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Naval Facilities Engineering Command

Norfolk, Virginia

Under The

LANTDIV CLEAN Program

Comprehensive Long-Term Environmental Action Navy

Baker

FOSTER WHEELER ENVIRONMENTAL CORPORATION

WESTON

REVISED DRAFT

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FOR
OPERABLE UNITS 3 AND 5

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NAVAL STATION ROOSEVELT ROADS
CEIBA, PUERTO RICO

VOLUME II OF III
TABLES AND FIGURES

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RFI SWMU 1- ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Investigation	Sample Media	Sample Designation	Sample Depth (ft bgs)	Sample Date	Analytical Parameters
Confirmation Study *	Groundwater Round 01	5GW1	NA	3/6/86	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		5GW2	NA	3/6/86	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		5GW3	NA	3/6/86	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		5GW4	NA	3/6/86	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		5GW5	NA	3/12/86	VOCs, SVOCs, Pesticides/PCBs, Inorganics
	Surface Water Round 01	5SW1	NA	11/28/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics, Chromium
		5SW2	NA	11/28/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics, Chromium
		5SW3	NA	11/28/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics, Chromium
		5SW4	NA	11/28/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics, Chromium
		5SW5	NA	11/28/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics, Chromium
		14SW9	NA	11/22/85	VOCs, Lead, Oil & Grease
	Sediment Round 01	5SE1	Unknown	11/28/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		5SE2	Unknown	11/28/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		5SE3	Unknown	11/28/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		5SE4	Unknown	11/28/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		5SE5	Unknown	11/28/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		14SE9	Unknown	11/22/85	VOCs, Lead, Oil & Grease
	Groundwater Round 02	5GW01	NA	10/12/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		5GW02	NA	10/12/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		5GW03	NA	10/13/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		5GW04	NA	10/13/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		5GW05	NA	10/12/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics
	Surface Water Round 02	5SW01	NA	10/7/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics, Chromium
		5SW02	NA	10/6/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics, Chromium
		5SW03	NA	10/6/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics, Chromium
		5SW04	NA	10/6/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics, Chromium
		5SW05	NA	10/6/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics, Chromium
	Sediment Round 02	5SE01	Unknown	10/7/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics, Chromium
		5SE02	Unknown	10/6/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics, Chromium
		5SE03	Unknown	10/6/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics, Chromium
		5SE04	Unknown	10/6/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics, Chromium
		5SE05	Unknown	10/6/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics, Chromium

Notes: NA - Not Applicable
* - Pre-RFI Investigation

TABLE 3-1 (continued)

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
RFI SWMU 1- ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Investigation	Sample Media	Sample Designation	Sample Depth (ft bgs)	Sample Date	Analytical Parameters
Supplemental Investigation *	Groundwater	05GW101	NA	12/1/92	SVOCs, Pesticides/PCBs, Inorganics
	Surface Soil	05SS126	0.5-1.5	11/15/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		05SS128	0.5-1.5	11/15/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		05SS130	0.5-1.5	11/15/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		05SS132	0.5-1.5	11/16/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		05SS135	0.5-1.5	11/16/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		05SS138	0.5-1.5	11/17/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
	Subsurface Soil	05SS127	1.5-2.67	11/15/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		05SS129	1.5-2.67	11/15/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		05SS131	1.5-2.67	11/15/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		05SS133	1.5-2.67	11/16/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		05SS134	1.5-2.67	11/16/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		05SS136	1.5-2.67	11/16/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		05SS137	1.5-2.67	11/16/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		05SS139	1.5-2.67	11/17/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		05SS140C	1.5-2.67	11/17/92	Pesticides/PCBs, Inorganics
		05SS140D	1.5-2.67	11/17/92	Pesticides/PCBs, Inorganics
		05SS140E	1.5-2.67	11/17/92	Pesticides/PCBs, Inorganics
Relative Risk Ranking *	Sediment	1SD01	0.0-1.0	Oct. 1995	Appendix IX List, Sulfide
		1SD02	0.0-1.0	Oct. 1995	Appendix IX List, Sulfide
		1SD03	0.0-1.0	Oct. 1995	Appendix IX List, Sulfide

Notes: Appendix IX List consists of Appendix IX VOCs, SVOCs, Pesticides/PCBs, Dioxins, Chlorinated Herbicides, and Inorganics.
NA - Not Applicable
* - Pre-RFI Investigation

TABLE 3-1 (continued)

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
RFI SWMU 1- ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Investigation	Sample Media	Sample Designation	Sample Depth (ft bgs)	Sample Date	Analytical Parameters
RFI Investigation	Surface Soil	1SS01	0.0-1.0	10/3/96	Appendix IX List, Explosives, Asbestos
		1SS02	0.0-1.0	10/11/96	Appendix IX List, Explosives, Asbestos
		1SS02D	0.0-1.0	10/11/96	Appendix IX List, Explosives, Asbestos
		1SS03	0.0-1.0	10/10/96	Appendix IX List, Explosives, Asbestos
		1SS04	0.0-1.0	10/10/96	Appendix IX List, Explosives, Asbestos
		1SS05	0.0-1.0	10/11/96	Appendix IX List, Explosives, Asbestos
		1SS06	0.0-1.0	10/11/96	Appendix IX List, Explosives, Asbestos
		1SS07	0.0-1.0	10/13/96	Appendix IX List, Explosives, Asbestos
		1SS08	0.0-1.0	10/22/96	Appendix IX List, Explosives, Asbestos
		1SB01-00	0.0-1.0	10/13/96	Appendix IX List, Explosives, Asbestos
		1SB02-00	0.0-1.0	10/13/96	Appendix IX List, Explosives, Asbestos
		1SB03-00	0.0-1.0	10/11/96	Appendix IX List, Explosives, Asbestos
		1MW01-00	0.0-1.0	10/29/96	Appendix IX List, Explosives, Asbestos
		1MW02-00	0.0-1.0	10/11/96	Appendix IX List, Explosives, Asbestos
		1MW03-00	0.0-1.0	10/11/96	Appendix IX List, Explosives, Asbestos
		1MW04-00	0.0-1.0	10/13/96	Appendix IX List, Explosives, Asbestos
	Sediment	1SD01	0.0-1.0	10/22/96	Appendix IX List, Explosives, Asbestos, TOC
		1SD02	0.0-1.0	10/22/96	Appendix IX List, Explosives, Asbestos, TOC
		1SD03	0.0-1.0	11/10/96	Appendix IX List, Explosives, Asbestos, TOC
	Subsurface Soil	1SB01-02/05	4.0-12.0	10/25/96	Appendix IX List, Explosives, Asbestos
		1SB02-03/04	6.0-10.0	10/26/96	Appendix IX List, Explosives, Asbestos
		1SB02-10/11/12	20.0-24.0	10/26/96	Appendix IX List, Explosives, Asbestos
		1SB03-03	6.0-8.0	10/24/96	Appendix IX List, Explosives, Asbestos
		1SB03-06	12.0-14.0	10/24/96	Appendix IX List, Explosives, Asbestos
		1MW01-02	4.0-6.0	10/29/96	Appendix IX List, Explosives, Asbestos
		1MW01-02D	4.0-6.0	10/29/96	Appendix IX List, Explosives, Asbestos
		1MW02-03	6.0-8.0	10/28/96	Appendix IX List, Explosives, Asbestos
		1MW02-03D	6.0-8.0	10/28/96	Appendix IX List, Explosives, Asbestos
		1MW02-11/12	22.0-26.0	10/28/96	Appendix IX List, Explosives, Asbestos
		1MW03-03	6.0-8.0	10/22/96	Appendix IX List, Explosives, Asbestos
		1MW03-05	10.0-12.0	10/22/96	Appendix IX List, Explosives, Asbestos
		1MW04-02	4.0-6.0	10/15/96	Appendix IX List, Explosives, Asbestos
		1MW04-04	8.0-10.0	10/15/96	Appendix IX List, Explosives, Asbestos
		5MW03R-03	5.0-7.0	9/18/97	Appendix IX List, Explosives, Asbestos
		5MW03R-05	10.0-12.0	9/18/97	Appendix IX List, Explosives, Asbestos
		1MW05-01	1.0-3.0	9/18/97	Appendix IX List, Explosives, Asbestos
		1MW05-05	10.0-12.0	9/18/97	Appendix IX List, Explosives, Asbestos

Notes: Appendix IX List consists of Appendix IX VOCs, SVOCs, Pesticides/PCBs, Dioxins, Chlorinated Herbicides, and Inorganics.

TABLE 3-1 (continued)

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
RFI SWMU 1- ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Investigation	Sample Media	Sample Designation	Sample Depth (ft bgs)	Sample Date	Analytical Parameters
RFI Investigation (cont.)	Groundwater	1MW01	NA	11/5/96	Appendix IX List, Explosives, Asbestos, Sodium
		1MW01D	NA	11/5/96	Appendix IX List, Explosives, Asbestos, Sodium
		1MW02	NA	11/5/96	Appendix IX List, Explosives, Asbestos, Sodium
		1MW03	NA	11/5/96	Appendix IX List, Explosives, Asbestos, Sodium
		1MW04	NA	11/5/96	Appendix IX List, Explosives, Asbestos, Sodium
		5GW01	NA	11/6/96	Appendix IX List, Explosives, Asbestos, Sodium
		5GW02	NA	11/5/96	Appendix IX List, Explosives, Asbestos, Sodium
		5GW04	NA	11/5/96	Appendix IX List, Explosives, Asbestos, Sodium
		5GW03R	NA	10/1/97	Appendix IX List, Explosives, Asbestos, Sodium
		1GW05	NA	10/1/97	Appendix IX List, Explosives, Asbestos, Sodium

Notes: Appendix IX List consists of Appendix IX VOCs, SVOCs, Pesticides/PCBs, Dioxins, Chlorinated Herbicides, and Inorganics.
NA - Not Applicable

TABLE 3-2

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
RFI SWMU 2 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Investigation	Sample Media	Sample Designation	Sample Depth (ft bgs)	Sample Date	Analytical Parameters
Confirmation Study *	Surface Soil Round 01	R6S1A	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6S2A	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6S3A	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6S4A	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6S5A	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6S6A	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6S7A	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6S8A	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6S9A	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6S10A	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics, EP TOX Lead
		R6S11A	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6S12A	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6S13A	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6S14A	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6S15A	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
	Surface Water Round 01	R6SW1	NA	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6SW2	NA	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6SW3	NA	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		14SW10	NA	11/22/85	VOCs, Lead, Oil & Grease
	Sediment	R6SE1	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6SE2	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6SE3	0.0-1.0	12/5/85	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		14SE10	Unknown	11/22/85	VOCs, Lead, Oil & Grease
	Groundwater Round 02	R6GW01	NA	11/2/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics
	Surface Soil Round 02	R6S04A	0.0-1.0	11/4/87	Lead
		RSS05A	0.0-1.0	11/4/87	Lead
		RSS09A	0.0-1.0	11/4/87	Lead, EP TOX Lead
		RSS10A	0.0-1.0	11/4/87	Lead
		RSS11A	0.0-1.0	11/4/87	Lead, EP TOX Lead
		RSS12A	0.0-1.0	11/4/87	Lead, EP TOX Lead
		RSS14A	0.0-1.0	11/4/87	Lead
		RSS15A	0.0-1.0	11/4/87	Lead
		RSS16A	0.0-1.0	11/4/87	Lead
		RSS17A	0.0-1.0	11/4/87	Lead
		RSS18A	0.0-1.0	11/4/87	Lead
		RSS19A	0.0-1.0	11/4/87	Lead
		RSS20A	0.0-1.0	11/4/87	Lead

Notes: NA - Not Applicable
* - Pre-RFI Investigation

TABLE 3-2 (continued)

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
RFI SWMU 2 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Investigation	Sample Media	Sample Designation	Sample Depth (ft bgs)	Sample Date	Analytical Parameters
Confirmation Study * (cont.)	Subsurface Soil Round 02	R6S010B	1.0-2.0	11/4/87	Lead
		R6S010C	2.0-3.0	11/4/87	Lead
	Surface Water Round 2	R6SW01	NA	10/7/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6SW02	NA	10/7/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6SW03	NA	10/7/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics
	Sediment Round 2	R6SE01	0.0-1.0	10/7/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6SE02	0.0-1.0	10/7/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		R6SE03	0.0-1.0	10/7/87	VOCs, SVOCs, Pesticides/PCBs, Inorganics
Supplemental Investigation *	Groundwater	06GW101	NA	11/18/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
	Surface Soil	06SS141	0.5-1.5	11/17/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		06SS143	0.5-1.5	11/17/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		06SS145	0.0-0.5	11/17/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		06SS147	0.5-1.5	11/17/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		06SS150	0.5-1.5	11/17/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		06SS153	0.5-1.5	11/17/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		06SS155D	0.5-1.67	11/17/92	Pesticides/PCBs, Inorganics
	Subsurface Soil	06SS142	1.5-2.67	11/17/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		06SS146	0.5-1.5	11/17/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		06SS148	1.5-2.67	11/17/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		06SS149	1.5-2.67	11/17/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		06SS151	2.0-3.0	11/17/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
		06SS152	2.0-3.0	11/17/92	Pesticides/PCBs
		06SS154	1.5-2.67	11/17/92	VOCs, SVOCs, Pesticides/PCBs, Inorganics
Relative Risk Ranking *	Sediment	2SD01	0.0-1.0	Oct. 1995	Appendix IX List, Sulfide
		2SD02	0.0-1.0	Oct. 1995	Appendix IX List, Sulfide
		2SD03	0.0-1.0	Oct. 1995	Appendix IX List, Sulfide
		2SD03D	0.0-1.0	Oct. 1995	Appendix IX List, Sulfide

Notes: NA - Not Applicable
* - Pre-RFI Investigation

TABLE 3-2 (continued)

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
RFI SWMU 2 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Investigation	Sample Media	Sample Designation	Sample Depth (ft bgs)	Sample Date	Analytical Parameters
RFI Investigation	Surface Soil	2SB01-00	0.0-1.0	10/8/96	Appendix IX List, Explosives, Asbestos
		2SB02-00	0.0-1.0	10/8/96	Appendix IX List, Explosives, Asbestos
		2SB02-00D	0.0-1.0	10/8/96	Appendix IX List, Explosives, Asbestos
		2SB03-00	0.0-1.0	10/8/96	Appendix IX List, Explosives, Asbestos
		2SB04-00	0.0-1.0	10/8/96	Appendix IX List, Explosives, Asbestos
		2SB05-00	0.0-1.0	10/8/96	Appendix IX List, Explosives, Asbestos
		2MW01-00	0.0-1.0	10/8/96	Appendix IX List, Explosives, Asbestos
		2MW02-00	0.0-1.0	10/8/96	Appendix IX List, Explosives, Asbestos
		2MW03-00	0.0-1.0	10/8/96	Appendix IX List, Explosives, Asbestos
	Sediment	2SD01	0.0-1.0	11/11/96	Appendix IX List, Explosives, Asbestos, TOC
		2SD02	0.0-1.0	11/11/96	Appendix IX List, Explosives, Asbestos, TOC
		2SD03	0.0-1.0	11/11/96	Appendix IX List, Explosives, Asbestos, TOC
	Subsurface Soil	2SB01-02	4.0-6.0	11/18/96	Appendix IX List, Explosives, Asbestos
		2SB01-05	10.0-12.0	11/18/96	Appendix IX List, Explosives, Asbestos
		2SB04-02	4.0-6.0	11/10/96	Appendix IX List, Explosives, Asbestos
		2SB05-01/02	2.0-6.0	11/10/96	Appendix IX List, Explosives, Asbestos
		2SB05-01/02D	2.0-6.0	11/10/96	Appendix IX List, Explosives, Asbestos
		2MW01-01	2.0-4.0	11/8/96	Appendix IX List, Explosives, Asbestos
		2MW02-02	4.0-6.0	11/6/96	Appendix IX List, Explosives, Asbestos
		2MW02-05	10.0-12.0	11/6/96	Appendix IX List, Explosives, Asbestos
		2MW03-01	2.0-4.0	11/9/96	Appendix IX List, Explosives, Asbestos
		2MW03-01D	2.0-4.0	11/9/96	Appendix IX List, Explosives, Asbestos
	Groundwater	2MW01	NA	11/12/96	Appendix IX List, Explosives, Asbestos, Sodium
		2MW02	NA	11/12/96	Appendix IX List, Explosives, Asbestos, Sodium
		2MW02D	NA	11/12/96	Appendix IX List, Explosives, Asbestos, Sodium
		2MW03	NA	11/12/96	Appendix IX List, Explosives, Asbestos, Sodium
		6GW01	NA	11/12/96	Appendix IX List, Explosives, Asbestos, Sodium, TOC, COD, TSS

Notes: Appendix IX List consists of Appendix IX VOCs, SVOCs, Pesticides/PCBs, Dioxins, Chlorinated Herbicides, and Inorganics.

TABLE 3-3

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
RFI SWMU 45 - BUILDING 38 OLD POWER PLANT
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Investigation	Sample Media	Sample Designation	Sample Depth (ft bgs)	Sample Date	Analytical Parameters
1996 RFI Investigation	Surface Soil	45MW01-00	0.0-1.0	11/22/96	VOCs, SVOCs, PCBs, RCRA Metals
		45MW02-00	0.0-1.0	11/22/96	VOCs, SVOCs, PCBs, RCRA Metals
		45MW03-00	0.0-1.0	11/22/96	VOCs, SVOCs, PCBs, RCRA Metals
		45MW04-00	0.0-1.0	11/22/96	VOCs, SVOCs, PCBs, RCRA Metals
	Subsurface Soil	45MW01-02	4.0-6.0	11/22/96	VOCs, SVOCs, PCBs, RCRA Metals
		45MW01-03	6.0-8.0	11/22/96	VOCs, SVOCs, PCBs, RCRA Metals
		45MW02-01	2.0-4.0	11/21/96	VOCs, SVOCs, PCBs, RCRA Metals
		45MW02-02	4.0-6.0	11/21/96	VOCs, SVOCs, PCBs, RCRA Metals
		45MW03-03	6.0-8.0	11/21/96	VOCs, SVOCs, PCBs, RCRA Metals
		45MW03-04	8.0-10.0	11/21/96	VOCs, SVOCs, PCBs, RCRA Metals
		45MW04-01	2.0-4.0	11/22/96	VOCs, SVOCs, PCBs, RCRA Metals
		45MW04-02	4.0-6.0	11/22/96	VOCs, SVOCs, PCBs, RCRA Metals
	Groundwater	45MW01	NA	11/25/96	VOCs, SVOCs, PCBs, RCRA Metals
		45MW02	NA	11/25/96	VOCs, SVOCs, PCBs, RCRA Metals
		45MW03	NA	11/25/96	VOCs, SVOCs, PCBs, RCRA Metals
		45MW04	NA	11/25/96	VOCs, SVOCs, PCBs, RCRA Metals
		45HP01	NA	11/22/96	VOCs, SVOCs, PCBs, RCRA Metals
		45HP02	NA	11/22/96	VOCs, SVOCs, PCBs, RCRA Metals
		45HP03	NA	11/22/96	VOCs, SVOCs, PCBs, RCRA Metals
		45HP04	NA	11/22/96	VOCs, SVOCs, PCBs, RCRA Metals

Notes: NA - Not Applicable

TABLE 3-3 (continued)

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
RFI SWMU 45 - BUILDING 38 OLD POWER PLANT
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Investigation	Sample Media	Sample Designation	Sample Depth (ft bgs)	Sample Date	Analytical Parameters
1997 RFI Investigation	Subsurface Soil	11-SB01-02	2.0-8.0	9/17/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB04-01	2.0-4.0	9/24/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB04-01D	2.0-4.0	9/24/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB05-02	2.0-8.0	9/17/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB06-02	2.0-8.0	9/18/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB07-02	2.0-8.0	9/18/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB08-02	2.0-8.0	9/18/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB09-02	2.0-8.0	9/19/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB11-02	2.0-8.0	9/19/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB11-02D	2.0-8.0	9/19/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB14-01	2.0-4.0	9/19/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB15-02	2.0-4.0	9/22/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB16-04	4.0-8.0	9/22/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB18-02	2.0-6.0	9/22/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB19-04	6.0-10.0	9/22/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB22-04	7.5-9.5	9/22/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB22-06	11.5-13.5	9/22/97	PCBs
		11-SB23-03	4.0-6.0	9/22/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB26-01	0.0-2.0	9/22/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SB27-04	6.0-10.0	9/22/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
	Groundwater	11GW01	NA	9/18/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
		11GW02	NA	9/22/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
		11GW05	NA	9/19/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
		11GW07	NA	9/19/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
		11GW08	NA	9/19/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
		11GW10	NA	9/20/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
		11GW11	NA	9/20/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
		11GW12	NA	9/20/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
		11GW13	NA	9/20/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
		11GW16	NA	9/20/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
		11GW16D	NA	9/20/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
		11GW18	NA	9/21/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
		11GW19	NA	9/21/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
		11GW24	NA	9/22/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
		11GW24D	NA	9/22/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
		11GW25	NA	9/22/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1), TOC
	Sediment	11-SD01	0.0-0.25	9/19/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SD01D	0.0-0.25	9/19/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SD02	0.0-0.25	10/2/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SD03	0.0-0.25	10/2/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SD03D	0.0-0.25	10/2/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SD04	0.0-0.25	10/2/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SD05	0.0-0.25	10/2/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SD06	0.0-0.25	10/2/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SD07	0.0-0.25	10/2/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SD08	0.0-0.25	10/2/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)
		11-SD09	0.0-0.25	10/2/97	VOCs, SVOCs, PCBs, App IX Metals, TPH (1)

Notes: NA - Not Applicable
(1) - TPH Analysis includes both Diesel and Gasoline Range Organics

TABLE 3-4

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
BACKGROUND
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Location	Sample Media	Sample Designation	Sample Depth (ft bgs)	Sample Date	Analytical Parameters
Background	Surface Soil	BGMW01-00	0.0-1.0	4/4/96	Appendix IX List
		BGMW02-00	0.0-1.0	4/4/96	Appendix IX List
		BGMW03-00	0.0-1.0	4/4/96	Appendix IX List
		BGMW04-00	0.0-1.0	4/4/96	Appendix IX List
	Subsurface Soil	BGMW01-04	8.0-10.0	4/23/96	Appendix IX List
		BGMW01-06	12.0-14.0	4/23/96	Appendix IX List
		BGMW02-05	10.0-12.0	4/22/96	Appendix IX List
		BGMW02-08	16.0-18.0	4/22/96	Appendix IX List
		BGMW03-03	6.0-8.0	4/12/96	Appendix IX List
		BGMW03-04	8.0-10.0	4/12/96	Appendix IX List
		BGMW04-02	4.0-6.0	4/24/96	Appendix IX List
		BGMW04-04	8.0-10.0	4/24/96	Appendix IX List
	Groundwater	BGMW01	NA	4/27/96	Appendix IX List
		BGMW02	NA	4/27/96	Appendix IX List
		BGMW03	NA	4/16/96	Appendix IX List
		BGMW04	NA	4/27/96	Appendix IX List

Notes: Refer to Table 3-5 for a listing of Appendix IX Parameters
NA - Not Applicable

TABLE 3-5

METHOD PERFORMANCE LIMITS
APPENDIX IX COMPOUND LIST AND CONTRACT
REQUIRED QUANTITATION LIMITS (CRQL)

Volatiles	Quantitation Limits* Water (µg/L)	Low Soil (µg/kg)	Method Number
Acetone	100	100	8240
Acetonitrile	100	100	8240
Acrolein	5	5	8240
Acrylonitrile	5	5	8240
Methyl Chloride	100	100	8240
Benzene	5	5	8240
Bromodichloromethane	10	10	8240
Bromoform	5	5	8240
Bromomethane	10	10	8240
Carbon Disulfide	5	5	8240
Carbon Tetrachloride	5	5	8240
Chlorobenzene	5	5	8240
2-Chloro-1,3-butadiene	5	5	8240
Chloroethane	10	10	8240
Chlorodibromomethane	5	5	8240
Chloroform	5	5	8240
Chloromethane	10	10	8240
3-Chloropropene	5	5	8240
1,2-Dibromo-3-chloropropane	5	5	8240
Dibromomethane	5	5	8240
trans-1,4-Dichloro-2-butene	100	100	8240
Dichlorodifluoromethane	5	5	8240
Dibromomethane	5	5	8240
1,1-Dichloroethane	5	5	8240
1,2-Dichloroethane	5	5	8240
trans-1,2-Dichloroethylene	5	5	8240
1,1-Dichloroethylene	5	5	8240
Dichloromethane	5	5	8240
1,2-Dichloropropane	5	5	8240
cis-1,3-Dichloropropene	5	5	8240
trans-1,3-Dichloropropene	5	5	8240
1,4-Dioxane	150	150	8240
Ethyl benzene	5	5	8240

Volatiles	Quantitation Limits* Water (µg/L)	Low Soil (µg/kg)	Method Number
Ethyl cyanide	100	100	8240
Ethyl methacrylate	5	5	8240
2-Hexanone	50	50	8240
Iodomethane	5	5	8240
Isobutyl alcohol	50	50	8240
Methacrylonitrile	100	100	8240
Methyl ethyl ketone	100	100	8240
Methyl methacrylate	5	50	8240
4-Methyl-2-pentanone	50	50	8240
Pentachloroethane	10	10	8240
Stryene	5	5	8240
1,1,1,2-Tetrachloroethane	5	5	8240
1,1,2,2-Tetrachloroethane	5	5	8240
Tetrachloroethene	5	5	8240
Toluene	5	5	8240
1,1,1-Trichloroethane	5	5	8240
1,1,2-Trichloroethane	5	5	8240
Trichloroethene	5	5	8240
Trichlorofluoromethane	5	NA	8240
1,2,3-Trichloropropane	5	5	8240
Vinyl Acetate	50	50	8240
Vinyl Chloride	10	10	8240
Xylene	5	5	8240

* Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis, will be higher.

TABLE 3-5 (Continued)

METHOD PERFORMANCE LIMITS
APPENDIX IX COMPOUND LIST AND CONTRACT
REQUIRED QUANTITATION LIMITS (CRQL)

Semivolatiles	Quantitation Limits* Water (µg/L)	Low Soil (µg/kg)	Method Number
Acenaphthene	10	660	8270
Acenaphthylene	10	660	8270
Acetophenone	10	NA	8270
2-Acetylaminofluorene	20	NA	8270
4-Aminobiphenyl	20	NA	8270
Aniline	10	NA	8270
Anthracene	10	660	8270
Aramite	20	NA	8270
Benzo(a)anthracene	10	660	8270
Benzo(b)fluoranthene	10	660	8270
Benzo(k)fluoranthene	10	660	8270
Benzo(g,h,i)perylene	10	660	8270
Benzo(a)pyrene	10	660	8270
Benzyl alcohol	20	1,300	8270
Bis(2-chloroethoxyl)methane	10	660	8270
Bis(2-chloroethyl)ether	10	660	8270
Bis(2-chloro-1-methyl ethyl)ether	10	660	8270
Bis(2-ethylhexyl)phthalate	10	660	8270
4-Bromophenyl phenyl ether	10	660	8270
Butyl benzyl phthalate	10	660	8270
p-Chloroaniline	20	1,300	8270
Chlorobenzilate	10	NA	8270
p-Chloro-m-cresol	20	1,300	8270
2-Chloronaphthalene	10	660	8270
2-Chlorophenol	10	660	8270
4-Chlorophenyl phenyl ether	10	660	8270
Chrysene	10	660	8270
o,m,p-Cresol	10	660	8270
Diallate	10	NA	8270
Dibenzofuran	10	660	8270
Di-n-butyl phthalate	10	660	8270
Dibenzo(a,h)anthracene	10	660	8270
o-Dichlorobenzene	10	660	8270

TABLE 3-5 (Continued)

METHOD PERFORMANCE LIMITS
APPENDIX IX COMPOUND LIST AND CONTRACT
REQUIRED QUANTITATION LIMITS (CRQL)

Semivolatiles	Quantitation Limits* Water (µg/L)	Low Soil (µg/kg)	Method Number
m-Dichlorobenzene	10	660	8270
p-Dichlorobenzene	10	660	8270
3,3'-Dichlorobenzidine	20	1,300	8270
2,4-Dichlorophenol	10	660	8270
2,6-Dichlorophenol	10	NA	8270
Diethylphthalate	10	660	8270
Dimethoate	20	NA	8270
p-(Dimethylamino)azobenzene	10	NA	8270
7,12-Dimethyl benz(a)anthracene	10	NA	8270
3,3-Dimethyl benzidine	10	NA	8270
Dimethylphenenthylamine	10	NA	8270
2,4-Dimethylphenol	10	660	8270
Dimethyl phthalate	10	660	8270
m-Dinitrobenzene	20	NA	8270
4,6-Dinitro-o-cresol	50	3,300	8270
2,4-Dinitrophenol	50	3,300	8270
2,4-Dinitrotoluene	10	660	8270
2,6-Dinitrotoluene	10	660	8270
Di-n-octylphthalate	10	660	8270
Diphenylamine	10	NA	8270
Di-n-propylnitrosamine	10	NA	8270
Ethylmethanesulfonate	20	NA	8270
Fluoranthene	10	660	8270
Fluorene	10	660	8270
Hexachlorobenzene	10	660	8270
Hexachlorobutadiene	10	660	8270
Hexachlorocyclopentadiene	10	660	8270
Hexachloroethane	10	660	8270
Hexachloropropene	10	NA	8270
Indeno(1,2,3-cd)pyrene	10	660	8270
Isodrin	20	NA	8270
Isophorone	10	660	8270
Isosafrole	10	NA	8270

TABLE 3-5 (Continued)

METHOD PERFORMANCE LIMITS
APPENDIX IX COMPOUND LIST AND CONTRACT
REQUIRED QUANTITATION LIMITS (CRQL)

Semivolatiles	Quantitation Limits* Water (µg/L)	Low Soil (µg/kg)	Method Number
Kepone	20	NA	8270
Methapyrilene	100	NA	8270
3-Methylcholanthrene	10	NA	8270
Methyl methanesulfonate	10	NA	8270
2-Methylnaphthalene	10	660	8270
Naphthalene	10	660	8270
1,4-Naphthoquinone	10	NA	8270
1-Naphthylamine	10	NA	8270
2-Naphthylamine	10	NA	8270
o-Nitroaniline	50	3,300	8270
m-Nitroaniline	50	3,300	8270
p-Nitroaniline	20	NA	8270
Nitrobenzene	10	660	8270
o-Nitrophenol	10	660	8270
p-Nitrophenol	50	3,300	8270
4-Nitroquinoline-1-oxide	40	NA	8270
n-Nitrosodi-n-butylamine	10	NA	8270
n-Nitrosodiethylamine	20	NA	8270
n-Nitrosodimethylamine	20	NA	8270
n-Nitrosodiphenylamine	10	660	8270
n-Nitrosomethylethylamine	20	NA	8270
n-Nitrosomorpholine	10	NA	8270
n-Nitrosopiperidine	20	NA	8270
n-Nitrosopyrrolidine	40	NA	8270
5-Nitro-o-toluidine	10	NA	8270
Pentachlorobenzene	10	NA	8270
Pentachloronitrobenzene	20	NA	8270
Pentachlorophenol	50	3,300	8270
Phenacetin	20	ND	8270
Phenanthrene	10	660	8270
Phenol	10	660	8270
Phorate	10	NA	8270
p-Phenylenediamine	10	NA	8270

TABLE 3-5 (Continued)

METHOD PERFORMANCE LIMITS
APPENDIX IX COMPOUND LIST AND CONTRACT
REQUIRED QUANTITATION LIMITS (CRQL)

Semivolatiles	Quantitation Limits* Water (µg/L)	Low Soil (µg/kg)	Method Number
2-PicolinPronamidee	10	NA	8270
Pyrene	10	660	8270
Pyridine	10	NA	8270
Safrole	10	NA	8270
1,2,4,5-Tetrachlorobenzene	10	NA	8270
2,3,4,6-Tetrachlorophenol	10	NA	8270
o-Toluidine	10	NA	8270
1,2,4-Trichlorobenzene	10	660	8270
2,4,5-Trichlorophenol	10	660	8270
2,4,6-Trichlorophenol	10	660	8270
O,O,O-Triethyl-Phosphorotrioate	10	NA	8270
sym-Trinitrobenzene	10	660	8270

* Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis, will be higher.

TABLE 3-5 (Continued)

METHOD PERFORMANCE LIMITS
APPENDIX IX COMPOUND LIST AND CONTRACT
REQUIRED QUANTITATION LIMITS (CRQL)

Pesticides/PCBs	Quantitation Limits[1] Water (µg/L)	Low Soil (µg/kg)	Method Number
Aldrin	0.04	2.7	8080
Alpha-BHC	0.03	2	8080
beta-BHC	0.06	4	8080
delta-BHC	0.09	6	8080
Lindane	0.05	1.7	8080
Chlordane	0.14	9.4	8080
4,4'-DDT	0.12	8	8080
4,4'-DDE	0.04	2.7	8080
4,4'-DDD	0.11	7.4	8080
Dieldrin	0.02	1.3	8080
Endosulfan I	0.14	9.4	8080
Endosulfan II	0.04	2.7	8080
Endosulfan sulfate	0.66	44	8080
Endrin	0.06	4	8080
Toxaphene	2.4	160	8080
Endrin Aldehyde	0.1	3.3	8080
Heptachlor	0.03	2	8080
Heptachlor epoxide	0.83	56	8080
Methyoxychlor	1.8	120	8080
Aroclor-1016	NA	NA	8080
Aroclor-1221	NA	NA	8080
Aroclor-1232	NA	NA	8080
Aroclor-1242	0.65	44	8080
Aroclor-1248	NA	NA	8080
Aroclor-1254	NA	NA	8080
Aroclor-1260	NA	NA	8080

(1) Practical Quantitation Limits taken from ATest Methods for Evaluating Solid Wastes,@ USEPA, SW-846, November 1986.

NA = Not Available

TABLE 3-5 (Continued)

METHOD PERFORMANCE LIMITS
APPENDIX IX COMPOUND LIST AND CONTRACT
REQUIRED QUANTITATION LIMITS (CRQL)

Dioxins (SW-846 Method 8280)	Quantitation Limits Water (µg/L)	Low Soil (µg/kg)	Method Number
PCDD=s	0.01	NA	8280
PCDF=s	0.01	NA	8280
2,3,7,8-TCDD	0.005	0.17	8280

TABLE 3-5 (Continued)

METHOD PERFORMANCE LIMITS
APPENDIX IX COMPOUND LIST AND CONTRACT
REQUIRED QUANTITATION LIMITS (CRQL)

Inorganics	Method Number	MDL (µg/L)	Method Description
Antimony	6010	32	Inductively Cupled Plasma
Arsenic	7060	1	AA Graphite Furnace
Barium	6010	2	Inductively Coupled Plasma
Beryllium	6010	0.3	Inductively Coupled Plasma
Cadmium	6010	4	Inductively Coupled Plasma
Chromium	6010	7	Inductively Coupled Plasma
Cobalt	6010	7	Inductively Coupled Plasma
Copper	6010	6	Inductively Coupled Plasma
Lead	7421	1	AA Graphite Furnace
Mercury	7470	0.2	Cold Vapor AA
Nickel	6010	40	Inductively Coupled Plasma
Selenium	7741	2	AA Graphite Furnace
Silver	6010	7	Inductively Coupled Plasma
Thallium	7841	1	AA Graphite Furnace
Tin	6010	1,000	Inductively Coupled Plasma
Vanadium	6010	8	Inductively Coupled Plasma
Cyanide	9010	5	Colorimetric
Sulfide	9030	1,000	Titrimetric, Iodine

TABLE 3-5 (Continued)

METHOD PERFORMANCE LIMITS
APPENDIX IX COMPOUND LIST AND CONTRACT
REQUIRED QUANTITATION LIMITS (CRQL)

Chlorinated Herbicides	Practical Quantitation Limits Water (µg/L)	Practical Quantitation Limits Soil/Sediment (µg/kg)	Method Number
2,4-Dichlorophenoxyacetic acid	12	804	8150
Dinoseb	0.7	46.9	8150
2,4,5-T	2	134	8150
Silvex	1.7	11.4	8150

TABLE 3-6

METHOD PERFORMANCE LIMITS
RCRA METALS COMPOUND LIST AND CONTRACT
REQUIRED QUANTITATION LIMITS (CRQL

Inorganics	Method Number	MDL (µg/L)	Method Description
Arsenic	7060	1	AA Graphite Furnace
Barium	6010	2	Inductively Coupled Plasma
Cadmium	6010	4	Inductively Coupled Plasma
Chromium	6010	7	Inductively Coupled Plasma
Lead	7421	1	AA Graphite Furnace
Mercury	7470	0.2	Cold Vapor AA
Selenium	7741	2	AA Graphite Furnace
Silver	6010	7	Inductively Coupled Plasma

TABLE 3-7

SUMMARY OF SOIL BORING AND WELL CONSTRUCTION DETAILS
OPERABLE UNITS 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

SWMU	Phase	Boring Number	Top of PVC Casing Elevation (ft above msl)	Ground Surface Elevation (ft above msl)	Boring Depth (ft bgs)	Depth to Bedrock (ft bgs)	Well Depth (ft bgs)	Well Depth (ft from top of PVC casing)	Screen Interval (ft bgs)	Sand Pack Interval (ft bgs)	Bentonite Interval (ft bgs)
1	I	1SB01	NA	141.27	16.50	16.50	NA	NA	NA	NA	NA
		1SB02	NA	128.41	28.25	28.25	NA	NA	NA	NA	NA
		1SB03	NA	115.84	60.30	60.30	NA	NA	NA	NA	NA
		1SB04	NA	103.80	35.30	35.30	NA	NA	NA	NA	NA
		1MW01	110.54	107.99	16.00	16.00	16.00	19.87	6.0 - 16.0	4.0 - 16.0	3.0 - 4.0
		1MW02	128.99	126.72	31.00	31.00	31.00	33.83	10.0 - 30.0	8.0 - 31.0	6.0 - 8.0
		1MW03	119.59	117.24	35.00	35.00	35.00	37.83	10.0 - 35.0	8.0 - 35.0	6.0 - 8.0
		1MW04	120.53	118.12	35.00	35.00	35.00	37.58	10.0 - 35.0	7.0 - 35.0	5.0 - 7.0
	II	1MW05	117.61	116.30	23.00	NA	23.00	24.31	13.0-23.0	8.0-23.0	6.0-8.0
		5MW02	108.95	106.70	14.50	NA	14.50	16.75	4.5-14.5	3.0-15.0	1.0-3.0
2	I	2SB01	NA	106.20	35.25	35.25	NA	NA	NA	NA	NA
		2SB02	NA	103.05	25.90	25.90	NA	NA	NA	NA	NA
		2SB03	NA	101.69	35.25	35.25	NA	NA	NA	NA	NA
		2SB04	NA	104.21	50.90	50.90	NA	NA	NA	NA	NA
		2SB05	NA	104.64	40.40	40.40	NA	NA	NA	NA	NA
		2MW01	105.39	102.94	20.90	NA	20.90	23.33	5.0 - 20.0	4.0 - 20.0	2.0 - 4.0
		2MW02	111.19	108.82	48.00	48.00	33.00	36.50	13.0 - 33.0	11.0 - 33.0	9.0 - 11.0
		2MW03	105.28	102.76	22.00	NA	18.00	22.40	3.0 - 18.0	3.0 - 18.0	2.0 - 3.0
45	I	45MW01	N/A	100.50	16.00	16.00	16.00	18.32	6.0 - 16.0	3.0 - 16.0	2.0 - 3.0
		45MW02	N/A	100.04	25.20	25.20	13.50	15.40	3.5 - 13.5	3.0 - 13.5	2.0 - 3.0
		45MW03	N/A	99.71	22.00	22.00	20.00	22.65	5.0 - 20.0	3.0 - 20.0	2.0 - 3.0
		45MW04	N/A	100.00	25.20	25.20	25.20	26.98	5.0 - 25.0	3.0 - 25.0	2.0 - 3.0
		45HP01	N/A	N/A	17.00	NA	17.00	17.00	7.0 - 17.0	NA	NA
		45HP02	N/A	N/A	17.00	NA	16.00	16.00	6.0 - 16.0	NA	NA
		45HP03	N/A	N/A	18.00	18.00	18.00	18.00	8.0 - 18.0	NA	NA
		45HP04	N/A	N/A	17.00	17.00	17.00	17.00	7.0 - 17.0	NA	NA

Notes: N/A - not available
NA - not applicable
Ground surface and top of casing elevations for SWMU 11/45 wells are estimated.

TABLE 3-7 (continued)

SUMMARY OF SOIL BORING AND WELL CONSTRUCTION DETAILS
OPERABLE UNITS 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

SWMU	Phase	Boring Number	Top of PVC Casing Elevation (ft above msl)	Ground Surface Elevation (ft above msl)	Boring Depth (ft bgs)	Depth to Bedrock (ft bgs)	Well Depth (ft bgs)	Well Depth (ft from top of PVC casing)	Screen Interval (ft bgs)	Sand Pack Interval (ft bgs)	Bentonite Interval (ft bgs)
45 (continued)	II	11SB01	N/A	109.68	16.00	NA	13.50	N/A	8.5-13.5	NA	NA
		11SB02	N/A	109.36	12.00	NA	N/A	N/A	N/A	NA	NA
		11SB03	N/A	108.41	16.00	NA	N/A	N/A	N/A	NA	NA
		11SB04	N/A	103.89	8.00	NA	N/A	N/A	N/A	NA	NA
		11SB05	N/A	109.56	16.00	NA	13.50	N/A	3.5-13.5	NA	NA
		11SB06	N/A	109.51	10.00	NA	N/A	N/A	N/A	NA	NA
		11SB07	N/A	108.64	14.00	NA	14.00	N/A	4.0-14.0	NA	NA
		11SB08	N/A	108.94	14.00	NA	14.00	N/A	4.0-14.0	NA	NA
		11SB09	N/A	108.24	10.00	NA	N/A	N/A	N/A	NA	NA
		11SB10	N/A	108.39	14.00	NA	14.00	N/A	4.0-14.0	NA	NA
		11SB11	N/A	108.21	14.00	NA	14.00	N/A	4.0-14.0	NA	NA
		11SB12	N/A	102.66	6.00	NA	4.50	N/A	0.0-4.5	NA	NA
		11SB13	N/A	104.31	6.00	NA	5.50	N/A	0.5-5.5	NA	NA
		11SB14	N/A	105.40	6.00	NA	N/A	N/A	N/A	NA	NA
		11SB15	N/A	106.16	8.00	NA	N/A	N/A	N/A	NA	NA
		11SB16	N/A	109.57	14.00	NA	14.00	N/A	4.0-14.0	NA	NA
		11SB17	N/A	109.52	10.00	NA	N/A	N/A	N/A	NA	NA
		11SB18	N/A	108.90	14.00	NA	14.00	N/A	4.0-14.0	NA	NA
		11SB19	N/A	108.11	14.00	NA	14.00	N/A	4.0-14.0	NA	NA
		11SB20	N/A	108.43	10.00	NA	N/A	N/A	N/A	NA	NA
		11SB21	N/A	107.63	8.00	NA	N/A	N/A	N/A	NA	NA
		11SB22	N/A	109.27	13.50	NA	N/A	N/A	N/A	NA	NA
		11SB23	N/A	108.78	10.00	NA	N/A	N/A	N/A	NA	NA
		11SB24	N/A	107.97	14.00	NA	14.00	N/A	4.0-14.0	NA	NA
		11SB25	N/A	105.64	10.00	NA	10.00	N/A	5.0-10.0	NA	NA
		11SB26	N/A	103.79	4.00	NA	N/A	N/A	N/A	NA	NA
		11SB27	N/A	109.32	12.00	NA	N/A	N/A	N/A	NA	NA
Background		BGMW01	164.97	162.50	30.00	NA	30.00	32.47	10.0-30.0	7.0-30.0	5.0-7.0
		BGMW02	168.59	166.41	35.00	NA	35.00	37.18	15.0-35.0	13.0-35.0	11.0-13.0
		BGMW03	169.45	166.83	28.00	NA	27.30	29.92	7.3-27.3	5.3-27.3	4.3-5.3
		BGMW03	166.01	163.30	30.00	NA	30.00	32.71	10.0-30.0	8.0-30.0	6.0-8.0

Notes: N/A - not available
NA - not applicable

TABLE 4-1

SUMMARY OF GROUNDWATER ELEVATION MEASUREMENTS
OPERABLE UNITS 3 AND 5 - RFI SWMUS 1, 2, AND 11/45
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

SWMU	Well Number	Top of PVC Casing Elevation (ft msl)	Depth to Water (ft) Nov-96	Groundwater Elevation (ft msl)	Depth to Water (ft) Dec-96	Groundwater Elevation (ft msl)
1	1MW01	110.54	10.09	100.45	10.09	100.45
	1MW02	128.99	26.71	102.28	26.09	102.90
	1MW03	119.59	17.92	101.67	16.75	102.84
	1MW04	120.53	16.68	103.85	15.45	105.08
	5GW01	117.90	10.61	107.29	10.32	107.58
	5GW03	106.20	5.45	100.75	5.53	100.67
	5GW04	105.20	4.28	100.92	4.65	100.55
2	2MW01	105.39	2.70	102.69	2.67	102.72
	2MW02	111.19	6.78	104.41	6.54	104.65
	2MW03	105.28	2.83	102.45	3.00	102.28
	6GW01	114.50	9.49	105.01	9.45	105.05
11/45	45MW01	112.56	11.19	101.37	11.70	100.86
	45MW02	112.48	10.77	101.71	11.28	101.20
	45MW03	112.61	NA	NA	NA	NA
	45MW04	111.96	10.87	101.09	11.19	100.77

Notes: NA - not available due to free product in well 45MW03.
Top of casing elevations for SMWU 11/45 wells are estimated based on field measurements and are not based on MSL.
msl - mean sea level
Elevation datum of 100 ft above sea level was assumed.

TABLE 4-2

SUMMARY OF HYDRAULIC CONDUCTIVITY ESTIMATES
OPERABLE UNITS 3 AND 5 - RFI SWMUS 1, 2, AND 11/45
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

SWMU	Well Number	Hydrauic Conductivity (ft/day)			Comments
		Falling Head	Rising Head	Average	
1	1MW01	--	13.30	--	
	1MW02	--	1.20	--	
	1MW03	--	7.90	--	
	1MW04	5.00	--	--	
	5GW01	26.90	31.10	29.00	Test 1, Steep Curve
		11.90	13.20	12.55	Test 1, Shallow Curve
		27.50	32.60	30.05	Test 2, Steep Curve
		8.40	11.90	10.15	Test 2, Shallow Curve
	5GW03	4.10	8.60	6.35	
	5GW04	27.10	26.80	26.95	Steep Curve
		7.30	5.90	6.60	Shallow Curve
	Max.	27.50	32.60	30.05	
	Min.	4.10	1.20	6.35	
	Avg.	14.78	15.25	17.38	
2	2MW01	17.20	17.90	17.55	Steep Curve
		9.50	7.70	8.60	Shallow Curve
	2MW02	14.50	14.10	14.30	Steep Curve
		6.30	--	--	Shallow Curve
	2MW03	1.30	--	--	
	6GW01	9.80	10.90	10.35	Steep Curve
		6.10	6.00	6.05	Shallow Curve
	Max.	17.20	17.90	17.55	
	Min.	1.30	6.00	6.05	
	Avg.	9.24	11.32	11.37	
11/45	45MW01	--	16.30	--	
	45MW02	--	0.90	--	
	45MW04	--	24.30	--	
	Max.	--	24.30	--	
	Min.	--	0.90	--	
	Avg.	--	13.83	--	

Notes: Results calculated using Bouwer-Rice Method.

TABLE 5-1 (continued)

SUMMARY OF ORGANIC DETECTIONS IN BACKGROUND SURFACE SOIL
OU 3/5 (SWMU 1, 2, 45)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID	EPA Region III	**EPA Region III**	BGMW01	BGMW02	BGMW03	BGMW04
Sample ID	Industrial	**Residential**	BGMW01-00	BGMW02-00	BGMW03-00	BGMW04-00
Sample Date	RBC	**RBC**	04/04/96	04/04/96	04/04/96	04/04/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
VOLATILES (ug/kg)						
SEMIVOLATILES (ug/kg)						
Bis(2-ethylhexyl)phthalate	408,800	45,623	92 J	380 U	400 U	380 U
Butylbenzylphthalate	408,800,000	15,642,857	62 J	380 U	400 U	380 U
Fluoranthene	81,760,000	3,128,571	46 J	380 U	400 U	380 U
PESTICIDES/PCBs (ug/kg)						
DIOXINS (ug/kg)						
CHLORINATED HERBICIDES (ug/kg)						
OP-PESTICIDES (ug/kg)						

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

TABLE 5-1 (continued)

SUMMARY OF ORGANIC DETECTIONS IN BACKGROUND SURFACE SOIL
OU 3/5 (SWMU 1, 2, 45)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBC (ug/kg)	**EPA Region III Residential RBC** (ug/kg)	Number Exceeding EPA Region III Industrial RBC	Range Exceeding EPA Region III Industrial RBC	**Number Exceeding EPA Region III Residential RBC**	**Range Exceeding EPA Region III Residential RBC**	Location Maximum Detect
VOLATILES (ug/kg)							
SEMIVOLATILES (ug/kg)							
Bis(2-ethylhexyl)phthalate	408,800	45,623	0/4		0/4		BGMW01-00
Butylbenzylphthalate	408,800,000	15,642,857	0/4		0/4		BGMW01-00
Fluoranthene	81,760,000	3,128,571	0/4		0/4		BGMW01-00
PESTICIDES/PCBs (ug/kg)							
DIOXINS (ug/kg)							
CHLORINATED HERBICIDES (ug/kg)							
OP-PESTICIDES (ug/kg)							

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

TABLE 5-2 (continued)

SUMMARY OF INORGANIC DETECTIONS IN BACKGROUND SURFACE SOIL
OU 3/5 (SWMU 1, 2, 45)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID	EPA Region III	**EPA Region III**	BGMW01	BGMW02	BGMW03	BGMW04
Sample ID	Industrial	**Residential**	BGMW01-00	BGMW02-00	BGMW03-00	BGMW04-00
Sample Date	RBC	**RBC**	04/04/96	04/04/96	04/04/96	04/04/96
Depth Range (ft.)	(mg/kg)	(mg/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
Inorganics (mg/kg)						
Arsenic	4	0.43	**1.2**	0.35 J	**1.5**	**1.8**
Barium	143,080	5,475	169	94.1	35.6	63.7
Beryllium	4,100	160	0.36	0.1 U	0.28	0.21
Chromium	6,132	235	44.1 J	11 J	33.6 J	29.9 J
Cobalt	122,640	4,693	30.2	27	9.5	21.2
Copper	81,760	3,129	98.5	250	57	62.9
Lead	NE	NE	9.6	2.4	6.6	11.9
Mercury	NE	NE	0.06	0.04 U	0.07	0.07
Nickel	40,880	1,564	10.9	7.8	5.8	8.6
Selenium	10,220	391	0.56 J	0.13 UJ	1.2 J	1.1 J
Thallium	143	5.5	0.1 J	0.08 U	0.09 UJ	0.09 UJ
Tin	1,226,400	46,929	1.3 U	1.2 U	1.4	2.2
Vanadium	14,308	548	227	123	189	170
Zinc	613,200	23,464	106 J	66.2 J	34.2 J	43.9 J

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.

Notes:
NE - Not Established.

TABLE 5-2 (continued)

SUMMARY OF INORGANIC DETECTIONS IN BACKGROUND SURFACE SOIL
OU 3/5 (SWMU 1, 2, 45)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBC (mg/kg)	**EPA Region III Residential RBC** (mg/kg)	Number Exceeding EPA Region III Industrial RBC	Range Exceeding EPA Region III Industrial RBC	**Number Exceeding EPA Region III Residential RBC**	**Range Exceeding EPA Region III Residential RBC**	Location Maximum Detect
Inorganics (mg/kg)							
Arsenic	4	0.43	0/4		3/4	1.2-1.8	BGMW04-00
Barium	143,080	5,475	0/4		0/4		BGMW01-00
Beryllium	4,100	160	0/4		0/4		BGMW01-00
Chromium	6,132	235	0/4		0/4		BGMW01-00
Cobalt	122,640	4,693	0/4		0/4		BGMW01-00
Copper	81,760	3,129	0/4		0/4		BGMW02-00
Lead	NE	NE	NE		NE		BGMW04-00
Mercury	NE	NE	NE		NE		BGMW03-00, BGMW04-00
Nickel	40,880	1,564	0/4		0/4		BGMW01-00
Selenium	10,220	391	0/4		0/4		BGMW03-00
Thallium	143	5.5	0/4		0/4		BGMW01-00
Tin	1,226,400	46,929	0/4		0/4		BGMW04-00
Vanadium	14,308	548	0/4		0/4		BGMW01-00
Zinc	613,200	23,464	0/4		0/4		BGMW01-00

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.

