846 8260 + Library Search	TCL B/N Method SW-846 8270 + Library Search
	Water(std.TAT)	Water (std.TAT)
11	1	
29	1	1
35	2	
Subtotal	4	1
QC samples		
Trip blanks	2	
Field Blanks	1	1
Duplicates	1	1
MS	1	1
MSD	1	1
Subtotal	6	4
Total	10	5
Notes: Field blanks - 10% of samples or a maximum of 1 per day. Duplicates, MS, MSD - 5% of samples.		

TABLE 4
 SUMMARY OF OIL ANALYSES FOR PHASE II AREAS OF CONCERN
 SUPPLEMENTAL FIELD WORK

Area of Concern No.	TCL PCBs Method SW-846 8080
	Oil (std. TAT)
69	7
Subtotal	7
Trip blanks	
Field Blanks	
Duplicates	1
MS	
MSD	
Subtotal	1
Total	8

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