Notes:
NE - Not Established.

TABLE 5-3

SUMMARY OF ORGANIC DETECTIONS IN BACKGROUND SUBSURFACE SOIL
OU 3/5 (SWMU 1, 2, 11/45)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID	EPA Region III	**EPA Region III**	BGMW01	BGMW01	BGMW02	BGMW02	BGMW03	BGMW03	BGMW04	BGMW04
Sample ID	Industrial	**Residential**	BGMW01-04	BGMW01-06	BGMW02-05	BGMW02-08	BGMW03-03	BGMW03-04	BGMW04-02	BGMW04-04
Sample Date	RBC	**RBC**	04/23/96	04/23/96	04/22/96	04/22/96	04/12/96	04/12/96	04/24/96	04/24/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	8.00-10.00	12.00-14.00	10.00-12.00	16.00-18.00	6.00-8.00	8.00-10.00	4.00-6.00	8.00-10.00
VOLATILES (ug/kg)										
Xylene (total)	4,088,000,000	156,428,571	2 J	3 J	8 U	7 U	7 U	2 J	6 U	7 U
SEMIVOLATILES (ug/kg)										
Di-n-butylphthalate	204,400,000	7,821,429	440 U	490 U	320 J	470 U	460 U	440 U	420 U	420 U
PESTICIDES/PCBs (ug/kg)										
DIOXINS (ug/kg)										
Total HxCDD	0.38	0.043	0.14 U	0.23 U	0.3 U	0.13 U	**0.31** J	0.26 U	0.35 U	0.42 U
CHLORINATED HERBICIDES (ug/kg)										
2,4,5-T	20,440,000	782,143	44 U	27 J	53 U	47 U	46 U	45 U	42 U	45 U
OP-PESTICIDES (ug/kg)										

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
J - Analyte present. Reported value may not be accurate or precise.

TABLE 5-3

SUMMARY OF ORGANIC DETECTIONS IN BACKGROUND SUBSURFACE SOIL
OU 3/5 (SWMU 1, 2, 11/45)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBC (ug/kg)	**EPA Region III Residential RBC** (ug/kg)	Number Exceeding EPA Region III Industrial RBC	Range Exceeding EPA Region III Industrial RBC	**Number Exceeding EPA Region III Residential RBC**	**Range Exceeding EPA Region III Residential RBC**	Location Maximum Detect
VOLATILES (ug/kg)							
Xylene (total)	4,088,000,000	156,428,571	0/8		0/8		BGMW01-06
SEMIVOLATILES (ug/kg)							
Di-n-butylphthalate	204,400,000	7,821,429	0/8		0/8		BGMW02-05
PESTICIDES/PCBs (ug/kg)							
DIOXINS (ug/kg)							
Total HxCDD	0.38	0.043	0/8		1/8	0.31J	BGMW03-03
CHLORINATED HERBICIDES (ug/kg)							
2,4,5-T	20,440,000	782,143	0/8		0/8		BGMW01-06
OP-PESTICIDES (ug/kg)							

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
J - Analyte present. Reported value may not be accurate or precise.

TABLE 5-4

SUMMARY OF INORGANIC DETECTIONS IN BACKGROUND SUBSURFACE SOIL
OU 3/5 (SWMU 1, 2, 11/45)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID	EPA Region III	**EPA Region III**	BGMW01	BGMW01	BGMW02	BGMW02	BGMW03	BGMW03	BGMW04	BGMW04
Sample ID	Industrial	**Residential**	BGMW01-04	BGMW01-06	BGMW02-05	BGMW02-08	BGMW03-03	BGMW03-04	BGMW04-02	BGMW04-04
Sample Date	RBC	**RBC**	04/23/96	04/23/96	04/22/96	04/22/96	04/12/96	04/12/96	04/24/96	04/24/96
Depth Range (ft.)	(mg/kg)	(mg/kg)	8.00-10.00	12.00-14.00	10.00-12.00	16.00-18.00	6.00-8.00	8.00-10.00	4.00-6.00	8.00-10.00
Inorganics (mg/kg)										
Arsenic	3.82	0.43	**1.7**	0.22 UJ	**0.71** J	**1**	**2.4** J	**0.76** J	**0.72**	**0.79**
Barium	143,080	5,475	13 J	243 J	178 J	178 J	9.7	3.5	246 J	17.3 J
Beryllium	4,100	160	0.29	0.7	0.37	0.74	0.15	0.25	0.33	0.13
Cadmium	2,044	78.21	0.46	0.44	0.4 U	0.62	0.33 UJ	0.33 UJ	0.48	0.43
Chromium	6,132	235	101 J	84.1 J	148 J	29.1 J	58.9 R	63.6 R	34.7 J	10.9 J
Cobalt	122,640	4,693	3.7	14	15.7	42.4	2	4.3	33.8	4.1
Copper	81,760	3,129	65.3	120	144	131	72.9 R	94.5 R	107	37.6
Lead	NE	NE	4.8	4.9	3.3	2.6	4.1 J	3.4 J	5	6.6
Mercury	NE	NE	0.05 U	0.06 U	0.06 U	0.05 U	0.06 UJ	0.17 J	0.06 U	0.06 U
Nickel	40,880	1,564	7.2	39.9	35.6	23	3.7	5.8	10.2	2.2
Selenium	10,220	391	0.22 J	0.17 UJ	0.19 UJ	0.16 UJ	1.2 J	0.3 UJ	0.37 J	0.16 UJ
Tin	1,226,400	46,929	1.4 UJ	3.1 J	1.9 UJ	3.4 J	1.5 UJ	1.5 UJ	1.4 UJ	1.5 J
Vanadium	14,308	548	206	256	373	232	204	260	234	83.9
Zinc	613,200	23,464	24.1 J	64.6 J	55.7 J	98.5 J	14 J	23 J	56.2 J	18.4 J

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.

Notes:
NE - Not Established.

TABLE 5-4

SUMMARY OF INORGANIC DETECTIONS IN BACKGROUND SUBSURFACE SOIL
OU 3/5 (SWMU 1, 2, 11/45)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBC (mg/kg)	**EPA Region III Residential RBC** (mg/kg)	Number Exceeding EPA Region III Industrial RBC	Range Exceeding EPA Region III Industrial RBC	**Number Exceeding EPA Region III Residential RBC**	**Range Exceeding EPA Region III Residential RBC**	Location Maximum Detect
Inorganics (mg/kg)							
Arsenic	3.82	0.43	0/8		7/8	0.71J-2.4J	BGMW03-03
Barium	143,080	5,475	0/8		0/8		BGMW04-02
Beryllium	4,100	160	0/8		0/8		BGMW02-08
Cadmium	2,044	78.21	0/8		0/8		BGMW02-08
Chromium	6,132	235	0/8		0/8		BGMW02-05
Cobalt	122,640	4,693	0/8		0/8		BGMW02-08
Copper	81,760	3,129	0/8		0/8		BGMW02-05
Lead	NE	NE	NE		NE		BGMW04-04
Mercury	NE	NE	NE		NE		BGMW03-04
Nickel	40,880	1,564	0/8		0/8		BGMW01-06
Selenium	10,220	391	0/8		0/8		BGMW03-03
Tin	1,226,400	46,929	0/8		0/8		BGMW02-08
Vanadium	14,308	548	0/8		0/8		BGMW02-05
Zinc	613,200	23,464	0/8		0/8		BGMW02-08

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.

Notes:
NE - Not Established.

TABLE 5-5

SUMMARY OF ORGANIC DETECTIONS IN BACKGROUND GROUNDWATER
OU 3/5 (SWMU 1, 2, 11/45)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID		**EPA Region III**	BGMW01	BGMW02	BGMW03	BGMW04
Sample ID	Federal	**Tap Water**	BGMW01	BGMW02	BGMW03	BGMW04
Sample Date	MCL	**RBC**	04/27/96	04/27/96	04/16/96	04/27/96
	(ug/l)	(ug/l)				
VOLATILES (ug/l)						
SEMIVOLATILES (ug/l)						
Acetophenone	NE	0.04	11 U	10 U	**1** J	10 U
Dimethylphthalate	NE	365,000	11 U	1 J	3 J	10 U
Bis(2-ethylhexyl)phthalate	6	4.78	11 U	10 U	**7** J	10 U
PESTICIDES/PCBs (ug/l)						
DIOXINS (ug/l)						
CHLORINATED HERBICIDES (ug/l)						
OP-PESTICIDES (ug/l)						

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-5

SUMMARY OF ORGANIC DETECTIONS IN BACKGROUND GROUNDWATER
OU 3/5 (SWMU 1, 2, 11/45)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Number Exceeding Federal MCL	Range Exceeding Federal MCL	**Number Exceeding EPA Region III Tap Water RBC**	**Range Exceeding EPA Region III Tap Water RBC**	Location Maximum Detect
VOLATILES (ug/l)							
SEMIVOLATILES (ug/l)							
Acetophenone	NE	0.04	NE		1/4	1J	BGMW03
Dimethylphthalate	NE	365,000	NE		0/4		BGMW03
Bis(2-ethylhexyl)phthalate	6	4.78	1/4	7J	1/4	7J	BGMW03
PESTICIDES/PCBs (ug/l)							
DIOXINS (ug/l)							
CHLORINATED HERBICIDES (ug/l)							
OP-PESTICIDES (ug/l)							

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-6

SUMMARY OF INORGANIC (TOTAL) DETECTIONS IN BACKGROUND GROUNDWATER
OU 3/5 (SWMU 1, 2, 11/45)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	BGMW01 BGMW01 04/27/96	BGMW02 BGMW02 04/27/96	BGMW03 BGMW03 04/16/96	BGMW04 BGMW04 04/27/96	Number Exceeding Federal MCL	Range Exceeding Federal MCL	**Number Exceeding EPA Region III Tap Water RBC**	**Range Exceeding EPA Region III Tap Water RBC**	Location Maximum Detect
Inorganics, Total (ug/l)											
Arsenic	50	0.04	1.8 U	1.8 U	**1.7** J	**3.6**	0/4		2/4	1.7J-3.6	BGMW04
Barium	2,000	2,555	275	212	313	612	0/4		0/4		BGMW04
Beryllium	4	73	2	1.1 U	1.1 U	2.3	0/4		0/4		BGMW04
Cadmium	5	18.25	7.5	2.9 U	2.9 U	2.9 U	1/4	7.5	0/4		BGMW01
Chromium	100	109.5	54.1	3.1 R	29.4	92	0/4		0/4		BGMW04
Cobalt	NE	2,190	91.8	54.3	55.4	83.4	NE		0/4		BGMW01
Copper	1,300	1,460	120	24	102	352	0/4		0/4		BGMW04
Lead	15	NE	4.3 J	0.9 UJ	2.5 J	7 J	0/4		NE		BGMW04
Nickel	100	730	73.7	40	26.4	39.4	0/4		0/4		BGMW01
Selenium	50	182.5	2.8 UJ	1.4 UJ	1.4 UJ	3.1 J	0/4		0/4		BGMW04
Vanadium	NE	255.5	159	26.8	103	**549**	NE		1/4	549	BGMW04
Zinc	NE	11,000	178	95.7	128	320	NE		0/4		BGMW04

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-6 (Continued)

SUMMARY OF INORGANIC (DISSOLVED) DETECTIONS IN BACKGROUND GROUNDWATER
OU 3/5 (SWMU 1, 2, 11/45)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	BGMW01 BGMW01 04/27/96	BGMW02 BGMW02 04/27/96	BGMW03 BGMW03 04/16/96	BGMW04 BGMW04 04/27/96	Number Exceeding Federal MCL	Range Exceeding Federal MCL	**Number Exceeding EPA Region III Tap Water RBC**	**Range Exceeding EPA Region III Tap Water RBC**	Location Maximum Detect
Inorganics, Dissolved (ug/l)											
Barium	2,000	2,555	82	148	121	126	0/4		0/4		BGMW02
Chromium	100	109.5	2.6 U	2.6 U	3.7	2.6 U	0/4		0/4		BGMW03
Cobalt	NE	2,190	59.4	44.4	11.5	3.9 U	NE		0/4		BGMW01
Copper	1,300	1,460	32	2.2 U	2.2 U	2.2 U	0/4		0/4		BGMW01
Nickel	100	730	34.1	35.6	11.1 U	11.1 U	0/4		0/4		BGMW02
Vanadium	NE	255.5	2.6 U	2.6 U	2.6 U	8.1	NE		0/4		BGMW04
Zinc	NE	11,000	82.6	60.6	4.4 J	3.8	NE		0/4		BGMW01

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-7 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Supplemental Investigation						RFI Investigation			
Site ID	EPA Region III	**EPA Region III**	05SS101	05SS102	05SS103	05SS104	05SS105	05SS106	1MW01	1MW02	1MW03	1MW04
Sample ID	Industrial	**Residential**	05SS126	05SS128	05SS130	05SS132	05SS135	05SS138	1MW01-00	1MW02-00	1MW03-00	1MW04-00
Sample Date	RBCs	**RBCs**	11/15/92	11/15/92	11/15/92	11/16/92	11/16/92	11/17/92	10/29/96	10/11/96	10/11/96	10/13/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
VOLATILES (ug/kg)												
Acetone	204,400,000	7,821,429	73 J	170 UJ	38 J	48 J	13 U	83 J	11 U	15 J	12 UJ	12 UJ
Carbon disulfide	204,400,000	7,821,429	14	10	18	10	6 U	6 U	6 U	6 UJ	6 UJ	6 U
Ethylbenzene	204,400,000	7,821,429	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 UJ	6 UJ	6 U
Methylene chloride	763,093	85,163	31 U	35 U	28 U	29 U	8	6 U	6 U	6 UJ	6 UJ	6 U
Tetrachloroethene	110,062	12,283	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 UJ	6 UJ	6 UJ
Xylene (total)	4,088,000,000	156,428,571	NA	NA	NA	NA	NA	NA	6 U	6 UJ	6 UJ	6 U
SEMIVOLATILES (ug/kg)												
2-Methylnaphthalene	40,880,000	1,564,286	1,500 U	1,500 U	1,560 U	1,500 U	1,600 UJ	1,500 U	370 U	400 U	410 U	390 U
Acenaphthylene	122,640,000	4,692,857	1,500 U	1,500 U	1,560 U	1,500 U	1,600 UJ	1,500 U	370 U	400 U	410 U	390 U
Anthracene	613,200,000	23,464,286	1,500 U	1,500 U	1,560 U	1,500 U	1,600 UJ	1,500 U	370 U	400 U	410 U	390 U
Benzo(a)anthracene	7,840	875	1,500 U	1,500 U	1,560 U	1,500 U	1,600 UJ	1,500 U	370 U	400 U	410 U	390 U
Benzo(a)pyrene	784	88	1,500 U	1,500 U	1,560 UJ	1,500 U	1,600 UJ	1,500 U	370 U	400 U	410 U	390 U
Benzo(b)fluoranthene	7,840	875	1,500 U	1,500 U	1,560 UJ	1,500 U	1,600 UJ	1,500 U	370 U	400 U	410 U	390 U
Benzo(g,h,i)perylene	61,320,000	2,346,429	1,500 U	1,500 U	1,560 UJ	1,500 U	1,600 UJ	1,500 U	370 U	400 U	410 U	390 U
Benzo(k)fluoranthene	78,400	8,750	1,500 U	1,500 U	1,560 UJ	1,500 U	1,600 UJ	1,500 U	370 U	400 U	410 U	390 U
Bis(2-ethylhexyl)phthalate	408,800	45,623	1,500 U	1,500 U	430 J	1,500 U	1,600 UJ	1,500 U	370 U	400 U	410 U	390 U
Butylbenzylphthalate	408,800,000	15,642,857	1,500 U	1,500 U	1,560 U	1,500 U	1,600 UJ	1,500 U	370 U	400 U	410 U	390 U
Chrysene	784,000	87,497	1,500 U	1,500 U	1,560 U	1,500 U	1,600 UJ	1,500 U	370 U	400 U	410 U	390 U
Dibenzo(a,h)anthracene	784	88	1,500 U	1,500 U	1,560 UJ	1,500 U	1,600 UJ	1,500 U	370 U	400 U	410 U	390 U
Fluoranthene	81,760,000	3,128,571	1,500 U	1,500 U	1,560 U	1,500 U	1,600 UJ	1,500 U	370 U	400 U	410 U	390 U
Indeno(1,2,3-cd)pyrene	7,840	875	1,500 U	1,500 U	1,560 UJ	1,500 U	1,600 UJ	1,500 U	370 U	400 U	410 U	390 U
Pyrene	61,320,000	2,346,429	1,500 U	1,500 U	1,560 U	1,500 U	1,600 UJ	1,500 U	370 U	400 U	410 U	390 U

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
C - Results were confirmed by GC/MS.
D - Parameter identified in an analysis at a secondary dilution factor.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-7 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Supplemental Investigation						RFI Investigation			
Site ID	EPA Region III	**EPA Region III**	05SS101	05SS102	05SS103	05SS104	05SS105	05SS106	1MW01	1MW02	1MW03	1MW04
Sample ID	Industrial	**Residential**	05SS126	05SS128	05SS130	05SS132	05SS135	05SS138	1MW01-00	1MW02-00	1MW03-00	1MW04-00
Sample Date	RBCs	**RBCs**	11/15/92	11/15/92	11/15/92	11/16/92	11/16/92	11/17/92	10/29/96	10/11/96	10/11/96	10/13/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
PESTICIDES/PCBs (ug/kg)												
4,4'-DDD	23,847	2,661	1.8 J	0.26 J	180 NJ	4.1 UJ	4 U	3.7 U	9 U	9.6 U	9.8 U	9.4 U
4,4'-DDE	16,833	1,879	5.5	2.2 J	480 J	0.63 J	4 U	3.7 U	9 U	9.6 U	4.1	7.4
4,4'-DDT	16,833	1,879	2.1 J	2.9 J	**3,500** CD	0.49 J	4 U	0.11 NJ	9 U	9.6 U	4.5	14
Endrin	613,200	23,464	0.12 NJ	3.9 U	40 U	4.1 UJ	4 U	3.7 U	9 U	9.6 U	9.8 U	9.4 U
Heptachlor	1,272	142	2 UJ	2 UJ	21 U	2.1 NJ	0.12 J	1.9 UJ	4.5 U	4.8 U	4.9 U	4.7 U
Methoxychlor	10,220,000	391,071	0.44 NJ	21 UJ	210 U	21 UJ	21 U	19 UJ	45 U	48 U	49 U	47 U
DIOXINS (ug/kg)												
CHLORINATED HERBICIDES (ug/kg)												
OP-PESTICIDES (ug/kg)												
EXPLOSIVES (ug/kg)												
ASBESTOS (MFL)												

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
C - Results were confirmed by GC/MS.
D - Parameter identified in an analysis at a secondary dilution factor.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-7 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				RFI Investigation								
Site ID	EPA Region III	**EPA Region III**	1SB01	1SB02	1SB03	1SS01	1SS02	1SS02	1SS03	1SS04	1SS05	1SS06
Sample ID	Industrial	**Residential**	1SB01-00	1SB02-00	1SB03-00	1SS01	1SS02	1SS02D	1SS03	1SS04	1SS05	1SS06
Sample Date	RBCs	**RBCs**	10/13/96	10/13/96	10/11/96	10/13/96	10/11/96	10/11/96	10/10/96	10/10/96	10/11/96	10/11/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
VOLATILES (ug/kg)												
Acetone	204,400,000	7,821,429	13 U	12 UJ	12 U	12 UJ	12 U	12 U	11 U	12 U	12 U	12 U
Carbon disulfide	204,400,000	7,821,429	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Ethylbenzene	204,400,000	7,821,429	1 J	6 UJ	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 UJ
Methylene chloride	763,093	85,163	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 UJ	6 U	6 UJ
Tetrachloroethene	110,062	12,283	3 J	6 UJ	6 U	6 UJ	6 U	6 U	6 U	6 U	6 U	6 UJ
Xylene (total)	4,088,000,000	156,428,571	5 J	6 UJ	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 UJ
SEMIVOLATILES (ug/kg)												
2-Methylnaphthalene	40,880,000	1,564,286	420 U	410 U	71 J	370 U	400 U	400 U	380 U	410 UJ	400 U	410 U
Acenaphthylene	122,640,000	4,692,857	420 U	410 U	410 U	370 U	400 U	400 U	380 U	410 UJ	400 U	45 J
Anthracene	613,200,000	23,464,286	420 U	410 U	48 J	370 U	400 U	400 U	380 U	410 UJ	400 U	110 J
Benzo(a)anthracene	7,840	875	420 U	410 U	180 J	370 U	400 U	400 U	380 U	410 UJ	400 U	**930**
Benzo(a)pyrene	784	88	420 U	410 U	**260** J	370 U	400 U	400 U	380 U	410 UJ	400 U	**590**
Benzo(b)fluoranthene	7,840	875	420 U	410 U	570	370 U	400 U	400 U	380 U	410 UJ	400 U	**1,500**
Benzo(g,h,i)perylene	61,320,000	2,346,429	420 U	410 U	180 J	370 U	400 U	400 U	380 U	410 UJ	400 U	230 J
Benzo(k)fluoranthene	78,400	8,750	420 U	410 U	260 J	370 U	400 U	400 U	380 U	410 UJ	400 U	660
Bis(2-ethylhexyl)phthalate	408,800	45,623	420 U	410 U	410 U	370 U	400 U	400 U	380 U	410 UJ	47 J	410 U
Butylbenzylphthalate	408,800,000	15,642,857	420 U	410 U	410 U	370 U	400 U	400 U	380 U	410 UJ	400 U	410 U
Chrysene	784,000	87,497	420 U	410 U	270 J	370 U	400 U	400 U	380 U	410 UJ	400 U	1,000
Dibenzo(a,h)anthracene	784	88	420 U	410 U	57 J	370 U	400 U	400 U	380 U	410 UJ	400 U	**91** J
Fluoranthene	81,760,000	3,128,571	420 U	410 U	120 J	370 U	400 U	400 U	380 U	410 UJ	400 U	770
Indeno(1,2,3-cd)pyrene	7,840	875	420 U	410 U	190 J	370 U	400 U	400 U	380 U	410 UJ	400 U	300 J
Pyrene	61,320,000	2,346,429	420 U	410 U	280 J	370 U	400 U	400 U	380 U	410 UJ	400 U	2,600

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
C - Results were confirmed by GC/MS.
D - Parameter identified in an analysis at a secondary dilution factor.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-7 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				RFI Investigation									
Site ID	EPA Region III	**EPA Region III**	1SB01	1SB02	1SB03	1SS01	1SS02	1SS02	1SS03	1SS04	1SS05	1SS06
Sample ID	Industrial	**Residential**	1SB01-00	1SB02-00	1SB03-00	1SS01	1SS02	1SS02D	1SS03	1SS04	1SS05	1SS06
Sample Date	RBCs	**RBCs**	10/13/96	10/13/96	10/11/96	10/13/96	10/11/96	10/11/96	10/10/96	10/10/96	10/11/96	10/11/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
PESTICIDES/PCBs (ug/kg)												
4,4'-DDD	23,847	2,661	10 U	9.7 U	20 U	9.1 U	9.6 U	9.7 U	9.1 U	10 U	9.6 U	49 U
4,4'-DDE	16,833	1,879	1.2 J	9.7 U	610	9.1 U	2.4	3.2	9.1 U	1.7 J	1.6 J	1,300
4,4'-DDT	16,833	1,879	2.5	1.2 J	340	9.1 U	1.2 J	1.6 J	9.1 U	1.2 J	3.6	270
Endrin	613,200	23,464	10 U	9.7 U	20 U	9.1 U	9.6 U	9.7 U	9.1 U	10 U	9.6 U	49 U
Heptachlor	1,272	142	5 U	4.8 U	9.8 U	4.6 U	4.8 U	4.9 U	4.5 U	5 U	4.8 U	24 U
Methoxychlor	10,220,000	391,071	50 U	48 U	98 U	46 U	48 U	49 U	45 U	50 U	48 U	240 U
DIOXINS (ug/kg)												
CHLORINATED HERBICIDES (ug/kg)												
OP-PESTICIDES (ug/kg)												
EXPLOSIVES (ug/kg)												
ASBESTOS (MFL)												

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
C - Results were confirmed by GC/MS.
D - Parameter identified in an analysis at a secondary dilution factor.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-7 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	1SS07 1SS07 10/13/96 0.00-1.00	1SS08 1SS08 10/21/96 0.00-1.00	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Location Maximum Detect
VOLATILES (ug/kg)									
Acetone	204,400,000	7,821,429	11 UJ	11 UJ	0/22		0/22		05SS138
Carbon disulfide	204,400,000	7,821,429	6 U	6 U	0/22		0/22		05SS130
Ethylbenzene	204,400,000	7,821,429	6 UJ	6 U	0/22		0/22		1SB01-00
Methylene chloride	763,093	85,163	6 U	6 U	0/22		0/22		05SS135
Tetrachloroethene	110,062	12,283	6 UJ	6 UJ	0/22		0/22		1SB01-00
Xylene (total)	4,088,000,000	156,428,571	6 UJ	6 U	0/16		0/16		1SB01-00
SEMIVOLATILES (ug/kg)									
2-Methylnaphthalene	40,880,000	1,564,286	370 U	380 U	0/22		0/22		1SB03-00
Acenaphthylene	122,640,000	4,692,857	370 U	380 U	0/22		0/22		1SS06
Anthracene	613,200,000	23,464,286	370 U	380 U	0/22		0/22		1SS06
Benzo(a)anthracene	7,840	875	56 J	380 U	0/22		1/22	930	1SS06
Benzo(a)pyrene	784	88	68 J	380 U	0/22		2/22	260J - 590	1SS06
Benzo(b)fluoranthene	7,840	875	100 J	380 U	0/22		1/22	1,500	1SS06
Benzo(g,h,i)perylene	61,320,000	2,346,429	38 J	380 U	0/22		0/22		1SS06
Benzo(k)fluoranthene	78,400	8,750	46 J	380 U	0/22		0/22		1SS06
Bis(2-ethylhexyl)phthalate	408,800	45,623	370 U	380 U	0/22		0/22		05SS130
Butylbenzylphthalate	408,800,000	15,642,857	75 J	380 U	0/22		0/22		1SS07
Chrysene	784,000	87,497	58 J	380 U	0/22		0/22		1SS06
Dibenzo(a,h)anthracene	784	88	370 U	380 U	0/22		1/22	91J	1SS06
Fluoranthene	81,760,000	3,128,571	62 J	380 U	0/22		0/22		1SS06
Indeno(1,2,3-cd)pyrene	7,840	875	47 J	380 U	0/22		0/22		1SS06
Pyrene	61,320,000	2,346,429	82 J	380 U	0/22		0/22		1SS06

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
C - Results were confirmed by GC/MS.
D - Parameter identified in an analysis at a secondary dilution factor.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-7 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	1SS07 1SS07 10/13/96 0.00-1.00	1SS08 1SS08 10/21/96 0.00-1.00	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Location Maximum Detect
PESTICIDES/PCBs (ug/kg)									
4,4'-DDD	23,847	2,661	8.8 U	9 U	0/22		0/22		05SS130
4,4'-DDE	16,833	1,879	280	9 U	0/22		0/22		1SS06
4,4'-DDT	16,833	1,879	140	9 U	0/22		1/22	3,500CD	05SS130
Endrin	613,200	23,464	8.8 U	9 U	0/22		0/22		05SS126
Heptachlor	1,272	142	4.4 U	4.5 U	0/22		0/22		05SS132
Methoxychlor	10,220,000	391,071	44 U	45 U	0/22		0/22		05SS126

DIOXINS (ug/kg)

CHLORINATED HERBICIDES (ug/kg)

OP-PESTICIDES (ug/kg)

EXPLOSIVES (ug/kg)

ASBESTOS (MFL)

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
C - Results were confirmed by GC/MS.
D - Parameter identified in an analysis at a secondary dilution factor.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-8

SUMMARY OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				Supplemental Investigation						RFI Investigation		
Site ID	2 x Average	**EPA Region III**	EPA Region III	05SS101	05SS102	05SS103	05SS104	05SS105	05SS106	1MW01	1MW02	1MW03
Sample ID	Detected	**Industrial**	Residential	05SS126	05SS128	05SS130	05SS132	05SS135	05SS138	1MW01-00	1MW02-00	1MW03-00
Sample Date	Background	**RBCs**	RBCs	11/15/92	11/15/92	11/15/92	11/16/92	11/16/92	11/17/92	10/29/96	10/11/96	10/11/96
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	0.00-1.00	0.00-1.00	0.00-1.00
Inorganics, Total (mg/kg)												
Aluminum	NE	2,044,000	78,214	17,100	18,200	22,600	8,220	38,500	9,180	NA	NA	NA
Antimony	0	818	31	11.1 U	11.5 U	11.2 U	11.9 U	5.9 J	2.3 U	2.4 J	2.8 J	1.9 UJ
Arsenic	2.43	3.8	0.43	0.71 U	0.73 U	0.71 U	0.76 U	0.75 U	0.69 U	0.67	0.78 UJ	0.78 UJ
Barium	181	143,080	5,475	180	143	174	143	131	46.5	76.2	53.8	158
Beryllium	0.45	4,100	160	0.73 B	1.2	1.2	0.69 B	1.3	0.69 B	0.81	0.32	0.59
Cadmium	0	2,044	78	1.3	1.4	1.7	0.71 U	4.6	1.3 UJ	0.77	0.27	0.34
Calcium	NE	NE	NE	9,110	6,030	8,360	10,800	3,420	2,920	NA	NA	NA
Chromium	59	6,132	235	13.9 J	16.4 J	24.2 J	20.5 J	19.5	13.5	32.4	30.6	29
Cobalt	44	122,640	4,693	16	24.8	24.1	34.6	24.5	16.6	15.2	13.8	22.7
Copper	234	81,760	3,129	131 J	57.4 J	68.5 J	91.6 J	35.3	19.9	169	19.8	45.9
Iron	NE	613,200	23,464	31,700	41,500	47,900	13,300	69,900	19,700	NA	NA	NA
Lead	15	NE	NE	39.6	9.1	18.1	2	2.1 J	1.9 J	3.6 R	4.4	13
Magnesium	NE	NE	NE	4,550	3,710	3,550	5,600	5,250	4,720	NA	NA	NA
Manganese	NE	40,880	1,564	381 J	1,140 J	994 J	776 J	1,170	735	NA	NA	NA
Mercury	0.11	NE	NE	0.1 UJ	0.12 UJ	0.11 UJ	0.12 UJ	0.11 U	0.11 U	0.02 U	0.05	0.06
Nickel	17	40,880	1,564	9.3 B	4.6 U	10	18.8	4.7 U	4.3 U	16.5	6.8	11.9
Potassium	NE	NE	NE	315 U	299 U	430 U	462 U	742 B	320 B	NA	NA	NA
Selenium	1.46	10,220	391	0.56 UJ	0.59 UJ	0.57 UJ	0.61 UJ	0.6 U	0.55 UJ	0.45 J	0.49	0.54 J
Silver	0	10,220	391	1.7 B	1.5 U	1.5 U	2.3 B	1.1 UJ	1 UJ	0.19 UJ	0.21 UJ	0.22 UJ
Sodium	NE	NE	NE	1,220	1,400	1,640	3,700	2,440 J	4,840 J	NA	NA	NA
Sulfide	0	NE	NE	NA	NA	NA	NA	NA	NA	28.6	27.1 UJ	29.9 UJ
Tin	2.4	1,226,400	46,929	NA	NA	NA	NA	NA	NA	0.94 U	1 U	1.1
Vanadium	355	14,308	548	112 J	210 J	239 J	108 J	195	84.5	84.2	157	186
Zinc	125	613,200	23,464	84.9	31.9	63.8	31.6	44.2	18.8	140 J	13.9 J	38.3 J

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

B - Not detected substantially above the level in laboratory or field blanks.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-8

SUMMARY OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

					RFI Investigation											
Site ID	2 x Average	**EPA Region III**	EPA Region III	1MW04	1SB01	1SB02	1SB03	1SS01	1SS02	1SS02	1SS03	1SS04	1SS05	1SS06	1SS07	1SS08
Sample ID	Detected	**Industrial**	Residential	1MW04-00	1SB01-00	1SB02-00	1SB03-00	1SS01	1SS02	1SS02D	1SS03	1SS04	1SS05	1SS06	1SS07	1SS08
Sample Date	Background	**RBCs**	RBCs	10/13/96	10/13/96	10/13/96	10/11/96	10/13/96	10/11/96	10/11/96	10/10/96	10/10/96	10/11/96	10/11/96	10/13/96	10/21/96
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
Inorganics, Total (mg/kg)																
Aluminum	NE	2,044,000	78,214	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	0	818	31	2.1 J	2.9 J	1.5 J	1.9 J	1.3 UJ	1.6 UJ	2 J	1.8 UJ	3.3 J	2.1 J	4 J	9.4 J	1.4 UJ
Arsenic	2.43	3.8	0.43	1.1 J	1.8 U	0.79 U	0.83 UJ	1.8 U	1.4 UJ	0.79 UJ	0.69 UJ	0.81 UJ	0.72 UJ	0.77 UJ	2.8	0.29 UJ
Barium	181	143,080	5,475	83.4	127	101	110	90.9	92.9	84.8	64.2	107	164	150	133	103
Beryllium	0.45	4,100	160	0.39	0.51	0.11	0.29	0.46	0.53	0.57	0.51	0.18	0.29	0.39	0.55	0.58
Cadmium	0	2,044	78	0.41	0.23 U	0.38	0.7	0.2	0.56	0.26	0.23 U	0.41	0.23 U	0.25 U	83.8	0.19 U
Calcium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	59	6,132	235	21.5 J	15 J	40.8 J	17.6	5.9 J	14.3	11.5	30	46.6	31.2	26.9	28.9 J	11.7
Cobalt	44	122,640	4,693	14.3	25.1	28.2	21.5	14.2	15.6	16.4	15.6	30.9	27.5	20.2	15.7	16.5
Copper	234	81,760	3,129	71.2	41.5	75	57.1	35.2	45.9	44.1	37.9	78.2	66.6	359	166	29.8
Iron	NE	613,200	23,464	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	15	NE	NE	8.3	5.4	7.5	25.7	3.4	3	5.9	2	9.3	9.1	79.4	101	6.9 J
Magnesium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NE	40,880	1,564	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.11	NE	NE	0.03	0.07	0.06	0.06	0.08	0.06	0.05	0.02 U	0.06	0.05	0.09	0.09	0.11
Nickel	17	40,880	1,564	11.3	9.5	16.7	10.2	5.4	8.3	7.6	12.7	19.4	14.1	12.5	38.1	6.2
Potassium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	1.46	10,220	391	0.32 UJ	0.8 J	0.18 UJ	0.43 J	0.23 UJ	0.8 U	0.35 UJ	0.31 U	0.36 UJ	0.51 J	0.48 J	0.64 J	0.81 U
Silver	0	10,220	391	0.19 UJ	0.2 UJ	0.16 UJ	0.18 UJ	0.14 UJ	0.18 UJ	0.2 UJ	0.2 UJ	0.17 UJ	0.19 UJ	0.21 UJ	2.6 J	0.16 UJ
Sodium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide	0	NE	NE	29.3 UJ	30.9 UJ	28.4 UJ	29.7 UJ	23 UJ	26.8 UJ	29.6 UJ	28.4 UJ	31.1 UJ	25.7 UJ	29.6 UJ	27.7 UJ	26.2 UJ
Tin	2.4	1,226,400	46,929	0.92 U	0.96 U	0.79 U	1.5	0.69 U	0.86 U	1.2	0.95 U	0.8 U	0.94 U	6.7	15.9	0.78 U
Vanadium	355	14,308	548	121	188	209	139	91.6	118	124	77.4	237	215	190	97.9	122
Zinc	125	613,200	23,464	40.9	28.3	35.8	61.6 J	19.1	26.9 J	26.7 J	23.1 J	29 J	36.9 J	136 J	223	24.8

Data Qualifiers:

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UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

B - Not detected substantially above the level in laboratory or field blanks.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-8

SUMMARY OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	2 x Average Detected Background (mg/kg)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	Number Exceeding 2 x Average Detected Background	Range Exceeding 2 x Average Detected Background	**Number Exceeding EPA Region III Industrial RBCs**	**Range Exceeding EPA Region III Industrial RBCs**	Number Exceeding EPA Region III Residential RBCs	Range Exceeding EPA Region III Residential RBCs	Location Maximum Detect
Inorganics, Total (mg/kg)										
Aluminum	NE	2,044,000	78,214	NE		0/6		0/6		05SS135
Antimony	0	818	31	12/22	1.5J - 9.4J	0/22		0/22		1SS07
Arsenic	2.43	3.8	0.43	1/22	2.8	0/22		3/22	0.67-2.8	1SS07
Barium	181	143,080	5,475	0/22		0/22		0/22		05SS126
Beryllium	0.45	4,100	160	15/22	0.46-1.3	0/22		0/22		05SS135
Cadmium	0	2,044	78	16/22	0.2-83.8	0/22		1/22	83.8	1SS07
Calcium	NE	NE	NE	NE		NE		NE		05SS132
Chromium	59	6,132	235	0/22		0/22		0/22		1SS04
Cobalt	44	122,640	4,693	0/22		0/22		0/22		05SS132
Copper	234	81,760	3,129	1/22	359	0/22		0/22		1SS06
Iron	NE	613,200	23,464	NE		0/6		4/6	31,700-69,900	05SS135
Lead	15	NE	NE	5/22	18.1-101	NE		NE		1SS07
Magnesium	NE	NE	NE	NE		NE		NE		05SS132
Manganese	NE	40,880	1,564	NE		0/6		0/6		05SS135
Mercury	0.11	NE	NE	0/22		NE		NE		1SS08
Nickel	17	40,880	1,564	3/22	18.8-38.1	0/22		0/22		1SS07
Potassium	NE	NE	NE	NE		NE		NE		05SS135
Selenium	1.46	10,220	391	0/22		0/22		0/22		1SB01-00
Silver	0	10,220	391	3/22	1.7B - 2.6J	0/22		0/22		1SS07
Sodium	NE	NE	NE	NE		NE		NE		05SS138
Sulfide	0	NE	NE	1/16	28.6	NE		NE		1MW01-00
Tin	2.4	1,226,400	46,929	2/16	6.7-15.9	0/16		0/16		1SS07
Vanadium	355	14,308	548	0/22		0/22		0/22		05SS130
Zinc	125	613,200	23,464	3/22	136J-223	0/22		0/22		1SS07

Data Qualifiers:

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J - Analyte present. Reported value may not be accurate or precise.

B - Not detected substantially above the level in laboratory or field blanks.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-9

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Supplemental Investigation									
Site ID	EPA Region III	**EPA Region III**	05SS101	05SS102	05SS103	05SS104	05SS104	05SS105	05SS105	05SS106	05BACK	05BACK
Sample ID	Industrial	**Residential**	05SS127	05SS129	05SS131	05SS133	05SS134	05SS136	05SS137	05SS139	05SS140C	05SS140D
Sample Date	RBCs	**RBCs**	11/15/92	11/15/92	11/15/92	11/16/92	11/16/92	11/16/92	11/16/92	11/17/92	11/17/92	11/17/92
Depth Range (ft.)	(ug/kg)	(ug/kg)	1.5-2.67	1.5-2.67	1.5-2.67	1.5-2.67	1.5-2.67	1.5-2.67	1.5-2.67	1.5-2.67	1.5-2.67	1.5-2.67
VOLATILES (ug/kg)												
1,2-Dibromo-3-chloropropane	4,088	456	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	204,400,000	7,821,429	160 J	12 U	12 U	260 J	120 J	54 J	47 J	12 UJ	NA	NA
Benzene	197,352	22,025	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	NA	NA
Carbon disulfide	204,400,000	7,821,429	21	10	10	2 J	3 J	3 J	6	6 U	NA	NA
Tetrachloroethene	110,062	12,283	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	NA	NA
SEMIVOLATILES (ug/kg)												
Bis(2-ethylhexyl)phthalate	408,800	45,623	1,500 U	1,500 U	1,500 U	1,700 U	1,900	400 J	440 J	420 J	NA	NA
Di-n-butylphthalate	204,400,000	7,821,429	1,500 U	1,500 U	1,500 U	1,700 U	1,700 U	1,600 UJ	1,500 UJ	1,500 UJ	NA	NA
PESTICIDES/PCBS (ug/kg)												
4,4'-DDD	23,847	2,661	3.7 U	4.1 U	44 NJ	0.23 J	1 NJ	3.8 U	3.8 U	3.8 U	3.6 U	3.5 U
4,4'-DDE	16,833	1,879	0.49 J	1.2 J	210	1.2 J	5.8	3.8 U	3.8 U	3.8 UJ	3.6 UJ	3.5 UJ
4,4'-DDT	16,833	1,879	0.31 NJ	2.6 J	1,500 CD	1.2 J	5.4	3.8 U	3.8 U	3.8 U	0.2 J	0.16 J
Chlordane, gamma-	NE	NE	1.9 U	2.1 UJ	20 U	2.1 U	0.086 J	2 U	2 U	2 U	1.9 UJ	1.8 U
delta-BHC	NE	NE	1.9 U	0.19 J	20 U	2.1 U	2.1 U	2 U	2 U	2 UJ	1.9 U	1.8 U
Dieldrin	358	40	3.7 U	4.1 U	38 U	4.2 U	4.2 U	3.8 U	3.8 U	3.8 UJ	3.6 U	3.5 U
Endosulfan I	12,264,000	469,286	1.9 U	2.1 U	20 U	2.1 U	2.1 U	2 U	2 U	2 UJ	1.9 UJ	1.8 UJ
Endrin	613,200	23,464	3.7 U	0.39 J	38 U	4.2 U	4.2 U	3.8 U	3.8 U	3.8 U	0.12 J	3.5 U
Endrin aldehyde	NE	NE	3.7 U	4.1 U	38 U	4.2 U	4.2 U	3.8 U	3.8 U	3.8 U	3.6 U	0.14 J
Methoxychlor	10,220,000	391,071	19 U	21 U	200 U	22 UJ	22 UJ	20 U	20 U	20 UJ	19 U	1.9 UJ
DIOXINS (ug/kg)												
Total HxCDD	0.38	0.043	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total HxCDF	0.38	0.043	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total TCDF	0.38	0.043	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORINATED HERBICIDES (ug/kg)												
OP-PESTICIDES (ug/kg)												
EXPLOSIVES (ug/kg)												
ASBESTOS (MFL)												

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

NJ - Presumptive evidence for the presence of the parameter at an estimated value.

C - Results were confirmed by GC/MS.

D - Parameter identified in an analysis at a secondary dilution factor.

Notes: NA - Not Analyzed. NE - Not Establis

TABLE 5-9

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				RFI Investigation								
Site ID	EPA Region III	**EPA Region III**	05BACK	1MW01	1MW01	1MW02	1MW02	1MW02	1MW03	1MW03	1MW04	1MW04
Sample ID	Industrial	**Residential**	05SS140E	1MW01-02	1MW01-02D	1MW02-03	1MW02-03D	1MW02-11/12	1MW03-03	1MW03-05	1MW04-02	1MW04-04
Sample Date	RBCs	**RBCs**	11/17/92	10/29/96	10/29/96	10/28/96	10/28/96	10/28/96	10/22/96	10/22/96	10/15/96	10/15/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	1.5-2.67	4.00-6.00	4.00-6.00	6.00-8.00	6.00-8.00	22.00-26.00	6.00-8.00	10.00-12.00	4.00-6.00	8.00-10.00
VOLATILES (ug/kg)												
1,2-Dibromo-3-chloropropane	4,088	456	NA	23 UJ	24 UJ	25 U	22 UJ	22 U	25 U	26 U	24 UJ	23 UJ
Acetone	204,400,000	7,821,429	NA	12 U	12 U	12 U	11 U	11 U	12 UJ	13 UJ	12 UJ	11 UJ
Benzene	197,352	22,025	NA	6 U	6 U	6 U	5 U	6 U	6 U	7 U	6 U	6 U
Carbon disulfide	204,400,000	7,821,429	NA	6 U	6 U	6 U	5 U	6 U	6 U	7 U	6 U	6 U
Tetrachloroethene	110,062	12,283	NA	6 U	6 U	6 U	5 U	6 U	6 UJ	7 UJ	6 UJ	6 UJ
SEMIVOLATILES (ug/kg)												
Bis(2-ethylhexyl)phthalate	408,800	45,623	NA	380 U	390 U	410 U	360 U	370 U	410 U	440 U	400 U	380 U
Di-n-butylphthalate	204,400,000	7,821,429	NA	380 U	390 U	410 U	360 U	370 U	410 U	440 U	400 U	380 U
PESTICIDES/PCBS (ug/kg)												
4,4'-DDD	23,847	2,661	3.6 U	9.1 U	9.5 U	9.8 UJ	8.7 UJ	8.6 UJ	9.9 U	10 U	9.5 UJ	9 UJ
4,4'-DDE	16,833	1,879	3.6 U	9.1 U	9.5 U	9.8 U	8.7 U	8.6 U	9.9 U	10 U	9.5 U	9 U
4,4'-DDT	16,833	1,879	3.6 U	9.1 U	9.5 U	9.8 UJ	8.7 UJ	8.6 UJ	9.9 U	10 U	9.5 U	32
Chlordane, gamma-	NE	NE	0.24 J	NA	NA	NA	NA	NA	NA	NA	NA	NA
delta-BHC	NE	NE	1.8 U	4.5 U	4.7 U	4.9 UJ	4.3 UJ	4.3 UJ	4.9 U	5.2 U	4.7 U	4.5 U
Dieldrin	358	40	3.6 U	9.1 U	9.5 U	9.8 U	8.7 U	8.6 U	9.9 U	10 U	9.5 U	14
Endosulfan I	12,264,000	469,286	1.8 UJ	4.5 U	4.7 U	4.9 U	4.3 U	4.3 U	4.9 U	5.2 U	4.7 U	7.5
Endrin	613,200	23,464	3.6 U	9.1 U	9.5 U	9.8 U	8.7 U	8.6 U	9.9 U	10 U	9.5 U	9 U
Endrin aldehyde	NE	NE	3.6 U	9.1 U	9.5 U	9.8 UJ	8.7 UJ	8.6 UJ	9.9 U	10 U	9.5 U	9 U
Methoxychlor	10,220,000	391,071	0.23 NJ	45 U	47 U	49 UJ	43 UJ	43 UJ	49 U	52 U	47 U	45 U
DIOXINS (ug/kg)												
Total HxCDD	0.38	0.043	NA	0.14 U	0.14 U	0.3 U	0.06 U	0.07 U	0.23 U	0.12 U	0.12 U	0.1 U
Total HxCDF	0.38	0.043	NA	0.07 U	0.12 U	0.12 U	0.05 U	0.05 U	0.16 U	0.13 U	0.1 U	0.07 U
Total TCDF	0.38	0.043	NA	**0.09** J	0.05 U	0.07 U	0.04 U	0.03 U	0.08 U	0.07 U	0.03 U	0.05 U
CHLORINATED HERBICIDES (ug/kg)												
OP-PESTICIDES (ug/kg)												
EXPLOSIVES (ug/kg)												
ASBESTOS (MFL)												

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

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NJ - Presumptive evidence for the presence of parameter at an estimated value.

C - Results were confirmed by GC/MS.

D - Parameter identified in an analysis at a se dilution factor.

Notes: NA - Not Analyzed. NE -

TABLE 5-9

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				RFI Investigation							
Site ID	EPA Region III	**EPA Region III**	1SB01	1SB02	1SB02	1SB03	1SB03	1MW05	1MW05-05	5GW03R	5GW03R
Sample ID	Industrial	**Residential**	1SB01-02/05	1SB02-03/04	1SB02-10/11/12	1SB03-03	1SB03-06	1MW05-01	1MW05-05	5GW03R-03	5GW03R-05
Sample Date	RBCs	**RBCs**	10/25/96	10/26/96	10/26/96	10/24/96	10/24/96	09/18/97	09/18/97	09/18/97	09/18/97
Depth Range (ft.)	(ug/kg)	(ug/kg)	4.00-12.00	6.00-10.00	20.00-24.00	6.00-8.00	12.00-14.00	1.00-3.00	10.00-12.00	5.00-7.00	10.00-12.00
VOLATILES (ug/kg)											
1,2-Dibromo-3-chloropropane	4,088	456	2 J	21 U	22 U	26 U	23 U	22 U	24 U	24 U	23 U
Acetone	204,400,000	7,821,429	11 U	11 U	11 U	13 U	11 U	11 UJ	12 U	12 U	12 U
Benzene	197,352	22,025	6 U	5 U	6 U	6 U	2 J	6 U	6 U	6 U	6 U
Carbon disulfide	204,400,000	7,821,429	6 U	5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Tetrachloroethene	110,062	12,283	2 J	5 U	6 U	6 U	6 U	6 UJ	6 R	6 U	6 R
SEMIVOLATILES (ug/kg)											
Bis(2-ethylhexyl)phthalate	408,800	45,623	360 U	350 U	360 U	410 U	370 U	370 U	390 U	390 U	380 U
Di-n-butylphthalate	204,400,000	7,821,429	360 U	350 U	360 U	410 U	370 U	90 J	45 J	390 U	64 J
PESTICIDES/PCBS (ug/kg)											
4,4'-DDD	23,847	2,661	8.6 UJ	8.3 UJ	8.8 UJ	10 U	9.1 UJ	18 U	19 U	9.5 U	9.2 U
4,4'-DDE	16,833	1,879	8.6 U	8.3 U	8.8 U	10 U	9.1 U	18 U	19 U	9.5 U	9.2 U
4,4'-DDT	16,833	1,879	8.6 UJ	8.3 UJ	8.8 UJ	10 U	9.1 UJ	18 U	19 U	9.5 U	9.2 U
Chlordane, gamma-	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
delta-BHC	NE	NE	4.3 UJ	4.1 UJ	4.4 UJ	5 U	4.5 UJ	8.8 U	9.3 U	4.8 U	4.6 U
Dieldrin	358	40	8.6 U	8.3 U	8.8 U	10 U	9.1 U	18 U	19 U	9.5 U	9.2 U
Endosulfan I	12,264,000	469,286	4.3 U	4.1 U	4.4 U	5 U	4.5 U	8.8 U	9.3 U	4.8 U	4.6 U
Endrin	613,200	23,464	8.6 U	8.3 U	8.8 U	10 U	9.1 U	18 U	19 U	9.5 U	9.2 U
Endrin aldehyde	NE	NE	8.6 UJ	8.3 UJ	8.8 UJ	10 U	9.1 UJ	18 U	19 U	9.5 U	9.2 U
Methoxychlor	10,220,000	391,071	43 UJ	41 UJ	44 UJ	50 U	45 UJ	88 U	93 U	48 U	46 U
DIOXINS (ug/kg)											
Total HxCDD	0.38	0.043	0.21 U	0.07 U	0.07 U	**0.3** J	0.28 U	0.04 U	0.04 U	0.03 U	0.03 U
Total HxCDF	0.38	0.043	0.19 U	0.06 U	0.04 U	**0.17** J	0.11 U	0.02 U	**0.14** J	0.02 U	0.02 U
Total TCDF	0.38	0.043	0.06 U	0.02 U	0.03 U	0.04 U	0.09 U	0.02 U	0.01 U	0.01 U	0.01 U
CHLORINATED HERBICIDES (ug/kg)											
OP-PESTICIDES (ug/kg)											
EXPLOSIVES (ug/kg)											
ASBESTOS (MFL)											

Data Qualifiers:

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condary

· Not Established.

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample.

NJ - Presumptive evidence for the presence of the parameter at an estimated value.

C - Results were confirmed by GC/MS.

D - Parameter identified in an analysis at a secondary dilution factor.

Notes: NA - Not Analyzed. NE - Not Established.

TABLE 5-9

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Location Maximum Detect
VOLATILES (ug/kg)							
1,2-Dibromo-3-chloropropane	4,088	456	0/18		0/18		1SB01-02/05
Acetone	204,400,000	7,821,429	0/26		0/26		05SS133
Benzene	197,352	22,025	0/26		0/26		1SB03-06
Carbon disulfide	204,400,000	7,821,429	0/26		0/26		05SS127
Tetrachloroethene	110,062	12,283	0/26		0/26		1SB01-02/05
SEMIVOLATILES (ug/kg)							
Bis(2-ethylhexyl)phthalate	408,800	45,623	0/26		0/26		05SS134-DUP
Di-n-butylphthalate	204,400,000	7,821,429	0/26		0/26		1MW05-01
PESTICIDES/PCBS (ug/kg)							
4,4'-DDD	23,847	2,661	0/30		0/30		05SS131
4,4'-DDE	16,833	1,879	0/30		0/30		05SS131
4,4'-DDT	16,833	1,879	0/30		0/30		05SS131
Chlordane, gamma-	NE	NE	NE		NE		05SS140E
delta-BHC	NE	NE	NE		NE		05SS129
Dieldrin	358	40	0/30		0/30		1MW04-04
Endosulfan I	12,264,000	469,286	0/30		0/30		1MW04-04
Endrin	613,200	23,464	0/30		0/30		05SS129
Endrin aldehyde	NE	NE	NE		NE		05SS140D
Methoxychlor	10,220,000	391,071	0/30		0/30		05SS140E
DIOXINS (ug/kg)							
Total HxCDD	0.38	0.043	0/18		1/18	0.3J	1SB03-03
Total HxCDF	0.38	0.043	0/18		2/18	0.14J - 0.17J	1SB03-03
Total TCDF	0.38	0.043	0/18		1/18	0.09J	1MW01-02
CHLORINATED HERBICIDES (ug/kg)							
OP-PESTICIDES (ug/kg)							
EXPLOSIVES (ug/kg)							
ASBESTOS (MFL)							

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

NJ - Presumptive evidence for the presence of the parameter at an estimated value.

C - Results were confirmed by GC/MS.

D - Parameter identified in an analysis at a secondary dilution factor.

Notes: NA - Not Analyzed. NE - Not Established.

TABLE 5-10

SUMMARY OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				Supplemental Investigation							
Site ID	2 X Average	**EPA Region III**	EPA Region III	05SS101	05SS102	05SS103	05SS104	05SS104	05SS105	05SS105	05SS106
Sample ID	Detected	**Industrial**	Residential	05SS127	05SS129	05SS131	05SS133	05SS134	05SS136	05SS137	05SS139
Sample Date	Background	**RBCs**	RBCs	11/15/92	11/15/92	11/15/92	11/16/92	11/16/92	11/16/92	11/16/92	11/17/92
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	1.5-2.67	1.5-2.67	1.5-2.67	1.5-2.67	1.5-2.67	1.5-2.67	1.5-2.67	1.5-2.67
Inorganics, Total (mg/kg)											
Aluminum	NE	2,044,000	78,214	6,240	40,700	6,920	12,800	9,430	14,000	32,800	17,700
Antimony	0	818	31	10.6 U	11 U	11.4 U	12.1 U	12.1 U	3 J	3.2 J	2.3 U
Arsenic	2.05	3.82	0.43	0.67 UJ	0.7 UJ	0.72 U	0.77 U	0.77 U	0.71 U	0.71 U	0.69 U
Barium	222	143,080	5,475	144	166	123	114	195	385	366	132
Beryllium	0.74	4,100	160	0.2 B	0.86 B	0.84 B	0.96 B	0.72 B	0.9 B	1 B	0.63 B
Cadmium	0.74	2,044	78	0.63 U	1.7	0.72 B	0.9 B	0.72 U	2.4	4.2	1.3 UJ
Calcium	NE	NE	NE	5,430	12,500	6,320	5,660	11,200	2,210	2,750	6,000
Chromium	133	6,132	235	2.8 J	35.7 J	14.9 J	33.3 J	21.3 J	9.6	15.3	51.7
Cobalt	30	122,640	4,693	18.8	23.8	22.5	35.5	33.8	16.5	17.5	16
Copper	193	81,760	3,129	53.3 J	106 J	25.8 J	141 J	93.6 J	31.6	45.4	33.4
Iron	NE	613,200	23,464	8,630	48,800	19,400	25,900	17,900	38,600	62,200	27,200
Lead	8.68	NE	NE	5.9	4.6	4.7	3.1	25.4	2 J	1.9 J	1.6 J
Magnesium	NE	NE	NE	5,510	5,730	3,360	6,910	5,340	5,350	6,310	10,200
Manganese	NE	40,880	1,564	620 J	848 J	876 J	971 J	1,450 J	508	407	656
Mercury	0.09	NE	NE	0.11 UJ	0.1 UJ	0.12 UJ	0.12 UJ	0.12 UJ	0.1 U	0.11 U	0.11 U
Nickel	31.9	40,880	1,564	4.2 U	13.3	4.9 B	20.8	17.5	4.5 U	4.4 U	10.8
Potassium	NE	NE	NE	245 U	371 U	316 U	606 U	569 U	580 B	633 B	205 U
Selenium	0.57	10,220	391	0.54 UJ	0.56 UJ	0.58 UJ	0.62 UJ	0.62 UJ	0.57 U	0.56 UJ	0.55 UJ
Silver	0	10,220	391	1.7 B	1.5 U	1.6 B	1.6 U	1.6 U	1.1 UJ	1.1 UJ	1 UJ
Sodium	NE	NE	NE	750 B	2,810	730 B	3,010	2,230	4,370 J	4,830 J	6,520 J
Tin	2.96	1,226,400	46,929	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	462	14,308	548	39.1 J	223 J	131 J	160 J	116 J	134	176	80.7
Zinc	89	613,200	23,464	28.6	42.2	20.2	44.7	68.8	28.5	37.3	49.4

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

TABLE 5-10

SUMMARY OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				Supplemental Investigation			RFI Investigation				
Site ID	2 X Average	**EPA Region III**	EPA Region III	05BACK	05BACK	05BACK	1MW01	1MW01	1MW02	1MW02	1MW02
Sample ID	Detected	**Industrial**	Residential	05SS140C	05SS140D	05SS140E	1MW01-02	1MW01-02D	1MW02-03	1MW02-03D	1MW02-11/12
Sample Date	Background	**RBCs**	RBCs	11/17/92	11/17/92	11/17/92	10/29/96	10/29/96	10/28/96	10/28/96	10/28/96
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	1.5-2.67	1.5-2.67	1.5-2.67	4.00-6.00	4.00-6.00	6.00-8.00	6.00-8.00	22.00-26.00
Inorganics, Total (mg/kg)											
Aluminum	NE	2,044,000	78,214	6,880	8,720	5,770	NA	NA	NA	NA	NA
Antimony	0	818	31	10.6 U	10.6 U	10.6 U	2.7 J	3 J	2.6 J	1.4 UJ	2.1 J
Arsenic	2.05	3.82	0.43	0.67 U	0.67 U	0.67 U	0.31	0.36 J	0.16 UJ	0.14 UJ	0.14 UJ
Barium	222	143,080	5,475	92.5	141	101	76.5	66.6	87.9	70.2	53.1
Beryllium	0.74	4,100	160	0.39 B	0.46 B	0.42 B	0.54	0.51	0.87	0.81	0.87
Cadmium	0.74	2,044	78	0.63 U	0.63 U	0.63 U	0.19 U	0.25	0.21 U	0.19 U	0.19 U
Calcium	NE	NE	NE	4,520	4,730	3,390	NA	NA	NA	NA	NA
Chromium	133	6,132	235	9 J	8 J	5.8 J	37.1	36.6	19.1	19.6	9.5
Cobalt	30	122,640	4,693	15.6	19.3	15.8	19.9	16.3	13.7	11.6	13.7
Copper	193	81,760	3,129	19.6 J	28.8 J	16.1 J	52.6	46.7	58.4	50.7	266
Iron	NE	613,200	23,464	10,300	12,700	9,250	NA	NA	NA	NA	NA
Lead	8.68	NE	NE	4.1	4.7	3.1	1.4 R	2 R	0.91 J	1.2 J	4.1 J
Magnesium	NE	NE	NE	2,930	2,860	2,470	NA	NA	NA	NA	NA
Manganese	NE	40,880	1,564	696 J	976 J	764 J	NA	NA	NA	NA	NA
Mercury	0.09	NE	NE	0.11 UJ	0.11 UJ	0.1 UJ	0.03 U	0.02	0.02 U	0.02 U	0.02 U
Nickel	31.9	40,880	1,564	4.2 U	4.2 U	5.2 B	16.5	13.9	8.2	6.9	7.3
Potassium	NE	NE	NE	1,020 B	923 B	1,310	NA	NA	NA	NA	NA
Selenium	0.57	10,220	391	0.54 UJ	0.6 J	0.54 UJ	0.31 J	0.5 J	0.36 UJ	0.32 UJ	0.32 UJ
Silver	0	10,220	391	1.9 B	1.4 U	2.4	0.16 UJ	0.16 UJ	0.18 UJ	0.16 UJ	0.33 UJ
Sodium	NE	NE	NE	500 U	575 U	507 U	NA	NA	NA	NA	NA
Tin	2.96	1,226,400	46,929	NA	NA	NA	0.78 U	0.78 U	0.85 U	0.78 U	0.79 U
Vanadium	462	14,308	548	43.4 J	49.4 J	44.4 J	111	103	141	126	111
Zinc	89	613,200	23,464	24.6	38.6	22.4	27.8 J	24.1 J	27.5	24.9	46

Data Qualifiers:

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J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

TABLE 5-10

SUMMARY OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				RFI Investigation						
Site ID	2 X Average	**EPA Region III**	EPA Region III	1MW03	1MW03	1MW04	1MW04	1SB01	1SB02	1SB02
Sample ID	Detected	**Industrial**	Residential	1MW03-03	1MW03-05	1MW04-02	1MW04-04	1SB01-02/05	1SB02-03/04	1SB02-10/11/12
Sample Date	Background	**RBCs**	RBCs	10/22/96	10/22/96	10/15/96	10/15/96	10/25/96	10/26/96	10/26/96
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	6.00-8.00	10.00-12.00	4.00-6.00	8.00-10.00	4.00-12.00	6.00-10.00	20.00-24.00
Inorganics, Total (mg/kg)										
Aluminum	NE	2,044,000	78,214	NA	NA	NA	NA	NA	NA	NA
Antimony	0	818	31	2.7 J	3.6 J	1.8 UJ	2.8 J	1.4 UJ	3.8 J	1.5 UJ
Arsenic	2.05	3.82	0.43	1.6 UJ	1.8 UJ	0.91 U	1.3 U	0.7 UJ	0.7 UJ	0.74 UJ
Barium	222	143,080	5,475	291	152	137	191	156	89.5	95.6
Beryllium	0.74	4,100	160	1.2	0.62	0.36	0.15	0.5	0.47	0.53
Cadmium	0.74	2,044	78	0.21 U	0.22 U	0.24 U	0.21	0.19 U	0.18 U	0.19 U
Calcium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA
Chromium	133	6,132	235	20.8	26.9	29.3 J	9.3 J	5.4	28.6	24.8
Cobalt	30	122,640	4,693	33.1	22	22.9	16.9	16.5	18.4	17.3
Copper	193	81,760	3,129	81.9	79.1	106	544	113	85.5	88.9
Iron	NE	613,200	23,464	NA	NA	NA	NA	NA	NA	NA
Lead	8.68	NE	NE	0.72 J	1.1 J	1.7	35.8	1.2 J	0.47 J	0.48 J
Magnesium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA
Manganese	NE	40,880	1,564	NA	NA	NA	NA	NA	NA	NA
Mercury	0.09	NE	NE	0.02 U	0.03 U	0.03	1.1	0.02 U	0.02 U	0.02 U
Nickel	31.9	40,880	1,564	13.6	10.1	14.5	9	7	19.2	16
Potassium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA
Selenium	0.57	10,220	391	0.36 UJ	0.4 UJ	0.21 UJ	0.75 UJ	1.6 UJ	1.6 UJ	1.7 UJ
Silver	0	10,220	391	0.36 UJ	0.19 UJ	0.2 UJ	0.16 UJ	0.16 UJ	0.16 UJ	0.17 UJ
Sodium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA
Tin	2.96	1,226,400	46,929	0.87 U	0.92 U	18.5	11.5	0.79 U	0.76 U	0.8 U
Vanadium	462	14,308	548	187	163	196	164	142	150	134
Zinc	89	613,200	23,464	72.7	72.8	141	58.8	34	27.7	34.1

Data Qualifiers:

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J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

TABLE 5-10

SUMMARY OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				RFI Investigation					
Site ID	2 X Average	**EPA Region III**	EPA Region III	1SB03	1SB03	1MW05	1MW05	5GW03R	5GW03R
Sample ID	Detected	**Industrial**	Residential	1SB03-03	1SB03-06	1MW05-01	1MW05-05	5GW03R-03	5GW03R-05
Sample Date	Background	**RBCs**	RBCs	10/24/96	10/24/96	09/18/97	09/18/97	09/18/97	09/18/97
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	6.00-8.00	12.00-14.00	1.00-3.00	10.00-12.00	5.00-7.00	10.00-12.00
Inorganics, Total (mg/kg)									
Aluminum	NE	2,044,000	78,214	NA	NA	NA	NA	NA	NA
Antimony	0	818	31	2.3 J	1.4 UJ	0.17 J	0.14 UJ	0.32 J	0.26 J
Arsenic	2.05	3.82	0.43	0.17 UJ	0.71 UJ	0.56 U	0.68 U	0.68 U	0.52 UJ
Barium	222	143,080	5,475	112	102	28.8	44	123	129
Beryllium	0.74	4,100	160	0.58	0.43	0.12 J	0.15 J	0.19 J	0.2 J
Cadmium	0.74	2,044	78	0.21 U	0.19 U	0.17 U	0.15 U	0.24 U	0.22 U
Calcium	NE	NE	NE	NA	NA	NA	NA	NA	NA
Chromium	133	6,132	235	8.9	6.8	45.1	78	27.5	40.1
Cobalt	30	122,640	4,693	12.3	9.4	25.7 J	28.2 J	15.3 J	18.2 J
Copper	193	81,760	3,129	63.6	54.3	19.5	42.8	55	69.1
Iron	NE	613,200	23,464	NA	NA	NA	NA	NA	NA
Lead	8.68	NE	NE	18.2 J	0.92 J	1.4	1.1	1.3	0.99
Magnesium	NE	NE	NE	NA	NA	NA	NA	NA	NA
Manganese	NE	40,880	1,564	NA	NA	NA	NA	NA	NA
Mercury	0.09	NE	NE	0.03 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Nickel	31.9	40,880	1,564	6.6	5.8	21.9 J	31.8 J	11.2 J	11.8 J
Potassium	NE	NE	NE	NA	NA	NA	NA	NA	NA
Selenium	0.57	10,220	391	0.38 UJ	0.32 UJ	0.15 UJ	0.19 UJ	0.19 U	0.29 UJ
Silver	0	10,220	391	0.18 UJ	0.16 UJ	0.1 J	0.3 J	0.1 J	0.06 U
Sodium	NE	NE	NE	NA	NA	NA	NA	NA	NA
Tin	2.96	1,226,400	46,929	6.3	0.79 U	1.6 J	1.9 J	1.8 J	2 J
Vanadium	462	14,308	548	134	97.1	101	121	91.9	92.6
Zinc	89	613,200	23,464	35.2	19.2	33	37	30	34.5

Data Qualifiers:

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R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

TABLE 5-10

SUMMARY OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	2 X Average Detected Background (mg/kg)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	Number Exceeding 2 X Average Detected Background	Range Exceeding 2 X Average Detected Background	**Number Exceeding EPA Region III Industrial RBCs**	**Range Exceeding EPA Region III Industrial RBCs**	Number Exceeding EPA Region III Residential RBCs	Range Exceeding EPA Region III Residential RBCs	Location Maximum Detect
Inorganics, Total (mg/kg)										
Aluminum	NE	2,044,000	78,214	NE		0/11		0/11		05SS129
Antimony	0	818	31	14/29	0.17J - 3.8J	0/29		0/29		1SB02-03/04
Arsenic	2.05	3.82	0.43	0/29		0/29		0/29		1MW01-02D
Barium	222	143,080	5,475	3/29	291-385	0/29		0/29		05SS136
Beryllium	0.74	4,100	160	9/29	0.81-1.2	0/29		0/29		1MW03-03
Cadmium	0.74	2,044	78	4/29	0.9B - 4.2	0/29		0/29		05SS137-DUP
Calcium	NE	NE	NE	NE		NE		NE		05SS129
Chromium	133	6,132	235	0/29		0/29		0/29		1MW05-05
Cobalt	30	122,640	4,693	3/29	33.1-35.5	0/29		0/29		05SS133
Copper	193	81,760	3,129	2/29	266-544	0/29		0/29		1MW04-04
Iron	NE	613,200	23,464	NE		0/11		5/11	25,900-62,200	05SS137-DUP
Lead	8.68	NE	NE	3/29	18.2J - 35.8	NE		NE		1MW04-04
Magnesium	NE	NE	NE	NE		NE		NE		05SS139
Manganese	NE	40,880	1,564	NE		0/11		0/11		05SS134-DUP
Mercury	0.09	NE	NE	1/29	1.1	NE		NE		1MW04-04
Nickel	31.9	40,880	1,564	0/29		0/29		0/29		1MW05-05
Potassium	NE	NE	NE	NE		NE		NE		05SS140E
Selenium	0.57	10,220	391	1/29	0.6J	0/29		0/29		05SS140D
Silver	0	10,220	391	7/29	0.1J - 2.4	0/29		0/29		05SS140E
Sodium	NE	NE	NE	NE		NE		NE		05SS139
Tin	2.96	1,226,400	46,929	3/18	6.3 - 18.5	0/18		0/18		1MW04-02
Vanadium	462	14,308	548	0/29		0/29		0/29		05SS129
Zinc	89	613,200	23,464	1/29	141	0/29		0/29		1MW04-02

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

TABLE 5-11 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study									
Site ID	ERL	**ERM**	5SE1	5SE2	5SE3	5SE4	5SE5	5SE1	5SE2	5SE3	5SE4	5SE5
Sample ID	Sediment	**Sediment**	5SE1	5SE2	5SE3	5SE4	5SE5	5SE01	5SE02	5SE03	5SE04	5SE05
Sample Date	Screening	**Screening**	11/28/85	11/28/85	11/28/85	11/28/85	11/28/85	10/07/87	10/06/87	10/06/87	10/06/87	10/06/87
Depth Range (ft.)	Value	**Value**	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00
	(ug/kg)	(ug/kg)										
VOLATILES (ug/kg)												
Methylene chloride	NE	NE	240 U	420 U	290 U	380 U	220 U	3,600	4,100	4,100	2,700	4,500
Tetrachloroethene	NE	NE	480 U	840 U	600 U	730 U	460 U	450 U	840 U	830 U	560 U	920 U
Xylene (total)	NE	NE	220 U	390 U	280 U	340 U	210 U	660 U	1,200 U	1,200 U	810 U	1,300 U
SEMIVOLATILES (ug/kg)												
Benzo(a)anthracene	261	1,600	200 U	300 U	200 U	300 U	200 U	130 U	240 U	240 U	160 U	270 U
Benzo(a)pyrene	430	1,600	200 U	300 U	200 U	300 U	700 U	200 U	370 U	370 U	240 U	400 U
Benzo(b)fluoranthene	NE	NE	200 U	300 U	200 U	300 U	600 U	200 U	370 U	370 U	240 U	400 U
Benzo(g,h,i)perylene	NE	NE	410 U	600 U	410 U	550 U	800 U	260 U	490 U	490 U	330 U	540 U
Benzo(k)fluoranthene	NE	NE	200 U	300 U	200 U	300 U	500 U	200 U	370 U	370 U	240 U	400 U
Bis(2-ethylhexyl)phthalate	NE	NE	100	300 U	200 U	300 U	200 U	170 U	330 U	330 U	220 U	360 U
Chrysene	384	2,800	200 U	300 U	200 U	300 U	200 U	130 U	240 U	240 U	160 U	270 U
Di-n-octylphthalate	NE	NE	1,000	4,000	500	300 U	500	190 U	350 U	350 U	230 U	380 U
Fluoranthene	600	5,100	200 U	300 U	200 U	300 U	200 U	130 U	240 U	240 U	160 U	270 U
Indeno(1,2,3-cd)pyrene	NE	NE	400 U	500 U	400 U	500 U	800 U	260 U	490 U	490 U	330 U	540 U
Phenols	NE	NE	NA	NA	NA	NA	NA	73 U	29,800	5,980	2,500	5,710
Pyrene	665	2,600	200 U	300 U	200 U	300 U	200 U	130 U	240 U	240 U	160 U	270 U
PESTICIDES/PCBs (ug/kg)												
4,4'-DDD	NE	NE	562 U	1,010 U	701 U	907 U	536 U	30.5 U	57.1 U	56.9 U	37.8 U	62.6 U
4,4'-DDE	2.2	27	562 U	1,010 U	701 U	907 U	536 U	**32.4**	57.1 U	56.9 U	**272**	62.6 U
4,4'-DDT	NE	46.1	562 U	1,010 U	701 U	907 U	536 U	43.5 U	81.6 U	138 U	54 U	89.4 U
delta-BHC	NE	NE	562 U	1,030	701	907 U	536 U	30.5 U	57.1 U	56.9 U	37.8 U	62.6 U
Aroclor-1260	NE	180	2,810 U	5,030 U	2,100 U	2,720 U	1,610 U	450 U	840 U	840 U	560 U	920 U

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-11 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study									
Site ID	ERL	**ERM**	5SE1	5SE2	5SE3	5SE4	5SE5	5SE1	5SE2	5SE3	5SE4	5SE5
Sample ID	Sediment	**Sediment**	5SE1	5SE2	5SE3	5SE4	5SE5	5SE01	5SE02	5SE03	5SE04	5SE05
Sample Date	Screening	**Screening**	11/28/85	11/28/85	11/28/85	11/28/85	11/28/85	10/07/87	10/06/87	10/06/87	10/06/87	10/06/87
Depth Range (ft.)	Value	**Value**	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00
	(ug/kg)	(ug/kg)										
DIOXINS (ug/kg)												
Total HxCDD	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total HxCDF	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PeCDF	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total TCDF	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORINATED HERBICIDES (ug/kg)												
OP-PESTICIDES (ug/kg)												
EXPLOSIVES (ug/kg)												
ASBESTOS (MFL)												
TOC (%)												

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-11 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Relative Risk Ranking			RFI Investigation		
Site ID	ERL	**ERM**	1SD01	1SD02	1SD03	1SD01	1SD02	1SD03
Sample ID	Sediment	**Sediment**	1SD01	1SD02	1SD03	1SD01	1SD02	1SD03
Sample Date	Screening	**Screening**	10/30/95	10/30/95	10/30/95	10/22/96	10/22/96	11/10/96
Depth Range (ft.)	Value	**Value**	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
	(ug/kg)	(ug/kg)						
VOLATILES (ug/kg)								
Methylene chloride	NE	NE	6 U	7 U	8 U	6 U	7 U	6 U
Tetrachloroethene	NE	NE	6 U	2 J	2 J	6 UJ	7 U	6 UJ
Xylene (total)	NE	NE	6 U	7 U	8 U	6 U	7 U	2 J
SEMIVOLATILES (ug/kg)								
Benzo(a)anthracene	261	1,600	410 U	470 U	530 U	120 J	500 U	410 U
Benzo(a)pyrene	430	1,600	410 U	470 U	530 U	160 J	500 U	410 U
Benzo(b)fluoranthene	NE	NE	410 U	470 U	530 U	310 J	500 U	410 U
Benzo(g,h,i)perylene	NE	NE	410 U	470 U	530 U	140 J	500 U	410 U
Benzo(k)fluoranthene	NE	NE	410 U	470 U	530 U	130 J	500 U	410 U
Bis(2-ethylhexyl)phthalate	NE	NE	130 J	470 U	110 J	200 J	500 U	410 U
Chrysene	384	2,800	410 U	470 U	530 U	180 J	500 U	410 U
Di-n-octylphthalate	NE	NE	410 U	470 U	530 U	440 U	500 U	410 U
Fluoranthene	600	5,100	410 U	470 U	530 U	130 J	500 U	410 U
Indeno(1,2,3-cd)pyrene	NE	NE	410 U	470 U	530 U	140 J	500 U	410 U
Phenols	NE	NE	NA	NA	NA	NA	NA	NA
Pyrene	665	2,600	410 U	470 U	530 U	180 J	62 J	410 U
PESTICIDES/PCBs (ug/kg)								
4,4'-DDD	NE	NE	9.7 U	11 U	64 U	42	97	9.9 U
4,4'-DDE	2.2	27	9.7 U	11 U	64 U	**930**	**370**	9.9 U
4,4'-DDT	NE	46.1	9.7 U	11 U	64 U	**130**	**63**	9.9 U
delta-BHC	NE	NE	4.8 U	5.6 U	32 U	10 U	12 U	5 U
Aroclor-1260	NE	180	97 U	110 U	640 U	200 U	**440**	99 U

Data Qualifiers:
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UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-11 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Relative Risk Ranking			RFI Investigation		
Site ID	ERL	**ERM**	1SD01	1SD02	1SD03	1SD01	1SD02	1SD03
Sample ID	Sediment	**Sediment**	1SD01	1SD02	1SD03	1SD01	1SD02	1SD03
Sample Date	Screening	**Screening**	10/30/95	10/30/95	10/30/95	10/22/96	10/22/96	11/10/96
Depth Range (ft.)	Value	**Value**	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
	(ug/kg)	(ug/kg)						
DIOXINS (ug/kg)								
Total HxCDD	NE	NE	0.15 U	0.19 U	0.24 U	0.64 J	2.4 J	NA
Total HxCDF	NE	NE	0.13 U	0.13 U	0.22 U	0.31 J	2.2 J	NA
Total PeCDF	NE	NE	0.15 U	0.12 U	0.14 U	0.13 U	0.34 J	NA
Total TCDF	NE	NE	0.1 U	0.1 U	0.1 U	0.05 U	0.13 J	NA
CHLORINATED HERBICIDES (ug/kg)								
OP-PESTICIDES (ug/kg)								
EXPLOSIVES (ug/kg)								
ASBESTOS (MFL)								
TOC (%)								

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-11 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	ERL Sediment Screening Value (ug/kg)	**ERM Sediment Screening Value** (ug/kg)	Number Exceeding ERL Sediment Screening Value	Range Exceeding ERL Sediment Screening Value	**Number Exceeding ERM Sediment Screening Value**	**Range Exceeding ERM Sediment Screening Value**	Location Maximum Detect
VOLATILES (ug/kg)							
Methylene chloride	NE	NE	NE		NE		5SE05
Tetrachloroethene	NE	NE	NE		NE		1SD02, 1SD03
Xylene (total)	NE	NE	NE		NE		1SD03
SEMIVOLATILES (ug/kg)							
Benzo(a)anthracene	261	1,600	0/16		0/16		1SD01
Benzo(a)pyrene	430	1,600	0/16		0/16		1SD01
Benzo(b)fluoranthene	NE	NE	NE		NE		1SD01
Benzo(g,h,i)perylene	NE	NE	NE		NE		1SD01
Benzo(k)fluoranthene	NE	NE	NE		NE		1SD01
Bis(2-ethylhexyl)phthalate	NE	NE	NE		NE		1SD01
Chrysene	384	2,800	0/16		0/16		1SD01
Di-n-octylphthalate	NE	NE	NE		NE		5SE2
Fluoranthene	600	5,100	0/16		0/16		1SD01
Indeno(1,2,3-cd)pyrene	NE	NE	NE		NE		1SD01
Phenols	NE	NE	NE		NE		5SE02
Pyrene	665	2,600	0/16		0/16		1SD01
PESTICIDES/PCBs (ug/kg)							
4,4'-DDD	NE	NE	NE		NE		1SD02
4,4'-DDE	2.2	27	4/16	32.4 - 930	4/16	32.4 - 930	1SD01
4,4'-DDT	NE	46.1	NE		2/16	63-130	1SD01
delta-BHC	NE	NE	NE		NE		5SE2
Aroclor-1260	NE	180	NE		1/16	440	1SD02

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-11 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	ERL Sediment Screening Value (ug/kg)	**ERM Sediment Screening Value** (ug/kg)	Number Exceeding ERL Sediment Screening Value	Range Exceeding ERL Sediment Screening Value	**Number Exceeding ERM Sediment Screening Value**	**Range Exceeding ERM Sediment Screening Value**	Location Maximum Detect
DIOXINS (ug/kg)							
Total HxCDD	NE	NE	NE		NE		1SD02
Total HxCDF	NE	NE	NE		NE		1SD02
Total PeCDF	NE	NE	NE		NE		1SD02
Total TCDF	NE	NE	NE		NE		1SD02
CHLORINATED HERBICIDES (ug/kg)							
OP-PESTICIDES (ug/kg)							
EXPLOSIVES (ug/kg)							
ASBESTOS (MFL)							
TOC (%)							

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-12 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SEDIMENT
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study									
Site ID	ERL	**ERM**	5SE1	5SE2	5SE3	5SE4	5SE5	5SE1	5SE2	5SE3	5SE4	5SE5
Sample ID	Sediment	**Sediment**	5SE1	5SE2	5SE3	5SE4	5SE5	5SE01	5SE02	5SE03	5SE04	5SE05
Sample Date	Screening	**Screening**	11/28/85	11/28/85	11/28/85	11/28/85	11/28/85	10/07/87	10/06/87	10/06/87	10/06/87	10/06/87
Depth Range (ft.)	Value	**Value**	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00	0.00-0.00
	(mg/kg)	(mg/kg)										
Inorganics (mg/kg)												
Antimony	NE	NE	3.8	5.2	5.1	24	7.3	7.9 U	15 U	16 U	10 U	16 U
Arsenic	8.2	70	14.4	11.6 U	13.4	32	22	4.47	6.05	5.58	3.78	3.45
Barium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NE	NE	0.415 U	0.776 U	0.526 U	1.33	0.954	0.587 U	1.13 U	1.16 U	0.743 U	1.18 U
Cadmium	1.2	9.6	0.623 U	1.16 U	0.788 U	0.91 U	0.595 U	3.04	3.13	2.4	1.28	1.63
Chromium	81	370	21.9	28.4	29.3	54.1	33.5	51.4	23.8	19.6	10.2	34.7
Cobalt	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	34	270	36.8	54.7	43.4	119	78.8	72.1	97.3	73.5	36.1	54.7
Lead	46.7	218	76.4	24.4 U	21	19.1 U	12.5 U	10.1	19.2	21.6	11	13.9 U
Mercury	0.15	0.71	0.109	0.187 U	0.131 U	0.174 U	0.1 U	0.095 U	0.173 U	0.186 U	0.129 U	0.198 U
Nickel	20.9	51.6	6.72	11.8	8.77	22.3	15.6	14.4	12.9 U	13.2 U	8.45	13.5 U
Selenium	NE	NE	19.8	31.3	27.4	85.4	49.7	3.47	6.5	1.12 U	1.09	5.51
Silver	1	3.7	1.08 U	1.94 U	1.33 U	2.03 U	1.36 U	0.55 U	1.06 U	1.2	0.691 U	1.1 U
Sulfide	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tin	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	150	410	25.9	42.8	32.8	72.8	50.8	75.7	98.1	89.5	51.5	50.2

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-12 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SEDIMENT
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Relative Risk Ranking			RFI Investigation		
Site ID	ERL	**ERM**	1SD01	1SD02	1SD03	1SD01	1SD02	1SD03
Sample ID	Sediment	**Sediment**	1SD01	1SD02	1SD03	1SD01	1SD02	1SD03
Sample Date	Screening	**Screening**	10/30/95	10/30/95	10/30/95	10/22/96	10/22/96	11/10/96
Depth Range (ft.)	Value	**Value**	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
	(mg/kg)	(mg/kg)						
Inorganics (mg/kg)								
Antimony	NE	NE	2.2 UJ	2.5 UJ	2.9 UJ	23.6 J	14.5 J	1.4 UJ
Arsenic	8.2	70	0.19 UJ	0.43 J	0.32 J	4.8 J	5.5 J	0.19 J
Barium	NE	NE	122	147	129	143	165	196 J
Beryllium	NE	NE	0.1 U	0.1 U	0.12 U	0.44	0.56	0.22
Cadmium	1.2	9.6	0.4 U	0.44 U	0.52 U	4.7	2.4	0.34
Chromium	81	370	15.1	38.9	18.3	49.2	43.2	22.4
Cobalt	NE	NE	6.4	28	4.6	18.8	14.7	13.5
Copper	34	270	14.5	110	21.5	**1,020**	**608**	50.8
Lead	46.7	218	1.5	2.9	4.3	**659** J	**966** J	1.3 J
Mercury	0.15	0.71	0.06 U	0.06 U	0.05 U	**0.85**	0.2	0.03 U
Nickel	20.9	51.6	3.1	16.7	5	**63.3**	31.6	8.7
Selenium	NE	NE	0.18 UJ	0.35 J	0.41 J	0.24 J	0.45 UJ	0.16 UJ
Silver	1	3.7	0.31 U	0.37	0.39 U	0.38 J	0.21 UJ	0.15 U
Sulfide	NE	NE	31.1 U	33.8 UJ	45.2 J	30.7 UJ	35.7 UJ	28.8 R
Tin	NE	NE	1.7 U	1.9 U	2.2 U	181	33.9	0.74 U
Vanadium	NE	NE	65.3	220	101	115	128	133
Zinc	150	410	9.9	32.3	21.6	**1,780**	**1,100**	15.6

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-12 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SEDIMENT
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	ERL Sediment Screening Value (mg/kg)	**ERM Sediment Screening Value** (mg/kg)	Number Exceeding ERL Sediment Screening Value	Range Exceeding ERL Sediment Screening Value	**Number Exceeding ERM Sediment Screening Value**	**Range Exceeding ERM Sediment Screening Value**	Location Maximum Detect
Inorganics (mg/kg)							
Antimony	NE	NE	NE		NE		5SE4
Arsenic	8.2	70	4/16	13.4 - 32	0/16		5SE4
Barium	NE	NE	NE		NE		1SD03
Beryllium	NE	NE	NE		NE		5SE4
Cadmium	1.2	9.6	7/16	1.28 - 4.7	0/16		1SD01
Chromium	81	370	0/16		0/16		5SE4
Cobalt	NE	NE	NE		NE		1SD02
Copper	34	270	14/16	36.1 - 1,020	2/16	608 - 1,020	1SD01
Lead	46.7	218	3/16	76.4 - 966 J	2/16	659 J - 966 J	1SD02
Mercury	0.15	0.71	2/16	0.2 - 0.85	1/16	0.85	1SD01
Nickel	20.9	51.6	3/16	22.3 - 63.3	1/16	63.3	1SD01
Selenium	NE	NE	NE		NE		5SE4
Silver	1	3.7	1/16	1.2	0/16		5SE03
Sulfide	NE	NE	NE		NE		1SD03
Tin	NE	NE	NE		NE		1SD01
Vanadium	NE	NE	NE		NE		1SD02
Zinc	150	410	2/16	1,100 - 1,780	2/16	1,100 - 1,780	1SD01

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-13 (continued)

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study										SI
Site ID		**EPA Region III**	5GW01	5GW02	5GW03	5GW04	5GW05	5GW01	5GW02	5GW03	5GW04	5GW05	5GW01
Sample ID	Federal	**Tap Water**	5GW1	5GW2	5GW3	5GW4	5GW5	5GW01	5GW02	5GW03	5GW04	5GW05	05GW101
Sample Date	MCL	**RBC**	03/06/86	03/06/86	03/06/86	03/06/86	03/12/86	10/12/87	10/12/87	10/13/87	10/13/87	10/12/87	12/1/92
	(ug/l)	(ug/l)											
VOLATILES (ug/l)													
Chloroform	100	0.15	**0.54**	0.43 U	0.46 U	0.46 U	0.48 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	NA
1,1,2,2-Tetrachloroethane	NE	0.05	**1.1**	0.49 U	0.52 U	0.51 U	0.51 U	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U	NA
SEMIVOLATILES (ug/l)													
Pentachlorophenol	1	0.56	**22**	**11**	**12**	**25**	10 U	10 U	10 U	10 U	10 U	10 U	52 U
Bis(2-ethylhexyl)phthalate	6	4.78	1 U	1 U	1 U	1	2	1 U	1 U	1.5	1	**22**	3 J
Phenols	NE	22,000	NA	NA	NA	NA	NA	76	30	350	800	220	NA
PESTICIDES/PCBs (ug/l)													
4,4'-DDE	NE	0.20	0.013 U	0.013 U	0.013 U	0.013 U	0.014 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.1 U
Heptachlor	0.4	0.00234	0.013 U	0.013 U	0.013 U	0.013 U	0.014 U	0.005 U	0.005 U	0.005 U	0.005 U	0.471 U	**0.0032** J
Aldrin	NE	0.00394	**0.045**	0.013 U	0.013 U	0.013 U	0.014 U	0.008 U	0.008 U	0.008 U	0.008 U	0.824 U	0.05 U
beta-BHC	NE	0.04	0.013 U	0.02	0.013 U	0.013 U	0.014 U	0.005 U	0.005 U	0.005 U	0.005 U	0.471 U	0.05 U
CHLORINATED HERBICIDES (ug/l)													
2,4,5-TP (Silvex)	50	292	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-T	NE	365	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS (ug/l)													
Total HxCDD	NE	0.0000045	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OP-PESTICIDES (ug/l)													
EXPLOSIVES (ug/l)													
ASBESTOS (MFL)													

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable Result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-13 (continued)

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			RFI Investigation									
Site ID		**EPA Region III**	1MW01	1MW01	1MW02	1MW03	1MW04	5GW01	5GW02	5GW04	1MW05	5GW03R
Sample ID	Federal	**Tap Water**	1MW01	1MW01D	1MW02	1MW03	1MW04	5GW01	5GW02	5GW04	1GW05	5GW03R
Sample Date	MCL	**RBC**	11/05/96	11/05/96	11/05/96	11/05/96	11/05/96	11/06/96	11/05/96	11/05/96	10/01/97	10/01/97
	(ug/l)	(ug/l)										
VOLATILES (ug/l)												
Chloroform	100	0.15	5 U	5 U	5 U	5 U	**2** J	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	NE	0.05	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
SEMIVOLATILES (ug/l)												
Pentachlorophenol	1	0.56	50 U	50 U	54 U	56 U	56 U	57 U	50 U	50 U	53 U	52 U
Bis(2-ethylhexyl)phthalate	6	4.78	2 R	10 U	81 U	11 U	11 U	11 U	14 U	10 U	10 U	10 U
Phenols	NE	22,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBs (ug/l)												
4,4'-DDE	NE	0.20	0.1 U	0.1 UJ	0.056 J	0.1 U	0.1 U	0.095 U	0.1 U	0.1 U	0.11 U	0.12 U
Heptachlor	0.4	0.00234	0.05 U	0.05 UJ	0.056 UJ	0.05 U	0.05 U	0.048 U	0.05 U	0.05 U	0.053 U	0.059 U
Aldrin	NE	0.00394	**0.03**	**0.02** J	**0.1** J	0.05 U	0.05 U	0.048 U	0.05 U	0.05 U	0.053 U	0.059 U
beta-BHC	NE	0.04	0.05 U	0.05 UJ	0.056 UJ	0.05 U	0.05 U	0.048 U	0.05 U	0.05 U	0.053 U	0.059 U
CHLORINATED HERBICIDES (ug/l)												
2,4,5-TP (Silvex)	50	292	1.2 U	1.2 U	0.11 U	0.081 J	0.11 U	0.11 U	1.1 U	1.2 U	0.11 U	0.11 U
2,4,5-T	NE	365	1.2 U	1.2 U	0.26	0.12 U	0.11 U	0.11 U	1.1 U	1.2 U	0.11 U	0.11 U
DIOXINS (ug/l)												
Total HxCDD	NE	0.0000045	0.0004 U	0.0004 U	0.0004 U	0.0003 U	0.0006 U	0.0005 U	**0.0005** J	0.0006 U	0.0004 U	0.00036 U
OP-PESTICIDES (ug/l)												
EXPLOSIVES (ug/l)												
ASBESTOS (MFL)												

Data Qualifiers:
- U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
- UJ - Not detected, quantitation limit may be inaccurate or imprecise.
- J - Analyte present. Reported value may not be accurate or precise.
- R - Unreliable Result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:
- NE - Not Established.
- NA - Not Analyzed.

TABLE 5-13 (continued)

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Number Exceeding Federal MCL	Range Exceeding Federal MCL	**Number Exceeding EPA Region III Tap Water RBC**	**Range Exceeding EPA Region III Tap Water RBC**	Location Maximum Detect
VOLATILES (ug/l)							
Chloroform	100	0.15	0/20		2/20	0.54 - 2 J	1MW04
1,1,2,2-Tetrachloroethane	NE	0.05	NE		1/20	1.1	5GW1
SEMIVOLATILES (ug/l)							
Pentachlorophenol	1	0.56	4/21	11 - 25	4/21	11 - 25	5GW4
Bis(2-ethylhexyl)phthalate	6	4.78	1/21	22	1/21	22	5GW05
Phenols	NE	22,000	NE		0/5		5GW04
PESTICIDES/PCBs (ug/l)							
4,4'-DDE	NE	0.20	NE		0/21		1MW02
Heptachlor	0.4	0.00234	0/21		1/21	0.0032 J	05GW101A
Aldrin	NE	0.00394	NE		4/21	0.02J - 0.1 J	1MW02
beta-BHC	NE	0.04	NE		0/21		5GW2
CHLORINATED HERBICIDES (ug/l)							
2,4,5-TP (Silvex)	50	292	0/10		0/10		1MW03
2,4,5-T	NE	365	NE		0/10		1MW02
DIOXINS (ug/l)							
Total HxCDD	NE	0.0000045	NE		1/10	0.0005J	5GW02
OP-PESTICIDES (ug/l)							
EXPLOSIVES (ug/l)							
ASBESTOS (MFL)							

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable Result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-14

SUMMARY OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study										SI
Site ID		**EPA Region III**	5GW01	5GW02	5GW03	5GW04	5GW05	5GW01	5GW02	5GW03	5GW04	5GW05	5GW01
Sample ID	Federal	**Tap Water**	5GW1	5GW2	5GW3	5GW4	5GW5	5GW01	5GW02	5GW03	5GW04	5GW05	05GW101
Sample Date	MCL	**RBC**	03/06/86	03/06/86	03/06/86	03/06/86	03/12/86	10/12/87	10/12/87	10/13/87	10/13/87	10/12/87	12/01/92
	(ug/l)	(ug/l)											
Inorganics, Total (ug/l)													
Aluminum	NE	36,500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	598 J
Antimony	6	14.6	24 U	24 U	24 U	24 U	18 U	21 U	21 U	21 U	21 U	21 U	47.2 U
Arsenic	50	0.04	**20.5**	15 U	**93.4**	**88.6**	**83.9**	**2.5**	3.2 U	3.2 U	3.2 U	3.2 U	3 U
Barium	2,000	2,555	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	164 B
Beryllium	4	73	3 U	3 U	3 U	5.06	3 U	1 U	1 U	1 U	1 U	1 U	0.6 U
Cadmium	5	18	3 U	3 U	3 U	3 U	3 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.8 U
Calcium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	158,000
Chromium	100	110	3.25	6.05	18.1	26.9	28.4	16	9.7	**205**	**178**	**163**	10.3 UJ
Chromium (Hexavalent)	NE	110	20 U	20 U	22	20 U	34.6	10 U	10 U	10 U	10 U	110	NA
Cobalt	NE	2,190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.6 U
Copper	1,300	1,460	23.9	58.2	**1,850**	113	55.8	2.8 U	9.2	**1,780**	2.8 U	154	5.9 B
Iron	NE	10,950	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	857 J
Lead	15	NE	24 U	24 U	24 U	24 U	21 U	20 U	20 U	4,000 U	2,000 U	2,000 U	1.8 U
Magnesium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	150,000
Manganese	NE	730	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	162 J
Mercury	2	NE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ
Nickel	100	730	3 U	4.32	46.3	48	12.6	8.6 U	8.6 U	34.1	17.8	20.5	18.7 U
Selenium	50	183	21 U	21 U	21 U	21 U	21 U	10.5	9.5	**359**	**310**	122	2.4 UJ
Silver	NE	183	3 U	3 U	3 U	3 U	3 U	3.6 U	3.7	37.7	24.7	37.6	6.3 U
Sodium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,040,000 J
Thallium	2	3	**10.6**	**9.64**	**4,310**	**3,860**	**3,450**	5 U	5 U	10 U	10 U	**69.4**	1.5 UJ
Tin	NE	21,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NE	256	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41.7 B
Zinc	NE	11,000	33.2	55.1	124	4,580	76.3	35	1.8 U	222	2	192	25.8

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm.
B - Not detected substantially above the level in blanks.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-14

SUMMARY OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			RFI Investigation									
Site ID		**EPA Region III**	1MW01	1MW01D	1MW02	1MW03	1MW04	5GW01	5GW02	5GW04	1MW05	5GW03R
Sample ID	Federal	**Tap Water**	1MW01	1MW01D	1MW02	1MW03	1MW04	5GW01	5GW02	5GW04	1GW05	5GW03R
Sample Date	MCL	**RBC**	11/05/96	11/05/96	11/05/96	11/05/96	11/05/96	11/06/96	11/05/96	11/05/96	10/01/97	10/01/97
	(ug/l)	(ug/l)										
Inorganics, Total (ug/l)												
Aluminum	NE	36,500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	6	14.6	80 U	**86.7**	16 U	16 U	**25.1**	16 U	80 U	80 U	2.5 J	1.4 J
Arsenic	50	0.04	26 R	26 R	26 R	26 R	26 R	26 R	26 R	26 R	2.1 U	2.1 U
Barium	2,000	2,555	723	745	47.5	248	806	177	45.5	69.7	350	690
Beryllium	4	73	2 U	2 U	0.4 U	0.4 U	4.8	0.4 U	2 U	2 U	0.82 J	0.67 J
Cadmium	5	18	**30.9** J	**23.4** J	2.1 UJ	2.1 UJ	2.1 UJ	5.5 J	**20.4** J	**24.6** J	0.3 U	0.3 U
Calcium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	110	50.6	48.2	1.7 U	2.3	**259**	1.7 U	8.5 U	8.5 U	**113**	59.1
Chromium (Hexavalent)	NE	110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NE	2,190	86.5	92.2	2.8 U	3.5	354	2.8 U	157	77.2	104	59.1
Copper	1,300	1,460	1,010	1,030	6.2	15.5	**2,950**	9.8	**1,720**	8.5	81.9	199
Iron	NE	10,950	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	15	NE	37.7 J	13 R	13 R	13 R	144 J	26 R	26 R	26 R	6.3	4.9
Magnesium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NE	730	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	NE	0.62	0.28	0.1 U	0.1 U	6.5	0.1 U	0.1	0.1 U	0.1 U	0.1 U
Nickel	100	730	53.7	43.5	6.7 U	9.8	188	6.7 U	33.5 U	35.9	86.9	41.5
Selenium	50	183	36 R	36 R	36 R	36 R	36 R	36 R	36 R	36 R	2 UJ	2 UJ
Silver	NE	183	9 UJ	9 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	9 UJ	9 UJ	0.82 J	0.7 U
Sodium	NE	NE	197,000 J	194,000 J	157,000 J	370,000 J	206,000 J	938,000 J	210,000 J	170,000 J	153,000	864,000
Thallium	2	3	16 UJ	16 UJ	16 UJ	16 UJ	16 UJ	16 UJ	16 UJ	16 UJ	1.9 U	1.9 U
Tin	NE	21,900	43.5 U	43.5 U	8.7 U	8.7 U	43.8	8.7 U	43.5 U	43.5 U	2.5 J	2.8 J
Vanadium	NE	256	**511**	**519**	21.3	32.1	**913**	50.4	8.5 U	8.5 U	**330**	**344**
Zinc	NE	11,000	138	144	5.3	16.6	760	12.5	67.5	23.8	182	134

Data Qualifiers:
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UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm.
B - Not detected substantially above the level in blanks.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-14

SUMMARY OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Number Exceeding Federal MCL	Range Exceeding Federal MCL	**Number Exceeding EPA Region III Tap Water RBC**	**Range Exceeding EPA Region III Tap Water RBC**	Location Maximum Detect
Inorganics, Total (ug/l)							
Aluminum	NE	36,500	NE		0/1		05GW101A
Antimony	6	14.6	2/21	25.1-86.7	2/21	25.1-86.7	1MW01D
Arsenic	50	0.04	3/21	83.9-93.4	5/21	2.5-93.4	5GW3
Barium	2,000	2,555	0/11		0/11		1MW04
Beryllium	4	73	2/21	4.8-5.06	0/21		5GW4
Cadmium	5	18	5/21	5.5J -30.9J	4/21	20.4J - 30.9J	1MW01
Calcium	NE	NE	NE		NE		05GW101A
Chromium	100	110	5/21	113-259	5/21	113-259	1MW04
Chromium (Hexavalent)	NE	110	NE		0/10		5GW05
Cobalt	NE	2,190	NE		0/11		1MW04
Copper	1,300	1,460	4/21	1,720-2,950	4/21	1,720-2,950	1MW04
Iron	NE	10,950	NE		0/1		05GW101A
Lead	15	NE	2/21	37.7J - 144J	NE		1MW04
Magnesium	NE	NE	NE		NE		05GW101A
Manganese	NE	730	NE		0/1		05GW101A
Mercury	2	NE	1/21	6.5	NE		1MW04
Nickel	100	730	1/21	188	0/21		1MW04
Selenium	50	183	3/21	122-359	2/21	310-359	5GW03
Silver	NE	183	NE		0/21		5GW03
Sodium	NE	NE	NE		NE		05GW101A
Thallium	2	3	6/21	9.64-4,310	6/21	9.64-4,310	5GW3
Tin	NE	21,900	NE		0/10		1MW04
Vanadium	NE	256	NE		5/11	330-913	1MW04
Zinc	NE	11,000	NE		0/21		5GW4

Data Qualifiers:
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UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm.
B - Not detected substantially above the level in blanks.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-15 (continued)

SUMMARY OF INORGANIC (DISSOLVED) DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			SI	RFI Investigation				
Site ID		**EPA Region III**	5GW01	1MW01	1MW01D	1MW02	1MW03	1MW04
Sample ID	Federal	**Tap Water**	05GW101	1MW01	1MW01D	1MW02	1MW03	1MW04
Sample Date	MCL	**RBC**	12/01/92	11/05/96	11/05/96	11/05/96	11/05/96	11/05/96
	(ug/l)	(ug/l)						
Inorganics, Dissolved (ug/l)								
Antimony	6	14.6	47.2 U	80 U	80 U	16 U	16 U	16 U
Barium	2,000	2,555	155 B	127	121	44	232	29.2
Cadmium	5	18	2.8 U	**42.1** J	**35.4** J	4.7 J	2.1 UJ	4.3 J
Calcium	NE	NE	145,000	NA	NA	NA	NA	NA
Chromium	100	110	10.3 UJ	8.5 U	8.5 U	1.7 U	1.7 U	1.7 U
Cobalt	NE	2,190	9.6 U	41.2	31.8	3.6	2.8 U	2.8 U
Copper	1,300	1,460	6.8 B	11.2	11.2	3.2	2.2	3.4
Iron	NE	10,950	51.8 B	NA	NA	NA	NA	NA
Magnesium	NE	NE	143,000	NA	NA	NA	NA	NA
Manganese	NE	730	97.7	NA	NA	NA	NA	NA
Nickel	100	730	18.7 U	33.5 U	38.2	6.7 U	6.7 U	6.7 U
Sodium	NE	NE	1,030,000 J	21,700,000 J	205,000 J	152,000 J	375,000 J	175,000 J
Thallium	2	3	**16.5** J	16 UJ	16 UJ	16 UJ	16 UJ	16 UJ
Vanadium	NE	256	20.3 B	8.5 U	9.1	16.6	28.9	17.5
Zinc	NE	11,000	12.1 U	26.2	20.6	3.5	3.3	3.3

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-15 (continued)

SUMMARY OF INORGANIC (DISSOLVED) DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			RFI Investigation				
Site ID		**EPA Region III**	5GW01	5GW02	5GW04	1MW05	5GW03R
Sample ID	Federal	**Tap Water**	5GW01	5GW02	5GW04	1GW05	5GW03R
Sample Date	MCL	**RBC**	11/06/96	11/05/96	11/05/96	10/01/97	10/01/97
	(ug/l)	(ug/l)					
Inorganics, Dissolved (ug/l)							
Antimony	6	14.6	16 U	80 U	80 U	1.4 J	1.3 J
Barium	2,000	2,555	158	36.1	53.9	19.8 J	74.3 J
Cadmium	5	18	2.1 UJ	**30.2** J	**33.8** J	0.3 U	0.3 U
Calcium	NE	NE	NA	NA	NA	NA	NA
Chromium	100	110	1.7 U	8.5 U	8.5 U	3.2 J	4.3 J
Cobalt	NE	2,190	2.8 U	144	83.8	0.93 J	0.8 U
Copper	1,300	1,460	3.3	**1,680**	7.5 U	1.3 U	1.3 U
Iron	NE	10,950	NA	NA	NA	NA	NA
Magnesium	NE	NE	NA	NA	NA	NA	NA
Manganese	NE	730	NA	NA	NA	NA	NA
Nickel	100	730	6.7 U	74	71.7	0.91 J	0.6 U
Sodium	NE	NE	935,000 J	20,400,000 J	18,800,000 J	NA	NA
Thallium	2	3	16 UJ	16 UJ	16 UJ	1.9 U	1.9 U
Vanadium	NE	256	42.2	8.5 U	8.5 U	32.6 J	71.1
Zinc	NE	11,000	6.8	41.9	26.6	5.4 J	1.6 J

Data Qualifiers:
- U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
- UJ - Not detected, quantitation limit may be inaccurate or imprecise.
- J - Analyte present. Reported value may not be accurate or precise.

Notes:
- NE - Not Established.
- NA - Not Analyzed.

TABLE 5-15 (continued)

SUMMARY OF INORGANIC (DISSOLVED) DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Number Exceeding Federal MCL	Range Exceeding Federal MCL	**Number Exceeding EPA Region III Tap Water RBC**	**Range Exceeding EPA Region III Tap Water RBC**	Location Maximum Detect
Inorganics, Dissolved (ug/l)							
Antimony	6	14.6	0/11		0/11		1GW05
Barium	2,000	2,555	0/11		0/11		1MW03
Cadmium	5	18	4/11	30.2J - 42.1J	4/11	30.2J - 42.1J	1MW01
Calcium	NE	NE	NE		NE		05GW101B
Chromium	100	110	0/11		0/11		5GW02
Cobalt	NE	2,190	NE		0/11		5GW02
Copper	1,300	1,460	1/11	1,680	1/11	1,680	5GW02
Iron	NE	10,950	NE		0/1		05GW101B
Magnesium	NE	NE	NE		NE		05GW101B
Manganese	NE	730	NE		0/1		05GW101B
Nickel	100	730	0/11		0/11		5GW02
Sodium	NE	NE	NE		NE		1MW01
Thallium	2	3	1/11	16.5J	1/11	16.5J	05GW101B
Vanadium	NE	256	NE		0/11		5GW02
Zinc	NE	11,000	NE		0/11		5GW02

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-16

SUMMARY OF ORGANIC DETECTIONS IN SURFACE WATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study									
Site ID	Federal	**EPA Region III**	5SW1	5SW2	5SW3	5SW4	5SW5	5SW1	5SW2	5SW3	5SW4	5SW5
Sample ID	Ambient	**BTAG**	5SW1	5SW2	5SW3	5SW4	5SW5	5SW01	5SW02	5SW03	5SW04	5SW05
Sample Date	Water	**Screening**	11/28/85	11/28/85	11/28/85	11/28/85	11/28/85	10/07/87	10/06/87	10/06/87	10/06/87	10/06/87
	Quality	**Levels**										
	(ug/l)	(ug/l)										
VOLATILES (ug/l)												
SEMIVOLATILES (ug/l)												
Bis(2-ethylhexyl)phthalate	NE	360	1	1	2	1 U	1	1.7	1 U	1.6	2.4	10
Di-n-octylphthalate	NE	3.4	1	**7**	**4**	1 U	2	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Phenols	NE	5,800	NA	NA	NA	NA	NA	540	29	57	33	130
PESTICIDES/PCBs (ug/l)												

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-16

SUMMARY OF ORGANIC DETECTIONS IN SURFACE WATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal Ambient Water Quality (ug/l)	**EPA Region III BTAG Screening Levels** (ug/l)	Number Exceeding Federal Ambient Water Quality	Range Exceeding Federal Ambient Water Quality	**Number Exceeding EPA Region III BTAG Screening Levels**	**Range Exceeding EPA Region III BTAG Screening Levels**	Location Maximum Detection
VOLATILES (ug/l)							
SEMIVOLATILES (ug/l)							
Bis(2-ethylhexyl)phthalate	NE	360	NE		0/10		5SW05
Di-n-octylphthalate	NE	3.4	NE		2/10	4-7	5SW2
Phenols	NE	5,800	NE		0/5		5SW01
PESTICIDES/PCBs (ug/l)							

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-17

SUMMARY OF INORGANIC (TOTAL) DETECTIONS IN SURFACE WATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study									
Site ID	Federal	**EPA Region III**	5SW1	5SW2	5SW3	5SW4	5SW5	5SW1	5SW2	5SW3	5SW4	5SW5
Sample ID	Ambient	**BTAG**	5SW1	5SW2	5SW3	5SW4	5SW5	5SW01	5SW02	5SW03	5SW04	5SW05
Sample Date	Water	**Screening**	11/28/85	11/28/85	11/28/85	11/28/85	11/28/85	10/07/87	10/06/87	10/06/87	10/06/87	10/06/87
	Quality	**Values**										
	(ug/l)	(ug/l)										
Inorganics, Total (ug/l)												
Arsenic	36	19[1]	**102**	**105**	**97**	**96**	**104**	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U
Chromium	50[3]	10,300[2]	3 U	6 U	7.49	6	6.39	108	3.7	12.4	7.7	105
Chromium (Hexavalent)	50	50	20 U	31.9	20 U	20 U	20 U	10 U	10 U	10 U	10 U	10 U
Copper	2.9	2.9	2	3 U	3 U	3 U	3 U	2.8 U	2.8 U	**24.8**	2.8 U	2.8 U
Selenium	71	35	39 U	39 U	39 U	39 U	39 U	**181**	11	14.9	8	**221**
Silver	2.3	0.0001	6 U	6 U	6 U	6 U	6 U	**28.8**	3.6 U	**3.8**	3.6 U	**28.9**
Thallium	NE	2,130	83.3	86.7	89.1	116	111	10 U	5 U	5 U	5 U	10 U
Zinc	86	19	15	16.1	4.31	**19.9**	5.01	1.8 U	1.8 U	**20.8**	1.8 U	1.8 U

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

Notes:

NE - Not Established.

NA - Not Analyzed.

(1) - Arsenic^{+3} value.

(2) - Chromium^{+3} value.

(3) - Chromium^{+6} value.

TABLE 5-17

SUMMARY OF INORGANIC (TOTAL) DETECTIONS IN SURFACE WATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal Ambient Water Quality (ug/l)	**EPA Region III BTAG Screening Values** (ug/l)	Number Exceeding Federal Ambient Water Quality	Range Exceeding Federal Ambient Water Quality	**Number Exceeding EPA Region III BTAG Screening Values**	**Range Exceeding EPA Region III BTAG Screening Values**	Location Maximum Detection
Inorganics, Total (ug/l)							
Arsenic	36	19[(1)]	5/10	96 - 105	5/10	96 - 105	5SW2
Chromium	50[(3)]	10,300[(2)]	2/10	105 - 108	0/10		5SW01
Chromium (Hexavalent)	50	50	0/10		0/10		5SW2
Copper	2.9	2.9	1/10	24.8	1/10	24.8	5SW03
Selenium	71	35	2/10	181 - 221	2/10	181-221	5SW05
Silver	2.3	0.0001	3/10	3.8-28.9	3/10	3.8-28.9	5SW05
Thallium	NE	2,130	NE		0/10		5SW4
Zinc	86	19	0/10		2/10	19.9-20.8	5SW03

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

Notes:

NE - Not Established.

NA - Not Analyzed.

(1) - Arsenic^{+3} value.

(2) - Chromium^{+3} value.

(3) - Chromium^{+6} value.

TABLE 5-18 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study										
Site ID	EPA Region III	**EPA Region III**	R6S1A	R6S2A	R6S3A	R6S4A	R6S5A	R6S6A	R6S7A	R6S8A	R6S9A	R6S10A	R6S11A
Sample ID	Industrial	**Residential**	R6S1A	R6S2A	R6S3A	R6S4A	R6S5A	R6S6A	R6S7A	R6S8A	R6S9A	R6S10A	R6S11A
Sample Date	RBCs	**RBCs**	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
VOLATILES (ug/kg)													
1,1,1-Trichloroethane	40,880,000	1,564,286	300 U	130 U	330 U	280 U	30 U	270 U	240 U	280 U	140 U	110 U	130 U
Acetone	204,400,000	7,821,429	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	204,400,000	7,821,429	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	763,093	85,163	270 U	570 U	250 U	230 U	220 U	250 U	230 U	270 U	620 U	520 U	290 U
Toluene	408,800,000	15,642,857	150 U	1,300 U	170 U	160 U	150 U	130 U	120 U	140 U	170 U	140 U	150 U
SEMIVOLATILES (ug/kg)													
Benzo(a)anthracene	7,840	875	50 U	60 U	50 U	40 U	70	100	40 U	40 U	50 U	40 U	40 U
Benzo(a)pyrene	784	88	100 U	100 U	90 U	40 U	40	**200**	40 U	40 U	70 U	40 U	50 U
Benzo(b)fluoranthene	7,840	875	70 U	90 U	70 U	40 U	60	200	40 U	40 U	60 U	40 U	40 U
Benzo(g,h,i)perylene	61,320,000	2,346,429	180 U	200 U	160 U	80 U	60 U	80	70 U	70 U	130 U	70 U	90 U
Benzo(k)fluoranthene	78,400	8,750	80 U	90 U	70 U	40 U	40	90	40 U	40 U	60 U	40 U	40 U
Bis(2-ethylhexyl)phthalate	408,800	45,623	50 U	60 U	50	40 U	60	200	50	40 U	80	40 U	40 U
Chrysene	784,000	87,497	50 U	60 U	50 U	40 U	80	100	40 U	40 U	50 U	40 U	40 U
Dibenzo(a,h)anthracene	784	88	200 U	200 U	200 U	80 U	60 U	90 U	70 U	70 U	100 U	70 U	90 U
Di-n-octylphthalate	40,880,000	1,564,286	50 U	100	50 U	40 U	100	40 U	100	200	50 U	80 U	40 U
Fluoranthene	81,760,000	3,128,571	50 U	60 U	50 U	40 U	60	200	20	40 U	50 U	40 U	40 U
Indeno(1,2,3-cd)pyrene	7,840	875	200 U	200 U	100 U	70 U	50 U	60 U	60 U	70 U	100 U	60 U	90 U
Phenanthrene	61,320,000	2,346,429	50 U	60 U	50 U	40 U	40 U	30	40 U	40 U	50 U	40 U	50 U
Pyrene	61,320,000	2,346,429	50 U	60 U	50 U	40 U	60	200	20	40 U	50 U	40 U	40 U

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
E - Concentration exceeds calibration range of GC/MS instrument.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-18 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study										
Site ID	EPA Region III	**EPA Region III**	R6S1A	R6S2A	R6S3A	R6S4A	R6S5A	R6S6A	R6S7A	R6S8A	R6S9A	R6S10A	R6S11A
Sample ID	Industrial	**Residential**	R6S1A	R6S2A	R6S3A	R6S4A	R6S5A	R6S6A	R6S7A	R6S8A	R6S9A	R6S10A	R6S11A
Sample Date	RBCs	**RBCs**	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
PESTICIDES/PCBs (ug/kg)													
4,4'-DDD	23,847	2,661	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
4,4'-DDE	16,833	1,879	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
4,4'-DDT	16,833	1,879	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
Aldrin	337	38	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
alpha-BHC	908	101	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
beta-BHC	3,180	355	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
delta-BHC	NE	NE	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
Dieldrin	358	40	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
Endosulfan I	12,264,000	469,286	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
Endosulfan II	12,264,000	469,286	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
Endosulfan sulfate	12,264,000	469,286	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
Endrin	613,200	23,464	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
Endrin aldehyde	NE	NE	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
Endrin ketone	613,200	23,464	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	4,402	491	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
Heptachlor	1,272	142	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
Heptachlor epoxide	629	70	395 U	475 U	388 U	364 U	346 U	350 U	308 U	358 U	385 U	327 U	364 U
DIOXINS (ug/kg)													
Total HxCDD	0.38	0.043	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total HxCDF	0.38	0.043	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
E - Concentration exceeds calibration range of GC/MS instrument.

Notes:

NE - Not Established.
NA - Not Analyzed.

CHLORINATED HERBICIDES (ug/kg)
OP-PESTICIDES (ug/kg)

TABLE 5-18 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study										
Site ID	EPA Region III	**EPA Region III**	R6S1A	R6S2A	R6S3A	R6S4A	R6S5A	R6S6A	R6S7A	R6S8A	R6S9A	R6S10A	R6S11A
Sample ID	Industrial	**Residential**	R6S1A	R6S2A	R6S3A	R6S4A	R6S5A	R6S6A	R6S7A	R6S8A	R6S9A	R6S10A	R6S11A
Sample Date	RBCs	**RBCs**	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
EXPLOSIVES (ug/kg)													
ASBESTOS (MFL)													

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
E - Concentration exceeds calibration range of GC/MS instrument.
Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-18 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study				Supplemental Investigation						
Site ID	EPA Region III	**EPA Region III**	R6S12A	R6S13A	R6S14A	R6S15A	06SS101	06SS102	06SS103	06SS104	06SS105	06SS106	06SS108
Sample ID	Industrial	**Residential**	R6S12A	R6S13A	R6S14A	R6S15A	06SS141	06SS143	06SS145	06SS147	06SS150	06SS153	06SS155D
Sample Date	RBCs	**RBCs**	12/05/85	12/05/85	12/05/85	12/05/85	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.5-1.5	0.5-1.5	0.0-0.50	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.67
VOLATILES (ug/kg)													
1,1,1-Trichloroethane	40,880,000	1,564,286	110 U	100 U	270 U	590 U	8 U	10 U	7 U	6 U	10 U	7 U	NA
Acetone	204,400,000	7,821,429	NA	NA	NA	NA	16 UJ	180 J	370 J	370 J	560 J	220 J	NA
Carbon disulfide	204,400,000	7,821,429	NA	NA	NA	NA	17 U	10 U	7 U	3 J	10 U	7 U	NA
Methylene chloride	763,093	85,163	260 U	2,500 U	240 U	8,200 U	24	9 J	65	39 U	40	32	NA
Toluene	408,800,000	15,642,857	130 U	130 U	130 U	260 U	8 U	10 U	7	6 U	10 U	7 U	NA
SEMIVOLATILES (ug/kg)													
Benzo(a)anthracene	7,840	875	40 U	40 U	30	40 U	2,000 U	2,500 U	1,900 U	1,500 U	2,700 U	1,700 U	NA
Benzo(a)pyrene	784	88	40 U	40 U	40 U	40 U	2,000 U	2,500 U	**180** J	1,500 U	2,700 U	1,700 U	NA
Benzo(b)fluoranthene	7,840	875	40 U	40 U	40 U	40 U	2,000 U	2,500 U	180 J	1,500 U	2,700 U	1,700 U	NA
Benzo(g,h,i)perylene	61,320,000	2,346,429	70 U	70 U	70 U	70 U	2,000 U	2,500 U	1,900 U	1,500 U	2,700 U	1,700 U	NA
Benzo(k)fluoranthene	78,400	8,750	40 U	40 U	40 U	40 U	2,000 U	2,500 U	260 J	1,500 U	2,700 U	1,700 U	NA
Bis(2-ethylhexyl)phthalate	408,800	45,623	40 U	40 U	300	4,000	2,000 U	2,500 U	1,900 U	1,500 U	2,700 U	1,700 U	NA
Chrysene	784,000	87,497	40 U	40 U	40 U	40 U	2,000 U	2,500 U	150 J	1,500 U	2,700 U	1,700 U	NA
Dibenzo(a,h)anthracene	784	88	70 U	60 U	60 U	70 U	2,000 U	2,500 U	1,900 U	1,500 U	2,700 U	1,700 U	NA
Di-n-octylphthalate	40,880,000	1,564,286	40 U	40 U	100	40 U	2,000 U	2,500 U	1,900 U	1,500 U	2,700 U	1,700 U	NA
Fluoranthene	81,760,000	3,128,571	40 U	40 U	30	40 U	2,000 U	2,500 U	1,900 U	1,500 U	2,700 U	1,700 U	NA
Indeno(1,2,3-cd)pyrene	7,840	875	60 U	60 U	60 U	70 U	2,000 U	2,500 U	1,900 U	1,500 U	2,700 U	1,700 U	NA
Phenanthrene	61,320,000	2,346,429	40 U	40 U	40 U	40 U	2,000 U	2,500 U	1,900 U	1,500 U	2,700 U	1,700 U	NA
Pyrene	61,320,000	2,346,429	40 U	40 U	30	40 U	2,000 U	2,500 U	1,900 U	1,500 U	2,700 U	1,700 U	NA

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
E - Concentration exceeds calibration range of GC/MS instrument.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-18 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study				Supplemental Investigation						
Site ID	EPA Region III	**EPA Region III**	R6S12A	R6S13A	R6S14A	R6S15A	06SS101	06SS102	06SS103	06SS104	06SS105	06SS106	06SS108
Sample ID	Industrial	**Residential**	R6S12A	R6S13A	R6S14A	R6S15A	06SS141	06SS143	06SS145	06SS147	06SS150	06SS153	06SS155D
Sample Date	RBCs	**RBCs**	12/05/85	12/05/85	12/05/85	12/05/85	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.5-1.5	0.5-1.5	0.0-0.50	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.67
PESTICIDES/PCBs (ug/kg)													
4,4'-DDD	23,847	2,661	326 U	294 U	354 U	324 U	5.1	0.75 NJ	4.5 UJ	4.2 U	4.7 UJ	4 U	4.2 U
4,4'-DDE	16,833	1,879	326 U	294 U	354 U	324 U	3 NJ	4.3 U	5.3 J	4.2 U	4.7 U	4 U	4.2 U
4,4'-DDT	16,833	1,879	326 U	294 U	354 U	324 U	1 NJ	4.3 U	1.1 J	4.2 UJ	0.74 J	4 U	4.2 U
Aldrin	337	38	326 U	294 U	354 U	324 U	2.5 U	2.2 U	2.3 U	2.2 U	2.4 U	0.27 J	2.2 U
alpha-BHC	908	101	326 U	294 U	354 U	324 U	0.085 NJ	2.2 U	2.3 UJ	2.2 U	2.4 U	2.1 U	2.2 U
beta-BHC	3,180	355	326 U	294 U	354 U	324 U	0.8 NJ	2.2 U	2.3 U	2.2 U	2.4 U	2.1 U	2.2 U
delta-BHC	NE	NE	326 U	294 U	354 U	324 U	0.39 NJ	2.2 U	2.3 U	2.2 U	2.4 U	2.1 U	2.2 U
Dieldrin	358	40	326 U	294 U	354 U	324 U	4.9 U	2 J	4.5 UJ	4.2 U	4.7 U	4 U	4.2 U
Endosulfan I	12,264,000	469,286	326 U	294 U	354 U	324 U	2.5 U	2.8 NJ	2.3 UJ	2.2 U	2.4 U	2.1 U	2.2 U
Endosulfan II	12,264,000	469,286	326 U	294 U	354 U	324 U	4.9 U	4.3 U	0.15 NJ	4.2 U	4.7 U	4 U	4.2 U
Endosulfan sulfate	12,264,000	469,286	326 U	294 U	354 U	324 U	1 NJ	4.3 U	4.5 U	4.2 U	4.7 U	4 U	4.2 U
Endrin	613,200	23,464	326 U	294 U	354 U	324 U	4.9 UJ	4.3 U	0.15 NJ	4.2 U	4.7 U	4 U	4.2 U
Endrin aldehyde	NE	NE	326 U	294 U	354 U	324 U	4.9 U	4.3 U	0.71 J	4.2 U	4.7 U	4 U	4.2 U
Endrin ketone	613,200	23,464	NA	NA	NA	NA	4.9 UJ	4.3 U	0.25 NJ	4.2 U	4.7 U	4 U	4.2 U
gamma-BHC (Lindane)	4,402	491	326 U	294 U	354 U	324 U	2.5 U	2.2 U	1.2 NJ	2.2 U	2.4 U	2.1 U	2.2 U
Heptachlor	1,272	142	326 U	294 U	354 U	324 U	0.36 J	2.2 U	0.17 J	0.11 J	2.4 UJ	2.1 UJ	2.2 UJ
Heptachlor epoxide	629	70	326 U	294 U	354 U	324 U	2.5 UJ	0.46 NJ	2.3 UJ	2.2 U	2.4 U	2.1 U	2.2 U
DIOXINS (ug/kg)													
Total HxCDD	0.38	0.043	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total HxCDF	0.38	0.043	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

NJ - Presumptive evidence for the presence of the parameter at an estimated value.

E - Concentration exceeds calibration range of GC/MS instrument.

Notes:

NE - Not Established.

NA - Not Analyzed.

CHLORINATED HERBICIDES (ug/kg)

OP-PESTICIDES (ug/kg)

TABLE 5-18 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study				Supplemental Investigation						
Site ID	EPA Region III	**EPA Region III**	R6S12A	R6S13A	R6S14A	R6S15A	06SS101	06SS102	06SS103	06SS104	06SS105	06SS106	06SS108
Sample ID	Industrial	**Residential**	R6S12A	R6S13A	R6S14A	R6S15A	06SS141	06SS143	06SS145	06SS147	06SS150	06SS153	06SS155D
Sample Date	RBCs	**RBCs**	12/05/85	12/05/85	12/05/85	12/05/85	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.5-1.5	0.5-1.5	0.0-0.50	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.67
EXPLOSIVES (ug/kg)													
ASBESTOS (MFL)													

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
E - Concentration exceeds calibration range of GC/MS instrument.
Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-18 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			RFI Investigation								
Site ID	EPA Region III	**EPA Region III**	2MW01	2MW02	2MW03	2SB01	2SB02	2SB02	2SB03	2SB04	2SB05
Sample ID	Industrial	**Residential**	2MW01-00	2MW02-00	2MW03-00	2SB01-00	2SB02-00	2SB02-00D	2SB03-00	2SB04-00	2SB05-00
Sample Date	RBCs	**RBCs**	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
VOLATILES (ug/kg)											
1,1,1-Trichloroethane	40,880,000	1,564,286	9	6 U	6 U	6 U	12 J	6 U	8 U	6 U	6 UJ
Acetone	204,400,000	7,821,429	13 U	12 UJ	12 U	12 UJ	12 U	12 U	15 U	12 U	12 U
Carbon disulfide	204,400,000	7,821,429	6 U	6 U	6 U	6 U	6 U	6 U	8 U	6 U	6 U
Methylene chloride	763,093	85,163	6 U	6 U	6 UJ	6 U	6 U	6 UJ	8 UJ	6 UJ	6 UJ
Toluene	408,800,000	15,642,857	6 U	6 U	6 U	6 U	6 UJ	6 U	8 U	6 U	6 UJ
SEMIVOLATILES (ug/kg)											
Benzo(a)anthracene	7,840	875	420 U	41 J	390 U	410 U	410 U	400 U	210 J	160 J	69 J
Benzo(a)pyrene	784	88	420 U	52 J	390 U	410 U	410 U	43 J	**340** J	**150** J	79 J
Benzo(b)fluoranthene	7,840	875	420 U	150 J	390 U	410 U	72 J	83 J	510	280 J	130 J
Benzo(g,h,i)perylene	61,320,000	2,346,429	420 U	78 J	390 U	410 U	410 U	400 U	300 J	82 J	72 J
Benzo(k)fluoranthene	78,400	8,750	420 U	58 J	390 U	410 U	410 U	400 U	220 J	110 J	53 J
Bis(2-ethylhexyl)phthalate	408,800	45,623	420 U	390 U	390 U	410 U	410 U	400 U	490 U	400 U	390 U
Chrysene	784,000	87,497	420 U	71 J	390 U	410 U	43 J	57 J	280 J	240 J	81 J
Dibenzo(a,h)anthracene	784	88	420 U	390 U	390 U	410 U	410 U	400 U	80 J	41 J	390 U
Di-n-octylphthalate	40,880,000	1,564,286	420 U	390 U	390 U	410 U	410 U	400 U	490 U	400 U	390 U
Fluoranthene	81,760,000	3,128,571	420 U	58 J	390 U	410 U	50 J	61 J	220 J	420	100 J
Indeno(1,2,3-cd)pyrene	7,840	875	420 U	390 U	390 U	410 U	410 U	44 J	290 J	110 J	69 J
Phenanthrene	61,320,000	2,346,429	420 U	390 U	390 U	410 U	410 U	400 U	490 U	240 J	390 U
Pyrene	61,320,000	2,346,429	420 U	390 U	390 U	410 U	410 U	42 J	150 J	220 J	67 J

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
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J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
E - Concentration exceeds calibration range of GC/MS instrument.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-18 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			RFI Investigation								
Site ID	EPA Region III	**EPA Region III**	2MW01	2MW02	2MW03	2SB01	2SB02	2SB02	2SB03	2SB04	2SB05
Sample ID	Industrial	**Residential**	2MW01-00	2MW02-00	2MW03-00	2SB01-00	2SB02-00	2SB02-00D	2SB03-00	2SB04-00	2SB05-00
Sample Date	RBCs	**RBCs**	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
PESTICIDES/PCBs (ug/kg)											
4,4'-DDD	23,847	2,661	10 U	9.3 U	9.2 U	9.8 UJ	9.8 UJ	9.7 UJ	59 UJ	9.6 U	46 U
4,4'-DDE	16,833	1,879	12	9.3 U	9.2 U	9.8 U	9.8 U	9.7 U	8.9 J	3.2	8.1
4,4'-DDT	16,833	1,879	12	9.3 U	9.2 U	9.8 U	9.8 U	9.7 U	5.9 J	2.4	3.9 J
Aldrin	337	38	5 U	4.6 U	4.6 U	4.9 U	4.9 U	4.8 U	30 U	4.8 U	23 U
alpha-BHC	908	101	5 U	4.6 U	4.6 U	4.9 U	4.9 U	4.8 U	30 U	4.8 U	23 U
beta-BHC	3,180	355	5 U	4.6 U	4.6 U	4.9 U	4.9 U	4.8 U	30 U	4.8 U	23 U
delta-BHC	NE	NE	5 U	4.6 U	4.6 U	4.9 U	4.9 U	4.8 U	30 U	4.8 U	23 U
Dieldrin	358	40	10 U	9.3 U	9.2 U	9.8 U	9.8 U	9.7 U	59 U	9.6 U	46 U
Endosulfan I	12,264,000	469,286	5 U	4.6 U	4.6 U	4.9 U	4.9 U	4.8 U	30 U	4.8 U	23 U
Endosulfan II	12,264,000	469,286	10 U	9.3 U	9.2 U	9.8 U	9.8 U	9.7 U	59 U	9.6 U	46 U
Endosulfan sulfate	12,264,000	469,286	10 U	9.3 U	9.2 U	9.8 U	9.8 U	9.7 U	59 U	9.6 U	46 U
Endrin	613,200	23,464	10 U	9.3 U	9.2 U	9.8 U	9.8 U	9.7 U	59 U	9.6 U	46 U
Endrin aldehyde	NE	NE	10 U	9.3 U	9.2 U	9.8 U	9.8 U	9.7 U	59 U	9.6 U	46 U
Endrin ketone	613,200	23,464	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	4,402	491	5 U	4.6 U	4.6 U	4.9 U	4.9 U	4.8 U	30 U	4.8 U	23 U
Heptachlor	1,272	142	5 U	4.6 U	4.6 U	4.9 U	4.9 U	4.8 U	30 U	4.8 U	23 U
Heptachlor epoxide	629	70	5 U	4.6 U	4.6 U	4.9 U	4.9 U	4.8 U	30 U	4.8 U	23 U
DIOXINS (ug/kg)											
Total HxCDD	0.38	0.043	0.14 U	0.12 U	0.29 U	0.33 U	0.27 U	0.38 U	**0.37** J	0.16 U	0.22 U
Total HxCDF	0.38	0.043	0.17 U	0.14 U	0.12 U	0.12 U	0.2 U	0.12 U	**0.17** J	0.1 U	0.53 U

Data Qualifiers:

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UJ - Not detected, quantitation limit may be inaccurate or imprecise.
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R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
E - Concentration exceeds calibration range of GC/MS instrument.

Notes:

NE - Not Established.
NA - Not Analyzed.

CHLORINATED HERBICIDES (ug/kg)
OP-PESTICIDES (ug/kg)

TABLE 5-18 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			RFI Investigation								
Site ID	EPA Region III	**EPA Region III**	2MW01	2MW02	2MW03	2SB01	2SB02	2SB02	2SB03	2SB04	2SB05
Sample ID	Industrial	**Residential**	2MW01-00	2MW02-00	2MW03-00	2SB01-00	2SB02-00	2SB02-00D	2SB03-00	2SB04-00	2SB05-00
Sample Date	RBCs	**RBCs**	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
EXPLOSIVES (ug/kg)											
ASBESTOS (MFL)											

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
E - Concentration exceeds calibration range of GC/MS instrument.
Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-18 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Location Maximum Detect
VOLATILES (ug/kg)							
1,1,1-Trichloroethane	40,880,000	1,564,286	0/30		0/30		2SB02-00
Acetone	204,400,000	7,821,429	0/15		0/15		06SS150
Carbon disulfide	204,400,000	7,821,429	0/15		0/15		06SS147
Methylene chloride	763,093	85,163	0/30		0/30		06SS145
Toluene	408,800,000	15,642,857	0/30		0/30		06SS145
SEMIVOLATILES (ug/kg)							
Benzo(a)anthracene	7,840	875	0/30		0/30		2SB03-00
Benzo(a)pyrene	784	88	0/30		4/30	150J - 340J	2SB03-00
Benzo(b)fluoranthene	7,840	875	0/30		0/30		2SB03-00
Benzo(g,h,i)perylene	61,320,000	2,346,429	0/30		0/30		2SB03-00
Benzo(k)fluoranthene	78,400	8,750	0/30		0/30		06SS145
Bis(2-ethylhexyl)phthalate	408,800	45,623	0/30		0/30		R6S15A
Chrysene	784,000	87,497	0/30		0/30		2SB03-00
Dibenzo(a,h)anthracene	784	88	0/30		0/30		2SB03-00
Di-n-octylphthalate	40,880,000	1,564,286	0/30		0/30		R6S8A
Fluoranthene	81,760,000	3,128,571	0/30		0/30		2SB04-00
Indeno(1,2,3-cd)pyrene	7,840	875	0/30		0/30		2SB03-00
Phenanthrene	61,320,000	2,346,429	0/30		0/30		2SB04-00
Pyrene	61,320,000	2,346,429	0/30		0/30		2SB04-00

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
E - Concentration exceeds calibration range of GC/MS instrument.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-18 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Location Maximum Detect
PESTICIDES/PCBs (ug/kg)							
4,4'-DDD	23,847	2,661	0/31		0/31		06SS141
4,4'-DDE	16,833	1,879	0/31		0/31		2MW01-00
4,4'-DDT	16,833	1,879	0/31		0/31		2MW01-00
Aldrin	337	38	0/31		0/31		06SS153
alpha-BHC	908	101	0/31		0/31		06SS141
beta-BHC	3,180	355	0/31		0/31		06SS141
delta-BHC	NE	NE	NE		NE		06SS141
Dieldrin	358	40	0/31		0/31		06SS143
Endosulfan I	12,264,000	469,286	0/31		0/31		06SS143
Endosulfan II	12,264,000	469,286	0/31		0/31		06SS145
Endosulfan sulfate	12,264,000	469,286	0/31		0/31		06SS141
Endrin	613,200	23,464	0/31		0/31		06SS145
Endrin aldehyde	NE	NE	NE		NE		06SS145
Endrin ketone	613,200	23,464	0/7		0/7		06SS145
gamma-BHC (Lindane)	4,402	491	0/31		0/31		06SS145
Heptachlor	1,272	142	0/31		0/31		06SS141
Heptachlor epoxide	629	70	0/31		0/31		06SS143
DIOXINS (ug/kg)							
Total HxCDD	0.38	0.043	0/9		1/9	0.37J	2SB03-00
Total HxCDF	0.38	0.043	0/9		1/9	0.17J	2SB03-00

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
E - Concentration exceeds calibration range of GC/MS instrument.

Notes:
NE - Not Established.
NA - Not Analyzed.

CHLORINATED HERBICIDES (ug/kg)
OP-PESTICIDES (ug/kg)

TABLE 5-18 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Location Maximum Detect
EXPLOSIVES (ug/kg)							
ASBESTOS (MFL)							

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
E - Concentration exceeds calibration range of GC/MS instrument.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-19 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				Confirmation Study								
Site ID	2 x Average	**EPA Region III**	EPA Region III	R6S1A	R6S2A	R6S3A	R6S4A	R6S5A	R6S6A	R6S7A	R6S8A	R6S9A
Sample ID	Detected	**Industrial**	Residential	R6S1A	R6S2A	R6S3A	R6S4A	R6S5A	R6S6A	R6S7A	R6S8A	R6S9A
Sample Date	Background	**RBCs**	RBCs	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
Inorganics, Total (mg/kg)												
Aluminum	NE	2,044,000	78,214	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	0	818	31	11	10	10	9.4	18	28	27	51	15
Arsenic	2.4	3.81547	0.43	**16.6**	**57.1**	**15.9**	**22.5**	**35.5**	**12.7**	**134**	**30.9**	**54.1**
Barium	181	143,080	5,475	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.45	4,100	160	0.221 U	1.01	0.276	0.623	1.11	0.289	3.31	2.18	1.17
Cadmium	0	2,044	78	0.332 U	2.88	0.361 U	0.323 U	0.881	0.729	2.41	1.54	1.12
Calcium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	59	6,132	235	16.9	23.7	17.9	17.5	34.9	13.8	39	36	78.2
Cobalt	44	122,640	4,693	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	234	81,760	3,129	22.6	50.3	20.6	26.2	380	51	823	163	107
Iron	NE	613,200	23,464	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	15	NE	NE	6.97 U	8.62 U	7.59 U	6.77 U	222	6.13 U	76.5	92.8	180
Magnesium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NE	40,880	1,564	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.11	NE	NE	0.052	0.075 U	0.061 U	0.048 U	0.714	0.991	0.261	0.136	0.105
Nickel	17	40,880	1,564	6.32	12.5	6.35	6.59	14.5	5.07	30.3	22.2	56.1
Potassium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	1.5	10,220	391	13.9	55.8	16.1	21	49.3	13.5	80.5	65.1	44.6
Sodium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tin	2.4	1,226,400	46,929	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	355	14,308	548	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	125	613,200	23,464	28.3	71.7	31.9	48.2	329	81.5	439	520	339
EP-TOX (ug/l)												
Lead	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

B - Not detected substantially above the level reported in laboratory or field blanks.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-19 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				Confirmation Study								
Site ID	2 x Average	**EPA Region III**	EPA Region III	R6S10A	R6S11A	R6S12A	R6S13A	R6S14A	R6S15A	R6S4A	R6S5A	R6S9A
Sample ID	Detected	**Industrial**	Residential	R6S10A	R6S11A	R6S12A	R6S13A	R6S14A	R6S15A	R6S04A	R6S05A	R6S09A
Sample Date	Background	**RBCs**	RBCs	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	12/05/85	11/04/87	11/04/87	11/04/87
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
Inorganics, Total (mg/kg)												
Aluminum	NE	2,044,000	78,214	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	0	818	31	17	9.5	9.1	20	9.4	6.5	NA	NA	NA
Arsenic	2.4	3.81547	0.43	**35.7**	**25.5**	**88.2**	2.63 U	**72.4**	**34.9**	NA	NA	NA
Barium	181	143,080	5,475	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.45	4,100	160	2.52	1.59	6.14	14.9	1.61	1.39	NA	NA	NA
Cadmium	0	2,044	78	1.69	0.872	2.41	0.762	2.41	0.577	NA	NA	NA
Calcium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	59	6,132	235	39.2	50	58.4	75.2	35.2	18.6	NA	NA	NA
Cobalt	44	122,640	4,693	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	234	81,760	3,129	383	211	527	383	332	101	NA	NA	NA
Iron	NE	613,200	23,464	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	15	NE	NE	3,040	568	197	58	466	169	316	376	988
Magnesium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NE	40,880	1,564	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.11	NE	NE	1.54	0.356	0.352	0.041 U	0.449	0.898	NA	NA	NA
Nickel	17	40,880	1,564	33.4	17.2	68.1	165	32.3	23.3	NA	NA	NA
Potassium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	1.5	10,220	391	93.9	65.4	426	2.63 U	68.5	60	NA	NA	NA
Sodium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tin	2.4	1,226,400	46,929	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	355	14,308	548	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	125	613,200	23,464	758	475	949	181	426	210	NA	NA	NA
EP-TOX (ug/l)												
Lead	NE	NE	NE	2.8	NA	NA	NA	NA	NA	NA	NA	10.6

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

B - Not detected substantially above the level reported in laboratory or field blanks.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-19 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				Confirmation Study									
Site ID	2 x Average	**EPA Region III**	EPA Region III	R6S10A	R6S11A	R6S12A	R6S14A	R6S15A	R6S16A	R6S17A	R6S18A	R6S19A	R6S20A
Sample ID	Detected	**Industrial**	Residential	R6S010A	R6S011A	R6S012A	R6S014A	R6S015A	R6S016A	R6S017A	R6S018A	R6S019A	R6S020A
Sample Date	Background	**RBCs**	RBCs	11/04/87	11/04/87	11/04/87	11/04/87	11/04/87	11/04/87	11/04/87	11/04/87	11/04/87	11/04/87
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
Inorganics, Total (mg/kg)													
Aluminum	NE	2,044,000	78,214	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	0	818	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	2.4	3.81547	0.43	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	181	143,080	5,475	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.45	4,100	160	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	0	2,044	78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	59	6,132	235	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	44	122,640	4,693	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	234	81,760	3,129	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NE	613,200	23,464	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	15	NE	NE	250	35.1	214	236	116	71.1	79	46.3	233	187
Magnesium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NE	40,880	1,564	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.11	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	17	40,880	1,564	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	1.5	10,220	391	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tin	2.4	1,226,400	46,929	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	355	14,308	548	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	125	613,200	23,464	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EP-TOX (ug/l)													
Lead	NE	NE	NE	NA	10.6	2.8	NA	NA	NA	NA	NA	NA	NA

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

B - Not detected substantially above the level reported in laboratory or field blanks.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-19 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				Supplemental Investigation						
Site ID	2 x Average	**EPA Region III**	EPA Region III	06SS101	06SS102	06SS103	06SS104	06SS105	06SS106	06SS108
Sample ID	Detected	**Industrial**	Residential	06SS141	06SS143	06SS145	06SS147	06SS150	06SS153	06SS155D
Sample Date	Background	**RBCs**	RBCs	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	0.5-1.5	0.5-1.5	0.0-0.50	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.67
Inorganics, Total (mg/kg)										
Aluminum	NE	2,044,000	78,214	21,600	20,000	15,100	1,660 J	36,600 J	23,900 J	27,200 J
Antimony	0	818	31	17.9 J	6.3 J	20.1 J	2.4 UJ	4 UJ	2.6 UJ	3 J
Arsenic	2.4	3.81547	0.43	**17.5**	1.2 U	**19.6**	3.3	1.2 U	**6.9**	0.82 U
Barium	181	143,080	5,475	156	100	410	24 B	189	263	83.1
Beryllium	0.45	4,100	160	0.47 B	0.51 B	0.77 B	0.15 U	1.5 B	0.41 B	1.4
Cadmium	0	2,044	78	8.7	2.1 UJ	3.9	1.3 UJ	6.3	1.5 UJ	3.9
Calcium	NE	NE	NE	51,900	9,920	48,200	487,000	6,460	166,000	1,880
Chromium	59	6,132	235	59.8	19	40.6	6.1	13.5	42.7	40.7
Cobalt	44	122,640	4,693	10.7 B	23.7	16.8	2.3 U	45.5	11.5 B	41.1
Copper	234	81,760	3,129	5,850	227	739	4.3 B	136	77.8	54.5
Iron	NE	613,200	23,464	168,000	43,400	38,000	4,040 J	107,000 J	20,800 J	62,700 J
Lead	15	NE	NE	1,210 J	130 J	4,760 J	3.1	7.5	77.4	5.6
Magnesium	NE	NE	NE	9,980	12,200	10,900	3,290	5,450	8,600	4,740
Manganese	NE	40,880	1,564	972	808	596	75.5	1,090	842	598
Mercury	0.11	NE	NE	0.15 U	0.15 U	0.45	0.12 U	0.16 U	0.12 U	0.13 U
Nickel	17	40,880	1,564	49.9	10.2 B	19.4	4.6 UJ	7.6 UJ	12 J	5.1 UJ
Potassium	NE	NE	NE	1,540 B	2,760	2,350	347 U	676 U	2,000	375 U
Selenium	1.5	10,220	391	0.75 U	0.92 U	0.7 U	0.59 UJ	0.98 UJ	0.64 UJ	0.66 UJ
Sodium	NE	NE	NE	13,100.0 J	13,100.0 J	4,940.0 J	2,800.0 J	7,830.0 J	6,900.0 J	5,630.0 J
Tin	2.4	1,226,400	46,929	NA	NA	NA	NA	NA	NA	NA
Vanadium	355	14,308	548	90.6	118	122	9.3 B	386	65.8	210
Zinc	125	613,200	23,464	3,350	200	1,440	8.3	89.2	206	40.7
EP-TOX (ug/l)										
Lead	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

B - Not detected substantially above the level reported in laboratory or field blanks.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-19 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				RFI Investigation								
Site ID	2 x Average	**EPA Region III**	EPA Region III	2MW01	2MW02	2MW03	2SB01	2SB02	2SB02	2SB03	2SB04	2SB05
Sample ID	Detected	**Industrial**	Residential	2MW01-00	2MW02-00	2MW03-00	2SB01-00	2SB02-00	2SB02-00D	2SB03-00	2SB04-00	2SB05-00
Sample Date	Background	**RBCs**	RBCs	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
Inorganics, Total (mg/kg)												
Aluminum	NE	2,044,000	78,214	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	0	818	31	1.7 UJ	1.9 J	1.5 UJ	1.5 UJ	1.6 UJ	1.5 UJ	13.3 J	1.6 UJ	2.4 J
Arsenic	2.4	3.81547	0.43	1.5	**6.2**	1.1	0.83 U	**5.1**	**4.7**	**18.6**	2.1	**6.1**
Barium	181	143,080	5,475	92.5	183	129	106	170	132	161	131	1,060
Beryllium	0.45	4,100	160	0.08	0.54	0.33	0.04 U	0.08	0.16	0.38	0.36	0.53
Cadmium	0	2,044	78	0.22 U	0.2 U	0.2 U	0.2 U	0.21 U	0.2 U	3.1	0.21 U	0.72
Calcium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	59	6,132	235	43.2 J	25.6 J	31.7 J	37.4 J	30.4 J	36.9 J	55.3 J	26.3 J	59.5 J
Cobalt	44	122,640	4,693	38.9 J	32.4 J	23.1 J	50.2 J	58.8 J	43.7 J	22.7 J	21.1 J	22.1 J
Copper	234	81,760	3,129	55.1 J	110 J	109 J	54.7 J	73.6 J	72 J	374 J	180 J	919 J
Iron	NE	613,200	23,464	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	15	NE	NE	11.6	13	60.6	16.1	35.2	34.8	1,000	156	512
Magnesium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NE	40,880	1,564	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.11	NE	NE	0.05 J	0.04 J	0.07 J	0.07 J	0.16 J	0.12 J	0.33 J	0.09 J	0.37 J
Nickel	17	40,880	1,564	18.4	17.1	16.1	18.1	15.9	18.5	34.6	13.5	17.1
Potassium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	1.5	10,220	391	0.7 J	0.84 UJ	0.7 UJ	0.93 UJ	1.1 J	1.1 J	1.1 UJ	0.9 UJ	0.84 UJ
Sodium	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tin	2.4	1,226,400	46,929	0.9 U	0.83 U	2.2	0.84 U	0.89 U	0.83 U	9.9	0.88 U	3.6
Vanadium	355	14,308	548	281 J	176 J	153 J	225 J	195 J	216 J	122 J	133 J	133 J
Zinc	125	613,200	23,464	52	107	108	62	96.3	89.8	845	231	1,260
EP-TOX (ug/l)												
Lead	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

B - Not detected substantially above the level reported in laboratory or field blanks.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-19 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	2 x Average Detected Background (mg/kg)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	Number Exceeding 2 x Average Detected Background	Range Exceeding 2 x Average Detected Background	**Number Exceeding EPA Region III Industrial RBCs**	**Range Exceeding EPA Region III Industrial RBCs**	Number Exceeding EPA Region III Residential RBCs	Range Exceeding EPA Region III Residential RBCs	Location Maximum Detect
Inorganics, Total (mg/kg)										
Aluminum	NE	2,044,000	78,214	NE		0/7		0/7		06SS150
Antimony	0	818	31	22/31	1.9J - 51	0/31		1/31	51	R6S8A
Arsenic	2.4	3.81547	0.43	23/31	3.3-134	22/31	4.7-134	26/31	1.1-134	R6S7A
Barium	181	143,080	5,475	5/16	183-1,060	0/16		0/16		2SB05-00
Beryllium	0.45	4,100	160	19/31	0.47B -14.9	0/31		0/31		R6S13A
Cadmium	0	2,044	78	18/31	0.577-8.7	0/31		0/31		06SS141
Calcium	NE	NE	NE	NE		NE		NE		06SS147
Chromium	59	6,132	235	4/31	59.5-78.2	0/31		0/31		R6S9A
Cobalt	44	122,640	4,693	3/16	45.5-58.8J	0/16		0/16		2SB02-00
Copper	234	81,760	3,129	10/31	332-5,850	0/31		1/31	5,850	06SS141
Iron	NE	613,200	23,464	NE		0/7		5/7	38,000-168,000	06SS141
Lead	15	NE	NE	34/44	16.1-4,760J	NE		NE		06SS145
Magnesium	NE	NE	NE	NE		NE		NE		06SS143
Manganese	NE	40,880	1,564	NE		0/7		0/7		06SS150
Mercury	0.11	NE	NE	14/31	0.12J - 1.54	NE		NE		R6S10A
Nickel	17	40,880	1,564	17/31	17.1-165	0/31		0/31		R6S13A
Potassium	NE	NE	NE	NE		NE		NE		06SS143
Selenium	1.5	10,220	391	14/31	13.5-426	0/31		1/31	426	R6S12A
Sodium	NE	NE	NE	NE		NE		NE		06SS141, 06SS143
Tin	2.4	1,226,400	46,929	2/9	3.6-9.9	0/9		0/9		2SB03-00
Vanadium	355	14,308	548	1/16	386	0/16		0/16		06SS150
Zinc	125	613,200	23,464	17/31	181-3,350	0/31		0/31		06SS141
EP-TOX (ug/l)										
Lead	NE	NE	NE	NE		NE		NE		R6S09A

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

B - Not detected substantially above the level reported in laboratory or field blanks.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-20 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Supplemental Investigation							RFI Investigation		
Site ID	EPA Region III	**EPA Region III**	06SS101	06SS103	06SS104	06SS104	06SS105	06SS105	06SS106	2MW01	2MW02	2MW02
Sample ID	Industrial	**Residential**	06SS142	06SS146	06SS148	06SS149-DUP	06SS151	06SS152-DUP	06SS154	2MW01-01	2MW02-02	2MW02-05
Sample Date	RBCs	**RBCs**	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/8/96	11/06/96	11/06/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	1.5-2.67	0.5-1.5	1.5-2.67	1.5-2.67	2.0-3.0	2.0-3.0	1.5-2.67	2.00-4.00	4.00-6.00	10.00-12.00
VOLATILES (ug/kg)												
Acetone	204,400,000	7,821,429	2,500 R	39 J	99 J	62 J	450 J	NA	350 EJ	22 U	13 U	12 U
Carbon disulfide	204,400,000	7,821,429	110 U	7 U	6 U	6 U	7 U	NA	7 R	7 U	6 U	6 U
Methylene chloride	763,093	85,163	590	11	23	15	27	NA	300 EJ	7 U	6 U	6 U
2-Butanone	1,226,400,000	46,928,571	410 J	15 UJ	12 UJ	12 UJ	14 UJ	NA	13 J	14 U	13 U	12 U
Benzene	197,352	22,025	18 U	7 U	6 U	6 U	7 U	NA	1 J	7 U	6 U	6 U
4-Methyl-2-pentanone	163,520,000	6,257,143	36 UJ	15 U	12 U	12 U	14 U	NA	11 J	14 UJ	13 UJ	12 UJ
Toluene	408,800,000	15,642,857	14 J	7 U	6 U	6 U	7 U	NA	18 J	7 U	6 U	6 U
Ethylbenzene	204,400,000	7,821,429	18 UJ	7 U	6 U	6 U	7 U	NA	2 J	7 U	6 U	6 U
m/p-xylene	NE	NE	18 UJ	7 U	6 U	6 U	7 U	NA	5 J	NA	NA	NA
o-Xylene	4,088,000,000	156,428,571	18 UJ	7 U	6 U	6 U	7 U	NA	3 J	NA	NA	NA
SEMIVOLATILES (ug/kg)												
2-Methylnaphthalene	40,880,000	1,564,286	4,400 U	1,700 U	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U
Fluorene	81,760,000	3,128,571	4,400 U	1,700 U	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U
Phenanthrene	61,320,000	2,346,429	4,400 U	1,900	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U
Anthracene	613,200,000	23,464,286	4,400 U	110 J	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U
Di-n-butylphthalate	204,400,000	7,821,429	4,400 U	94 J	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U
Fluoranthene	81,760,000	3,128,571	4,400 U	3,200	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U
Pyrene	61,320,000	2,346,429	4,400 U	2,100	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U
Benzo(a)anthracene	7,840	875	4,400 U	**1,000** J	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U
Chrysene	784,000	87,497	4,400 U	1,400 J	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U
Bis(2-ethylhexyl)phthalate	408,800	45,623	15,000	1,700 U	1,600 U	1,600 U	3,300	NA	630 J	470 U	430 U	400 U
Benzo(b)fluoranthene	7,840	875	4,400 U	**1,300** J	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
JS - Estimated value. Signal to noise ratio threshold exceeded.
E - Concentration exceeds calibration range of GC/MS instrument.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.

Notes:

NE - Not Established.
NA - Not Analyzed.

SEMIVOLATILES (ug/kg) (cont.)

TABLE 5-20 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Supplemental Investigation							RFI Investigation		
Site ID	EPA Region III	**EPA Region III**	06SS101	06SS103	06SS104	06SS104	06SS105	06SS105	06SS106	2MW01	2MW02	2MW02
Sample ID	Industrial	**Residential**	06SS142	06SS146	06SS148	06SS149-DUP	06SS151	06SS152-DUP	06SS154	2MW01-01	2MW02-02	2MW02-05
Sample Date	RBCs	**RBCs**	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/8/96	11/06/96	11/06/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	1.5-2.67	0.5-1.5	1.5-2.67	1.5-2.67	2.0-3.0	2.0-3.0	1.5-2.67	2.00-4.00	4.00-6.00	10.00-12.00
Benzo(k)fluoranthene	78,400	8,750	4,400 U	2,000	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U
Benzo(a)pyrene	784	88	4,400 U	**270** J	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U
Indeno(1,2,3-cd)pyrene	7,840	875	4,400 U	700 J	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U
Dibenzo(a,h)anthracene	784	88	4,400 U	**450** J	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U
Benzo(g,h,i)perylene	61,320,000	2,346,429	4,400 U	350 J	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U
Carbazole	286,160	31,936	4,400 U	92 J	1,600 U	1,600 U	1,800 U	NA	1,400 U	470 U	430 U	400 U
PESTICIDES/PCBs (ug/kg)												
beta-BHC	3,180	355	1.1 J	2.7 U	2.2 U	0.48 J	2.4 UJ	0.43 NJ	2.1 U	11 U	5.1 U	4.8 U
delta-BHC	NE	NE	0.86 J	2.7 U	2.2 U	2.1 U	2.4 U	2.5 U	2.1 U	11 U	5.1 U	4.8 U
gamma-BHC (Lindane)	4,402	491	0.13 NJ	2.7 U	2.2 U	2.1 U	2.4 UJ	2.5 U	2.1 U	11 U	5.1 U	4.8 U
Heptachlor	1,272	142	0.42 J	2.7 U	2.2 UJ	2.1 U	2.4 UJ	2.5 U	2.1 UJ	11 U	5.1 U	4.8 U
Aldrin	337	38	4.2 U	0.35 J	2.2 U	2.1 U	2.4 U	2.5 U	2.1 U	11 U	5.1 U	4.8 U
Heptachlor epoxide	629	70	4.2 UJ	2.7 U	2.2 U	2.1 U	2.4 U	2.5 U	0.35 J	11 U	5.1 U	4.8 U
Endosulfan I	12,264,000	469,286	1.5 NJ	2.7 U	2.2 U	2.1 U	2.4 UJ	2.5 U	2.1 U	11 U	5.1 U	4.8 U
Dieldrin	358	40	4.2 UJ	5.2 U	4.3 U	4 U	0.064 NJ	0.44 J	4.1 U	22 U	10 U	9.6 U
4,4'-DDE	16,833	1,879	8.2 U	5.2 U	4.3 U	4 U	0.68 J	4.8 U	4.1 U	22 U	10 U	9.6 U
Endrin	613,200	23,464	8.2 UJ	5.2 U	4.3 U	4 U	4.7 U	0.31 J	1.6 J	22 U	10 U	9.6 U
Endosulfan II	12,264,000	469,286	8.2 UJ	5.2 U	4.3 U	4 U	0.33 J	4.8 U	4.1 U	22 U	10 U	9.6 U
4,4'-DDT	16,833	1,879	8.2 U	5.2 U	4.3 U	4 U	1.7 J	0.22 NJ	4.1 UJ	22 U	10 U	9.6 U
Methoxychlor	10,220,000	391,071	1.5 J	27 U	22 U	21 U	25 UJ	25 U	21 U	110 U	51 U	48 U
alpha-Chlordane	16,352	1,825	4.2 UJ	2.7 U	2.2 U	2.1 U	2.4 U	2.5 U	1.5 NJ	110 U	51 U	48 U

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
JS - Estimated value. Signal to noise ratio threshold exceeded.
E - Concentration exceeds calibration range of GC/MS instrument.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-20 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Supplemental Investigation							RFI Investigation		
Site ID	EPA Region III	**EPA Region III**	06SS101	06SS103	06SS104	06SS104	06SS105	06SS105	06SS106	2MW01	2MW02	2MW02
Sample ID	Industrial	**Residential**	06SS142	06SS146	06SS148	06SS149-DUP	06SS151	06SS152-DUP	06SS154	2MW01-01	2MW02-02	2MW02-05
Sample Date	RBCs	**RBCs**	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/8/96	11/06/96	11/06/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	1.5-2.67	0.5-1.5	1.5-2.67	1.5-2.67	2.0-3.0	2.0-3.0	1.5-2.67	2.00-4.00	4.00-6.00	10.00-12.00
DIOXINS (ug/kg)												
Total TCDF	0.38	0.043	NA	NA	NA	NA	NA	NA	NA	0.02 U	0.03 U	0.03 U
Total HxCDD	0.38	0.043	NA	NA	NA	NA	NA	NA	NA	0.08 U	0.05 U	0.06 U
CHLORINATED HERBICIDES (ug/kg)												
OP-PESTICIDES (ug/kg)												
EXPLOSIVES (ug/kg)												
ASBESTOS (MFL)												

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
JS - Estimated value. Signal to noise ratio threshold exceeded.
E - Concentration exceeds calibration range of GC/MS instrument.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-20 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			RFI Investigation						
Site ID	EPA Region III	**EPA Region III**	2MW03	2MW03	2SB01	2SB01	2SB04	2SB05	2SB05
Sample ID	Industrial	**Residential**	2MW03-01	2MW03-01D	2SB01-02	2SB01-05	2SB04-02	2SB05-01/02	2SB05-01/02D
Sample Date	RBCs	**RBCs**	11/09/96	11/09/96	11/18/96	11/18/96	11/10/96	11/10/96	11/10/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	2.00-4.00	2.00-4.00	4.00-6.00	10.00-12.00	4.00-6.00	2.00-6.00	2.00-6.00
VOLATILES (ug/kg)									
Acetone	204,400,000	7,821,429	48 U	35 U	13 U	14 U	21	14 U	14 U
Carbon disulfide	204,400,000	7,821,429	9 U	4 J	7 U	7 U	7 U	7 U	7 U
Methylene chloride	763,093	85,163	9 U	8 U	7 U	7 U	7 U	7 U	7 U
2-Butanone	1,226,400,000	46,928,571	18 UJ	16 UJ	13 UJ	14 UJ	15 UJ	14 UJ	14 UJ
Benzene	197,352	22,025	9 U	8 UJ	7 U	7 U	7 U	7 U	7 U
4-Methyl-2-pentanone	163,520,000	6,257,143	18 UJ	16 UJ	13 U	14 U	15 UJ	14 UJ	14 UJ
Toluene	408,800,000	15,642,857	9 U	8 UJ	7 U	7 U	7 U	7 U	7 U
Ethylbenzene	204,400,000	7,821,429	9 U	8 UJ	7 U	7 U	7 U	7 U	7 U
m/p-xylene	NE	NE	NA	NA	NA	NA	NA	NA	NA
o-Xylene	4,088,000,000	156,428,571	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (ug/kg)									
2-Methylnaphthalene	40,880,000	1,564,286	620 U	540 U	83 J	450 U	480 U	450 UJ	460 U
Fluorene	81,760,000	3,128,571	620 U	540 U	240 J	450 U	480 U	450 UJ	460 U
Phenanthrene	61,320,000	2,346,429	620 U	540 U	56 J	450 U	480 U	450 UJ	460 U
Anthracene	613,200,000	23,464,286	620 U	540 U	440 U	450 U	480 U	450 UJ	460 U
Di-n-butylphthalate	204,400,000	7,821,429	620 U	540 U	440 U	450 U	480 U	450 UJ	460 U
Fluoranthene	81,760,000	3,128,571	620 U	540 U	440 U	450 U	480 U	450 UJ	460 U
Pyrene	61,320,000	2,346,429	620 U	540 U	440 UJ	450 UJ	480 U	450 UJ	460 U
Benzo(a)anthracene	7,840	875	620 U	540 U	440 U	450 U	480 U	450 UJ	460 U
Chrysene	784,000	87,497	620 U	540 U	440 U	450 U	480 U	450 UJ	460 U
Bis(2-ethylhexyl)phthalate	408,800	45,623	620 U	540 U	150 J	450 U	480 U	450 UJ	460 U
Benzo(b)fluoranthene	7,840	875	620 U	540 U	440 UJ	450 U	480 U	450 UJ	460 U

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
JS - Estimated value. Signal to noise ratio threshold exceeded.
E - Concentration exceeds calibration range of GC/MS instrument.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.

Notes:

NE - Not Established.
NA - Not Analyzed.

SEMIVOLATILES (ug/kg) (cont.)

TABLE 5-20 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			RFI Investigation						
Site ID	EPA Region III	**EPA Region III**	2MW03	2MW03	2SB01	2SB01	2SB04	2SB05	2SB05
Sample ID	Industrial	**Residential**	2MW03-01	2MW03-01D	2SB01-02	2SB01-05	2SB04-02	2SB05-01/02	2SB05-01/02D
Sample Date	RBCs	**RBCs**	11/09/96	11/09/96	11/18/96	11/18/96	11/10/96	11/10/96	11/10/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	2.00-4.00	2.00-4.00	4.00-6.00	10.00-12.00	4.00-6.00	2.00-6.00	2.00-6.00
Benzo(k)fluoranthene	78,400	8,750	620 U	540 U	440 UJ	450 U	480 U	450 UJ	460 U
Benzo(a)pyrene	784	88	620 U	540 U	440 UJ	450 U	480 U	450 UJ	460 U
Indeno(1,2,3-cd)pyrene	7,840	875	620 U	540 U	440 UJ	450 U	480 U	450 UJ	460 U
Dibenzo(a,h)anthracene	784	88	620 U	540 U	440 UJ	450 U	480 U	450 UJ	460 U
Benzo(g,h,i)perylene	61,320,000	2,346,429	620 U	540 U	440 UJ	450 U	480 U	450 UJ	460 U
Carbazole	286,160	31,936	620 U	540 U	440 U	450 U	480 U	450 UJ	460 U
PESTICIDES/PCBs (ug/kg)									
beta-BHC	3,180	355	15 U	13 U	5.4 U	5.5 U	5.9 U	5.4 U	5.6 U
delta-BHC	NE	NE	15 U	13 U	5.4 U	5.5 U	5.9 U	5.4 U	5.6 U
gamma-BHC (Lindane)	4,402	491	15 U	13 U	5.4 U	5.5 U	5.9 U	5.4 U	5.6 U
Heptachlor	1,272	142	15 U	13 U	5.4 U	5.5 U	5.9 U	5.4 U	5.6 U
Aldrin	337	38	15 U	13 U	5.4 U	5.5 U	5.9 U	5.4 U	5.6 U
Heptachlor epoxide	629	70	15 U	13 U	5.4 U	5.5 U	5.9 U	5.4 U	5.6 U
Endosulfan I	12,264,000	469,286	15 U	13 U	5.4 U	5.5 U	5.9 U	5.4 U	5.6 U
Dieldrin	358	40	30 U	26 U	11 U	11 U	12 U	11 U	11 U
4,4'-DDE	16,833	1,879	30 U	26 U	11 U	11 U	12 U	11 U	11 U
Endrin	613,200	23,464	30 U	26 U	11 U	11 U	12 U	11 U	11 U
Endosulfan II	12,264,000	469,286	30 U	26 U	11 U	11 U	12 U	11 U	11 U
4,4'-DDT	16,833	1,879	30 U	26 U	11 U	11 U	12 U	11 U	11 U
Methoxychlor	10,220,000	391,071	150 U	130 U	54 U	55 U	59 U	54 U	56 U
alpha-Chlordane	16,352	1,825	150 U	130 U	54 U	55 U	59 U	54 U	56 U

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
JS - Estimated value. Signal to noise ratio threshold exceeded.
E - Concentration exceeds calibration range of GC/MS instrument.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-20 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			RFI Investigation						
Site ID	EPA Region III	**EPA Region III**	2MW03	2MW03	2SB01	2SB01	2SB04	2SB05	2SB05
Sample ID	Industrial	**Residential**	2MW03-01	2MW03-01D	2SB01-02	2SB01-05	2SB04-02	2SB05-01/02	2SB05-01/02D
Sample Date	RBCs	**RBCs**	11/09/96	11/09/96	11/18/96	11/18/96	11/10/96	11/10/96	11/10/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	2.00-4.00	2.00-4.00	4.00-6.00	10.00-12.00	4.00-6.00	2.00-6.00	2.00-6.00
DIOXINS (ug/kg)									
Total TCDF	0.38	0.043	0.04 U	0.03 U	NA	NA	**0.28** JS	**0.07** JS	0.02 U
Total HxCDD	0.38	0.043	0.09 U	0.08 U	NA	NA	**0.21** JS	0.09 U	0.07 U
CHLORINATED HERBICIDES (ug/kg)									
OP-PESTICIDES (ug/kg)									
EXPLOSIVES (ug/kg)									
ASBESTOS (MFL)									

Data Qualifiers:
- U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
- UJ - Not detected, quantitation limit may be inaccurate or imprecise.
- J - Analyte present. Reported value may not be accurate or precise.
- JS - Estimated value. Signal to noise ratio threshold exceeded.
- E - Concentration exceeds calibration range of GC/MS instrument.
- NJ - Presumptive evidence for the presence of the parameter at an estimated value.

Notes:
- NE - Not Established.
- NA - Not Analyzed.

TABLE 5-20 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Location Maximum Detection
VOLATILES (ug/kg)							
Acetone	204,400,000	7,821,429	0/16		0/16		06SS151
Carbon disulfide	204,400,000	7,821,429	0/16		0/16		2MW03-01D
Methylene chloride	763,093	85,163	0/16		0/16		06SS142
2-Butanone	1,226,400,000	46,928,571	0/16		0/16		06SS142
Benzene	197,352	22,025	0/16		0/16		06SS154
4-Methyl-2-pentanone	163,520,000	6,257,143	0/16		0/16		06SS154
Toluene	408,800,000	15,642,857	0/16		0/16		06SS154
Ethylbenzene	204,400,000	7,821,429	0/16		0/16		06SS154
m/p-xylene	NE	NE	NE		NE		06SS154
o-Xylene	4,088,000,000	156,428,571	0/6		0/6		06SS154
SEMIVOLATILES (ug/kg)							
2-Methylnaphthalene	40,880,000	1,564,286	0/16		0/16		2SB01-02
Fluorene	81,760,000	3,128,571	0/16		0/16		2SB01-02
Phenanthrene	61,320,000	2,346,429	0/16		0/16		06SS146
Anthracene	613,200,000	23,464,286	0/16		0/16		06SS146
Di-n-butylphthalate	204,400,000	7,821,429	0/16		0/16		06SS146
Fluoranthene	81,760,000	3,128,571	0/16		0/16		06SS146
Pyrene	61,320,000	2,346,429	0/16		0/16		06SS146
Benzo(a)anthracene	7,840	875	0/16		1/16	1,000J	06SS146
Chrysene	784,000	87,497	0/16		0/16		06SS146
Bis(2-ethylhexyl)phthalate	408,800	45,623	0/16		0/16		06SS142
Benzo(b)fluoranthene	7,840	875	0/16		1/16	1,300J	06SS146

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
JS - Estimated value. Signal to noise ratio threshold exceeded.
E - Concentration exceeds calibration range of GC/MS instrument.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.

Notes:
NE - Not Established.
NA - Not Analyzed.

SEMIVOLATILES (ug/kg) (cont.)

TABLE 5-20 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Location Maximum Detection
Benzo(k)fluoranthene	78,400	8,750	0/16		0/16		06SS146
Benzo(a)pyrene	784	88	0/16		1/16	270J	06SS146
Indeno(1,2,3-cd)pyrene	7,840	875	0/16		0/16		06SS146
Dibenzo(a,h)anthracene	784	88	0/16		1/16	450J	06SS146
Benzo(g,h,i)perylene	61,320,000	2,346,429	0/16		0/16		06SS146
Carbazole	286,160	31,936	0/16		0/16		06SS146
PESTICIDES/PCBs (ug/kg)							
beta-BHC	3,180	355	0/17		0/17		06SS142
delta-BHC	NE	NE	NE		NE		06SS142
gamma-BHC (Lindane)	4,402	491	0/17		0/17		06SS142
Heptachlor	1,272	142	0/17		0/17		06SS142
Aldrin	337	38	0/17		0/17		06SS146
Heptachlor epoxide	629	70	0/17		0/17		06SS154
Endosulfan I	12,264,000	469,286	0/17		0/17		06SS142
Dieldrin	358	40	0/17		0/17		06SS152-DUP
4,4'-DDE	16,833	1,879	0/17		0/17		06SS151
Endrin	613,200	23,464	0/17		0/17		06SS154
Endosulfan II	12,264,000	469,286	0/17		0/17		06SS151
4,4'-DDT	16,833	1,879	0/17		0/17		06SS151
Methoxychlor	10,220,000	391,071	0/17		0/17		06SS142
alpha-Chlordane	16,352	1,825	0/17		0/17		06SS154

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
JS - Estimated value. Signal to noise ratio threshold exceeded.
E - Concentration exceeds calibration range of GC/MS instrument.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-20 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Location Maximum Detection
DIOXINS (ug/kg)							
Total TCDF	0.38	0.043	0/8		2/8	0.07JS -0.28JS	2SB04-02
Total HxCDD	0.38	0.043	0/8		1/8	0.21JS	2SB04-02
CHLORINATED HERBICIDES (ug/kg)							
OP-PESTICIDES (ug/kg)							
EXPLOSIVES (ug/kg)							
ASBESTOS (MFL)							

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
JS - Estimated value. Signal to noise ratio threshold exceeded.
E - Concentration exceeds calibration range of GC/MS instrument.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-21 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				Confirmation Study		Supplemental Investigation					
Site ID	2 X Average	**EPA Region III**	EPA Region III	R6S10	R6S10	06SS101	06SS103	06SS104	06SS104	06SS105	06SS106
Sample ID	Detected	**Industrial**	Residential	R6S010B	R6S010C	06SS142	06SS146	06SS148	06SS149-DUP	06SS151	06SS154
Sample Date	Background	**RBCs**	RBCs	11/04/87	11/04/87	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92	11/17/92
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	1.00-2.00	2.00-3.00	1.5-2.67	0.5-1.5	1.5-2.67	1.5-2.67	2.0-3.0	1.5-2.67
Inorganics, Total (mg/kg)											
Aluminum	NE	2,044,000	78,214	NA	NA	12,400	18,600	7,220 J	13,700 J	38,600 J	22,800 J
Antimony	0	818	31	NA	NA	21.4 J	19.8 J	2.4 UJ	2.4 UJ	2.8 UJ	2.9 J
Arsenic	2.0	3.8	0.4	NA	NA	**21.4**	**18.7**	0.95 B	1.7 B	1.5 J	**10.5**
Barium	222	143,080	5,475	NA	NA	25.1 U	509	32.4 B	41.9 B	213	173
Beryllium	0.7	4,100	160	NA	NA	0.82 B	0.57 B	0.16 B	0.22 B	1.3 B	0.42 B
Cadmium	0.7	2,044	78	NA	NA	9.3	5	1.3 UJ	1.3 UJ	5.1	1.5 UJ
Calcium	NE	NE	NE	NA	NA	15,900	61,000	20,100 B	337,000	10,700	154,000
Chromium	133	6,132	235	NA	NA	110	39.4	15.4	21.7	2.8	26.4
Cobalt	30	122,640	4,693	NA	NA	6.9 U	15.7	3.5 B	4.9 B	14.1	14.2
Copper	193	81,760	3,129	NA	NA	1,490	774	13.2	17.6	86.3	60.7
Iron	NE	613,200	23,464	NA	NA	238,000	44,900	9,050 J	16,000 J	84,100 J	24,400 J
Lead	8.7	NE	NE	199	63.6	546 J	5,850 J	7.4	3.4	5	89.5
Magnesium	NE	NE	NE	NA	NA	14,600	12,700	5,890	8,250	10,900	9,220
Manganese	NE	40,880	1,564	NA	NA	766	601	212	458	245	615
Mercury	0.1	NE	NE	NA	NA	0.3 U	0.68	0.1 U	0.09 U	0.13 U	0.13 U
Nickel	32	40,880	1,564	NA	NA	108	17.4	4.5 UJ	4.6 UJ	5.3 UJ	5.1 UJ
Potassium	NE	NE	NE	NA	NA	3,690	2,200	549 U	788 B	1,200 B	1,880
Selenium	0.6	10,220	391	NA	NA	2.1 J	0.72 J	0.58 UJ	0.59 UJ	0.68 UJ	0.65 UJ
Silver	0	10,220	391	NA	NA	3.2 UJ	1.3 UJ	1.1 UJ	1.1 UJ	1.3 UJ	1.2 UJ
Sodium	NE	NE	NE	NA	NA	50,100 J	7,540 J	3,830 J	5,630 J	11,300 J	7,470 J
Sulfide	0	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
Tin	3.0	1,226,400	46,929	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	462	14,308	548	NA	NA	145	116	22.8	33.7	257	70.5
Zinc	89	613,200	23,464	NA	NA	592	2,010	24.3	33.8	80.7	102

Data Qualifiers:

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J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

B - Reported value is less than CRDL but greater than instrument detection limit.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-21 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				RFI Investigation				
Site ID	2 X Average	**EPA Region III**	EPA Region III	2MW01	2MW02	2MW02	2MW03	2MW03
Sample ID	Detected	**Industrial**	Residential	2MW01-01	2MW02-02	2MW02-05	2MW03-01	2MW03-01D
Sample Date	Background	**RBCs**	RBCs	11/08/96	11/06/96	11/06/96	11/09/96	11/09/96
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	2.00-4.00	4.00-6.00	10.00-12.00	2.00-4.00	2.00-4.00
Inorganics, Total (mg/kg)								
Aluminum	NE	2,044,000	78,214	NA	NA	NA	NA	NA
Antimony	0	818	31	4.6 J	3.6 J	1.9 UJ	3.3 J	3.3 J
Arsenic	2.0	3.8	0.4	1.6 J	0.73 J	0.2 UJ	**4.2** J	2.6 UJ
Barium	222	143,080	5,475	67.8 J	90.8 J	367 J	209 J	193 J
Beryllium	0.7	4,100	160	0.05 U	0.05 U	0.05 U	0.13	0.21
Cadmium	0.7	2,044	78	0.33	0.24 U	0.3	0.49	0.58
Calcium	NE	NE	NE	NA	NA	NA	NA	NA
Chromium	133	6,132	235	38.5	28.8	6.3	39.9	31.2
Cobalt	30	122,640	4,693	42.5	35.6	73.4	25.7	15.8
Copper	193	81,760	3,129	44.8	40.1	50.3	205	69.6
Iron	NE	613,200	23,464	NA	NA	NA	NA	NA
Lead	8.7	NE	NE	7.8	14.2	3.5	350	82.4
Magnesium	NE	NE	NE	NA	NA	NA	NA	NA
Manganese	NE	40,880	1,564	NA	NA	NA	NA	NA
Mercury	0.1	NE	NE	0.06	0.03 U	0.02 U	0.06	0.07
Nickel	32	40,880	1,564	16.8	11.1	13.5	20.4	16.3
Potassium	NE	NE	NE	NA	NA	NA	NA	NA
Selenium	0.6	10,220	391	1 J	0.21 J	0.18 UJ	1.3 J	0.61 J
Silver	0	10,220	391	0.22 U	0.2 U	0.21 U	0.23 U	0.26 U
Sodium	NE	NE	NE	NA	NA	NA	NA	NA
Sulfide	0	NE	NE	34.2 R	31 R	27.6 R	952 J	1,750 J
Tin	3.0	1,226,400	46,929	1.1 U	0.99 U	1 U	62.5	12.9
Vanadium	462	14,308	548	232	210	141	142	132
Zinc	89	613,200	23,464	42.6	36.3	36.1	180	66.7

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

B - Reported value is less than CRDL but greater than instrument detection limit.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-21 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

				RFI Investigation				
Site ID	2 X Average	**EPA Region III**	EPA Region III	2SB01	2SB01	2SB04	2SB05	2SB05
Sample ID	Detected	**Industrial**	Residential	2SB01-02	2SB01-05	2SB04-02	2SB05-01/02	2SB05-01/02D
Sample Date	Background	**RBCs**	RBCs	11/18/96	11/18/96	11/10/96	11/10/96	11/10/96
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	4.00-6.00	10.00-12.00	4.00-6.00	2.00-6.00	2.00-6.00
Inorganics, Total (mg/kg)								
Aluminum	NE	2,044,000	78,214	NA	NA	NA	NA	NA
Antimony	0	818	31	3.9 J	4.9 J	5 J	5.1 J	9.4 J
Arsenic	2.0	3.8	0.4	0.37 J	0.21 UJ	1.6 J	1.3 J	1 J
Barium	222	143,080	5,475	56.9	33.5	490 J	357 J	222 J
Beryllium	0.7	4,100	160	0.19	0.11	0.06	0.04 U	0.14
Cadmium	0.7	2,044	78	0.29	0.39	0.62	0.64	0.47 U
Calcium	NE	NE	NE	NA	NA	NA	NA	NA
Chromium	133	6,132	235	36.7	20.8	35.9	39.8	31.3
Cobalt	30	122,640	4,693	27.1 J	22.1 J	70.3	102	112
Copper	193	81,760	3,129	63.2 J	97.4 J	55.4	39.5	38.4
Iron	NE	613,200	23,464	NA	NA	NA	NA	NA
Lead	8.7	NE	NE	4.5 R	2.2 R	23.4	10	10.3
Magnesium	NE	NE	NE	NA	NA	NA	NA	NA
Manganese	NE	40,880	1,564	NA	NA	NA	NA	NA
Mercury	0.1	NE	NE	0.03 U	0.03 U	0.06	0.04	0.04
Nickel	32	40,880	1,564	20.3	16.9	17.7	19.7	22
Potassium	NE	NE	NE	NA	NA	NA	NA	NA
Selenium	0.6	10,220	391	0.17 UJ	0.19 UJ	0.67 J	1 UJ	1.1 J
Silver	0	10,220	391	0.21 U	0.21 U	0.22 U	0.2 U	1.6
Sodium	NE	NE	NE	NA	NA	NA	NA	NA
Sulfide	0	NE	NE	32.2 U	34.5 U	34.9 R	32.1 R	35.1 R
Tin	3.0	1,226,400	46,929	1 U	1 U	4.2	0.94 U	2 U
Vanadium	462	14,308	548	191 J	222 J	240	253	261
Zinc	89	613,200	23,464	60.3 J	29.5 J	57.5	36.9	37.1

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

B - Reported value is less than CRDL but greater than instrument detection limit.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-21 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	2 X Average Detected Background (mg/kg)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	Number Exceeding 2 X Average Detected Background	Range Exceeding 2 X Average Detected Background	**Number Exceeding EPA Region III Industrial RBCs**	**Range Exceeding EPA Region III Industrual RBCs**	Number Exceeding EPA Region III Residential RBCs	Range Exceeding EPA Region III Residential RBCs	Location Maximum Detect
Inorganics, Total (mg/kg)										
Aluminum	NE	2,044,000	78,214	NE		0/6		0/6		06SS151
Antimony	0	818	31	12/16	2.9J - 21.4J	0/16		0/16		06SS142
Arsenic	2.0	3.8	0.4	4/16	4.2J- 21.4	4/16	4.2J-21.4	12/16	0.73J - 21.4	06SS142
Barium	222	143,080	5,475	4/16	357J - 509	0/16		0/16		06SS146
Beryllium	0.7	4,100	160	2/16	0.82B - 1.3B	0/16		0/16		06SS151
Cadmium	0.7	2,044	78	3/16	5-9.3	0/16		0/16		06SS142
Calcium	NE	NE	NE	NE		NE		NE		06SS149-DUP
Chromium	133	6,132	235	0/16		0/16		0/16		06SS142
Cobalt	30	122,640	4,693	6/16	35.6-112	0/16		0/16		2SB05-01/02D
Copper	193	81,760	3,129	3/16	205-1,490	0/16		0/16		06SS142
Iron	NE	613,200	23,464	NE		0/6		4/6	24,400J - 238,000	06SS142
Lead	8.7	NE	NE	11/18	10-5,850J	NE		NE		06SS146
Magnesium	NE	NE	NE	NE		NE		NE		06SS142
Manganese	NE	40,880	1,564	NE		0/6		0/6		06SS142
Mercury	0.1	NE	NE	1/16	0.68	NE		NE		06SS146
Nickel	32	40,880	1,564	1/16	108	0/16		0/16		06SS142
Potassium	NE	NE	NE	NE		NE		NE		06SS142
Selenium	0.6	10,220	391	7/16	0.61J - 21J	0/16		0/16		06SS142
Silver	0	10,220	391	1/16	1.6	0/16		0/16		2SB05-01/02D
Sodium	NE	NE	NE	NE		NE		NE		06SS142
Sulfide	0	NE	NE	2/10	952J - 1,750J	NE		NE		2MW03-01D
Tin	3.0	1,226,400	46,929	3/10	4.2-62.5	0/10		0/10		2MW03-01
Vanadium	462	14,308	548	0/16		0/16		0/16		2SB05-01/02D
Zinc	89	613,200	23,464	4/16	102-2,010	0/16		0/16		06SS146

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

B - Reported value is less than CRDL but greater than instrument detection limit.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-22 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study						Relative Risk Ranking				RFI Investigation		
Site ID	ERL	**ERM**	6SE1	6SE2	6SE3	6SE1	6SE2	6SE3	2SD01	2SD02	2SD03	2SD03	2SD01	2SD02	2SD03
Sample ID	Sediment	**Sediment**	R6SE1	R6SE2	R6SE3	R6SE01	R6SE02	R6SE03	2SD01	2SD02	2SD03	2SD03D	2SD01	2SD02	2SD03
Sample Date	Screening	**Screening**	12/05/85	12/05/85	12/05/85	10/07/87	10/07/87	10/07/87	10/31/95	10/31/95	10/31/95	10/31/95	11/11/96	11/11/96	11/11/96
Depth Range (ft.)	Value	**Value**	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
	(ug/kg)	(ug/kg)													
VOLATILES (ug/kg)															
2-Butanone	NE	NE	1,500 U	2,200 U	1,600	6,900 U	4,600 U	6,000 U	17 U	24 U	16 U	11 J	15 U	15 U	12 U
SEMIVOLATILES (ug/kg)															
Anthracene	85.3	1,100	60 U	60 U	60 U	170 U	110 U	150 U	560 U	780 U	95 J	300 J	500 U	500 U	400 U
Benzo(a)anthracene	261	1,600	60 U	60 U	200 U	170 U	110 U	150 U	560 U	530 J	970	**2,200**	500 U	500 U	400 U
Benzo(a)pyrene	430	1,600	70 U	90 U	500 U	260 U	170 U	230 U	560 U	780 U	920	**1,900**	500 U	500 U	400 U
Benzo(b)fluoranthene	NE	NE	60 U	70 U	500 U	260 U	170 U	230 U	560 U	780 U	1,800	2,700	500 U	63 J	400 U
Benzo(g,h,i)perylene	NE	NE	120 U	170 U	1,200 U	340 U	230 U	300 U	560 U	780 U	540 U	870	500 U	500 U	400 U
Benzo(k)fluoranthene	NE	NE	60 U	70 U	400 U	260 U	170 U	230 U	560 U	780 U	140 J	1,400	500 U	500 U	400 U
Bis(2-ethylhexyl)phthalate	NE	NE	90	60 U	200 U	13,000	150 U	10,000	200 J	880	540 U	470 U	500 U	500 U	400 U
Carbazole	NE	NE	NA	NA	NA	NA	NA	NA	560 U	780 U	540 U	65 J	500 U	500 U	400 U
Chrysene	384	2,800	60 U	60 U	200 U	170 U	110 U	150 U	560 U	720 J	1,200	2,600	500 U	500 U	400 U
Dibenzo(a,h)anthracene	63.4	1,600	100 U	200 U	1,000 U	340 U	230 U	300 U	560 U	780 U	540 U	260 J	500 U	500 U	400 U
Di-n-octylphthalate	NE	NE	300	200	200	240 U	160 U	210 U	560 U	780 U	540 U	470 U	500 U	500 U	400 U
Fluoranthene	600	5,100	60 U	60 U	80 U	170 U	110 U	150 U	560 U	960	1,900	3,500	500 U	500 U	400 U
Fluorene	19	540	60 U	60 U	60 U	170 U	110 U	150 U	560 U	780 U	540 U	62 J	500 U	500 U	400 U
Indeno(1,2,3-cd)pyrene	NE	NE	100 U	200 U	1,000 U	340 U	230 U	300 U	560 U	780 U	90 J	1,000	500 U	500 U	400 U
Phenanthrene	NE	NE	60 U	60 U	60 U	170 U	110 U	150 U	560 U	290 J	630	1,900	500 U	500 U	400 U
Pyrene	665	2,600	60 U	60 U	80 U	170 U	110 U	150 U	560 U	1,200	2,200	**5,500**	500 U	500 U	400 U
PESTICIDES/PCBS (ug/kg)															
beta-BHC	NE	NE	466 U	496 U	487 U	401 U	26.8 U	35.1 U	34 U	92 U	65 U	22	12 U	30 U	9.7 U
4,4'-DDE	2.2	27	466 U	496 U	487 U	40.1 U	26.8 U	35.1 U	68 U	180 U	**29**	**33**	24 U	60 U	19 U

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-22 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study						Relative Risk Ranking				RFI Investigation		
Site ID	ERL	**ERM**	6SE1	6SE2	6SE3	6SE1	6SE2	6SE3	2SD01	2SD02	2SD03	2SD03	2SD01	2SD02	2SD03
Sample ID	Sediment	**Sediment**	R6SE1	R6SE2	R6SE3	R6SE01	R6SE02	R6SE03	2SD01	2SD02	2SD03	2SD03D	2SD01	2SD02	2SD03
Sample Date	Screening	**Screening**	12/05/85	12/05/85	12/05/85	10/07/87	10/07/87	10/07/87	10/31/95	10/31/95	10/31/95	10/31/95	11/11/96	11/11/96	11/11/96
Depth Range (ft.)	Value	**Value**	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
	(ug/kg)	(ug/kg)													
DIOXINS (ug/kg)															
Total HxCDD	NE	NE	NA	NA	NA	NA	NA	NA	0.2 U	0.23 U	2.5	3.3	0.1 U	0.16 U	0.07 U
Total HxCDF	NE	NE	NA	NA	NA	NA	NA	NA	0.19 U	0.2 U	0.91 J	1 J	0.05 U	0.09 U	0.06 U
Total PeCDD	NE	NE	NA	NA	NA	NA	NA	NA	0.19 U	0.2 U	0.24 U	0.26 J	0.08 U	0.06 U	0.05 U
CHLORINATED HERBICIDES (ug/kg)															
OP-PESTICIDES (ug/kg)															
EXPLOSIVES (ug/kg)															
ASBESTOS (MFL)															

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-22 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	ERL Sediment Screening Value (ug/kg)	**ERM Sediment Screening Value** (ug/kg)	Number Exceeding ERL Sediment Screening Value	Range Exceeding ERL Sediment Screening Value	**Number Exceeding ERM Sediment Screening Value**	**Range Exceeding ERM Sediment Screening Value**	Location Maximum Detect
VOLATILES (ug/kg)							
2-Butanone	NE	NE	NE		NE		R6SE3
SEMIVOLATILES (ug/kg)							
Anthracene	85.3	1,100	2/13	95 - 300	0/13		2SD03
Benzo(a)anthracene	261	1,600	3/13	530 - 2,200	1/13	2,200	2SD03
Benzo(a)pyrene	430	1,600	2/13	920 - 1,900	1/13	1,900	2SD03
Benzo(b)fluoranthene	NE	NE	NE		NE		2SD03
Benzo(g,h,i)perylene	NE	NE	NE		NE		2SD03
Benzo(k)fluoranthene	NE	NE	NE		NE		2SD03
Bis(2-ethylhexyl)phthalate	NE	NE	NE		NE		R6SE01
Carbazole	NE	NE	NE		NE		2SD03
Chrysene	384	2,800	3/13	720 - 2,600	0/13		2SD03
Dibenzo(a,h)anthracene	63.4	1,600	1/13	260 J	0/13		2SD03
Di-n-octylphthalate	NE	NE	NE		NE		R6SE1
Fluoranthene	600	5,100	3/13	960 - 3,500	0/13		2SD03
Fluorene	19	540	1/13	62 J	0/13		2SD03
Indeno(1,2,3-cd)pyrene	NE	NE	NE		NE		2SD03
Phenanthrene	NE	NE	NE		NE		2SD03
Pyrene	665	2,600	3/13	1,200 - 5,500	1/13	5,500	2SD03
PESTICIDES/PCBS (ug/kg)							
beta-BHC	NE	NE	NE		NE		2SD03
4,4'-DDE	2.2	27	2/13	29 - 33	2/13	29 - 33	2SD03

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-22 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	ERL Sediment Screening Value (ug/kg)	**ERM Sediment Screening Value** (ug/kg)	Number Exceeding ERL Sediment Screening Value	Range Exceeding ERL Sediment Screening Value	**Number Exceeding ERM Sediment Screening Value**	**Range Exceeding ERM Sediment Screening Value**	Location Maximum Detect
DIOXINS (ug/kg)							
Total HxCDD	NE	NE	NE		NE		2SD03
Total HxCDF	NE	NE	NE		NE		2SD03
Total PeCDD	NE	NE	NE		NE		2SD03
CHLORINATED HERBICIDES (ug/kg)							
OP-PESTICIDES (ug/kg)							
EXPLOSIVES (ug/kg)							
ASBESTOS (MFL)							

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
J - Analyte present. Reported value may not be accurate or precise.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-23 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SEDIMENT
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study						Relative Risk Ranking				RFI Investigation		
Site ID	ERL	**ERM**	6SE1	6SE2	6SE3	6SE1	6SE2	6SE3	2SD01	2SD02	2SD03	2SD03	2SD01	2SD02	2SD03
Sample ID	Sediment	**Sediment**	R6SE1	R6SE2	R6SE3	R6SE01	R6SE02	R6SE03	2SD01	2SD02	2SD03	2SD03D	2SD01	2SD02	2SD03
Sample Date	Screening	**Screening**	12/05/85	12/05/85	12/05/85	10/07/87	10/07/87	10/07/87	10/31/95	10/31/95	10/31/95	10/31/95	11/11/96	11/11/96	11/11/96
Depth Range (ft.)	Value	**Value**	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
	(mg/kg)	(mg/kg)													
Inorganics (mg/kg)															
Antimony	NE	NE	5.9	6.9	7.4	11 U	6.8 U	9.7 U	2.6 UJ	5 UJ	2.6 UJ	3.1 UJ	1.7 UJ	4.8 J	3.3 J
Arsenic	8.2	70	7.76	15.1	16.4	3.76	1.94	4.75	2 J	7 J	6.2 J	7.6 J	5.2 J	5.3 J	2.6 J
Barium	NE	NE	NA	NA	NA	NA	NA	NA	12.1	55.9 J	49.8	59.4	19.8 J	486 J	136 J
Beryllium	NE	NE	0.278 U	0.36	0.392	0.825 U	0.502 U	0.722 U	0.11 U	0.21 UJ	0.11 U	0.13 U	0.15	0.48	0.07
Cadmium	1.2	9.6	0.417 U	0.404 U	0.407 U	1.71	0.52	0.747	0.46 U	1.2 J	0.47 U	0.55 U	0.23 U	1.5	0.32
Chromium	81	370	6.71	11.7	18	14.2	6.58	13.9	6.6	18.7 J	23.1	34.7	15	45.9 J	25.3 J
Cobalt	NE	NE	NA	NA	NA	NA	NA	NA	1.2	4.6 J	7.9	7.9	4.2	24.9	34.7
Copper	34	270	9.1	20.4	26.4	35.9	10.9	57.5	8.2	**332** J	**384**	**830**	16.9	**399**	62.4
Lead	46.7	218	8.75 U	8.49 U	8.54 U	12.2	6.06	21.2	3.8	**339** J	144 J	202 J	4	**390** J	49.7 J
Mercury	0.15	0.71	0.065 U	0.067 U	0.084	0.144 U	0.075 U	0.174 U	0.06 U	**0.8** J	**2.6**	**2.7**	0.04	0.14	0.05
Nickel	20.9	51.6	3.46	5.62	7.45	9.39 U	5.71 U	8.22 U	2.4	7.8 J	6.7	9.1	5.7	24.1	14
Selenium	NE	NE	7.02	16.3	19.4	1.92	0.851	0.742 U	0.25 UJ	0.35 UJ	0.34 J	0.15 J	0.23 J	0.22 UJ	0.45 J
Sulfide	NE	NE	NA	NA	NA	NA	NA	NA	41.9 UJ	296 J	55 J	34.8 UJ	38 R	37 U	29.7 U
Tin	NE	NE	NA	NA	NA	NA	NA	NA	2 U	13.5 J	9.4	13.7	0.93 U	32.1	0.59 U
Vanadium	NE	NE	NA	NA	NA	NA	NA	NA	15	37.1 J	57.1	79.2	31.5	112 J	154 J
Zinc	150	410	14.1	23.3	29.8	53.5	22.2	67	9.6	**432** J	281	401	15.1	**841**	92.8

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-23 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SEDIMENT
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	ERL Sediment Screening Value (mg/kg)	**ERM Sediment Screening Value** (mg/kg)	Number Exceeding ERL Sediment Screening Value	Range Exceeding ERL Sediment Screening Value	**Number Exceeding ERM Sediment Screening Value**	**Range Exceeding ERM Sediment Screening Value**	Location Maximum Detect
Inorganics (mg/kg)							
Antimony	NE	NE	NE		NE		R6SE3
Arsenic	8.2	70	2/13	15.1 - 16.4	0/13		R6SE3
Barium	NE	NE	NE		NE		2SD02
Beryllium	NE	NE	NE		NE		2SD02
Cadmium	1.2	9.6	2/13	1.5 - 1.71	0/13		R6SE01
Chromium	81	370	0/13		0/13		2SD02
Cobalt	NE	NE	NE		NE		2SD03
Copper	34	270	7/13	35.9 - 830	4/13	332 - 830	2SD03
Lead	46.7	218	5/13	49.7 J - 390 J	2/13	339 J - 390 J	2SD02
Mercury	0.15	0.71	3/13	0.8 J - 27	3/13	0.8 J - 2.7	2SD03
Nickel	20.9	51.6	1/13	24.1	0/13		2SD02
Selenium	NE	NE	NE		NE		R6SE3
Sulfide	NE	NE	NE		NE		2SD02
Tin	NE	NE	NE		NE		2SD02
Vanadium	NE	NE	NE		NE		2SD03
Zinc	150	410	4/13	281-841	2/13	432 J - 841	2SD02

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.
R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-24

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			CS	SI	RFI Investigation				
Site ID		**EPA Region III**	6GW01	6GW01	2MW01	2MW02	2MW02	2MW03	6GW01
Sample ID	Federal	**Tap Water**	R6GW01	06GW101	2MW01	2MW02	2MW02D	2MW03	6GW01
Sample Date	MCL	**RBC**	11/02/87	11/18/92	11/12/96	11/12/96	11/12/96	11/12/96	11/12/96
	(ug/l)	(ug/l)							
VOLATILES (ug/l)									
Chloroform	100	0.15	**1.7**	5 U	**4** J	**7**	**6**	5 U	5 U
Trichloroethene	5	1.55	1 U	5 U	5 U	**6**	**5**	5 U	**7**
SEMIVOLATILES (ug/l)									
Bis(2-ethylhexyl)phthalate	6	4.78	1.9	2 J	10 U	10 U	10 U	10 U	12 U
Isodrin	NE	NE	NA	NA	0.05	0.02	0.01 J	0.032	0.05 U
Pentachlorophenol	1	0.56	**11**	53 U	49 U	50 U	50 U	50 U	**5** J
Phenols	NE	22,000	58	NA	NA	NA	NA	NA	NA
PESTICIDES/PCBs (ug/l)									
Aldrin	NE	0.0039	**0.006**	0.05 U	**0.13**	0.05 U	0.05 U	**0.084**	0.05 U
Heptachlor epoxide	0.2	0.0012	0.005 U	0.05 U	**0.04**	0.05 U	0.05 U	0.053 U	0.05 U
Heptachlor	0.4	0.0023	0.005 U	0.0017 NJ	0.05 U	0.05 U	0.05 U	0.053 U	0.05 U
DIOXINS (ug/l)									
CHLORINATED HERBICIDES (ug/l)									
2,4,5-T	NE	365	NA	NA	0.11 U	0.11 U	0.11 U	0.13	0.11 U
OP-PESTICIDES (ug/l)									
EXPLOSIVES (ug/l)									
ASBESTOS (MFL)									
MISCELLANEOUS									
COD (mg/l)	NE	NE	NA	NA	NA	NA	NA	NA	210,000
Total organic carbon (mg/l)	NE	NE	NA	NA	NA	NA	NA	NA	46,000
Total suspended solids (mg/l)	NE	NE	NA	NA	NA	NA	NA	NA	63,000

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

NJ - Presumptive evidence for the presence of the parameter at an estimated value.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-24

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Number Exceeding Federal MCL	Range Exceeding Federal MCL	**Number Exceeding EPA Region III Tap Water RBC**	**Range Exceeding EPA Region III Tap Water RBC**	Location Maximum Detect
VOLATILES (ug/l)							
Chloroform	100	0.15	0/7		4/7	1.7 - 7	2MW02
Trichloroethene	5	1.55	2/7	6 - 7	3/7	5 - 7	6GW01
SEMIVOLATILES (ug/l)							
Bis(2-ethylhexyl)phthalate	6	4.78	0/7		0/7		06GW101
Isodrin	NE	NE	NE		NE		2MW01
Pentachlorophenol	1	0.56	2/7	5 J - 11	2/7	5 J - 11	R6GW01
Phenols	NE	22,000	NE		NE		R6GW01
PESTICIDES/PCBs (ug/l)							
Aldrin	NE	0.0039	NE		3/7	0.006 - 0.13	2MW01
Heptachlor epoxide	0.2	0.0012	0/7		1/7	0.04	2MW01
Heptachlor	0.4	0.0023	0/7		0/7		06GW101
DIOXINS (ug/l)							
CHLORINATED HERBICIDES (ug/l)							
2,4,5-T	NE	365	NE		0/5		2MW03
OP-PESTICIDES (ug/l)							
EXPLOSIVES (ug/l)							
ASBESTOS (MFL)							
MISCELLANEOUS							
COD (mg/l)	NE	NE	NE		NE		6GW01
Total organic carbon (mg/l)	NE	NE	NE		NE		6GW01
Total suspended solids (mg/l)	NE	NE	NE		NE		6GW01

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

NJ - Presumptive evidence for the presence of the parameter at an estimated value.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-25

SUMMARY OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			CS	SI	RFI Investigation				
Site ID		**EPA Region III**	6GW01	6GW01	2MW01	2MW02	2MW02	2MW03	6GW01
Sample ID	Federal	**Tap Water**	R6GW01	06GW101	2MW01	2MW02	2MW02D	2MW03	6GW01
Sample Date	MCL	**RBC**	11/02/87	11/18/92	11/12/96	11/12/96	11/12/96	11/12/96	11/12/96
	(ug/l)	(ug/l)							
Inorganics, Total (ug/l)									
Aluminum	NE	36,500	NA	1,200	NA	NA	NA	NA	NA
Antimony	6	14.6	21 U	47.2 U	16 R	**16.1** J	16 R	**19.6** J	16 R
Arsenic	50	0.045	6.4 U	3 U	2 U	**2.7**	2 U	**2.8**	2 U
Barium	2,000	2,555	NA	22.5 U	363	663	624	455	1.8
Beryllium	4	73	1 U	1.5 B	0.72	1	0.58	0.4 U	0.4 U
Cadmium	5	18	2.4 U	2.8 U	3.2	2.1 U	2.1 U	2.2	2.1 U
Calcium	NE	NE	NA	62,500	NA	NA	NA	NA	NA
Chromium	100	110	3.3 U	10.4 UJ	21	57.4	48	19.2	1.7 U
Cobalt	NE	2,190	NA	15.5 UJ	51	131	123	37.9	2.8 U
Copper	1,300	1,460	6.1	5.1 UJ	72	212	175	79.2	1.5 U
Iron	NE	10,950	NA	1,730	NA	NA	NA	NA	NA
Lead	15	NE	121	1.5 UJ	4.4	16.9	13.5	10.8	0.7 U
Magnesium	NE	NE	NA	80,700	NA	NA	NA	NA	NA
Mercury	2	NE	0.2 U	0.2 UJ	0.1 U	0.71	0.68	0.1 U	0.1 U
Nickel	100	730	8.6 U	7.8 UJ	22.2	66.3	53.2	15.5	6.7 U
Selenium	50	183	2.5 U	4.8 J	1.8 UJ	9 U	9 U	1.8 UJ	4.2
Sodium	NE	NE	NA	801,000 J	936,000	676,000	677,000	230,000	593,000
Vanadium	NE	256	NA	30 J	147	**631**	**539**	160	46.2
Zinc	NE	11,000	40.1	20.2 J	112	252	223	88.8	8.9

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

B - Not detected substantially above the level reported in laboratory or field blanks.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-25

SUMMARY OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Number Exceeding Federal MCL	Range Exceeding Federal MCL	**Number Exceeding EPA Region III Tap Water RBC**	**Range Exceeding EPA Region III Tap Water RBC**	Location Maximum Detect
Inorganics, Total (ug/l)							
Aluminum	NE	36,500	NE		0/1		06GW101
Antimony	6	14.6	2/7	16.1 J - 19.6 J	2/7	16.1 J - 19.6 J	2MW03
Arsenic	50	0.045	0/7		2/7	2.7 - 2.8	2MW03
Barium	2,000	2,555	0/6		0/6		2MW02
Beryllium	4	73	0/7		0/7		06GW101
Cadmium	5	18	0/7		0/7		2MW01
Calcium	NE	NE	NE		NE		06GW101
Chromium	100	110	0/7		0/7		2MW02
Cobalt	NE	2,190	NE		0/6		2MW02
Copper	1,300	1,460	0/7		0/7		2MW02
Iron	NE	10,950	NE		0/1		06GW101
Lead	15	NE	2/7	16.9 - 121	NE		R6GW01
Magnesium	NE	NE	NE		NE		06GW101
Mercury	2	NE	0/7		NE		2MW02
Nickel	100	730	0/7		0/7		2MW02
Selenium	50	183	0/7		0/7		06GW101
Sodium	NE	NE	NE		NE		2MW01
Vanadium	NE	256	NE		2/6	539 - 631	2MW02
Zinc	NE	11,000	NE		0/7		2MW02

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

B - Not detected substantially above the level reported in laboratory or field blanks.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-26

SUMMARY OF INORGANIC (DISSOLVED) DETECTIONS IN GROUNDWATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			CS	SI	RFI Investigation				
Site ID		**EPA Region III**	6GW01	6GW01	2MW01	2MW02	2MW02	2MW03	6GW01
Sample ID	Federal	**Tap Water**	R6GW01	06GW101	2MW01	2MW02	2MW02D	2MW03	6GW01
Sample Date	MCL	**RBC**	11/02/87	11/18/92	11/12/96	11/12/96	11/12/96	11/12/96	11/12/96
	(ug/l)	(ug/l)							
Inorganics, Dissolved (ug/l)									
Aluminum	NE	36,500	NA	48.9 J	NA	NA	NA	NA	NA
Antimony	6	15	NA	47.2 U	16 R	16 R	**21.2** J	16 R	16 R
Barium	2,000	2,555	NA	35.2 U	246	99.6	94.7	262	3.4
Cadmium	5	18	NA	2.8 U	2.1 U	2.1 U	2.1 U	3.2	3
Calcium	NE	NE	NA	58,700	NA	NA	NA	NA	NA
Chromium	100	110	NA	10.4 UJ	1.7 U	2	1.7 U	1.7 U	1.7 U
Cobalt	NE	2,190	NA	15.5 UJ	15.9	3.2	2.8 U	4	2.8 U
Copper	1,300	1,460	NA	8.5 J	1.5 U	5.9	6.2	3.3	1.6
Magnesium	NE	NE	NA	77,500	NA	NA	NA	NA	NA
Selenium	50	183	NA	9.2 J	1.8 U	1.8 J	1.8 U	1.8 UJ	5.2
Sodium	NE	NE	NA	786,000 J	838,000	648,000	643,000	223,000	583,000
Vanadium	NE	256	NA	17.9 J	7.9	30.6	23.6	25.5	45.8
Zinc	NE	11,000	NA	16.5 B	16	5.2	4	9.9	6.4

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable Result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

B - Not detected substantially above the level reported in laboratory or field blanks.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-26

SUMMARY OF INORGANIC (DISSOLVED) DETECTIONS IN GROUNDWATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Number Exceeding Federal MCL	Range Exceeding Federal MCL	**Number Exceeding EPA Region III Tap Water RBC**	**Range Exceeding EPA Region III Tap Water RBC**	Location Maximum Detect
Inorganics, Dissolved (ug/l)							
Aluminum	NE	36,500	NE		0/1		06GW101
Antimony	6	15	1/6	21.2 J	1/6	21.2 J	2MW02D
Barium	2,000	2,555	0/6		0/6		2MW03
Cadmium	5	18	0/6		0/6		2MW03
Calcium	NE	NE	NE		NE		06GW101
Chromium	100	110	0/6		0/6		2MW02
Cobalt	NE	2,190	NE		0/6		2MW01
Copper	1,300	1,460	0/6		0/6		06GW101
Magnesium	NE	NE	NE		NE		06GW101
Selenium	50	183	0/6		0/6		06GW101
Sodium	NE	NE	NE		NE		2MW01
Vanadium	NE	256	NE		0/6		6GW01
Zinc	NE	11,000	NE		0/6		06GW101

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable Result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

B - Not detected substantially above the level reported in laboratory or field blanks.

Notes:

NE - Not Established.

NA - Not Analyzed.

TABLE 5-27

SUMMARY OF ORGANIC DETECTIONS IN SURFACE WATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study										
Site ID	Federal	**EPA Region III**	6SW1	6SW2	6SW3	6SW1	6SW2	6SW3	Number	Range	**Number**	**Range**	Location
Sample ID	Ambient	**BTAG**	R6SW1	R6SW2	R6SW3	R6SW01	R6SW02	R6SW03	Exceeding	Exceeding	**Exceeding**	**Exceeding**	Maximum
Sample Date	Water	**Screening**	12/05/85	12/05/85	12/05/85	10/07/87	10/07/87	10/07/87	Federal	Federal	**EPA**	**EPA**	Detection
	Quality	**Levels**							Ambient	Ambient	**Region III**	**Region III**	
	(ug/l)	(ug/l)							Water	Water	**BTAG**	**BTAG**	
									Quality	Quality	**Screening**	**Screening**	
VOLATILES (ug/l)											**Levels**	**Levels**	
SEMIVOLATILES (ug/l)													
Bis(2-ethylhexyl)phthalate	NE	360	1.0	1.0	0.3 U	1.0	2.4	1.3	NE		0/6		R6SW02
Di-n-octylphthalate	NE	3.4	2.0	0.2 U	2.0	1.1 U	1.1 U	1.1 U	NE		0/6		R6SW1, R6SW3
Phenols	NE	5,800	0.28 U	0.21 U	0.21 U	70	40	1,200	NE		0/6		R6SW03
PESTICIDES/PCBs (ug/l)													

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

Notes:
NE - Not Established.
NA - Not Analyzed.

TABLE 5-28

SUMMARY OF INORGANIC (TOTAL) DETECTIONS IN SURFACE WATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

			Confirmation Study										
Site ID	Federal	**EPA Region III**	6SW1	6SW2	6SW3	6SW1	6SW2	6SW3	Number	Range	**Number**	**Range**	Location
Sample ID	Ambient	**BTAG**	R6SW1	R6SW2	R6SW3	R6SW01	R6SW02	R6SW03	Exceeding	Exceeding	**Exceeding**	**Exceeding**	Maximum
Sample Date	Water	**Screening**	12/05/85	12/05/85	12/05/85	10/07/87	10/07/87	10/07/87	Federal	Federal	**EPA Region III**	**EPA Region III**	Detection
	Quality	**Levels**							Ambient	Ambient	**BTAG**	**BTAG**	
	(ug/l)	(ug/l)							Water	Water	**Screening**	**Screening**	
									Quality	Quality	**Levels**	**Levels**	
Inorganics, Total (ug/l)													
Beryllium	NE	1,500	23.6	50.6	24.7	1 U	1 U	1 U	NE		0/6		R6SW2
Cadmium	9.3	9.3	4.42	8.4	3.35	2.4 U	2.4 U	2.4 U	0/6		0/6		R6SW2
Chromium	50[2]	10,300[1]	318	611	339	97.4	107	106	6/6	97.4 - 611	0/6		R6SW2
Copper	2.9	2.9	**354**	**966**	**516**	2.8 U	2.8 U	**67.8**	4/6	67.8-966	4/6	67.8-966	R6SW2
Lead	8.5	5.1	**211**	**526**	**244**	400 U	400 U	400 U	3/6	211 - 526	3/6	211-526	R6SW2
Mercury	0.025	0.025	**0.856**	**0.997**	**0.997**	0.2 U	0.2 U	0.2 U	3/6	0.856-0.997	3/6	0.856-0.997	R6SW2, R6SW3
Nickel	8.3	8.3	**138**	**252**	**147**	8.6 U	8.6 U	8.6 U	3/6	138 - 252	3/6	138-252	R6SW2
Selenium	71	35	**278**	39 U	**549**	**162**	**191**	**241**	5/6	162 - 549	5/6	162 - 549	R6SW3
Silver	2.3	0.0001	6 U	6 U	6 U	**32.2**	**31.1**	**28.7**	3/6	28.7-32.2	3/6	28.7-32.2	R6SW01
Thallium	NE	2,130	29.3	28.6	19.2	6.8 U	6.8 U	6.8 U	NE		0/6		R6SW1
Zinc	86	19.0	**558**	**1,310**	**818**	1.8 U	1.8 U	**52.5**	3/6	558-1,310	4/6	52.5-1,310	R6SW2

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

Notes:

NE - Not Established.

NA - Not Analyzed.

(1) - Chromium^{+3} value.

(2) - Chromium^{+6} value.

TABLE 5-29 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
1996 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID	EPA Region III	**EPA Region III**	45MW01	45MW02	45MW03	45MW04	45MW04
Sample ID	Industrial	**Residential**	45MW01-00	45MW02-00	45MW03-00	45MW04-00	45MW04-00D
Sample Date	RBCs	**RBCs**	11/22/96	11/21/96	11/21/96	11/22/96	11/22/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
VOLATILES (ug/kg)							
SEMIVOLATILES (ug/kg)							
PCBs (ug/kg)							
Aroclor-1260	2,862	319	87 U	100	90 U	150	130

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

TABLE 5-29 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
1996 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Location Maximum Detect
VOLATILES (ug/kg)							
SEMIVOLATILES (ug/kg)							
PCBs (ug/kg)							
Aroclor-1260	2,862	319	0/5		0/5		45MW04-00

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

TABLE 5-30 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SURFACE SOIL
1996 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID	2 x Average	**EPA Region III**	EPA Region III	45MW01	45MW02	45MW03	45MW04	45MW04
Sample ID	Detected	**Industrial**	Residential	45MW01-00	45MW02-00	45MW03-00	45MW04-00	45MW04-00D
Sample Date	Background	**RBCs**	RBCs	11/22/96	11/21/96	11/21/96	11/22/96	11/22/96
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00	0.00-1.00
RCRA Metals (mg/kg)								
Arsenic, Total	2.43	3.82	0.43	0.7 UJ	3.3 J	2.6 J	2.3 J	1.1 J
Barium, Total	181	143,080	5,475	284	277	233	108	218
Cadmium, Total	0	2,044	78.21	0.25	0.25	0.42	0.41	0.19 U
Chromium, Total	59.3	6,132	234.64	24.6	23.2	29.9	10.9	19.5
Lead, Total	15.25	NE	NE	2.8 J	8.2	5.2 J	7.4 J	4.8 J
Mercury, Total	0.11	NE	NE	0.03	0.03	0.03	0.04	0.03

Data Qualifiers:

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-30 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SURFACE SOIL
1996 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	2 x Average Detected Background (mg/kg)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	Number Exceeding 2 x Average Detected Background	Range Exceeding 2 x Average Detected Background	**Number Exceeding EPA Region III Industrial RBCs**	**Range Exceeding EPA Region III Industrial RBCs**	Number Exceeding EPA Region III Residential RBCs	Range Exceeding EPA Region III Residential RBCs	Location Maximum Detect
RCRA Metals (mg/kg)										
Arsenic, Total	2.43	3.82	0.43	2/5	2.6J - 3.3J	0/5		4/5	1.1J - 3.3J	45MW02-00
Barium, Total	181	143,080	5,475	4/5	218-284	0/5		0/5		45MW01-00
Cadmium, Total	0	2,044	78.21	4/5	0.25 - 0.42	0/5		0/5		45MW03-00
Chromium, Total	59.3	6,132	234.64	0/5		0/5		0/5		45MW03-00
Lead, Total	15.25	NE	NE	0/5		NE		NE		45MW02-00
Mercury, Total	0.11	NE	NE	0/5		NE		NE		45MW04-00

Data Qualifiers:
J - Analyte present. Reported value may not be accurate or precise.

Notes:
NE - Not Established.

TABLE 5-31 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
1996 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID	EPA Region III	**EPA Region III**	45MW01	45MW01	45MW02	45MW02	45MW03	45MW03	45MW03	45MW04	45MW04
Sample ID	Industrial	**Residential**	45MW01-02	45MW01-03	45MW02-01	45MW02-02	45MW03-03	45MW03-03D	45MW03-04	45MW04-01	45MW04-02
Sample Date	RBCs	**RBCs**	11/22/96	11/22/96	11/21/96	11/21/96	11/21/96	11/21/96	11/21/96	11/22/96	11/22/96
Depth Range (ft.)	(ug/kg)	(ug/kg)	4.00-6.00	6.00-8.00	2.00-4.00	4.00-6.00	6.00-8.00	6.00-8.00	8.00-10.00	2.00-4.00	4.00-6.00
VOLATILES (ug/kg)											
Acetone	204,400,000	7,821,428.57	12 UJ	11 UJ	12 UJ	13 UJ	11 UJ	11 UJ	35 J	12 UJ	15 UJ
SEMIVOLATILES (ug/kg)											
Benzo(g,h,i)perylene	61,320,000	2,346,428.57	400 U	370 U	410 U	420 U	370 UJ	61 J	380 UJ	380 U	490 U
PCBs (ug/kg)											

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

TABLE 5-31 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
1996 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Location Maximum Detect
VOLATILES (ug/kg)							
Acetone	204,400,000	7,821,428.57	0/9		0/9		45MW03-04
SEMIVOLATILES (ug/kg)							
Benzo(g,h,i)perylene	61,320,000	2,346,428.57	0/9		0/9		45MW03-03D
PCBs (ug/kg)							

Data Qualifiers:
U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.
UJ - Not detected, quantitation limit may be inaccurate or imprecise.
J - Analyte present. Reported value may not be accurate or precise.

TABLE 5-32 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
1996 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID	2 x Average	**EPA Region III**	EPA Region III	45MW01	45MW01	45MW02	45MW02	45MW03	45MW03	45MW03	45MW04	45MW04
Sample ID	Detected	**Industrial**	Residential	45MW01-02	45MW01-03	45MW02-01	45MW02-02	45MW03-03	45MW03-03D	45MW03-04	45MW04-01	45MW04-02
Sample Date	Background	**RBCs**	RBCs	11/22/96	11/22/96	11/21/96	11/21/96	11/21/96	11/21/96	11/21/96	11/22/96	11/22/96
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	4.00-6.00	6.00-8.00	2.00-4.00	4.00-6.00	6.00-8.00	6.00-8.00	8.00-10.00	2.00-4.00	4.00-6.00
RCRA Metals (mg/kg)												
Arsenic, Total	2.05	3.82	0.43	3.4 J	0.49 J	2.6 J	3.4 J	3.1 J	3.6 J	2.4 J	**3.9** J	1.9 J
Barium, Total	222	143,080	5,475	19.4	30.6	16.6	19.2	8.7	13.8	6.7	8.7	7.4
Cadmium, Total	0.74	2,044	78.21	0.35	0.33	0.25	0.47	0.29	0.41	0.21	0.39	0.23 U
Chromium, Total	133	6,132	235	9.2	36.1	13.2	8.9	7.2	6.4	4.3	2.7	4.5
Lead, Total	8.68	NE	NE	1.1 J	2 J	2 J	1.3 J	1.4 J	1.1 J	0.67 J	0.54 J	1 J

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-32 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
1996 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	2 x Average Detected Background (mg/kg)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	Number Exceeding 2 x Average Detected Background	Range Exceeding 2 x Average Detected Background	**Number Exceeding EPA Region III Industrial RBCs**	**Range Exceeding EPA Region III Industrial RBCs**	Number Exceeding EPA Region III Residential RBCs	Range Exceeding EPA Region III Residential RBCs	Location Maximum Detect
RCRA Metals (mg/kg)										
Arsenic, Total	2.05	3.82	0.43	7/9	2.4J - 3.9J	1/9	3.9J	9/9	0.49J - 3.9J	45MW04-01
Barium, Total	222	143,080	5,475	0/9		0/9		0/9		45MW01-03
Cadmium, Total	0.74	2,044	78.21	0/9		0/9		0/9		45MW02-02
Chromium, Total	133	6,132	235	0/9		0/9		0/9		45MW01-03
Lead, Total	8.68	NE	NE	0/9		NE		NE		45MW01-03, 45MW02-01

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-33 (continued)

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
1996 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID		**EPA Region III**	45HP01	45HP02	45HP03	45HP04	45MW01	45MW01	45MW02	45MW03	45MW04
Sample ID	Federal	**Tap Water**	45HP01	45HP02	45HP03	45HP04	45MW01	45MW01D	45MW02	45MW03	45MW04
Sample Date	MCL	**RBC**	11/22/96	11/22/96	11/22/96	11/22/96	11/25/96	11/25/96	11/25/96	11/25/96	11/25/96
	(ug/l)	(ug/l)									
VOLATILES (ug/l)											
Acetone	NE	3,650	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	12 J
SEMIVOLATILES (ug/l)											
Acenaphthene	NE	2,190	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2 J	10 U
Bis(2-ethylhexyl)phthalate	6	4.78	10 U	10 U	10 U	10 U	10 U	10 U	**64** J	10 U	10 U
Phenol	NE	22,000	4 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
PCBs (ug/l)											
Aroclor-1260	0.5	0.03	1 U	**0.35**	1 U	1 U	1 U	0.99 U	1 U	1 U	1 U

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-33 (continued)

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
1996 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Number Exceeding Federal MCL	Range Exceeding Federal MCL	**Number Exceeding EPA Region III Tap Water RBC**	**Range Exceeding EPA Region III Tap Water RBC**	Location Maximum Detection
VOLATILES (ug/l)							
Acetone	NE	3,650	NE		0/9		45MW04
SEMIVOLATILES (ug/l)							
Acenaphthene	NE	2,190	NE		0/9		45MW03
Bis(2-ethylhexyl)phthalate	6	4.78	1/9	64J	1/9	64J	45MW02
Phenol	NE	22,000	NE		0/9		45HP01
PCBs (ug/l)							
Aroclor-1260	0.5	0.03	0/9		1/9	0.35	45HP02

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-34 (continued)

SUMMARY OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
1996 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID		**EPA Region III**	45HP01	45HP02	45HP03	45HP04	45MW01	45MW01	45MW02	45MW03	45MW04
Sample ID	Federal	**Tap Water**	45HP01	45HP02	45HP03	45HP04	45MW01	45MW01D	45MW02	45MW03	45MW04
Sample Date	MCL	**RBC**	11/22/96	11/22/96	11/22/96	11/22/96	11/25/96	11/25/96	11/25/96	11/25/96	11/25/96
	(ug/l)	(ug/l)									
RCRA Metals (ug/l)											
Arsenic, Total	50	0.04	**103**	**96.8**	16 U	8 U	**13.4** J	1.6 UJ	**39.2** J	**14.5** J	**11.3** J
Barium, Total	2,000	2,555	113	197	282	155	483	382	470	173	220
Cadmium, Total	5	18.25	6.4	6.2	2.5	2.3	5.4 J	2.4 J	6.6 J	3.5 J	**27.8**
Chromium, Total	100	109.5	**136**	**127**	**175**	84.2	**182**	**127**	104	61.7	39.8
Lead, Total	15	NE	16.2	30	9	2.6	22.8	18.7	29.7	12.1	4 J
Mercury, Total	2	NE	0.23	0.24	0.1 U	0.1 U	0.1 U	0.1 U	0.11	0.1 U	0.1 U

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-34 (continued)

SUMMARY OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
1996 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Number Exceeding Federal MCL	Range Exceeding Federal MCL	**Number Exceeding EPA Region III Tap Water RBC**	**Range Exceeding EPA Region III Tap Water RBC**	Location Maximum Detect
RCRA Metals (ug/l)							
Arsenic, Total	50	0.04	2/9	96.8 - 103	6/9	11.3J - 103	45HP01
Barium, Total	2,000	2,555	0/9		0/9		45MW01
Cadmium, Total	5	18.25	5/9	5.4J - 27.8	1/9	27.8	45MW04
Chromium, Total	100	109.5	6/9	104 - 182	5/9	127 - 182	45MW01
Lead, Total	15	NE	5/9	16.2 - 30	NE		45HP02
Mercury, Total	2	NE	0/9		NE		45HP02

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-35 (continued)

SUMMARY OF INORGANIC (DISSOLVED) DETECTIONS IN GROUNDWATER
1996 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID		**EPA Region III**	45HP01	45HP02	45HP03	45HP04	45MW01	45MW01	45MW02	45MW03	45MW04
Sample ID	Federal	**Tap Water**	45HP01	45HP02	45HP03	45HP04	45MW01	45MW01D	45MW02	45MW03	45MW04
Sample Date	MCL	**RBC**	11/22/96	11/22/96	11/22/96	11/22/96	11/25/96	11/25/96	11/25/96	11/25/96	11/25/96
	(ug/l)	(ug/l)									
RCRA Metals (ug/l)											
Arsenic, Soluble	50	0.04	**16.1** J	**4.3**	1.6 U	1.6 U	**2.5** J	**2** J	**2.9** J	1.6 UJ	1.6 UJ
Barium, Soluble	2,000	2,555	19.2	4.9	7.8	3.7	50.6	50.7	101	49.6	162
Cadmium, Soluble	5	18.25	5.6	2.1 U	2.1 U	2.4	2.1 U	2.1 U	2.1 U	2.1 U	5 J
Lead, Soluble	15	NE	0.7 UJ	0.7 U	0.7 U	0.7 U	1.6	1.3 U	1.3 U	1.3 U	1.3 UJ

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-35 (continued)

SUMMARY OF INORGANIC (DISSOLVED) DETECTIONS IN GROUNDWATER
1996 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Number Exceeding Federal MCL	Range Exceeding Federal MCL	**Number Exceeding EPA Region III Tap Water RBC**	**Range Exceeding EPA Region III Tap Water RBC**	Location Maximum Detect
RCRA Metals (ug/l)							
Arsenic, Soluble	50	0.04	0/9		5/9	2J - 16.1J	45HP01
Barium, Soluble	2,000	2,555	0/9		0/9		45MW04
Cadmium, Soluble	5	18.25	1/9	5.6	0/9		45HP01
Lead, Soluble	15	NE	0/9		NE		45MW01

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-36 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID	EPA Region III	**EPA Region III**	11-SB01	11-SB04	11-SB04	11-SB05	11-SB06	11-SB07	11-SB08	11-SB09	11-SB11	11-SB11
Sample ID	Industrial	**Residential**	11SB01-02	11SB04-01	11SB04-01D	11SB05-02	11SB06-02	11SB07-02	11SB08-02	11SB09-02	11SB11-02	11SB11-02D
Sample Date	RBCs	**RBCs**	09/17/97	09/24/97	09/24/97	09/17/97	09/18/97	09/18/97	09/18/97	09/19/97	09/19/97	09/19/97
Depth Range (ft.)	(ug/kg)	(ug/kg)	2.00-8.00	2.00-4.00	2.00-4.00	2.00-8.00	2.00-8.00	2.00-8.00	2.00-8.00	2.00-8.00	2.00-8.00	2.00-8.00
VOLATILES (ug/kg)												
2-Butanone	1,226,400,000	46,928,571	12 U	12 U	12 U	11 U	10 U	11 U	11 U	11 UJ	11 UJ	14
2-Hexanone	81,760,000	3,128,571	12 U	12 U	12 U	11 U	10 U	11 U	11 U	11 UJ	11 UJ	11 U
4-Methyl-2-pentanone	163,520,000	6,257,143	12 U	12 U	12 U	11 U	10 U	11 U	11 U	11 UJ	11 U	11 U
Acetone	204,400,000	7,821,429	48	12 UJ	12 UJ	11 U	10 U	11 U	11 U	12 J	11 UJ	65
Toluene	408,800,000	15,642,857	24	6 U	6 U	5 U	8	5 U	5 U	5 U	6 U	6 U
SEMIVOLATILES (ug/kg)												
Acenaphthene	122,640,000	4,692,857	380 U	380 U	390 U	360 U	340 U	360 U	360 U	180 J	360 U	370 U
Benzo(a)anthracene	7,840	875	110 J	380 U	390 U	360 U	340 U	360 U	360 U	1,700 U	360 U	370 U
Benzo(a)pyrene	784	88	**110** J	380 U	390 U	360 UJ	340 U	360 U	360 U	**260** J	360 U	370 U
Benzo(g,h,i)perylene	61,320,000	2,346,429	380 U	380 UJ	390 UJ	100 UJ	340 U	120 J	360 U	1,700 U	360 U	370 U
Benzoic acid	8,176,000,000	312,857,143	1,900 U	1,900 U	2,000 U	1,800 U	1,700 U	1,800 U	1,800 U	8,600 U	510 J	520 J
Chrysene	784,000	87,497	380 U	380 U	390 U	360 U	340 U	360 U	360 U	340 J	360 U	370 U
Diethylphthalate	1,635,200,000	62,571,429	380 U	380 U	390 U	360 U	340 U	360 U	360 U	1,700 U	360 U	370 U
Di-n-butylphthalate	204,400,000	7,821,429	84 J	380 U	390 U	360 U	140 J	240 J	270 J	1,700 U	360 U	370 U
Phenol	1,226,400,000	46,928,571	380 U	380 U	390 U	360 U	340 U	360 U	360 U	1,700 U	360 U	370 U
Pyrene	61,320,000	2,346,429	47 J	380 U	390 U	360 U	340 U	360 U	360 U	180 J	360 UJ	370 UJ
TPH (ug/kg)												
Diesel Range Organics	NE	NE	250,000	7,000 U	7,200 U	68,000 U	6,700	67,000 U	6,800 U	110,000	6,800 U	6,900 U
Gasoline Range Organics	NE	NE	140	58 U	59 U	55 U	130	32 J	55 U	540	35 J	46 J
PCBs (ug/kg)												
Aroclor-1260	2,862	319	**320** J	93 U	93 U	110 J	60 J	75 J	87 U	420 U	86 U	89 U

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established. NA - Not Analyzed.

TABLE 5-36 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID	EPA Region III	**EPA Region III**	11-SB14	11-SB15	11-SB16	11-SB18	11-SB19	11-SB22	11-SB22	11-SB23	11-SB26	11-SB27
Sample ID	Industrial	**Residential**	11SB14-01	11SB15-02	11SB16-04	11SB18-02	11SB19-04	11SB22-04	11SB22-06	11SB23-03	11SB26-01	11SB27-04
Sample Date	RBCs	**RBCs**	09/19/97	09/19/97	09/19/97	09/20/97	09/20/97	09/21/97	09/21/97	09/21/97	09/21/97	09/21/97
Depth Range (ft.)	(ug/kg)	(ug/kg)	2.00-4.00	2.00-4.00	4.00-8.00	2.00-6.00	6.00-10.00	7.50-9.50	11.50-13.50	4.00-6.00	0.00-2.00	6.00-10.00
VOLATILES (ug/kg)												
2-Butanone	1,226,400,000	46,928,571	11 UJ	13 UJ	15 UJ	14 UJ	13 UJ	11 U	NA	12 U	11 U	12 U
2-Hexanone	81,760,000	3,128,571	11 UJ	13 UJ	15 UJ	14 UJ	13 UJ	8 J	NA	12 U	11 U	12 U
4-Methyl-2-pentanone	163,520,000	6,257,143	11 UJ	13 U	15 U	14 U	13 U	4 J	NA	12 U	11 U	12 U
Acetone	204,400,000	7,821,429	11 UJ	13 UJ	83 J	14 UJ	46 J	11 U	NA	12 U	11 U	12 U
Toluene	408,800,000	15,642,857	5 U	6 U	8 U	7 U	7 U	5 U	NA	6 U	5 U	6 U
SEMIVOLATILES (ug/kg)												
Acenaphthene	122,640,000	4,692,857	360 U	410 U	500 U	450 U	440 U	360 U	NA	420 U	350 U	400 U
Benzo(a)anthracene	7,840	875	360 U	410 U	500 U	450 U	440 U	360 U	NA	420 U	350 U	400 U
Benzo(a)pyrene	784	88	360 U	410 U	500 U	450 U	57 J	360 U	NA	420 U	350 U	**140** J
Benzo(g,h,i)perylene	61,320,000	2,346,429	360 U	410 UJ	500 UJ	450 UJ	440 UJ	360 U	NA	420 UJ	350 UJ	400 UJ
Benzoic acid	8,176,000,000	312,857,143	510 J	2,000 U	2,500 U	2,200 U	2,200 U	1,800 U	NA	2,100 U	1,800 U	2,000 U
Chrysene	784,000	87,497	360 U	410 U	500 U	450 U	440 U	360 U	NA	420 U	350 U	400 U
Diethylphthalate	1,635,200,000	62,571,429	360 U	410 U	500 U	450 U	44 J	360 U	NA	420 U	350 U	400 U
Di-n-butylphthalate	204,400,000	7,821,429	360 U	410 U	500 U	450 U	440 U	360 U	NA	420 U	350 U	400 U
Phenol	1,226,400,000	46,928,571	360 U	410 U	130 J	450 U	440 U	360 U	NA	420 U	350 U	400 U
Pyrene	61,320,000	2,346,429	360 UJ	410 U	500 U	450 U	440 U	360 U	NA	420 U	350 U	400 U
TPH (ug/kg)												
Diesel Range Organics	NE	NE	6,500 U	7,700 U	9,100 U	8,200 U	8,200 U	120,000	NA	7,800 U	6,700 U	7,400 U
Gasoline Range Organics	NE	NE	54 U	63 U	76 U	68 U	67 U	42 J	NA	63 U	57	60 U
PCBs (ug/kg)												
Aroclor-1260	2,862	319	86 U	100 U	120 U	46	110 U	440 U	110 U	100 U	85 U	95 U

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established. NA - Not Analyzed.

TABLE 5-36 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Location Maximum Detect
VOLATILES (ug/kg)							
2-Butanone	1,226,400,000	46,928,571	0/19		0/19		11SB11-02D
2-Hexanone	81,760,000	3,128,571	0/19		0/19		11SB22-04
4-Methyl-2-pentanone	163,520,000	6,257,143	0/19		0/19		11SB22-04
Acetone	204,400,000	7,821,429	0/19		0/19		11SB16-04
Toluene	408,800,000	15,642,857	0/19		0/19		11SB01-02
SEMIVOLATILES (ug/kg)							
Acenaphthene	122,640,000	4,692,857	0/19		0/19		11SB09-02
Benzo(a)anthracene	7,840	875	0/19		0/19		11SB01-02
Benzo(a)pyrene	784	88	0/19		3/19	110J - 260J	11SB09-02
Benzo(g,h,i)perylene	61,320,000	2,346,429	0/19		0/19		11SB07-02
Benzoic acid	8,176,000,000	312,857,143	0/19		0/19		11SB11-02D
Chrysene	784,000	87,497	0/19		0/19		11SB09-02
Diethylphthalate	1,635,200,000	62,571,429	0/19		0/19		11SB19-04
Di-n-butylphthalate	204,400,000	7,821,429	0/19		0/19		11SB08-02
Phenol	1,226,400,000	46,928,571	0/19		0/19		11SB16-04
Pyrene	61,320,000	2,346,429	0/19		0/19		11SB09-02
TPH (ug/kg)							
Diesel Range Organics	NE	NE	NE		NE		11SB01-02
Gasoline Range Organics	NE	NE	NE		NE		11SB09-02
PCBs (ug/kg)							
Aroclor-1260	2,862	319	0/20		1/20	320J	11SB01-02

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established. NA - Not Analyzed.

TABLE 5-37 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID	2 x Average	**EPA Region III**	EPA Region III	11-SB01	11-SB04	11-SB04	11-SB05	11-SB06	11-SB07	11-SB08	11-SB09	11-SB11
Sample ID	Detected	**Industrial**	Residential	11SB01-02	11SB04-01	11SB04-01D	11SB05-02	11SB06-02	11SB07-02	11SB08-02	11SB09-02	11SB11-02
Sample Date	Background	**RBCs**	RBCs	09/17/97	09/24/97	09/24/97	09/17/97	09/18/97	09/18/97	09/18/97	09/19/97	09/19/97
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	2.00-8.00	2.00-4.00	2.00-4.00	2.00-8.00	2.00-8.00	2.00-8.00	2.00-8.00	2.00-8.00	2.00-8.00
Inorganics, Total (mg/kg)												
Antimony	0	818	31.29	0.42 J	0.36 UJ	0.36 UJ	0.68 UJ	0.16 UJ	0.71 UJ	0.19 UJ	0.38 UJ	0.33 UJ
Arsenic	2.05	3.82	0.43	2.7 J	3.2 J	3 J	**4.5** J	0.66 U	2.7 J	0.94 J	3.3 J	3.1 J
Barium	222	143,080	5,475	119	12.9 J	15.7 J	9 J	30.4	9.8 J	80.9	10 J	8.9 J
Beryllium	0.74	4,100	160	0.28 J	0.06 U	0.06 U	0.11 U	0.06 J	0.11 U	0.09 J	0.06 U	0.05 U
Cadmium	0.74	2,044	78.21	0.67	0.07 U	0.08 U	0.14 U	0.33 J	0.15 U	0.42 J	0.08 U	0.07 U
Chromium	133	6,132	235	16.4	18.3	24.4	5.6	27.1	4.7	10.3	5.4	5.6
Cobalt	30	122,640	4,693	9.4	6 J	7.2 J	0.65 J	12.5	0.62 J	10.7	0.84 J	0.65 J
Copper	193	81,760	3,129	75 R	28.4 J	39.3 J	4.5 R	114 R	3.8 R	46 R	3 R	5.8 R
Lead	8.68	NE	NE	7.7 J	3.8 J	4.8 J	0.79	1.5	1.4 J	1.1	0.59	0.49
Mercury	0.09	NE	NE	0.04 J	0.02 U	0.02 U	0.02 U	0.02 U	0.03 U	0.02 U	0.02 U	0.02 U
Nickel	31.90	40,880	1,564	11.4	6.2 J	8	1.7 J	13.2	1.7 J	4.2	0.85 J	1.5 J
Silver	0	10,220	391	0.36 J	0.11 U	0.11 U	0.22 U	0.1 J	0.22 U	0.1 J	0.12 U	0.1 U
Tin	2.96	1,226,400	46,929	2.7 J	1.7 J	2.1 J	0.87 J	1.4 J	0.67 U	1.2 J	1.2 J	1 J
Vanadium	462	14,308	547.5	68.8 J	52.5	74.7	13.2 J	89.3 J	12 J	51 J	7 J	10.1 J
Zinc	88.63	613,200	23,464	59 R	17.5 R	25.5 R	5.2 R	41.7 R	5.4 R	35.8 R	4.3 R	5.3 R

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

TABLE 5-37 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID	2 x Average	**EPA Region III**	EPA Region III	11-SB11	11-SB14	11-SB15	11-SB16	11-SB18	11-SB19	11-SB22	11-SB23	11-SB26	11-SB2
Sample ID	Detected	**Industrial**	Residential	11SB11-02D	11SB14-01	11SB15-02	11SB16-04	11SB18-02	11SB19-04	11SB22-04	11SB23-03	11SB26-01	11SB27-
Sample Date	Background	**RBCs**	RBCs	09/19/97	09/19/97	09/19/97	09/19/97	09/20/97	09/20/97	09/21/97	09/21/97	09/21/97	09/21/9
Depth Range (ft.)	(mg/kg)	(mg/kg)	(mg/kg)	2.00-8.00	2.00-4.00	2.00-4.00	4.00-8.00	2.00-6.00	6.00-10.00	7.50-9.50	4.00-6.00	0.00-2.00	6.00-10.
Inorganics, Total (mg/kg)													
Antimony	0	818	31.29	0.39 UJ	0.36 UJ	0.38 UJ	0.24 UJ	0.41 UJ	0.19 UJ	0.43 J	0.38 UJ	0.32 UJ	0.22
Arsenic	2.05	3.82	0.43	**5.4**	2.1 J	2.3 J	3 J	2.9 J	0.71 U	2.5 J	3.7 J	2.6 J	0.7
Barium	222	143,080	5,475	9.9 J	26 J	33	8.7 J	10.4 J	116	85.7	88.1	16 J	42.7
Beryllium	0.74	4,100	160	0.06 U	0.06 U	0.06 U	0.04 U	0.07 U	0.18	0.16 J	0.17 J	0.05 U	0.13
Cadmium	0.74	2,044	78.21	0.09 J	0.23 J	0.08 U	0.05 J	0.09 U	0.86	0.07 U	0.08 U	0.79 J	0.51
Chromium	133	6,132	235	5.3	11.8	15.1	7.1	3.8	21.9	9.7	320	39.3	35.3
Cobalt	30	122,640	4,693	0.92 J	5.4 J	9.7 J	0.46 J	0.31 J	14.4	20.4	17.8	11.6	10.5
Copper	193	81,760	3,129	6.3 R	31.5 R	59.4 J	5.1 J	2.4 J	131 J	101 J	126 J	62.8 J	70.2
Lead	8.68	NE	NE	0.76	2.5	1.4 J	0.42 J	0.5 J	1.4 J	0.94 J	0.55 J	1.3 J	1.1
Mercury	0.09	NE	NE	0.02 U	0.02 U	0.02 U	0.03 U	0.02 U	0.02 U	0.02 U	0.03 U	0.02 U	0.02
Nickel	31.90	40,880	1,564	1.1 J	4.4 J	7 J	1.4 J	1.1 J	9.8	10.6	17	13.7	11.9
Silver	0	10,220	391	0.12 U	0.11 U	0.12 U	0.08 U	0.13 U	0.07 J	0.13 J	0.17 J	0.1 U	0.08
Tin	2.96	1,226,400	46,929	1.1 J	1.3 J	2.2 J	1.8 J	1.8 J	2.6 J	2.1 J	2.4 J	2.1 J	1.9
Vanadium	462	14,308	547.5	13.8 J	35 J	63.4	22.1	5.6 J	135	158	137	109	87.4
Zinc	88.63	613,200	23,464	6.9 R	19 R	29.3 R	4.2 R	2.5 R	42.6	90.9	61.2	27.5 R	25.6

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

TABLE 5-37 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	2 x Average Detected Background (mg/kg)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	7 04 7 00	Number Exceeding 2 x Average Detected Background	Range Exceeding 2 x Average Detected Background	**Number Exceeding EPA Region III Industrial RBCs**	**Range Exceeding EPA Region III Industrial RBCs**	Number Exceeding EPA Region III Residential RBCs	Range Exceeding EPA Region III Residential RBCs	Location Maximum Detect
Inorganics, Total (mg/kg)											
Antimony	0	818	31.29	J	3/19	0.22J - 0.43J	0/19		0/19		11SB22-04
Arsenic	2.05	3.82	0.43	U	15/19	2.1J - 5.4	2/19	4.5J - 5.4	16/19	0.94J - 5.4	11SB11-02D
Barium	222	143,080	5,475		0/19		0/19		0/19		11SB01-02
Beryllium	0.74	4,100	160		0/19		0/19		0/19		11SB01-02
Cadmium	0.74	2,044	78.21		2/19	0.79J - 0.86	0/19		0/19		11SB19-04
Chromium	133	6,132	235		1/19	320	0/19		1/19	320	11SB23-03
Cobalt	30	122,640	4,693		0/19		0/19		0/19		11SB22-04
Copper	193	81,760	3,129	J	0/19		0/19		0/19		11SB19-04
Lead	8.68	NE	NE	J	0/19		NE		NE		11SB01-02
Mercury	0.09	NE	NE	U	0/19		NE		NE		11SB01-02
Nickel	31.90	40,880	1,564		0/19		0/19		0/19		11SB23-03
Silver	0	10,220	391	J	7/19	0.07J - 0.36J	0/19		0/19		11SB01-02
Tin	2.96	1,226,400	46,929	J	0/19		0/19		0/19		11SB01-02
Vanadium	462	14,308	547.5		0/19		0/19		0/19		11SB22-04
Zinc	88.63	613,200	23,464	R	1/19	90.9	0/19		0/19		11SB22-04

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

TABLE 5-38 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID	ERL	**ERM**	11-SD01	11-SD01	11-SD02	11-SD03	11-SD03	11-SD04	11-SD05	11-SD06	11-SD07	11-SD08	11-SD(
Sample ID	Sediment	**Sediment**	11SD01	11SD01D	11SD02	11SD03	11SD03D	11SD04	11SD05	11SD06	11SD07	11SD08	11SD0
Sample Date	Screening Value	**Screening Value**	09/19/97	09/19/97	10/02/97	10/02/97	10/02/97	10/02/97	10/02/97	10/02/97	10/02/97	10/02/97	10/02/
Depth Range (ft.)	(ug/kg)	(ug/kg)	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.
VOLATILES (ug/kg)													
Acetone	NE	NE	97 J	23 J	28 J	47 J	140 J	43 J	63 J	55 J	30 J	38 J	41
SEMIVOLATILES (ug/kg)													
Acenaphthylene	44	640	81 J	550 U	630 U	100 J	180 J	660 U	730 U	830 U	720 U	640 U	700
Anthracene	85.3	1,100	98 J	550 U	630 U	160 J	320 J	660 U	730 U	830 U	720 U	640 U	96
Benzo(a)anthracene	261	1,600	190 J	160 J	630 U	320 J	640 J	180 J	730 U	85 J	93 J	640 U	310
Benzo(a)pyrene	430	1,600	170 J	1,300	96 J	**1,800**	**3,200**	220 J	730 U	160 J	120 J	640 U	360
Benzo(b)fluoranthene	NE	NE	1,900	2,000	140 J	2,700	5,000	330 J	730 U	250 J	160 J	640 U	520
Benzo(g,h,i)perylene	NE	NE	560	690	630 U	1,100	1,800	160 J	730 U	120 J	720 U	640 U	230
Benzo(k)fluoranthene	NE	NE	720	710	630 U	1,200	2,000	160 J	730 U	830 U	720 U	640 U	540
Benzoic acid	NE	NE	2,700 U	790 J	3,100 UJ	3,600 UJ	3,900 UJ	3,300 UJ	3,600 UJ	4,200 UJ	3,600 UJ	3,200 UJ	3,500
Bis(2-ethylhexyl)phthalate	NE	NE	530 U	550 UJ	260 J	320 J	480 J	280 J	240 J	370 J	700 J	200 J	590
Carbazole	NE	NE	530 U	550 U	630 U	350 J	390 J	330 J	730 U	390 J	350 J	640 U	390
Chrysene	384	2,800	610	490 J	76 J	1,000	1,900	210 J	730 U	130 J	100 J	640 U	390
Dibenzo(a,h)anthracene	63.4	1,600	180 J	200 J	630 U	380 J	580 J	660 U	730 U	830 U	720 U	640 U	75
Di-n-butylphthalate	NE	NE	120 J	550 U	89 J	730 U	190 J	99 J	110 J	170 J	460 J	88 J	120
Fluoranthene	600	5,100	93 J	550 U	83 J	120 J	230 J	330 J	730 U	110 J	180 J	640 U	680
Indeno(1,2,3-cd)pyrene	NE	NE	650	740	75 J	1,300	2,100	170 J	730 U	150 J	94 J	640 U	260
Phenanthrene	NE	NE	530 U	550 U	630 U	78 J	160 J	200 J	730 U	830 U	140 J	640 U	470
Pyrene	665	2,600	140 J	550 UJ	79 J	210 J	370 J	320 J	730 U	110 J	180 J	640 U	680
PCBs (ug/kg)													
Aroclor-1260	22.7	180	28 J	34 J	42	44	46	53	42	62	51	33	130
TPH (ug/kg)													
Diesel Range Organics	NE	NE	26,000	55,000	23,000	65,000	65,000	35,000	19,000	46,000	18,000	12,000 U	31,000

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

Notes:

NE - Not Established.

TABLE 5-38 (continued)

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	ERL Sediment Screening Value (ug/kg)	**ERM Sediment Screening Value** (ug/kg)	)9)9)7 00	Number Exceeding ERL Sediment Screening Value	Range Exceeding ERL Sediment Screening Value	**Number Exceeding ERM Sediment Screening Value**	**Range Exceeding ERM Sediment Screening Value**	Location Maximum Detect
VOLATILES (ug/kg)								
Acetone	NE	NE	J	NE		NE		11SD03D
SEMIVOLATILES (ug/kg)								
Acenaphthylene	44	640	U	3/11	81J-180J	0/11		11SD03D
Anthracene	85.3	1,100	J	4/11	96J-320J	0/11		11SD03D
Benzo(a)anthracene	261	1,600	J	3/11	310J-640J	0/11		11SD03D
Benzo(a)pyrene	430	1,600	J	3/11	1,300-3,200	2/11	1,800-3,200	11SD03D
Benzo(b)fluoranthene	NE	NE	J	NE		NE		11SD03D
Benzo(g,h,i)perylene	NE	NE	J	NE		NE		11SD03D
Benzo(k)fluoranthene	NE	NE	J	NE		NE		11SD03D
Benzoic acid	NE	NE	UJ	NE		NE		11SD01D
Bis(2-ethylhexyl)phthalate	NE	NE	J	NE		NE		11SD07
Carbazole	NE	NE	J	NE		NE		11SD03D, 11SD06, 11SD09
Chrysene	384	2,800	J	5/11	390J-1,900	0/11		11SD03D
Dibenzo(a,h)anthracene	63.4	1,600	J	5/11	75J-580J	0/11		11SD03D
Di-n-butylphthalate	NE	NE	J	NE		NE		11SD07
Fluoranthene	600	5,100	J	1/11	680J	0/11		11SD09
Indeno(1,2,3-cd)pyrene	NE	NE	J	NE		NE		11SD03D
Phenanthrene	NE	NE	J	NE		NE		11SD09
Pyrene	665	2,600	J	1/11	680J	0/11		11SD09
PCBs (ug/kg)								
Aroclor-1260	22.7	180		11/11	28J - 130	0/11		11SD09
TPH (ug/kg)								
Diesel Range Organics	NE	NE		NE		NE		11SD03, 11SD03D

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

Notes:

NE - Not Established.

TABLE 5-39 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SEDIMENT
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID	ERL	**ERM**	11-SD01	11-SD01	11-SD02	11-SD03	11-SD03	11-SD04	11-SD05	11-SD06	11-SD07	11-SD08	11-SD0
Sample ID	Sediment	**Sediment**	11SD01	11SD01D	11SD02	11SD03	11SD03D	11SD04	11SD05	11SD06	11SD07	11SD08	11SD0
Sample Date	Screening Value	**Screening Value**	09/19/97	09/19/97	10/02/97	10/02/97	10/02/97	10/02/97	10/02/97	10/02/97	10/02/97	10/02/97	10/02/9
Depth Range (ft.)	(mg/kg)	(mg/kg)	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.00	0.00-3.0
Inorganics (mg/kg)													
Antimony	NE	NE	0.57 UJ	0.51 UJ	0.7 J	0.4 J	0.68 J	0.41 J	0.63 J	0.36 UJ	0.3 UJ	0.37 J	0.63
Arsenic	8.2	70	11.9	12	3.3 J	4.9 J	5.4 J	3.7 J	5.8 J	5.6 J	4.8 J	7.8 J	5.4
Barium	NE	NE	20.9 J	15.6 J	14.2 J	18.1 J	17.3 J	16.5 J	15.7 J	26.1 J	19.1 J	13 J	24.4
Beryllium	NE	NE	0.09 U	0.08 U	0.05 U	0.06 U	0.06 J	0.05 U	0.06 U	0.06 J	0.05 U	0.04 U	0.06
Cadmium	1.2	9.6	0.66 J	0.4 J	0.07 U	0.08 U	0.08 J	0.07 U	0.07 U	0.08 U	0.06 U	0.06 U	0.06
Chromium	81	370	12.7	9.8	9.6	11.9	12.7 J	9.4	9.1	14.4	8.6	8	13.8
Cobalt	NE	NE	7.3 J	5.4 J	2.3 J	3.1 J	3.1 UJ	2.4 J	2.6 J	4.1 J	2.8 J	1.8 J	4.1
Copper	34	270	84.1 R	41.6 R	21.8 J	30.9 J	31.3 J	25.6 J	25 J	40.1 J	27.1 J	18.1 J	44.6
Lead	46.7	218	20.2	30.4	8.7	15.4	17.2	13.6	11.9	18.8	17.4	9.7	22
Mercury	0.15	0.71	0.31	0.42	0.04 U	0.04 U	0.06 U	0.04 U	0.05 U	0.04 U	0.04 U	0.03 U	0.04
Nickel	20.9	51.6	5 J	3.5 J	2.3 J	3.1 J	3	2.3 J	2.8 J	4.7 J	2.5 J	1.7 J	3.8
Selenium	NE	NE	0.78 J	0.59 UJ	0.37 U	0.42 U	0.44 U	0.36 U	0.41 U	0.42 U	0.35 U	0.32 U	0.35
Silver	1	3.7	0.36 J	0.16 U	0.1 U	0.11 U	0.12 U	0.1 U	0.11 U	0.13 J	0.1 U	0.09 U	0.13
Tin	NE	NE	5.5 J	5 J	2.9 J	3.7 J	4	3.3 J	3.5 J	4.3 J	3.1 J	2.2 J	3.2
Vanadium	NE	NE	73.4 J	29 J	17.9	22.2	22.4	18.9	22.3	29.5	21.2	15.8	31.7
Zinc	150	410	130 R	83 R	33	56.6	62.7	48.9	37.3	68.8	44.8	26.1	83.9

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

Notes:

NE - Not Established.

TABLE 5-39 (continued)

SUMMARY OF INORGANIC DETECTIONS IN SEDIMENT
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	ERL Sediment Screening Value (mg/kg)	**ERM Sediment Screening Value** (mg/kg)	)9 9 /7)0	Number Exceeding ERL Sediment Screening Value	Range Exceeding ERL Sediment Screening Value	**Number Exceeding ERM Sediment Screening Value**	**Range Exceeding ERM Sediment Screening Value**	Location Maximum Detect
Inorganics (mg/kg)								
Antimony	NE	NE	J	NE		NE		11SD02
Arsenic	8.2	70	J	2/11	11.9 - 12	0/11		11SD01D
Barium	NE	NE	J	NE		NE		11SD06
Beryllium	NE	NE	J	NE		NE		11SD03D, 11SD06, 11SD09
Cadmium	1.2	9.6	U	0/11		0/11		11SD01
Chromium	81	370		0/11		0/11		11SD06
Cobalt	NE	NE	J	NE		NE		11SD01
Copper	34	270	J	2/11	40.1J - 44.6J	0/11		11SD09
Lead	46.7	218		0/11		0/11		11SD01D
Mercury	0.15	0.71	U	2/11	0.31 - 0.42	0/11		11SD01D
Nickel	20.9	51.6	J	0/11		0/11		11SD01
Selenium	NE	NE	U	NE		NE		11SD01
Silver	1	3.7	J	0/11		0/11		11SD01
Tin	NE	NE	J	NE		NE		11SD01
Vanadium	NE	NE		NE		NE		11SD01
Zinc	150	410		0/11		0/11		11SD09

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

Notes:

NE - Not Established.

TABLE 5-40 (continued)

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID		**EPA Region III**	11-SB01	11-SB02	11-SB05	11-SB07	11-SB08	11-SB10	11-SB11	11-SB12	11-SB13
Sample ID	Federal	**Tap Water**	11GW01	11GW02	11GW05	11GW07	11GW08	11GW10	11GW11	11GW12	11GW13
Sample Date	MCL	**RBC**	09/18/97	09/22/97	09/19/97	09/19/97	09/19/97	09/20/97	09/20/97	09/20/97	09/20/97
	(ug/l)	(ug/l)									
VOLATILES (ug/l)											
Acetone	NE	3,650	10 UJ	10 U	10 U	10 UJ	16 J	34	17	24	12
SEMIVOLATILES (ug/l)											
2,4-Dichlorophenol	NE	110	10 U	11 U	50 U	2 J	10 U	10 U	10 U	10 U	10 U
Anthracene	NE	10,950	5 J	11 U	9 J	13 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	NE	0.09	10 U	11 U	**6** J	13 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	0.2	0.01	10 U	11 U	**7** J	13 U	10 U	10 U	10 U	10 U	10 U
Benzoic acid	NE	146,000	48 U	54 UJ	250 U	23 J	26 J	50 U	50 UJ	50 U	49 U
Benzyl alcohol	NE	10,950	10 U	11 U	50 U	13 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	6	4.78	10 U	10 U	50 U	13 UJ	10 UJ	47 U	10 U	120 U	10 U
Chrysene	NE	9.17	10 U	11 U	**13** J	13 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	NE	29,200	10 U	11 U	50 U	13 U	10 U	34	10 U	12	10 U
Dimethylphthalate	NE	365,000	10 U	11 U	50 U	13 U	10 U	27	10 U	2 J	10 U
Diphenylamine	NE	913	10 U	11 U	18 J	13 U	10 U	10 U	10 U	10 U	10 U
m&p Cresol	NE	NE	10 U	11 U	50 U	13 U	2 J	10 U	10 U	10 U	10 U
o-Cresol	NE	1,825	10 U	11 U	50 U	13 U	10 U	10 U	10 U	10 U	10 U
Phenol	NE	22,000	10 U	11 U	50 U	2 J	3 J	10 U	10 U	10 U	10 U
Pyrene	NE	1,095	5 J	11 U	15 J	13 UJ	10 UJ	10 U	10 U	10 U	10 U
PCBs (ug/l)											
TPH (ug/l)											
Diesel Range Organics	NE	NE	68,000	140 U	2,800	1,200	130 J	140 U	120 U	120 U	120 U
Gasoline Range Organics	NE	NE	2,100	50 U	550	54	50 U	110	50 U	50 U	50 U
TOC											
Total organic carbon (mg/l)	NE	NE	60,800	1,000 U	20,800	27,100	26,900	1,000 U	8,100	6,800	1,000 U

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-40 (continued)

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID		**EPA Region III**	11-SB16	11-SB16	11-SB18	11-SB19	11-SB24	11-SB24	11-SB25
Sample ID	Federal	**Tap Water**	11GW16	11GW16D	11GW18	11GW19	11GW24	11GW24D	11GW25
Sample Date	MCL	**RBC**	09/20/97	09/20/97	09/21/97	09/21/97	09/22/97	09/22/97	09/22/97
	(ug/l)	(ug/l)							
VOLATILES (ug/l)									
Acetone	NE	3,650	13	10 U	10 U	10 U	10 U	10 U	10 U
SEMIVOLATILES (ug/l)									
2,4-Dichlorophenol	NE	110	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	NE	10,950	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	NE	0.09	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	0.2	0.01	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzoic acid	NE	146,000	51 U	50 U	52 U	25 J	50 UJ	49 U	48 U
Benzyl alcohol	NE	10,950	10 U	10 U	10 U	3 J	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	6	4.78	**24**	45 U	25 U	10 U	10 U	10 U	10 U
Chrysene	NE	9.17	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	NE	29,200	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	NE	365,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diphenylamine	NE	913	10 U	10 U	10 U	10 U	10 U	10 U	10 U
m&p Cresol	NE	NE	10 U	10 U	10 U	7 J	10 U	10 U	10 U
o-Cresol	NE	1,825	10 U	10 U	10 U	1 J	10 U	10 U	10 U
Phenol	NE	22,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	NE	1,095	10 U	10 U	10 U	10 U	10 U	10 U	1 J
PCBs (ug/l)									
TPH (ug/l)									
Diesel Range Organics	NE	NE	120 U	120 U	140	120 U	130 U	120 U	120 U
Gasoline Range Organics	NE	NE	50 U	50 U	50 U	50 U	50 U	50 U	50 U
TOC									
Total organic carbon (mg/l)	NE	NE	43,200	46,200	72,200	12,900	9,500	1,000 U	1,000 U

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-40 (continued)

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Number Exceeding Federal MCL	Range Exceeding Federal MCL	**Number Exceeding EPA Region III Tap Water RBC**	**Range Exceeding EPA Region III Tap Water RBC**	Location Maximum Detect
VOLATILES (ug/l)							
Acetone	NE	3,650	NE		0/16		11GW10
SEMIVOLATILES (ug/l)							
2,4-Dichlorophenol	NE	110	NE		0/16		11GW07
Anthracene	NE	10,950	NE		0/16		11GW05
Benzo(a)anthracene	NE	0.09	NE		1/16	6J	11GW05
Benzo(a)pyrene	0.2	0.01	1/16	7J	1/16	7J	11GW05
Benzoic acid	NE	146,000	NE		0/16		11GW08
Benzyl alcohol	NE	10,950	NE		0/16		11GW19
Bis(2-ethylhexyl)phthalate	6	4.78	1/16	24	1/16	24	11GW16
Chrysene	NE	9.17	NE		1/16	13J	11GW05
Diethylphthalate	NE	29,200	NE		0/16		11GW10
Dimethylphthalate	NE	365,000	NE		0/16		11GW10
Diphenylamine	NE	913	NE		0/16		11GW05
m&p Cresol	NE	NE	NE		NE		11GW19
o-Cresol	NE	1,825	NE		0/16		11GW19
Phenol	NE	22,000	NE		0/16		11GW08
Pyrene	NE	1,095	NE		0/16		11GW05
PCBs (ug/l)							
TPH (ug/l)							
Diesel Range Organics	NE	NE	NE		NE		11GW01
Gasoline Range Organics	NE	NE	NE		NE		11GW01
TOC							
Total organic carbon (mg/l)	NE	NE	NE		NE		11GW18

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NE - Not Established.

TABLE 5-41 (continued)

SUMMARY OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID		**EPA Region III**	11-SB01	11-SB02	11-SB05	11-SB07	11-SB08	11-SB10	11-SB11	11-SB12
Sample ID	Federal	**Tap Water**	11GW01	11GW02	11GW05	11GW07	11GW08	11GW10	11GW11	11GW12
Sample Date	MCL	**RBC**	09/18/97	09/22/97	09/19/97	09/19/97	09/19/97	09/20/97	09/20/97	09/20/97
	(ug/l)	(ug/l)								
Inorganics, Total (ug/l)										
Antimony	6	14.6	2.3 J	3.3 J	1.9 U	2.7 J	2.2 J	3.7 J	2 J	1.9 U
Arsenic	50	0.04	1.3 U	**8.3** J	**1.7** J	**9.5** J	**15.2**	**16.5** J	**5** J	6.5 UJ
Barium	2,000	2,555	43.7 J	19.2 J	60.9 J	15 J	91.3 J	10.8 J	52.4 J	71.4 J
Cadmium	5	18.25	0.4 U	0.4 U	0.4 U	0.4 U	0.54 J	0.4 U	0.4 U	0.4 U
Chromium	100	110	1.5 J	24.1	0.7 J	11.7	14.3	4.7 J	7.1 J	0.7 U
Cobalt	NE	2,190	0.7 U	4.6 J	0.7 U	1.2 J	1.8 J	0.7 U	1.3 J	4.8 J
Copper	1,300	1,460	4.2 J	49.2	1.1 J	11.5 J	14 J	1.8 J	15.8 J	2.8 J
Lead	15	NE	1 U	4.4 R	1 UJ	1.5 J	1 UJ	1.5 U	1.5 U	1.5 U
Mercury	2	NE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.53	0.1 U	0.1 U
Nickel	100	730	0.92 J	5.5 J	0.96 J	0.8 U	2.3 J	0.8 U	0.8 U	0.8 U
Tin	NE	21,900	1.8 U	1.8 U	1.8 U	1.8 U	2 J	1.8 U	2 J	1.8 U
Vanadium	NE	256	20.7 J	39 J	10.1 J	19.2 J	40.6 J	10.2 J	16.6 J	2.3 J
Zinc	NE	1,095	7.2 J	23.1	8.4 J	24.8	16 J	5.8 J	11.7 J	4.8 J

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

TABLE 5-41 (continued)

SUMMARY OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID		**EPA Region III**	11-SB13	11-SB16	11-SB16	11-SB18	11-SB19	11-SB24	11-SB24	11-SB25
Sample ID	Federal	**Tap Water**	11GW13	11GW16	11GW16D	11GW18	11GW19	11GW24	11GW24D	11GW25
Sample Date	MCL	**RBC**	09/20/97	09/20/97	09/20/97	09/21/97	09/21/97	09/22/97	09/22/97	09/22/97
	(ug/l)	(ug/l)								
Inorganics, Total (ug/l)										
Antimony	6	14.6	1.9 U	1.9 U	3.1 J	1.9 U	2.4 J	3.1 J	2 J	2.8 J
Arsenic	50	0.04	6.5 UJ	6.5 U	1.3 UJ	**3.5** J	**18.9**	**2.8** J	**2.5** J	**4.4** J
Barium	2,000	2,555	118 J	10.4 J	6.1 J	8.8 J	391	25.6 J	23.1 J	34.6 J
Cadmium	5	18.25	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium	100	110	0.7 U	27	15.9	6.4 J	10	1.2 J	0.7 U	0.87 J
Cobalt	NE	2,190	0.7 U	3.7 J	1.3 J	0.7 U	3.5 J	0.7 U	0.7 U	0.7 U
Copper	1,300	1,460	0.5 U	98.9 J	42.1 J	0.78 J	46.1	0.5 U	0.5 U	2.6 J
Lead	15	NE	7.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Mercury	2	NE	0.1 U	0.1 J	0.1 U	0.34	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	100	730	0.8 U	7.9 J	3 J	0.8 U	1.8 J	0.8 U	0.8 U	0.8 U
Tin	NE	21,900	1.8 U	1.8 U	1.8 U	2 J	1.8 U	1.8 U	1.8 U	2.1 J
Vanadium	NE	256	0.8 U	67.8	46 J	11.6 J	27.3 J	1.7 J	0.8 U	2.6 J
Zinc	NE	1,095	4.2 J	15.8 J	7 J	7.3 J	24	3.1 J	1.3 J	7.6 J

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

TABLE 5-41 (continued)

SUMMARY OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Number Exceeding Federal MCL	Range Exceeding Federal MCL	**Number Exceeding EPA Region III Tap Water RBC**	**Range Exceeding EPA Region III Tap Water RBC**	Location Maximum Detect
Inorganics, Total (ug/l)							
Antimony	6	14.6	0/16		0/16		11GW10
Arsenic	50	0.04	0/16		9/16	1.7J - 18.9	11GW19
Barium	2,000	2,555	0/16		0/16		11GW19
Cadmium	5	18.25	0/16		0/16		11GW08
Chromium	100	110	0/16		0/16		11GW16
Cobalt	NE	2,190	NE		0/16		11GW12
Copper	1,300	1,460	0/16		0/16		11GW16
Lead	15	NE	0/16		NE		11GW07
Mercury	2	NE	0/16		NE		11GW10
Nickel	100	730	0/16		0/16		11GW16
Tin	NE	21,900	NE		0/16		11GW25
Vanadium	NE	256	NE		0/16		11GW16
Zinc	NE	1,095	NE		0/16		11GW07

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

TABLE 5-42 (continued)

SUMMARY OF INORGANIC (DISSOLVED) DETECTIONS IN GROUNDWATER
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID		**EPA Region III**	11-SB01	11-SB02	11-SB05	11-SB07	11-SB08	11-SB10	11-SB11	11-SB12	11-SB13
Sample ID	Federal	**Tap Water**	11GW01	11GW02	11GW05	11GW07	11GW08	11GW10	11GW11	11GW12	11GW13
Sample Date	MCL	**RBC**	09/18/97	09/22/97	09/19/97	09/19/97	09/19/97	09/20/97	09/20/97	09/20/97	09/20/97
	(ug/l)	(ug/l)									
Inorganics, Dissolved (ug/l)											
Antimony	6	14.6	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	3.6 J	1.9 U	1.9 U	1.9 U
Arsenic	50	0.04	**1.8** J	**1.3** J	1.3 UJ	**3.3** J	**4.4** J	**12.7** J	**8** J	6.5 U	6.5 U
Barium	2,000	2,555	45.9 J	3.1 J	63.3 J	5.3 J	28.9 J	7.8 J	48.1 J	70.4 J	128 J
Cadmium	5	18.25	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	2.9 J	0.4 U	0.4 U	0.4 U
Chromium	100	110	0.97 J	0.7 J	0.7 U	0.7 U	1.1 J	0.7 U	0.7 U	0.7 U	0.7 U
Cobalt	NE	2,190	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	4.2 J	0.7 U
Copper	1,300	1,460	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.4 J
Lead	15	NE	1 UJ	1.5 U	1 UJ	1 UJ	1 UJ	54.8 R	1.5 U	7.5 U	7.5 U
Mercury	2	NE	0.1 U	1.6	0.1 U	0.29	0.1 U	0.1 U	1.6	0.1 U	0.1 U
Tin	NE	21,900	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	2.1 J	1.8 U	1.8 U
Vanadium	NE	256	16.2 J	2.2 J	3.2 J	0.8 U	0.8 U	0.8 U	1.1 J	0.8 U	2.5 J
Zinc	NE	1,095	3.3 J	1.5 J	3.4 J	2.9 J	3.1 J	7.8 J	2 J	2.6 J	9.4 J

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

TABLE 5-42 (continued)

SUMMARY OF INORGANIC (DISSOLVED) DETECTIONS IN GROUNDWATER
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID		**EPA Region III**	11-SB16	11-SB16	11-SB18	11-SB19	11-SB24	11-SB24	11-SB25
Sample ID	Federal	**Tap Water**	11GW16	11GW16D	11GW18	11GW19	11GW24	11GW24D	11GW25
Sample Date	MCL	**RBC**	09/20/97	09/20/97	09/21/97	09/21/97	09/22/97	09/22/97	09/22/97
	(ug/l)	(ug/l)							
Inorganics, Dissolved (ug/l)									
Antimony	6	14.6	1.9 U	1.9 U	2.4 J	3.2 J	2.3 J	1.9 U	2 J
Arsenic	50	0.04	1.3 U	1.3 U	**2.4** J	**15** J	**3.6** J	2.6 U	**2.3** J
Barium	2,000	2,555	2.8 J	2.6 J	5.8 J	278	23.6 J	22.3 J	38.8 J
Cadmium	5	18.25	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chromium	100	110	8.6 J	7.9 J	3.3 J	0.7 U	0.7 U	0.7 U	0.7 U
Cobalt	NE	2,190	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
Copper	1,300	1,460	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Lead	15	NE	1.6 J	1.5 U	1.5 U	1.5 U	9.2 R	1.5 U	1.5 U
Mercury	2	NE	2.6	0.1 U	0.12 J	0.1 U	0.1 U	0.1 U	0.1 U
Tin	NE	21,900	1.8 U	1.8 U	2.4 J	1.8 U	1.8 U	1.8 U	1.9 J
Vanadium	NE	256	29.3 J	28.1 J	5.2 J	0.8 U	0.8 U	0.8 U	0.8 U
Zinc	NE	1,095	1.9 J	2.4 J	2.9 J	3.4 J	2.8 J	1.9 J	3.3 J

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

TABLE 5-42 (continued)

SUMMARY OF INORGANIC (DISSOLVED) DETECTIONS IN GROUNDWATER
1997 RFI INVESTIGATION
SWMU 45 (BUILDING 38 EXTERIOR)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Number Exceeding Federal MCL	Range Exceeding Federal MCL	**Number Exceeding EPA Region III Tap Water RBC**	**Range Exceeding EPA Region III Tap Water RBC**	Location Maximum Detect
Inorganics, Dissolved (ug/l)							
Antimony	6	14.6	0/16		0/16		11GW10
Arsenic	50	0.04	0/16		10/16	1.3J - 15J	11GW19
Barium	2,000	2,555	0/16		0/16		11GW19
Cadmium	5	18.25	0/16		0/16		11GW10
Chromium	100	110	0/16		0/16		11GW16
Cobalt	NE	2,190	NE		0/16		11GW12
Copper	1,300	1,460	0/16		0/16		11GW13
Lead	15	NE	0/16		NE		11GW16
Mercury	2	NE	1/16	2.6	NE		11GW16
Tin	NE	21,900	NE		0/16		11GW18
Vanadium	NE	256	NE		0/16		11GW16
Zinc	NE	1,095	NE		0/16		11GW13

Data Qualifiers:

U - Not Detected. The associated number indicates the approximate sample concentration necessary to be detected.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

J - Analyte present. Reported value may not be accurate or precise.

R - Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

Notes:

NE - Not Established.

TABLE 5-43

SUMMARY OF ORGANIC AND INORGANIC DETECTIONS IN EQUIPMENT RINSATE BLANKS
SWMU 01 - 1996 RFI INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Sample ID	1RB01	1RB02	1RB03	1RB04	1RB05
Sample Date	10/15/96	10/22/96	10/25/96	10/26/96	10/29/96
VOLATILES (ug/l)					
Acetone	10 UJ	10 U	10 U	10 U	21
SEMIVOLATILES (ug/l)					
Bis(2-ethylhexyl)phthalate	10 U	2 J	3 J	10 U	10 U
Diethylphthalate	2 J	4 J	10 U	10 U	10 U
Phenol	10 U	1 J	10 U	10 U	10 U
PESTICIDES/PCBs (ug/l)					
CHLORINATED HERBICIDES (ug/l)					
OP-PESTICIDES (ug/l)					
DIOXINS (ug/l)					
EXPLOSIVES (ug/l)					
Inorganics, Total (ug/l)					
Chromium	1.7 U	1.7 U	2	1.7 U	1.8
Copper	2.2	2.1	1.7	1.5 U	1.5 U
Lead	1.3 U	1.3 U	1.3 U	2.3 J	1.3 U
Mercury	0.1 U	0.1 J	0.1 U	0.1 U	0.1 U
Zinc	13.9	7.1	2.6	4.3	7.7

Data Qualifiers:

U - Not detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

TABLE 5-44

SUMMARY OF ORGANIC AND INORGANIC DETECTIONS IN FIELD BLANKS
SWMUs 01, 02, AND 45 - 1996 RFI INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

	SWMUs 01 and 02		SWMU 45
Sample ID	FB01	FB02	FB03
Sample Date	10/23/96	10/29/96	11/22/96
VOLATILES (ug/l)			
Acetone	10 U	25	10 U
Bromodichloromethane	11	5 U	8
Chloroform	66	5 U	78
Methylene chloride	5 U	6	5 U
Toluene	5 U	1 J	5 U
SEMIVOLATILES (ug/l)			
Bis(2-ethylhexyl)phthalate	10 U	1 J	10
PESTICIDES/PCBs (ug/l)			
CHLORINATED HERBICIDES (ug/l)			
OP-PESTICIDES (ug/l)			
DIOXINS (ug/l)			
EXPLOSIVES (ug/l)			
Inorganics, Total (ug/l)			
Barium	6.6	1.4 U	NA
Copper	2.7	1.9	NA
Lead	2.2 J	15.1	NA
Mercury	0.11 J	0.1 U	NA
Zinc	32.6	7.5	NA
RCRA Metals (ug/l)			
Barium	NA	NA	5.3
Lead	NA	NA	0.7 U
Mercury	NA	NA	0.1 U

Data Qualifiers:

U - Not detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NA - Not Analyzed.

TABLE 5-45

SUMMARY OF ORGANIC DETECTIONS IN TRIP BLANKS
SWMUs 01, 02, AND 45 - 1996 RFI INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

	SWMU 01	SWMU 01/ SWMU 02	SWMU 02	SWMU 01						SWMU 02				SWMU 45	
Sample ID	TB1	TB001	TB002	TB02	TB03	TB04	TB05	TB06	TB07	TB09	TB10	TB11	TB12	TB13	TB-14
Sample Date	10/10/96	12/16/96	12/17/96	10/13/96	10/15/96	10/21/96	10/24/96	10/26/96	10/29/96	11/6/96	11/9/96	11/11/96	11/18/96	11/22/96	11/25/96
VOLATILES (ug/l)															
Acetone	10 UJ	10 UJ	10 U	10 UJ	10 UJ	10	10 U	10 U	10 U	10 U	10 U	10 U	12	10 U	10 UJ
Trichlorofluoromethane	10 U	6 J	10 UJ	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 UJ

Qualifiers:

U - Not detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

TABLE 5-46

SUMMARY OF ORGANIC AND INORGANIC DETECTIONS IN EQUIPMENT RINSATE BLANKS
SWMUs 01 AND 45 - 1997 RFI INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

	SWMU 01	SWMU 45						
Sample ID	1ER01	11ER01	11ER02	11EB03	11ER04	11ER05	11ER06	11ER07
Sample Date	09/20/97	09/18/97	09/18/97	09/20/97	09/20/97	09/24/97	09/24/97	10/02/97
VOLATILES (ug/l)								
2-Butanone	10 U	10 UJ	10 UJ	10 UJ	10 UJ	40 J	10 U	10 U
SEMIVOLATILES (ug/l)								
4-Chloroaniline	21 U	1 J	20 U	22 UJ	20 UJ	20 U	21 U	20 U
Benzoic acid	53 U	14 J	49 U	54 UJ	50 UJ	51 U	52 U	50 U
Bis(2-ethylhexyl)phthalate	24	26 U	10 U	11 U	10 U	10 U	10 U	19 U
Phenol	11 U	1 J	10 U	11 U	10 U	10 U	10 U	10 U
Pyridine	21 U	5 J	20 U	22 UJ	20 UJ	20 UJ	21 UJ	20 U
PESTICIDES/PCBs (ug/l)								
CHLORINATED HERBICIDES (ug/l)								
OP-PESTICIDES (ug/l)								
DIOXINS (ug/l)								
EXPLOSIVES (ug/l)								
TPH (ug/l)								
ASBESTOS (MFL)								
Inorganics, Total (ug/l)								
Antimony	1.9 U	1.9 U	1.9 U	2.2 J	1.9 U	1.9 U	1.9 U	1.9 U
Barium	0.43 J	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	1.6 J	0.3 U
Chromium	1.2 J	1.1 J	1.1 J	0.96 J	0.83 J	1.2 J	0.92 J	1.7 J
Lead	1.6 J	1 U	1 U	2.9 R	2.5 R	1.5 J	2.4 J	1.5 U
Mercury	0.1 U	0.1 U	0.1 U	3.2	0.12 J	0.1 U	0.1 U	0.1 U
Zinc	1.7 J	1.6 J	1 J	1.8 J	1.3 J	6.9 J	2.2 J	1 J

Data Qualifiers:

U - Not detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

UJ - Not detected. quantitation limit may be inaccurate or imprecise.

R - Unreliable result. Analyte may or may not be present in the sample.

TABLE 5-47

SUMMARY OF ORGANIC AND INORGANIC DETECTIONS IN FIELD BLANKS
SMWUs 01 AND 45 - 1997 RFI INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

	SWMU 01	SWMU 45	
Sample ID	FB01	11FB01	11FB02
Sample Date	09/19/97	09/24/97	09/24/97
VOLATILES (ug/l)			
1,1-Dichloroethane	5 UJ	5 U	2 J
Acetone	20 J	10 U	10 U
Benzene	5 U	5 U	3 J
Bromodichloromethane	13 J	31 J	15 J
Chloroform	160 J	94 J	140 J
Dibromochloromethane	5 U	8 J	5 U
Ethylbenzene	5 U	5 U	4 J
Xylene (total)	5 U	5 U	7 J
SEMIVOLATILES (ug/l)			
2,3,4,6-Tetrachlorophenol	10 U	10 J	10 UJ
Acetophenone	2 J	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	12	10 U
Phenol	3 J	10 U	10 R
sym-Trinitrobenzene	98 U	95 J	100 UJ
PESTICIDES/PCBs (ug/l)			
CHLORINATED HERBICIDES (ug/l)			
OP-PESTICIDES (ug/l)			
DIOXINS (ug/l)			
EXPLOSIVES (ug/l)			
ASBESTOS (MFL)			
TPH (ug/l)			
Gasoline Range Organics	25 J	50 U	50 U

Data Qualifiers:

U - Not detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

R - Unreliable result. Analyte may or may not be present in the sample.

TABLE 5-47 (continued)

SUMMARY OF ORGANIC AND INORGANIC DETECTIONS IN FIELD BLANKS
SMWUs 01 AND 45 - 1997 RFI INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

	SWMU 01	SWMU 45	
Sample ID	FB01	11FB01	11FB02
Sample Date	09/19/97	09/24/97	09/24/97
Inorganics, Total (ug/l)			
Barium	3.3 J	28.7 J	4.2 J
Chromium	2.1 J	1.4 J	1.9 J
Copper	0.5 U	22.3 J	0.5 U
Lead	1.0 U	2.3 J	1.5 J
Vanadium	1.7 J	1.9 J	1.5 J
Zinc	10.7 J	29.4	3.2 J
RCRA Metals (ug/l)			
Barium, Total	3.3 J	NA	NA
Chromium, Total	2.1 J	NA	NA

Qualifiers:

U - Not detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

Notes:

NA - Not Analyzed.

TABLE 5-48

SUMMARY OF ORGANIC DETECTIONS IN TRIP BLANKS
SWMUs 01 AND 45 - 1997 RFI INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

	SWMU 45				SWMU 01/ SWMU 45	SWMU 45	SWMU 01	SWMU 45	SWMU 01/ SWMU 45
Sample ID	11TB01	11TB02	11TB03	11TB04	13TB01	13TB02	1TB01	TB01	TB02
Sample Date	9/20/97	9/20/97	9/24/97	10/2/97	9/16/97	9/18/97	10/1/97	9/18/97	9/18/97
VOLATILES (ug/l)									
Acetone	10 U	10 U	10 U	10 U	10 UJ	11 J	10 U	10 UJ	10 UJ

Qualifiers:

U - Not detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

TABLE 5-49

SUMMARY OF ORGANIC AND INORGANIC DETECTIONS IN EQUIPMENT RINSATE BLANKS
SWMU 02 - 1996 RFI INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Sample ID	2RB01	2RB02	2RB03	2RB04	2RB05
Sample Date	11/7/96	11/10/96	11/12/96	11/13/96	11/18/96
VOLATILES (ug/l)					
Acetone	11	10 UJ	20	10 U	33 J
Toluene	5 U	5 U	3 J	5 U	5 U
SEMIVOLATILES (ug/l)					
Bis(2-ethylhexyl)phthalate	10 U	1 J	10 U	2 J	10 U
PESTICIDES/PCBs (ug/l)					
CHLORINATED HERBICIDES (ug/l)					
OP-PESTICIDES (ug/l)					
DIOXINS (ug/l)					
EXPLOSIVES (ug/l)					
Inorganics, Total (ug/l)					
Chromium	1.7 U	2.7	1.7 U	1.7 U	1.7 U
Copper	4.2	3.5	1.5 U	1.5 U	1.5 U
Sodium	NA	NA	438	183	175
Zinc	2.7	3.2	1 U	1 U	3.5

Data Qualifiers:

U - Not detected. The associated number indicates the approximate sample concentration necessary to be detected.

J - Analyte present. Reported value may not be accurate or precise.

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

Notes:

NA - Not Analyzed.

TABLE 5-50

SUMMARY OF ORGANIC AND INORGANIC DETECTIONS IN EQUIPMENT RINSATE BLANKS
SWMU 45 - 1996 RFI INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Sample ID	45RB01	45RB02
Sample Date	11/22/96	11/22/96
VOLATILES (ug/l)		
Acetone	23 J	22 J
Toluene	4 J	3 J
SEMIVOLATILES (ug/l)		
PCBs (ug/l)		
RCRA Metals (ug/l)		
Barium, Total	1.4 U	1.5
Lead, Total	0.7 U	0.83

Data Qualifiers:

J - Analyte present. Reported value may not be accurate or precise.

U - Not detected. The associated number indicates the approximate sample concentration necessary to be detected.

TABLE 5-51 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard EPA Region III Industrial RBCs	**EPA Region III Residential RBCs**
VOLATILES (ug/kg)										
Acetone	204,400,000	7,821,429	22	28.05	1,431	37.83	1.721	41.92	Yes	Yes
Carbon disulfide	204,400,000	7,821,429	22	7.27	9.73	3.12	1.721	8.42	Yes	Yes
Ethylbenzene	204,400,000	7,821,429	22	5.77	1.14	1.07	1.721	6.16	Yes	Yes
Methylene chloride	763,093	85,163	22	10.59	96.16	9.81	1.721	14.19	Yes	Yes
Tetrachloroethene	110,062	12,283	22	5.86	0.41	0.64	1.721	6.10	Yes	Yes
Xylene (total)	4,088,000,000	156,428,571	16	5.94	0.06	0.25	1.753	6.05	Yes	Yes
SEMIVOLATILES (ug/kg)										
2-Methylnaphthalene	40,880,000	1,564,286	22	689	281,182	530	1.721	883	Yes	Yes
Acenaphthylene	122,640,000	4,692,857	22	688	282,742	532	1.721	883	Yes	Yes
Anthracene	613,200,000	23,464,286	22	674	294,582	543	1.721	873	Yes	Yes
Benzo(a)anthracene	7,840	875	22	703	288,421	537	1.721	900	Yes	**No**
Benzo(a)pyrene	784	88	22	692	282,029	531	1.721	887	**No**	**No**
Benzo(b)fluoranthene	7,840	875	22	749	299,231	547	1.721	949	Yes	**No**
Benzo(g,h,i)perylene	61,320,000	2,346,429	22	670	296,630	545	1.721	870	Yes	Yes
Benzo(k)fluoranthene	78,400	8,750	22	694	282,910	532	1.721	889	Yes	Yes
Bis(2-ethylhexyl)phthalate	408,800	45,623	22	637	246,553	497	1.721	819	Yes	Yes
Butylbenzylphthalate	408,800,000	15,642,857	22	691	279,805	529	1.721	885	Yes	Yes
Chrysene	784,000	87,497	22	710	285,891	535	1.721	907	Yes	Yes
Dibenzo(a,h)anthracene	784	88	22	674	295,087	543	0.953	784	**Yes**	**No**
Fluoranthene	81,760,000	3,128,571	22	693	288,874	537	1.721	890	Yes	Yes
Indeno(1,2,3-cd)pyrene	7,840	875	22	674	292,910	541	1.721	873	Yes	Yes
Pyrene	61,320,000	2,346,429	22	785	444,273	667	1.721	1,029	Yes	Yes
PESTICIDES/PCBs (ug/kg)										
4,4'-DDD	23,847	2,661	22	17.97	1,400	37.42	1.721	31.70	Yes	Yes
4,4'-DDE	16,833	1,879	22	126	96,406	310	1.721	240	Yes	Yes
4,4'-DDT	16,833	1,879	22	197	552,596	743	1.721	470	Yes	Yes
Endrin	613,200	23,464	22	11.69	129	11.36	1.721	15.86	Yes	Yes
Heptachlor	1,272	142	22	5.87	32.61	5.71	1.721	7.96	Yes	Yes
Methoxychlor	10,220,000	391,071	22	58.75	3,258	57.08	1.721	79.69	Yes	Yes

TABLE 5-51 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	s_x Standard Error	Is the average sample concentration < the screening criteria? **Industrial RBCs**	<u>Residential RBCs</u>	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? **Industrial RBCs**	<u>Residential RBCs</u>	Industrial RBCs n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
VOLATILES (ug/kg)												
Acetone	204,400,000	7,821,429	8.06	Yes	Yes	1.323	38.7	No	No			
Carbon disulfide	204,400,000	7,821,429	0.67	Yes	Yes	1.323	8.15	No	No			
Ethylbenzene	204,400,000	7,821,429	0.23	Yes	Yes	1.323	6.07	No	No			
Methylene chloride	763,093	85,163	2.09	Yes	Yes	1.323	13.4	No	No			
Tetrachloroethene	110,062	12,283	0.14	Yes	Yes	1.323	6.04	No	No			
Xylene (total)	4,088,000,000	156,428,571	0.06	Yes	Yes	1.341	6.02	No	No			
SEMIVOLATILES (ug/kg)												
2-Methylnaphthalene	40,880,000	1,564,286	113	Yes	Yes	1.323	838	No	No			
Acenaphthylene	122,640,000	4,692,857	113	Yes	Yes	1.323	837	No	No			
Anthracene	613,200,000	23,464,286	116	Yes	Yes	1.323	827	No	No			
Benzo(a)anthracene	7,840	875	114	Yes	Yes	1.323	854	No	No			
Benzo(a)pyrene	784	88	113	Yes	No	1.323	842	Yes	Yes	75	Yes	53
Benzo(b)fluoranthene	7,840	875	117	Yes	Yes	1.323	903	No	Yes			
Benzo(g,h,i)perylene	61,320,000	2,346,429	116	Yes	Yes	1.323	824	No	No			
Benzo(k)fluoranthene	78,400	8,750	113	Yes	Yes	1.323	844	No	No			
Bis(2-ethylhexyl)phthalate	408,800	45,623	106	Yes	Yes	1.323	777	No	No			
Butylbenzylphthalate	408,800,000	15,642,857	113	Yes	Yes	1.323	840	No	No			
Chrysene	784,000	87,497	114	Yes	Yes	1.323	861	No	No			
Dibenzo(a,h)anthracene	784	88	116	Yes	No	1.323	827	Yes	Yes	95	Yes	73
Fluoranthene	81,760,000	3,128,571	115	Yes	Yes	1.323	845	No	No			
Indeno(1,2,3-cd)pyrene	7,840	875	115	Yes	Yes	1.323	827	No	No			
Pyrene	61,320,000	2,346,429	142	Yes	Yes	1.323	973	No	No			
PESTICIDES/PCBs (ug/kg)												
4,4'-DDD	23,847	2,661	7.98	Yes	Yes	1.323	28.5	No	No			
4,4'-DDE	16,833	1,879	66.2	Yes	Yes	1.323	213	No	No			
4,4'-DDT	16,833	1,879	158	Yes	Yes	1.323	407	No	No			
Endrin	613,200	23,464	2.42	Yes	Yes	1.323	14.9	No	No			
Heptachlor	1,272	142	1.22	Yes	Yes	1.323	7.48	No	No			
Methoxychlor	10,220,000	391,071	12.2	Yes	Yes	1.323	74.8	No	No			

TABLE 5-51 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	Residential RBCs n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
VOLATILES (ug/kg)					
Acetone	204,400,000	7,821,429			
Carbon disulfide	204,400,000	7,821,429			
Ethylbenzene	204,400,000	7,821,429			
Methylene chloride	763,093	85,163			
Tetrachloroethene	110,062	12,283			
Xylene (total)	4,088,000,000	156,428,571			
SEMIVOLATILES (ug/kg)					
2-Methylnaphthalene	40,880,000	1,564,286			
Acenaphthylene	122,640,000	4,692,857			
Anthracene	613,200,000	23,464,286			
Benzo(a)anthracene	7,840	875			
Benzo(a)pyrene	784	88	1	No	
Benzo(b)fluoranthene	7,840	875	16	No	
Benzo(g,h,i)perylene	61,320,000	2,346,429			
Benzo(k)fluoranthene	78,400	8,750			
Bis(2-ethylhexyl)phthalate	408,800	45,623			
Butylbenzylphthalate	408,800,000	15,642,857			
Chrysene	784,000	87,497			
Dibenzo(a,h)anthracene	784	88	1	No	
Fluoranthene	81,760,000	3,128,571			
Indeno(1,2,3-cd)pyrene	7,840	875			
Pyrene	61,320,000	2,346,429			
PESTICIDES/PCBs (ug/kg)					
4,4'-DDD	23,847	2,661			
4,4'-DDE	16,833	1,879			
4,4'-DDT	16,833	1,879			
Endrin	613,200	23,464			
Heptachlor	1,272	142			
Methoxychlor	10,220,000	391,071			

TABLE 5-51 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Review of data utilizing only RFI Data Due to high detection levels from SI Data exceeding the screeing criteria.

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs (ug/kg)**	Number of Samples	Average Sample Concentration	Sample Variance	Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard: EPA Region III Industrial RBCs	**EPA Region III Residential RBCs**	
VOLATILES (ug/kg)											
Acetone	204,400,000	7,821,429									
Carbon disulfide	204,400,000	7,821,429									
Ethylbenzene	204,400,000	7,821,429									
Methylene chloride	763,093	85,163									
Tetrachloroethene	110,062	12,283									
Xylene (total)	4,088,000,000	156,428,571									
SEMIVOLATILES (ug/kg)											
2-Methylnaphthalene	40,880,000	1,564,286									
Acenaphthylene	122,640,000	4,692,857									
Anthracene	613,200,000	23,464,286									
Benzo(a)anthracene	7,840	875	16	394	30,032	173	1.753	470	Yes	Yes	
Benzo(a)pyrene	784	88	16	379	10,801	104	1.753	424	Yes	**No**	Detection Levels are above Res. RBC
Benzo(b)fluoranthene	7,840	875	16	457	85,370	292	1.753	585	Yes	Yes	
Benzo(g,h,i)perylene	61,320,000	2,346,429									
Benzo(k)fluoranthene	78,400	8,750									
Bis(2-ethylhexyl)phthalate	408,800	45,623									
Butylbenzylphthalate	408,800,000	15,642,857									
Chrysene	784,000	87,497									
Dibenzo(a,h)anthracene	784	88	16	354	12,201	110	1.753	402	Yes	**No**	Detection Levels are above Res. RBC
Fluoranthene	81,760,000	3,128,571									
Indeno(1,2,3-cd)pyrene	7,840	875									
Pyrene	61,320,000	2,346,429									
PESTICIDES/PCBs (ug/kg)											
4,4'-DDD	23,847	2,661									
4,4'-DDE	16,833	1,879									
4,4'-DDT	16,833	1,879									
Endrin	613,200	23,464									
Heptachlor	1,272	142									
Methoxychlor	10,220,000	391,071									

TABLE 5-52 (continued)

STATISTICAL EVALUATION OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard **EPA Region III Industrial RBCs**	EPA Region III Residential RBCs
Inorganics, Total (mg/kg)										
Aluminum	2,044,000	78,214	6	18,967	122,018,827	11,046	2.015	28,054	Yes	Yes
Antimony	818	31	22	4.38	14.77	3.84	1.721	5.79	Yes	Yes
Arsenic	3.8	0.43	22	0.96	0.30	0.54	1.721	1.16	Yes	**No**
Barium	143,080	5,475	22	114	1,495	38.67	1.721	128.58	Yes	Yes
Beryllium	4,100	160	22	0.59	0.10	0.32	1.721	0.70	Yes	Yes
Cadmium	2,044	78	22	4.56	314	17.73	1.721	11.06	Yes	Yes
Calcium	NE	NE	6	6,773	10,167,427	3,189	2.015	9,396	NE	NE
Chromium	6,132	235	22	22.81	104	10.19	1.721	26.55	Yes	Yes
Cobalt	122,640	4,693	22	20.64	37.13	6.09	1.721	22.87	Yes	Yes
Copper	81,760	3,129	22	79.36	5,617	74.95	1.721	106.86	Yes	Yes
Iron	613,200	23,464	6	37,333	421,974,667	20,542	2.015	54,232	Yes	**No**
Lead	NE	NE	21	17.00	685	26.18	1.725	26.86	NE	NE
Magnesium	NE	NE	6	4,563	665,187	816	2.015	5,234	NE	NE
Manganese	40,880	1,564	6	866	88,872	298	2.015	1,111	Yes	Yes
Mercury	NE	NE	22	0.07	0.00	0.03	1.721	0.09	NE	NE
Nickel	40,880	1,564	22	11.77	54.97	7.41	1.721	14.49	Yes	Yes
Potassium	NE	NE	6	428	28,166	168	2.015	566	NE	NE
Selenium	10,220	391	22	0.51	0.03	0.17	1.721	0.57	Yes	Yes
Silver	10,220	391	22	0.66	0.60	0.78	1.721	0.94	Yes	Yes
Sodium	NE	NE	6	2,540	2,099,520	1,449	2.015	3,732	NE	NE
Sulfide	NE	NE	16	28.25	4.46	2.11	1.753	29.18	NE	NE
Tin	1,226,400	46,929	16	2.25	15.33	3.92	1.753	3.97	Yes	Yes
Vanadium	14,308	548	22	150	2,851	53.40	1.721	170	Yes	Yes
Zinc	613,200	23,464	22	53.61	2,598	50.97	1.721	72.31	Yes	Yes

TABLE 5-52 (continued)

STATISTICAL EVALUATION OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	s_x Standard Error	Is the average sample concentration < the screening criteria? **Industrial RBCs**	Is the average sample concentration < the screening criteria? Residential RBCs	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? **Industrial RBCs**	Is the confidence interval > screening criteria? Residential RBCs	n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If So How Many Additional Samples Required?
Inorganics, Total (mg/kg)												
Aluminum	2,044,000	78,214	4510	Yes	Yes	1.476	25,623	No	No			
Antimony	818	31	0.82	Yes	Yes	1.323	5.46	No	No			
Arsenic	3.8	0.43	0.12	Yes	No	1.323	1.12	No	Yes	2	No	
Barium	143,080	5,475	8.24	Yes	Yes	1.323	125	No	No			
Beryllium	4,100	160	0.07	Yes	Yes	1.323	0.68	No	No			
Cadmium	2,044	78	3.78	Yes	Yes	1.323	9.6	No	No			
Calcium	NE	NE	1302	Yes	Yes	1.476	8,695	No	No			
Chromium	6,132	235	2.17	Yes	Yes	1.323	25.7	No	No			
Cobalt	122,640	4,693	1.30	Yes	Yes	1.323	22.4	No	No			
Copper	81,760	3,129	16.0	Yes	Yes	1.323	100	No	No			
Iron	613,200	23,464	8386	Yes	No	1.476	49,711	No	Yes	5	No	
Lead	NE	NE	5.71	Yes	Yes	1.325	24.6	No	No			
Magnesium	NE	NE	333	Yes	Yes	1.476	5,055	No	No			
Manganese	40,880	1,564	122	Yes	Yes	1.476	1,046	No	No			
Mercury	NE	NE	0.01	Yes	Yes	1.323	0.08	No	No			
Nickel	40,880	1,564	1.58	Yes	Yes	1.323	13.9	No	No			
Potassium	NE	NE	68.5	Yes	Yes	1.476	529	No	No			
Selenium	10,220	391	0.04	Yes	Yes	1.323	0.56	No	No			
Silver	10,220	391	0.17	Yes	Yes	1.323	0.88	No	No			
Sodium	NE	NE	592	Yes	Yes	1.476	3,413	No	No			
Sulfide	NE	NE	0.53	Yes	Yes	1.341	29.0	No	No			
Tin	1,226,400	46,929	0.98	Yes	Yes	1.341	3.56	No	No			
Vanadium	14,308	548	11.4	Yes	Yes	1.323	165	No	No			
Zinc	613,200	23,464	10.9	Yes	Yes	1.323	68.0	No	No			

TABLE 5-53

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard EPA Region III Industrial RBCs	**EPA Region III Residential RBCs**
VOLATILES (ug/kg)										
1,2-Dibromo-3-chloropropane	4,088	456	18	22.28	27.62	5.26	1.74	24.43	Yes	Yes
Acetone	204,400,000	7,821,429	26	34.12	3,414	58.43	1.708	53.69	Yes	Yes
Benzene	197,352	22,025	26	5.81	0.72	0.85	1.708	6.09	Yes	Yes
Carbon disulfide	204,400,000	7,821,429	26	6.46	11.54	3.40	1.708	7.60	Yes	Yes
Tetrachloroethene	110,062	12,283	24	5.80	0.75	0.87	1.714	6.10	Yes	Yes
SEMIVOLATILES (ug/kg)										
Bis(2-ethylhexyl)phthalate	408,800	45,623	26	626	250,225	500	1.708	793.71	Yes	Yes
Di-n-butylphthalate	204,400,000	7,821,429	26	711	348,265	590	1.708	908.41	Yes	Yes
PESTICIDES/PCBS (ug/kg)										
4,4'-DDD	23,847	2,661	29	8.96	63.35	7.96	1.701	11.47	Yes	Yes
4,4'-DDE	16,833	1,879	29	14.67	1,430	37.81	1.701	26.61	Yes	Yes
4,4'-DDT	16,833	1,879	29	59.74	76,771	277	1.701	147.26	Yes	Yes
Chlordane, gamma-	NE	NE	11	3.28	31.27	5.59	1.812	6.34	NE	NE
delta-BHC	NE	NE	29	4.47	12.87	3.59	1.701	5.60	NE	NE
Dieldrin	358	40	29	9.17	47.12	6.86	1.701	11.34	Yes	Yes
Endosulfan I	12,264,000	469,286	29	4.64	12.71	3.57	1.701	5.76	Yes	Yes
Endrin	613,200	23,464	29	8.75	49.75	7.05	1.701	10.98	Yes	Yes
Endrin aldehyde	NE	NE	29	8.88	47.96	6.93	1.701	11.07	NE	NE
Methoxychlor	10,220,000	391,071	29	44.25	1,323	36.37	1.701	55.73	Yes	Yes
DIOXINS (ug/kg)										
Total HxCDD	0.38	0.043	18	0.13	0.01	0.09	1.74	0.17	Yes	**No**
Total HxCDF	0.38	0.043	18	0.09	0.00	0.05	1.74	0.11	Yes	**No**
Total TCDF	0.38	0.043	18	0.044	0.00	0.03	1.74	0.06	Yes	**No**
CHLORINATED HERBICIDES (ug/kg)										
OP-PESTICIDES (ug/kg)										
EXPLOSIVES (ug/kg)										
ASBESTOS (MFL)										

TABLE 5-53

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	s_x Standard Error	Is the average sample concentration < the screening criteria? **Industrial RBCs**	 Residential RBCs	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? **Industrial RBCs**	 Residential RBCs	n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
VOLATILES (ug/kg)												
1,2-Dibromo-3-chloropropane	4,088	456	1.24	Yes	Yes	1.333	23.9	No	No			
Acetone	204,400,000	7,821,429	11.46	Yes	Yes	1.316	49.2	No	No			
Benzene	197,352	22,025	0.17	Yes	Yes	1.316	6.0	No	No			
Carbon disulfide	204,400,000	7,821,429	0.67	Yes	Yes	1.316	7.3	No	No			
Tetrachloroethene	110,062	12,283	0.18	Yes	Yes	1.319	6.0	No	No			
SEMIVOLATILES (ug/kg)												
Bis(2-ethylhexyl)phthalate	408,800	45,623	98.10	Yes	Yes	1.316	755.3	No	No			
Di-n-butylphthalate	204,400,000	7,821,429	115.74	Yes	Yes	1.316	863.0	No	No			
PESTICIDES/PCBS (ug/kg)												
4,4'-DDD	23,847	2,661	1.48	Yes	Yes	1.313	10.9	No	No			
4,4'-DDE	16,833	1,879	7.02	Yes	Yes	1.313	23.9	No	No			
4,4'-DDT	16,833	1,879	51.45	Yes	Yes	1.313	127.3	No	No			
Chlordane, gamma-	NE	NE	1.69	NE	NE	1.372	5.6	NE	NE			
delta-BHC	NE	NE	0.67	NE	NE	1.313	5.3	NE	NE			
Dieldrin	358	40	1.27	Yes	Yes	1.313	10.8	No	No			
Endosulfan I	12,264,000	469,286	0.66	Yes	Yes	1.313	5.5	No	No			
Endrin	613,200	23,464	1.31	Yes	Yes	1.313	10.5	No	No			
Endrin aldehyde	NE	NE	1.29	NE	NE	1.313	10.6	NE	NE			
Methoxychlor	10,220,000	391,071	6.75	Yes	Yes	1.313	53.1	No	No			
DIOXINS (ug/kg)												
Total HxCDD	0.38	0.043	0.02	Yes	No	1.333	0.2	No	Yes	2	No	
Total HxCDF	0.38	0.043	0.01	Yes	No	1.333	0.1	No	Yes	2	No	
Total TCDF	0.38	0.043	0.01	Yes	No	1.333	0.1	No	Yes	623	Yes	605
CHLORINATED HERBICIDES (ug/kg)												
OP-PESTICIDES (ug/kg)												
EXPLOSIVES (ug/kg)												
ASBESTOS (MFL)												

TABLE 5-54 (continued)

STATISTICAL EVALUATION OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard EPA Region III Industrial RBCs	**EPA Region III Residential RBCs**
Inorganics, Total (mg/kg)										
Aluminum	2,044,000	78,214	11	14,724	135,323,445	11,633	1.812	21,079	Yes	Yes
Antimony	818	31	29	4.53	18.16	4.26	1.701	5.88	Yes	Yes
Arsenic	3.82	0.43	29	0.69	0.14	0.38	1.701	0.81	Yes	**No**
Barium	143,080	5,475	29	137	7,086	84.18	1.701	163	Yes	Yes
Beryllium	4,100	160	29	0.57	0.09	0.29	1.701	0.66	Yes	Yes
Cadmium	2,044	78	29	0.62	0.74	0.86	1.701	0.90	Yes	Yes
Calcium	NE	NE	11	5,883	10,522,362	3,244	1.812	7,655	NE	NE
Chromium	6,132	235	29	23.48	285.31	16.89	1.701	28.81	Yes	Yes
Cobalt	122,640	4,693	29	19.53	42.66	6.53	1.701	21.60	Yes	Yes
Copper	81,760	3,129	29	85.23	10,185	101	1.701	117	Yes	Yes
Iron	613,200	23,464	11	25,535	310,293,627	17,615	1.812	35,158	Yes	**No**
Lead	NE	NE	27	4.91	68.64	8.28	1.706	7.63	NE	NE
Magnesium	NE	NE	11	5,179	5,103,749	2,259	1.812	6,413	NE	NE
Manganese	40,880	1,564	11	797	79,569	282	1.812	952	Yes	Yes
Mercury	NE	NE	29	0.09	0.04	0.20	1.701	0.16	NE	NE
Nickel	40,880	1,564	29	11.22	44.47	6.67	1.701	13.32	Yes	Yes
Potassium	NE	NE	11	616	119,958	346	1.812	805	NE	NE
Selenium	10,220	391	29	0.56	0.16	0.40	1.701	0.69	Yes	Yes
Silver	10,220	391	29	0.70	0.51	0.71	1.701	0.92	Yes	Yes
Sodium	NE	NE	11	2,439	4,334,781	2,082	1.812	3,577	NE	NE
Tin	1,226,400	46,929	18	2.92	22.45	4.74	1.74	4.86	Yes	Yes
Vanadium	14,308	548	29	123	2,117	46.01	1.701	137	Yes	Yes
Zinc	613,200	23,464	29	40.88	590	24.29	1.701	48.56	Yes	Yes

TABLE 5-54 (continued)

STATISTICAL EVALUATION OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	s_x Standard Error	Is the average sample concentration < the screening criteria? Industrial RBCs	**Residential RBCs**	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? Industrial RBCs	**Residential RBCs**	n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If So How Many Additional Samples Required?
Inorganics, Total (mg/kg)												
Aluminum	2,044,000	78,214	3507	Yes	Yes	1.372	19,536	No	No			
Antimony	818	31	0.79	Yes	Yes	1.313	5.57	No	No			
Arsenic	3.82	0.43	0.07	Yes	No	1.313	0.78	No	Yes	4	No	
Barium	143,080	5,475	15.6	Yes	Yes	1.313	157	No	No			
Beryllium	4,100	160	0.05	Yes	Yes	1.313	0.64	No	No			
Cadmium	2,044	78	0.16	Yes	Yes	1.313	0.83	No	No			
Calcium	NE	NE	978	NE	NE	1.372	7,225	NE	NE			
Chromium	6,132	235	3.14	Yes	Yes	1.313	27.6	No	No			
Cobalt	122,640	4,693	1.21	Yes	Yes	1.313	21.1	No	No			
Copper	81,760	3,129	18.7	Yes	Yes	1.313	110	No	No			
Iron	613,200	23,464	5311	Yes	No	1.372	32,821	No	Yes	136	Yes	125
Lead	NE	NE	1.59	NE	NE	1.315	7.01	NE	NE			
Magnesium	NE	NE	681	NE	NE	1.372	6,114	NE	NE			
Manganese	40,880	1,564	85.1	Yes	Yes	1.372	914	No	No			
Mercury	NE	NE	0.04	NE	NE	1.313	0.14	NE	NE			
Nickel	40,880	1,564	1.24	Yes	Yes	1.313	12.8	No	No			
Potassium	NE	NE	104	NE	NE	1.372	759	NE	NE			
Selenium	10,220	391	0.07	Yes	Yes	1.313	0.66	No	No			
Silver	10,220	391	0.13	Yes	Yes	1.313	0.87	No	No			
Sodium	NE	NE	628	NE	NE	1.372	3,301	NE	NE			
Tin	1,226,400	46,929	1.12	Yes	Yes	1.333	4.41	No	No			
Vanadium	14,308	548	8.54	Yes	Yes	1.313	134	No	No			
Zinc	613,200	23,464	4.51	Yes	Yes	1.313	46.8	No	No			

TABLE 5-55

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SEDIMENT
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	ERL Sediment Screening Value (ug/kg)	**ERM Sediment Screening Value** (ug/kg)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard ERL Sediment Screening Value	**ERM Sediment Screening Value**
VOLATILES (ug/kg)										
Methylene chloride	NE	NE	17	1,228	3,068,036	1,752	1.746	1,969	NE	NE
Tetrachloroethene	NE	NE	17	423	122,504	350	1.746	571	NE	NE
Xylene (total)	NE	NE	17	405	210,556	459	1.746	599	NE	NE
SEMIVOLATILES (ug/kg)										
Benzo(a)anthracene	261	1,600	16	293	17,607	133	1.753	351	**No**	Yes
Benzo(a)pyrene	430	1,600	16	360	21,427	146	1.753	424	Yes	Yes
Benzo(b)fluoranthene	NE	NE	16	363	15,050	123	1.753	417	NE	NE
Benzo(g,h,i)perylene	NE	NE	16	459	21,825	148	1.753	523	NE	NE
Benzo(k)fluoranthene	NE	NE	16	346	15,666	125	1.753	400	NE	NE
Bis(2-ethylhexyl)phthalate	NE	NE	16	271	15,393	124	1.753	325	NE	NE
Chrysene	384	2,800	16	296	16,452	128	1.753	352	Yes	Yes
Di-n-octylphthalate	NE	NE	16	660	825,360	908	1.753	1,058	NE	NE
Fluoranthene	600	5,100	16	293	17,383	132	1.753	351	Yes	Yes
Indeno(1,2,3-cd)pyrene	NE	NE	16	448	20,190	142	1.753	510	NE	NE
Phenols	NE	NE	5	8,813	143,587,559	11,983	2.132	20,238	NE	NE
Pyrene	665	2,600	16	269	16,543	129	1.753	325	Yes	Yes
PESTICIDES/PCBs (ug/kg)										
4,4'-DDD	NE	NE	16	262	124,402	353	1.753	417	NE	NE
4,4'-DDE	2.2	27	16	349	138,322	372	1.753	512	**No**	**No**
4,4'-DDT	NE	46.1	16	276	119,034	345	1.753	427	NE	**No**
delta-BHC	NE	NE	16	253	131,127	362	1.753	412	NE	NE
Aroclor-1260	NE	180	16	1,217	1,824,193	1,351	1.753	1,809	NE	**No**
DIOXINS (ug/kg)										
Total HxCDD	NE	NE	5	0.72	0.92	0.96	2.132	1.64	NE	NE
Total HxCDF	NE	NE	5	0.60	0.81	0.90	2.132	1.45	NE	NE
Total PeCDF	NE	NE	5	0.18	0.01	0.09	2.132	0.26	NE	NE
Total TCDF	NE	NE	5	0.10	0.00	0.03	2.132	0.12	NE	NE

TABLE 5-55

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SEDIMENT
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	ERL Sediment Screening Value (ug/kg)	**ERM Sediment Screening Value** (ug/kg)	s_x Standard Error	Is the average sample concentration < the screening criteria? ERL SSV	**ERM SSV**	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? ERL SSV	**ERM SSV**	ERL Sediment Screening Value: n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
VOLATILES (ug/kg)												
Methylene chloride	NE	NE	425	NE	NE	1.337	1,796	NE	NE			
Tetrachloroethene	NE	NE	84.9	NE	NE	1.337	536	NE	NE			
Xylene (total)	NE	NE	111	NE	NE	1.337	554	NE	NE			
SEMIVOLATILES (ug/kg)												
Benzo(a)anthracene	261	1,600	33.2	No	Yes	1.341	337	Yes	No	32	Yes	16
Benzo(a)pyrene	430	1,600	36.6	Yes	Yes	1.341	409	No	No			
Benzo(b)fluoranthene	NE	NE	30.7	NE	NE	1.341	404	NE	NE			
Benzo(g,h,i)perylene	NE	NE	36.9	NE	NE	1.341	508	NE	NE			
Benzo(k)fluoranthene	NE	NE	31.3	NE	NE	1.341	388	NE	NE			
Bis(2-ethylhexyl)phthalate	NE	NE	31.0	NE	NE	1.341	312	NE	NE			
Chrysene	384	2,800	32.1	Yes	Yes	1.341	339	No	No			
Di-n-octylphthalate	NE	NE	227	NE	NE	1.341	965	NE	NE			
Fluoranthene	600	5,100	33.0	Yes	Yes	1.341	337	No	No			
Indeno(1,2,3-cd)pyrene	NE	NE	35.5	NE	NE	1.341	496	NE	NE			
Phenols	NE	NE	5,359	NE	NE	1.533	17,028	NE	NE			
Pyrene	665	2,600	32.2	Yes	Yes	1.341	312	No	No			
PESTICIDES/PCBs (ug/kg)												
4,4'-DDD	NE	NE	88.2	NE	NE	1.341	380	NE	NE			
4,4'-DDE	2.2	27	93.0	No	No	1.341	474	Yes	Yes	2	No	
4,4'-DDT	NE	46.1	86.3	NE	No	1.341	391	NE	Yes			
delta-BHC	NE	NE	90.5	NE	NE	1.341	375	NE	NE			
Aroclor-1260	NE	180	338	NE	No	1.341	1,669	NE	Yes			
DIOXINS (ug/kg)												
Total HxCDD	NE	NE	0.43	NE	NE	1.533	1.38	NE	NE			
Total HxCDF	NE	NE	0.40	NE	NE	1.533	1.21	NE	NE			
Total PeCDF	NE	NE	0.04	NE	NE	1.533	0.24	NE	NE			
Total TCDF	NE	NE	0.01	NE	NE	1.533	0.12	NE	NE			

TABLE 5-55

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SEDIMENT
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	ERL Sediment Screening Value (ug/kg)	**ERM Sediment Screening Value** (ug/kg)	ERM Sediment Screening Value n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
VOLATILES (ug/kg)					
Methylene chloride	NE	NE			
Tetrachloroethene	NE	NE			
Xylene (total)	NE	NE			
SEMIVOLATILES (ug/kg)					
Benzo(a)anthracene	261	1,600			
Benzo(a)pyrene	430	1,600			
Benzo(b)fluoranthene	NE	NE			
Benzo(g,h,i)perylene	NE	NE			
Benzo(k)fluoranthene	NE	NE			
Bis(2-ethylhexyl)phthalate	NE	NE			
Chrysene	384	2,800			
Di-n-octylphthalate	NE	NE			
Fluoranthene	600	5,100			
Indeno(1,2,3-cd)pyrene	NE	NE			
Phenols	NE	NE			
Pyrene	665	2,600			
PESTICIDES/PCBs (ug/kg)					
4,4'-DDD	NE	NE			
4,4'-DDE	2.2	27	2	No	
4,4'-DDT	NE	46.1	4	No	
delta-BHC	NE	NE			
Aroclor-1260	NE	180	3	No	
DIOXINS (ug/kg)					
Total HxCDD	NE	NE			
Total HxCDF	NE	NE			
Total PeCDF	NE	NE			
Total TCDF	NE	NE			

TABLE 5-56 (continued)

STATISTICAL EVALUATION OF INORGANIC DETECTIONS IN SEDIMENT
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	ERL Sediment Screening Value (mg/kg)	**ERM Sediment Screening Value** (mg/kg)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard ERL Sediment Screening Value	**ERM Sediment Screening Value**
Inorganics (mg/kg)										
Antimony	NE	NE	16	9.84	55.8	7.47	1.753	13.1	NE	NE
Arsenic	8.2	70	16	8.01	78.0	8.83	1.753	11.9	**No**	Yes
Barium	NE	NE	6	150	725	26.9	2.015	172	NE	NE
Beryllium	NE	NE	16	0.65	0.17	0.41	1.753	0.83	NE	NE
Cadmium	1.2	9.6	16	1.52	1.61	1.27	1.753	2.08	**No**	Yes
Chromium	81	370	16	30.9	180	13.4	1.753	36.8	Yes	Yes
Cobalt	NE	NE	6	14.3	73.0	8.55	2.015	21.4	NE	NE
Copper	34	270	16	156	72,567	269	1.753	274	**No**	**No**
Lead	46.7	218	17	110	73,185	271	1.746	224	**No**	**No**
Mercury	0.15	0.71	16	0.17	0.04	0.19	1.753	0.25	**No**	Yes
Nickel	20.9	51.6	16	16.0	207	14.4	1.753	22.3	**No**	Yes
Selenium	NE	NE	16	14.6	572	23.9	1.753	25.0	NE	NE
Silver	1	3.7	16	0.88	0.35	0.59	1.753	1.14	**No**	Yes
Sulfide	NE	NE	5	35.3	34.8	5.90	2.132	40.9	NE	NE
Tin	NE	NE	6	36.9	5,150	71.8	2.015	95.9	NE	NE
Vanadium	NE	NE	6	127	2,663	51.6	2.015	169	NE	NE
Zinc	150	410	16	222	242,187	492	1.753	438	**No**	**No**

TABLE 5-56 (continued)

STATISTICAL EVALUATION OF INORGANIC DETECTIONS IN SEDIMENT
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	ERL Sediment Screening Value (mg/kg)	**ERM Sediment Screening Value** (mg/kg)	s_x Standard Error	Is the average sample concentration < the screening criteria? ERL SSV	**ERM SSV**	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? ERL SSV	**ERM SSV**	n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If So How Many Additional Samples Required?
Inorganics (mg/kg)												
Antimony	NE	NE	1.87	NE	NE	1.341	12	NE	NE			
Arsenic	8.2	70	2.21	Yes	Yes	1.341	11	Yes	No	3,887	Yes	3,871
Barium	NE	NE	11.0	NE	NE	1.476	167	NE	NE			
Beryllium	NE	NE	0.10	NE	NE	1.341	1	NE	NE			
Cadmium	1.2	9.6	0.32	No	Yes	1.341	2	Yes	No	28	Yes	12
Chromium	81	370	3.36	Yes	Yes	1.341	35	No	No			
Cobalt	NE	NE	3.49	NE	NE	1.476	19	NE	NE			
Copper	34	270	67.3	No	Yes	1.341	246	Yes	No	9	No	
Lead	46.7	218	65.6	No	Yes	1.337	198	Yes	No	33	Yes	16
Mercury	0.15	0.71	0.05	No	Yes	1.341	0	Yes	No	150	Yes	134
Nickel	20.9	51.6	3.59	Yes	Yes	1.341	21	No	No			
Selenium	NE	NE	5.98	NE	NE	1.341	23	NE	NE			
Silver	1	3.7	0.15	Yes	Yes	1.341	1	Yes	No	47	Yes	31
Sulfide	NE	NE	2.64	NE	NE	1.533	39	NE	NE			
Tin	NE	NE	29.3	NE	NE	1.476	80	NE	NE			
Vanadium	NE	NE	21.1	NE	NE	1.476	158	NE	NE			
Zinc	150	410	123	No	Yes	1.341	387	Yes	No	84	Yes	68

TABLE 5-57 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard Federal MCL	**EPA Region III Tap Water RBC**
VOLATILES (ug/l)										
Chloroform	100	0.15	20	2.87	4.12	2.03	1.729	3.65	Yes	No
1,1,2,2-Tetrachloroethane	NE	0.05	20	3.68	3.43	1.85	1.729	4.40	NE	No
SEMIVOLATILES (ug/l)										
Pentachlorophenol	1	0.56	21	33.81	431.16	20.76	1.725	41.63	No	No
Bis(2-ethylhexyl)phthalate	6	4.78	20	10.18	313.45	9.55	1.729	13.87	No	No
Phenols	NE	22,000	5	295.20	95,465.20	308.97	2.132	589.79	NE	Yes
PESTICIDES/PCBs (ug/l)										
4,4'-DDE	NE	0.20	21	0.06	0.00	0.05	1.725	0.07	NE	Yes
Heptachlor	0.4	0.00234	21	0.05	0.01	0.10	1.725	0.09	Yes	No
Aldrin	NE	0.00394	21	0.07	0.03	0.17	1.725	0.14	NE	No
beta-BHC	NE	0.04	21	0.05	0.01	0.10	1.725	0.09	NE	No
CHLORINATED HERBICIDES (ug/l)										
2,4,5-TP (Silvex)	50	292	10	0.53	0.31	0.55	1.833	0.85	Yes	Yes
2,4,5-T	NE	365	10	0.55	0.29	0.54	1.833	0.86	NE	Yes
DIOXINS (ug/l)										
Total HxCDD	NE	0.0000045	10	0.00045	0.00000001	0.0001	1.833	0.0005	NE	No
OP-PESTICIDES (ug/l)										
EXPLOSIVES (ug/l)										
ASBESTOS (MFL)										

TABLE 5-57 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	s_x Standard Error	Is the average sample concentration < the screening criteria? Federal MCL	**Tap Water RBC**	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? Federal MCL	**Tap Water RBC**	n_2 Re-estimation of the number of samples required	Federal MCL Are Additional Samples Required?	If so How Many Additional Samples Required?
VOLATILES (ug/l)												
Chloroform	100	0.15	0.45	Yes	No	1.328	3.47	No	Yes			
1,1,2,2-Tetrachloroethane	NE	0.05	0.41	NE	No	1.328	4.23	NE	Yes			
SEMIVOLATILES (ug/l)												
Pentachlorophenol	1	0.56	4.53	No	No	1.325	39.8	Yes	Yes	1	No	
Bis(2-ethylhexyl)phthalate	6	4.78	2.14	No	No	1.328	13.0	Yes	Yes	32	Yes	12
Phenols	NE	22,000	138	NE	Yes	1.533	507	NE	No			
PESTICIDES/PCBs (ug/l)												
4,4'-DDE	NE	0.20	0.01	NE	Yes	1.325	0.07	NE	No			
Heptachlor	0.4	0.00234	0.02	Yes	No	1.325	0.08	No	Yes			
Aldrin	NE	0.00394	0.04	NE	No	1.325	0.12	NE	Yes			
beta-BHC	NE	0.04	0.02	NE	No	1.325	0.08	NE	Yes			
CHLORINATED HERBICIDES (ug/l)												
2,4,5-TP (Silvex)	50	292	0.17	Yes	Yes	1.393	0.78	No	No			
2,4,5-T	NE	365	0.17	NE	Yes	1.393	0.79	NE	No			
DIOXINS (ug/l)												
Total HxCDD	NE	0.0000045	0.000032	NE	No	1.393	0.00	NE	Yes			
OP-PESTICIDES (ug/l)												
EXPLOSIVES (ug/l)												
ASBESTOS (MFL)												

TABLE 5-57 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Tap Water RBC n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
VOLATILES (ug/l)					
Chloroform	100	0.15	1	No	
1,1,2,2-Tetrachloroethane	NE	0.05	0.46	No	
SEMIVOLATILES (ug/l)					
Pentachlorophenol	1	0.56	1	No	
Bis(2-ethylhexyl)phthalate	6	4.78	19	No	
Phenols	NE	22,000			
PESTICIDES/PCBs (ug/l)					
4,4'-DDE	NE	0.20			
Heptachlor	0.4	0.00234	7	No	
Aldrin	NE	0.00394	11	No	
beta-BHC	NE	0.04	61	Yes	40
CHLORINATED HERBICIDES (ug/l)					
2,4,5-TP (Silvex)	50	292			
2,4,5-T	NE	365			
DIOXINS (ug/l)					
Total HxCDD	NE	0.0000045	0.10	No	
OP-PESTICIDES (ug/l)					
EXPLOSIVES (ug/l)					
ASBESTOS (MFL)					

TABLE 5-58 (continued)

STATISTICAL EVALUATION OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard Federal MCL	**EPA Region III Tap Water RBC**
Inorganics, Total (ug/l)										
Aluminum	NE	36,500	1	598	Insufficient number of samples to perform the statistical analysis for this constituent					
Antimony	6	14.6	13	20.78	121	11.02	1.782	26.22	**No**	**No**
Arsenic	50	0.04	21	25.33	813	28.51	1.752	36.23	Yes	**No**
Barium	2,000	2,555	11	370	95,218	309	1.812	538	Yes	Yes
Beryllium	4	73	21	1.82	1.91	1.38	1.725	2.34	Yes	Yes
Cadmium	5	18	21	6.74	84.78	9.21	1.725	10.20	**No**	Yes
Calcium	NE	NE	1	158,000	Insufficient number of samples to perform the statistical analysis for this constituent					
Chromium	100	110	21	57.97	6,023	77.61	1.725	87.18	Yes	Yes
Chromium (Hexavalent)	NE	110	10	26.66	919	30.32	1.833	44.23	NE	Yes
Cobalt	NE	2,190	11	86.25	10,452	102	1.812	142	NE	Yes
Copper	1,300	1,460	21	528	728,518	854	1.725	849	Yes	Yes
Iron	NE	10,950	1	857	Insufficient number of samples to perform the statistical analysis for this constituent					
Lead	15	NE	15	557	1,383,979	1,176	1.761	1,092	**No**	NE
Magnesium	NE	NE	1	150,000	Insufficient number of samples to perform the statistical analysis for this constituent					
Manganese	NE	730	1	162	Insufficient number of samples to perform the statistical analysis for this constituent					
Mercury	2	NE	21	0.56	1.88	1.37	1.725	1.08	Yes	NE
Nickel	100	730	21	34.70	1,687	41.07	1.725	50.16	Yes	Yes
Selenium	50	183	13	70.95	14,736	121.39	1.782	130.95	**No**	Yes
Silver	NE	183	21	8.25	123	11.10	1.725	12.43	NE	Yes
Sodium	NE	NE	11	409,000	124,468,800,000	352,801	1.812	601,749	NE	NE
Thallium	2	3	21	565	1,933,641	1,391	1.725	1,089	**No**	**No**
Tin	NE	21,900	10	24.92	391	19.77	1.833	36.38	NE	Yes
Vanadium	NE	256	11	253	89,487	299	1.812	416	NE	**No**
Zinc	NE	11,000	21	325	977,093	988	1.725	697	NE	Yes

TABLE 5-58 (continued)

STATISTICAL EVALUATION OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	EPA Region III Tap Water RBC (ug/l)	s_x Standard Error	Is the average sample concentration < the screening criteria? Federal MCL	Tap Water RBC	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? Federal MCL	Tap Water RBC	n_2 Re-estimation of the number of samples required	Federal MCL Are Additional Samples Required?	If so How Many Additional Samples Required?
Inorganics, Total (ug/l)												
Aluminum	NE	36,500	Insufficient number of samples to perform the statistical analysis for this constituent									
Antimony	6	14.6	3.06	No	No	1.356	24.92	Yes	Yes	1	No	
Arsenic	50	0.04	6.22	Yes	No	1.325	33.57	No	Yes			
Barium	2,000	2,555	93.0	Yes	Yes	1.372	497.26	No	No			
Beryllium	4	73	0.30	Yes	Yes	1.325	2.22	No	No			
Cadmium	5	18	2.01	No	Yes	1.325	9.40	Yes	No			
Calcium	NE	NE	Insufficient number of samples to perform the statistical analysis for this constituent									
Chromium	100	110	16.9	Yes	Yes	1.325	80.41	No	No			
Chromium (Hexavalent)	NE	110	9.59	NE	Yes	1.393	40.02	NE	No			
Cobalt	NE	2,190	30.8	NE	Yes	1.372	128.54	NE	No			
Copper	1,300	1,460	186	Yes	Yes	1.325	774.72	No	No			
Iron	NE	10,950	Insufficient number of samples to perform the statistical analysis for this constituent									
Lead	15	NE	304	No	NE	1.341	964.11	Yes	NE	8	No	
Magnesium	NE	NE	Insufficient number of samples to perform the statistical analysis for this constituent									
Manganese	NE	730	Insufficient number of samples to perform the statistical analysis for this constituent									
Mercury	2	NE	0.30	Yes	NE	1.325	0.96	No	NE			
Nickel	100	730	8.96	Yes	Yes	1.325	46.58	No	No			
Selenium	50	183	33.7	No	Yes	1.356	116.61	Yes	No	62	Yes	49
Silver	NE	183	2.42	NE	Yes	1.325	11.46	NE	No			
Sodium	NE	NE	106,374	NE	NE	1.372	554,944.60	NE	NE			
Thallium	2	3	303	No	No	1.325	967.44	Yes	Yes	11	No	
Tin	NE	21,900	6.25	NE	Yes	1.393	33.63	NE	No			
Vanadium	NE	256	90.2	NE	Yes	1.372	376.43	NE	Yes			
Zinc	NE	11,000	216	NE	Yes	1.325	611.09	NE	No			

TABLE 5-58 (continued)

STATISTICAL EVALUATION OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Tap Water RBC n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
Inorganics, Total (ug/l)					
Aluminum	NE	36,500			
Antimony	6	14.6	6	No	
Arsenic	50	0.04	2	No	
Barium	2,000	2,555			
Beryllium	4	73			
Cadmium	5	18			
Calcium	NE	NE			
Chromium	100	110			
Chromium (Hexavalent)	NE	110			
Cobalt	NE	2,190			
Copper	1,300	1,460			
Iron	NE	10,950			
Lead	15	NE			
Magnesium	NE	NE			
Manganese	NE	730			
Mercury	2	NE			
Nickel	100	730			
Selenium	50	183			
Silver	NE	183			
Sodium	NE	NE			
Thallium	2	3	11	No	
Tin	NE	21,900			
Vanadium	NE	256	21,209	Yes	21,198
Zinc	NE	11,000			

TABLE 5-59 (continued)

STATISTICAL EVALUATION OF INORGANIC (DISSOLVED) DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard Federal MCL	**EPA Region III Tap Water RBC**
Inorganics, Dissolved (ug/l)										
Antimony	6	14.6	11	39.45	1,174	34.26	1.812	58.17	**No**	**No**
Barium	2,000	2,555	11	95.48	4,621	67.98	1.812	132.62	Yes	Yes
Cadmium	5	18.25	11	14.37	287	16.93	1.812	23.62	**No**	**No**
Calcium	NE	NE	1	145,000	Insufficient number of samples to perform the statistical analysis for this constituent					
Chromium	100	110	11	5.33	12	3.51	1.812	7.24	Yes	Yes
Cobalt	NE	2,190	11	29.47	2,105	45.88	1.812	54.53	NE	Yes
Copper	1,300	1,460	11	157.40	255,027	505.00	1.812	433.30	Yes	Yes
Iron	NE	10,950	1	51.80	Insufficient number of samples to perform the statistical analysis for this constituent					
Magnesium	NE	NE	1	143,000	Insufficient number of samples to perform the statistical analysis for this constituent					
Manganese	NE	730	1	97.70	Insufficient number of samples to perform the statistical analysis for this constituent					
Nickel	100	730	11	24.04	737	27.15	1.812	38.87	Yes	Yes
Sodium	NE	NE	9	7,085,778	98,848,410,444,444	9,942,254	1.86	13,249,975	NE	NE
Thallium	2	3	11	13.48	33	5.73	1.812	16.61	**No**	**No**
Vanadium	NE	256	11	23.98	370	19.24	1.812	34.49	NE	Yes
Zinc	NE	11,000	11	13.75	175	13.23	1.812	20.98	NE	Yes

TABLE 5-59 (continued)

STATISTICAL EVALUATION OF INORGANIC (DISSOLVED) DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	s_x Standard Error	Is the average sample concentration < the screening criteria? Federal MCL	**Tap Water RBC**	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? Federal MCL	**Tap Water RBC**	n_2 Re-estimation of the number of samples required	Federal MCL Are Additional Samples Required?	If so How Many Additional Samples Required?
Inorganics, Dissolved (ug/l)												
Antimony	6	14.6	10.3	No	No	1.372	53.62	Yes	Yes	2	No	
Barium	2,000	2,555	20.5	Yes	Yes	1.372	123.60	No	No			
Cadmium	5	18.25	5.10	No	Yes	1.372	21.37	Yes	Yes	6	No	
Calcium	NE	NE	Insufficient number of samples to perform the statistical analysis for this constituent									
Chromium	100	110	1.06	Yes	Yes	1.372	6.78	No	No			
Cobalt	NE	2,190	13.8	NE	Yes	1.372	48.44	NE	No			
Copper	1,300	1,460	152	Yes	Yes	1.372	366.31	No	No			
Iron	NE	10,950	Insufficient number of samples to perform the statistical analysis for this constituent									
Magnesium	NE	NE	Insufficient number of samples to perform the statistical analysis for this constituent									
Manganese	NE	730	Insufficient number of samples to perform the statistical analysis for this constituent									
Nickel	100	730	8.19	Yes	Yes	1.372	35.27	No	No			
Sodium	NE	NE	3,314,085	NE	NE	1.397	11,715,554	NE	NE			
Thallium	2	3	1.73	No	No	1.372	15.85	Yes	Yes	0.47	No	
Vanadium	NE	256	5.80	NE	Yes	1.372	31.94	NE	No			
Zinc	NE	11,000	3.99	NE	Yes	1.372	19.23	NE	No			

TABLE 5-59 (continued)

STATISTICAL EVALUATION OF INORGANIC (DISSOLVED) DETECTIONS IN GROUNDWATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	Tap Water RBC n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
Inorganics, Dissolved (ug/l)					
Antimony	6	14.6	4	No	
Barium	2,000	2,555			
Cadmium	5	18.25	36	Yes	25
Calcium	NE	NE			
Chromium	100	110			
Cobalt	NE	2,190			
Copper	1,300	1,460			
Iron	NE	10,950			
Magnesium	NE	NE			
Manganese	NE	730			
Nickel	100	730			
Sodium	NE	NE			
Thallium	2	3	1	No	
Vanadium	NE	256			
Zinc	NE	11,000			

TABLE 5-60 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SURFACE WATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal Ambient Water Quality (ug/l)	**EPA Region III BTAG Screening Levels** (ug/l)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard Federal Ambient Water Quality	**EPA Region III BTAG Screening Levels**
SEMIVOLATILES (ug/l)										
Bis(2-ethylhexyl)phthalate	NE	360	10	2	8	3	1.833	3.87	NE	Yes
Di-n-octylphthalate	NE	3.4	10	2	4	2	1.833	3.19	NE	Yes
Phenols	NE	5,800	5	158	47,294	217	2.132	365	NE	Yes

TABLE 5-60 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SURFACE WATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal Ambient Water Quality (ug/l)	**EPA Region III BTAG Screening Levels** (ug/l)	s_x Standard Error	Is the average sample concentration < the screening criteria? Federal Ambient Water Quality	 **EPA Region III BTAG Screening Levels**	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? Federal Ambient Water Quality	 **EPA Region III BTAG Screening Levels**	n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
SEMIVOLATILES (ug/l)												
Bis(2-ethylhexyl)phthalate	NE	360	0.87	NE	Yes	1.393	3.49	NE	No			
Di-n-octylphthalate	NE	3.4	0.62	NE	Yes	1.393	2.92	NE	No			
Phenols	NE	5,800	97.3	NE	Yes	1.533	307	NE	No			

TABLE 5-61 (continued)

STATISTICAL EVALUATION OF INORGANIC (TOTAL) DETECTIONS IN SURFACE WATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal Ambient Water Quality (ug/l)	**EPA Region III BTAG Screening Values** (ug/l)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard: Federal Ambient Water Quality	95% Confidence that the mean concentration of the sample attains the respective cleanup standard: **EPA Region III BTAG Screening Levels**
Inorganics, Total (ug/l)										
Arsenic	36	19[(1)]	10	52	2,653	52	1.833	82	**No**	Yes
Chromium	50[(3)]	10,300[(2)]	10	27	1,782	42	1.833	51	Yes	Yes
$Chromium^{+6}$	50	50	10	16	55	7	1.833	20	Yes	Yes
Copper	2.9	2.9	10	5	48	7	1.833	9	**No**	**No**
Selenium	71	35	10	63	5,535	74	1.833	106	**No**	**No**
Silver	2.3	0.0001	10	10	101	10	1.833	16	**No**	**No**
Thallium	NE	2,130	10	52	2,366	49	1.833	80	NE	Yes
Zinc	86	19	10	9	65	8	1.833	14	Yes	Yes

TABLE 5-61 (continued)

STATISTICAL EVALUATION OF INORGANIC (TOTAL) DETECTIONS IN SURFACE WATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal Ambient Water Quality (ug/l)	**EPA Region III BTAG Screening Values** (ug/l)	s_x Standard Error	Is the average sample concentration < the screening criteria? Federal Ambient Water Quality	 **EPA Region III BTAG Screening Levels**	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? Federal Ambient Water Quality	 **EPA Region III BTAG Screening Levels**	Federal Ambient Water Quality n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?	BTAG Screening Le n_2 Re-estimation of the number of samples required	Are Additional Samples Required?
Inorganics, Total (ug/l)														
Arsenic	36	19[1]	16.29	No	Yes	1.393	74.7	Yes	No	20	Yes	10		
Chromium	50[3]	10,300[2]	13.35	Yes	Yes	1.393	45.2	No	No					
Chromium^{+6}	50	50	2.35	Yes	Yes	1.393	19.5	No	No					
Copper	2.9	2.9	2.20	No	No	1.393	8.07	Yes	Yes	21	Yes	11	21	Yes
Selenium	71	35	23.53	Yes	No	1.393	95.9	Yes	Yes	172	Yes	162	14	Yes
Silver	2.3	0.0001	3.18	No	No	1.393	14.3	Yes	Yes	3	No		2	No
Thallium	NE	2,130	15.38	NE	Yes	1.393	73.5	NE	No					
Zinc	86	19	2.56	Yes	Yes	1.393	12.4	No	No					

TABLE 5-61 (continued)

STATISTICAL EVALUATION OF INORGANIC (TOTAL) DETECTIONS IN SURFACE WATER
SWMU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal Ambient Water Quality (ug/l)	**EPA Region III BTAG Screening Values** (ug/l)	vels If so How Many Additional Samples Required?
Inorganics, Total (ug/l)			
Arsenic	36	19[1]	
Chromium	50[3]	10,300[2]	
Chromium^{+6}	50	50	
Copper	2.9	2.9	11
Selenium	71	35	4
Silver	2.3	0.0001	
Thallium	NE	2,130	
Zinc	86	19	

TABLE 5-62 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard: EPA Region III Industrial RBCs	95% Confidence that the mean concentration of the sample attains the respective cleanup standard: **EPA Region III Residential RBCs**
VOLATILES (ug/kg)										
1,1,1-Trichloroethane	40,880,000	1,564,286	30	114	20,898	145	1.699	159	Yes	Yes
Acetone	204,400,000	7,821,429	15	122	31,935	179	1.761	203	Yes	Yes
Carbon disulfide	204,400,000	7,821,429	15	7.33	10	3.18	1.761	8.78	Yes	Yes
Methylene chloride	763,093	85,163	30	506	2,325,077	1,525	1.699	979	Yes	Yes
Toluene	408,800,000	15,642,857	30	118	55,660	236	1.699	191	Yes	Yes
SEMIVOLATILES (ug/kg)										
Benzo(a)anthracene	7,840	875	30	518	661,408	813	1.699	770	Yes	Yes
Benzo(a)pyrene	784	88	30	461	594,047	771	1.699	701	Yes	No
Benzo(b)fluoranthene	7,840	875	30	465	593,299	770	1.699	703	Yes	Yes
Benzo(g,h,i)perylene	61,320,000	2,346,429	30	544	638,112	799	1.699	792	Yes	Yes
Benzo(k)fluoranthene	78,400	8,750	30	464	594,009	771	1.699	703	Yes	Yes
Bis(2-ethylhexyl)phthalate	408,800	45,623	30	703	1,005,291	1,003	1.699	1,014	Yes	Yes
Chrysene	784,000	87,497	30	443	603,602	777	1.699	684	Yes	Yes
Dibenzo(a,h)anthracene	784	88	30	557	630,867	794	1.699	804	No	No
Di-n-octylphthalate	40,880,000	1,564,286	30	569	627,920	792	1.699	815	Yes	Yes
Fluoranthene	81,760,000	3,128,571	30	508	667,843	817	1.699	761	Yes	Yes
Indeno(1,2,3-cd)pyrene	7,840	875	30	538	643,795	802	1.699	787	Yes	Yes
Phenanthrene	61,320,000	2,346,429	30	550	644,190	803	1.699	799	Yes	Yes
Pyrene	61,320,000	2,346,429	30	520	660,007	812	1.699	772	Yes	Yes

TABLE 5-62 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard EPA Region III Industrial RBCs	**EPA Region III Residential RBCs**
PESTICIDES/PCBs (ug/kg)										
4,4'-DDD	23,847	2,661	31	179	31,684	178	1.697	234	Yes	Yes
4,4'-DDE	16,833	1,879	31	176	32,570	180	1.697	231	Yes	Yes
4,4'-DDT	16,833	1,879	31	176	32,778	181	1.697	231	Yes	Yes
Aldrin	337	38	31	176	32,700	181	1.697	231	Yes	No
alpha-BHC	908	101	31	176	32,707	181	1.697	231	Yes	No
beta-BHC	3,180	355	31	176	32,699	181	1.697	231	Yes	Yes
delta-BHC	NE	NE	31	176	32,704	181	1.697	231	Yes	Yes
Dieldrin	358	40	31	179	31,671	178	1.697	234	Yes	No
Endosulfan I	12,264,000	469,286	31	176	32,672	181	1.697	231	Yes	Yes
Endosulfan II	12,264,000	469,286	31	179	31,696	178	1.697	234	Yes	Yes
Endosulfan sulfate	12,264,000	469,286	31	179	31,690	178	1.697	234	Yes	Yes
Endrin	613,200	23,464	31	179	31,696	178	1.697	234	Yes	Yes
Endrin aldehyde	NE	NE	31	179	31,689	178	1.697	234	Yes	Yes
Endrin ketone	613,200	23,464	7	3.79	3	1.59	1.943	4.96	Yes	Yes
gamma-BHC (Lindane)	4,402	491	31	176	32,692	181	1.697	231	Yes	Yes
Heptachlor	1,272	142	31	176	32,753	181	1.697	231	Yes	No
Heptachlor epoxide	629	70	31	176	32,699	181	1.697	231	Yes	No
DIOXINS (ug/kg)										
Total HxCDD	0.38	0.043	9	0.25	0	0.10	1.86	0.31	Yes	No
Total HxCDF	0.38	0.043	9	0.19	0	0.13	1.86	0.27	Yes	No

TABLE 5-62 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	s_x Standard Error	Is the average sample concentration < the screening criteria? **Industrial RBCs**	Residential RBCs	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? **Industrial RBCs**	Residential RBCs	Residential RBCs: n_2 Re-estimation of the number of samples required	Residential RBCs: Are Additional Samples Required?	Residential RBCs: If so How Many Additional Samples Required?
VOLATILES (ug/kg)												
1,1,1-Trichloroethane	40,880,000	1,564,286	26.4	Yes	Yes	1.311	149	No	No			
Acetone	204,400,000	7,821,429	46.1	Yes	Yes	1.345	184	No	No			
Carbon disulfide	204,400,000	7,821,429	0.82	Yes	Yes	1.345	8.44	No	No			
Methylene chloride	763,093	85,163	278	Yes	Yes	1.311	871	No	No			
Toluene	408,800,000	15,642,857	43.1	Yes	Yes	1.311	174	No	No			
SEMIVOLATILES (ug/kg)												
Benzo(a)anthracene	7,840	875	148	Yes	Yes	1.311	713	No	No			
Benzo(a)pyrene	784	88	141	Yes	No	1.311	646	No	Yes	7	No	
Benzo(b)fluoranthene	7,840	875	141	Yes	Yes	1.311	649	No	No			
Benzo(g,h,i)perylene	61,320,000	2,346,429	146	Yes	Yes	1.311	736	No	No			
Benzo(k)fluoranthene	78,400	8,750	141	Yes	Yes	1.311	649	No	No			
Bis(2-ethylhexyl)phthalate	408,800	45,623	183	Yes	Yes	1.311	943	No	No			
Chrysene	784,000	87,497	142	Yes	Yes	1.311	629	No	No			
Dibenzo(a,h)anthracene	784	88	145	Yes	No	1.311	747	No	Yes	5	No	
Di-n-octylphthalate	40,880,000	1,564,286	145	Yes	Yes	1.311	759	No	No			
Fluoranthene	81,760,000	3,128,571	149	Yes	Yes	1.311	703	No	No			
Indeno(1,2,3-cd)pyrene	7,840	875	146	Yes	Yes	1.311	730	No	No			
Phenanthrene	61,320,000	2,346,429	147	Yes	Yes	1.311	742	No	No			
Pyrene	61,320,000	2,346,429	148	Yes	Yes	1.311	714	No	No			

TABLE 5-62 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	s_x Standard Error	Is the average sample concentration < the screening criteria? **Industrial RBCs**	Is the average sample concentration < the screening criteria? Residential RBCs	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? **Industrial RBCs**	Is the confidence interval > screening criteria? Residential RBCs	Residential RBCs: n_2 Re-estimation of the number of samples required	Residential RBCs: Are Additional Samples Required?	Residential RBCs: If so How Many Additional Samples Required?
PESTICIDES/PCBs (ug/kg)												
4,4'-DDD	23,847	2,661	32.0	Yes	Yes	1.31	221	No	No			
4,4'-DDE	16,833	1,879	32.4	Yes	Yes	1.31	219	No	No			
4,4'-DDT	16,833	1,879	32.5	Yes	Yes	1.31	218	No	No			
Aldrin	337	38	32.5	Yes	No	1.31	219	No	Yes	3	No	
alpha-BHC	908	101	32.5	Yes	No	1.31	219	No	Yes	10	No	
beta-BHC	3,180	355	32.5	Yes	Yes	1.31	219	No	No			
delta-BHC	NE	NE	32.5	Yes	Yes	1.31	219	No	No			
Dieldrin	358	40	32.0	Yes	No	1.31	221	No	Yes	3	No	
Endosulfan I	12,264,000	469,286	32.5	Yes	Yes	1.31	219	No	No			
Endosulfan II	12,264,000	469,286	32.0	Yes	Yes	1.31	221	No	No			
Endosulfan sulfate	12,264,000	469,286	32.0	Yes	Yes	1.31	221	No	No			
Endrin	613,200	23,464	32.0	Yes	Yes	1.31	221	No	No			
Endrin aldehyde	NE	NE	32.0	Yes	Yes	1.31	221	No	No			
Endrin ketone	613,200	23,464	0.60	Yes	Yes	1.44	4.66	No	No			
gamma-BHC (Lindane)	4,402	491	32.5	Yes	Yes	1.31	219	No	No			
Heptachlor	1,272	142	32.5	Yes	No	1.31	219	No	Yes	49	Yes	18
Heptachlor epoxide	629	70	32.5	Yes	No	1.31	219	No	Yes	5	No	
DIOXINS (ug/kg)												
Total HxCDD	0.38	0.043	0.03	Yes	No	1.397	0.30	No	Yes	0	No	
Total HxCDF	0.38	0.043	0.04	Yes	No	1.397	0.25	No	Yes	2	No	

TABLE 5-63 (continued)

STATISTICAL EVALUATION OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard EPA Region III Industrial RBCs	**EPA Region III Residential RBCs**
Inorganics, Total (mg/kg)										
Aluminum	2,044,000	78,214	7	20,866	116,714,895	10,803	1.943	28,800	Yes	Yes
Antimony	818	31	31	11	115	11	1.697	14.1	Yes	Yes
Arsenic	3.82	0.43	31	24	917	30	1.697	33.0	No	No
Barium	143,080	5,475	16	212	58,643	242	1.753	318	Yes	Yes
Beryllium	4,100	160	31	1	8	3	1.697	2.33	Yes	Yes
Cadmium	2,044	78	31	2	4	2	1.697	2.27	Yes	Yes
Calcium	NE	NE	7	110,194	30,814,343,029	175,540	1.943	239,108	NE	NE
Chromium	6,132	235	31	36	320	18	1.697	41.7	Yes	Yes
Cobalt	122,640	4,693	16	29	253	16	1.753	36.0	Yes	Yes
Copper	81,760	3,129	31	407	1,079,094	1,039	1.697	724	Yes	Yes
Iron	613,200	23,464	7	63,420	3,204,356,133	56,607	1.943	104,991	Yes	No
Lead	NE	NE	44	370	717,611	847	1.682	585	NE	NE
Magnesium	NE	NE	7	7,880	11,590,633	3,405	1.943	10,380	NE	NE
Manganese	40,880	1,564	7	712	111,364	334	1.943	957	Yes	Yes
Mercury	NE	NE	31	0	0	0	1.697	0.38	NE	NE
Nickel	40,880	1,564	31	25	905	30	1.697	34.2	Yes	Yes
Potassium	NE	NE	7	1,435	967,754	984	1.943	2,158	NE	NE
Selenium	10,220	391	31	35	6,130	78	1.697	59.0	Yes	Yes
Sodium	NE	NE	7	7,757	15,811,090	3,976	1.943	10,677	NE	NE
Tin	1,226,400	46,929	9	2	9	3	1.86	4.18	Yes	Yes
Vanadium	14,308	548	16	165	7,951	89	1.699	203	Yes	Yes
Zinc	613,200	23,464	31	422	431,287	657	1.697	622	Yes	Yes

TABLE 5-63 (continued)

STATISTICAL EVALUATION OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	s_x Standard Error	Is the average sample concentration < the screening criteria? **Industrial RBCs**	 Residential RBCs	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? **Industrial RBCs**	 Residential RBCs	Industrial RBCs n_2 Re-estimation of the number of samples required	 Are Additional Samples Required?	If so How Many Additional Samples Required?	Residential RBC n_2 Re-estimation of the number of samples required	 Are Additional Samples Required?
Inorganics, Total (mg/kg)														
Aluminum	2,044,000	78,214	4,083	Yes	Yes	1.44	26,746	No	No					
Antimony	818	31	1.93	Yes	Yes	1.31	13.3	No	No					
Arsenic	3.82	0.43	5.44	No	No	1.31	30.8	Yes	Yes	4	No		3	No
Barium	143,080	5,475	60.5	Yes	Yes	1.341	293	No	No					
Beryllium	4,100	160	0.50	Yes	Yes	1.31	2.14	No	No					
Cadmium	2,044	78	0.35	Yes	Yes	1.31	2.14	No	No					
Calcium	NE	NE	66,348	NE	NE	1.44	205,735	NE	NE					
Chromium	6,132	235	3.21	Yes	Yes	1.31	40.4	No	No					
Cobalt	122,640	4,693	3.98	Yes	Yes	1.341	34.4	No	No					
Copper	81,760	3,129	187	Yes	Yes	1.31	651	No	No					
Iron	613,200	23,464	21,395	Yes	No	1.44	94,229	No	Yes				4	No
Lead	NE	NE	128	NE	NE	1.302	536	NE	NE					
Magnesium	NE	NE	1,287	NE	NE	1.44	9,733	NE	NE					
Manganese	40,880	1,564	126	Yes	Yes	1.44	893	No	No					
Mercury	NE	NE	0.06	NE	NE	1.31	0.36	NE	NE					
Nickel	40,880	1,564	5.40	Yes	Yes	1.31	32.2	No	No					
Potassium	NE	NE	372	NE	NE	1.44	1,971	NE	NE					
Selenium	10,220	391	14.1	Yes	Yes	1.31	53.6	No	No					
Sodium	NE	NE	1,503	NE	NE	1.44	9,921	NE	NE					
Tin	1,226,400	46,929	1.00	Yes	Yes	1.397	3.71	No	No					
Vanadium	14,308	548	22.3	Yes	Yes	1.341	195	No	No					
Zinc	613,200	23,464	118	Yes	Yes	1.31	576	No	No					

TABLE 5-63 (continued)

STATISTICAL EVALUATION OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	s If so How Many Additional Samples Required?
Inorganics, Total (mg/kg)			
Aluminum	2,044,000	78,214	
Antimony	818	31	
Arsenic	3.82	0.43	
Barium	143,080	5,475	
Beryllium	4,100	160	
Cadmium	2,044	78	
Calcium	NE	NE	
Chromium	6,132	235	
Cobalt	122,640	4,693	
Copper	81,760	3,129	
Iron	613,200	23,464	
Lead	NE	NE	
Magnesium	NE	NE	
Manganese	40,880	1,564	
Mercury	NE	NE	
Nickel	40,880	1,564	
Potassium	NE	NE	
Selenium	10,220	391	
Sodium	NE	NE	
Tin	1,226,400	46,929	
Vanadium	14,308	548	
Zinc	613,200	23,464	

TABLE 5-64 (continued)

STASTICAL EVALUATION OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard EPA Region III Industrial RBCs	**EPA Region III Residential RBCs**
VOLATILES (ug/kg)										
Acetone	204,400,000	7,821,429	15	80.4	17,766	133	1.761	141	Yes	Yes
Carbon disulfide	204,400,000	7,821,429	15	13.5	713	26.7	1.761	25.7	Yes	Yes
Methylene chloride	763,093	85,163	16	64.8	24,867	158	1.753	134	Yes	Yes
2-Butanone	1,226,400,000	46,928,571	16	38.7	9,807	99.0	1.753	82.1	Yes	Yes
Benzene	197,352	22,025	16	7.25	11.0	3.32	1.753	8.70	Yes	Yes
4-Methyl-2-pentanone	163,520,000	6,257,143	16	15.2	33.8	5.81	1.753	17.7	Yes	Yes
Toluene	408,800,000	15,642,857	16	8.06	10.7	3.28	1.753	9.50	Yes	Yes
Ethylbenzene	204,400,000	7,821,429	16	7.31	10.2	3.20	1.753	8.71	Yes	Yes
m/p-xylene	NE	NE	6	8.17	23.8	4.88	2.015	12.2	NE	NE
o-Xylene	4,088,000,000	156,428,571	6	7.83	27.0	5.19	2.015	12.1	Yes	Yes
SEMIVOLATILES (ug/kg)										
2-Methylnaphthalene	40,880,000	1,564,286	16	1,055	1,123,397	1,060	1.753	1,520	Yes	Yes
Fluorene	81,760,000	3,128,571	16	1,065	1,104,587	1,051	1.753	1,526	Yes	Yes
Phenanthrene	61,320,000	2,346,429	16	1,066	1,146,683	1,071	1.753	1,535	Yes	Yes
Anthracene	613,200,000	23,464,286	16	978	1,111,123	1,054	1.753	1,440	Yes	Yes
Di-n-butylphthalate	204,400,000	7,821,429	16	977	1,112,991	1,055	1.753	1,439	Yes	Yes
Fluoranthene	81,760,000	3,128,571	16	1,171	1,350,212	1,162	1.753	1,680	Yes	Yes
Pyrene	61,320,000	2,346,429	16	1,103	1,128,287	1,062	1.753	1,568	Yes	Yes
Benzo(a)anthracene	7,840	875	16	1,034	1,057,612	1,028	1.753	1,484	Yes	**No**
Chrysene	784,000	87,497	16	1,059	1,065,812	1,032	1.753	1,511	Yes	Yes
Bis(2-ethylhexyl)phthalate	408,800	45,623	16	1,768	13,094,887	3,619	1.753	3,353	Yes	Yes
Benzo(b)fluoranthene	7,840	875	16	1,053	1,061,887	1,030	1.753	1,504	Yes	**No**
Benzo(k)fluoranthene	78,400	8,750	16	1,096	1,115,612	1,056	1.753	1,559	Yes	Yes
Benzo(a)pyrene	784	88	16	988	1,094,203	1,046	1.753	1,447	**No**	**No**
Indeno(1,2,3-cd)pyrene	7,840	875	16	1,015	1,064,587	1,032	1.753	1,467	Yes	**No**
Dibenzo(a,h)anthracene	784	88	16	999	1,078,993	1,039	1.753	1,455	**No**	**No**
Benzo(g,h,i)perylene	61,320,000	2,346,429	16	993	1,086,943	1,043	1.753	1,450	Yes	Yes
Carbazole	286,160	31,936	16	977	1,113,227	1,055	1.753	1,439	Yes	Yes

TABLE 5-64 (continued)

STASTICAL EVALUATION OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard EPA Region III Industrial RBCs	**EPA Region III Residential RBCs**
PESTICIDES/PCBs (ug/kg)										
beta-BHC	3,180	355	17	5.18	17.9	4.23	1.746	6.97	Yes	Yes
delta-BHC	NE	NE	17	5.39	16.2	4.03	1.746	7.09	NE	NE
gamma-BHC (Lindane)	4,402	491	17	5.34	16.7	4.08	1.746	7.07	Yes	Yes
Heptachlor	1,272	142	17	5.36	16.5	4.06	1.746	7.08	Yes	Yes
Aldrin	337	38	17	5.44	16.1	4.02	1.746	7.15	Yes	Yes
Heptachlor epoxide	629	70	17	5.48	15.9	3.99	1.746	7.17	Yes	Yes
Endosulfan I	12,264,000	469,286	17	5.42	15.9	3.98	1.746	7.11	Yes	Yes
Dieldrin	358	40	17	10.3	72.3	8.50	1.746	13.9	Yes	Yes
4,4'-DDE	16,833	1,879	17	10.9	64.9	8.06	1.746	14.3	Yes	Yes
Endrin	613,200	23,464	17	10.7	67.9	8.24	1.746	14.2	Yes	Yes
Endosulfan II	12,264,000	469,286	17	10.9	65.4	8.08	1.746	14.3	Yes	Yes
4,4'-DDT	16,833	1,879	17	10.7	68.4	8.27	1.746	14.2	Yes	Yes
Methoxychlor	10,220,000	391,071	17	53.5	1,661	40.7	1.746	70.8	Yes	Yes
alpha-Chlordane	16,352	1,825	17	46.2	2,232	47.2	1.746	66.2	Yes	Yes
DIOXINS (ug/kg)										
Total TCDF	0.38	0.043	8	0.07	0.01	0.09	1.895	0.12	Yes	**No**
Total HxCDD	0.38	0.043	8	0.09	0.00	0.05	1.895	0.12	Yes	**No**

TABLE 5-64 (continued)

STASTICAL EVALUATION OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	s_x Standard Error	Is the average sample concentration < the screening criteria? **Industrial RBCs**	Is the average sample concentration < the screening criteria? Residential RBCs	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? **Industrial RBCs**	Is the confidence interval > screening criteria? Residential RBCs	Industrial RBCs n_2 Re-estimation of the number of samples required	Industrial RBCs Are Additional Samples Required?	Industrial RBCs If so How Many Additional Samples Required?
VOLATILES (ug/kg)												
Acetone	204,400,000	7,821,429	34.4	Yes	Yes	1.345	127	No	No			
Carbon disulfide	204,400,000	7,821,429	6.90	Yes	Yes	1.345	22.8	No	No			
Methylene chloride	763,093	85,163	39.4	Yes	Yes	1.341	118	No	No			
2-Butanone	1,226,400,000	46,928,571	24.8	Yes	Yes	1.341	71.9	No	No			
Benzene	197,352	22,025	0.83	Yes	Yes	1.341	8.36	No	No			
4-Methyl-2-pentanone	163,520,000	6,257,143	1.45	Yes	Yes	1.341	17.1	No	No			
Toluene	408,800,000	15,642,857	0.82	Yes	Yes	1.341	9.16	No	No			
Ethylbenzene	204,400,000	7,821,429	0.80	Yes	Yes	1.341	8.38	No	No			
m/p-xylene	NE	NE	1.99	Yes	Yes	1.476	11.1	No	No			
o-Xylene	4,088,000,000	156,428,571	2.12	Yes	Yes	1.476	11.0	No	No			
SEMIVOLATILES (ug/kg)												
2-Methylnaphthalene	40,880,000	1,564,286	265.0	Yes	Yes	1.341	1,411	No	No			
Fluorene	81,760,000	3,128,571	262.7	Yes	Yes	1.341	1,417	No	No			
Phenanthrene	61,320,000	2,346,429	267.7	Yes	Yes	1.341	1,425	No	No			
Anthracene	613,200,000	23,464,286	263.5	Yes	Yes	1.341	1,332	No	No			
Di-n-butylphthalate	204,400,000	7,821,429	263.7	Yes	Yes	1.341	1,331	No	No			
Fluoranthene	81,760,000	3,128,571	290.5	Yes	Yes	1.341	1,561	No	No			
Pyrene	61,320,000	2,346,429	265.6	Yes	Yes	1.341	1,459	No	No			
Benzo(a)anthracene	7,840	875	257.1	Yes	No	1.341	1,379	No	Yes			
Chrysene	784,000	87,497	258.1	Yes	Yes	1.341	1,405	No	No			
Bis(2-ethylhexyl)phthalate	408,800	45,623	904.7	Yes	Yes	1.341	2,981	No	No			
Benzo(b)fluoranthene	7,840	875	257.6	Yes	No	1.341	1,398	No	Yes			
Benzo(k)fluoranthene	78,400	8,750	264.1	Yes	Yes	1.341	1,450	No	No			
Benzo(a)pyrene	784	88	261.5	No	No	1.341	1,339	Yes	Yes	47	Yes	31
Indeno(1,2,3-cd)pyrene	7,840	875	257.9	Yes	No	1.341	1,361	No	Yes			
Dibenzo(a,h)anthracene	784	88	259.7	No	No	1.341	1,348	Yes	Yes	42	Yes	26
Benzo(g,h,i)perylene	61,320,000	2,346,429	260.6	Yes	Yes	1.341	1,343	No	No			
Carbazole	286,160	31,936	263.8	Yes	Yes	1.341	1,331	No	No			

TABLE 5-64 (continued)

STASTICAL EVALUATION OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	s_x Standard Error	Is the average sample concentration < the screening criteria? **Industrial RBCs**	 Residential RBCs	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? **Industrial RBCs**	 Residential RBCs	Industrial RBCs n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
PESTICIDES/PCBs (ug/kg)												
beta-BHC	3,180	355	1.03	Yes	Yes	1.337	6.55	No	No			
delta-BHC	NE	NE	0.98	Yes	Yes	1.337	6.69	No	No			
gamma-BHC (Lindane)	4,402	491	0.99	Yes	Yes	1.337	6.67	No	No			
Heptachlor	1,272	142	0.98	Yes	Yes	1.337	6.68	No	No			
Aldrin	337	38	0.97	Yes	Yes	1.337	6.75	No	No			
Heptachlor epoxide	629	70	0.97	Yes	Yes	1.337	6.77	No	No			
Endosulfan I	12,264,000	469,286	0.97	Yes	Yes	1.337	6.72	No	No			
Dieldrin	358	40	2.06	Yes	Yes	1.337	13.1	No	No			
4,4'-DDE	16,833	1,879	1.95	Yes	Yes	1.337	13.5	No	No			
Endrin	613,200	23,464	2.00	Yes	Yes	1.337	13.4	No	No			
Endosulfan II	12,264,000	469,286	1.96	Yes	Yes	1.337	13.5	No	No			
4,4'-DDT	16,833	1,879	2.01	Yes	Yes	1.337	13.3	No	No			
Methoxychlor	10,220,000	391,071	9.88	Yes	Yes	1.337	66.7	No	No			
alpha-Chlordane	16,352	1,825	11.5	Yes	Yes	1.337	61.5	No	No			
DIOXINS (ug/kg)												
Total TCDF	0.38	0.043	0.03	Yes	No	1.415	0.11	No	Yes			
Total HxCDD	0.38	0.043	0.02	Yes	No	1.415	0.12	No	Yes			

TABLE 5-64 (continued)

STASTICAL EVALUATION OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	Residential RBCs n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
VOLATILES (ug/kg)					
Acetone	204,400,000	7,821,429			
Carbon disulfide	204,400,000	7,821,429			
Methylene chloride	763,093	85,163			
2-Butanone	1,226,400,000	46,928,571			
Benzene	197,352	22,025			
4-Methyl-2-pentanone	163,520,000	6,257,143			
Toluene	408,800,000	15,642,857			
Ethylbenzene	204,400,000	7,821,429			
m/p-xylene	NE	NE			
o-Xylene	4,088,000,000	156,428,571			
SEMIVOLATILES (ug/kg)					
2-Methylnaphthalene	40,880,000	1,564,286			
Fluorene	81,760,000	3,128,571			
Phenanthrene	61,320,000	2,346,429			
Anthracene	613,200,000	23,464,286			
Di-n-butylphthalate	204,400,000	7,821,429			
Fluoranthene	81,760,000	3,128,571			
Pyrene	61,320,000	2,346,429			
Benzo(a)anthracene	7,840	875	75	Yes	59
Chrysene	784,000	87,497			
Bis(2-ethylhexyl)phthalate	408,800	45,623			
Benzo(b)fluoranthene	7,840	875	61	Yes	45
Benzo(k)fluoranthene	78,400	8,750			
Benzo(a)pyrene	784	88	2	No	
Indeno(1,2,3-cd)pyrene	7,840	875	98	Yes	82
Dibenzo(a,h)anthracene	784	88	2	No	
Benzo(g,h,i)perylene	61,320,000	2,346,429			
Carbazole	286,160	31,936			

TABLE 5-64 (continued)

STASTICAL EVALUATION OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	Residential RBCs n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
PESTICIDES/PCBs (ug/kg)					
beta-BHC	3,180	355			
delta-BHC	NE	NE			
gamma-BHC (Lindane)	4,402	491			
Heptachlor	1,272	142			
Aldrin	337	38			
Heptachlor epoxide	629	70			
Endosulfan I	12,264,000	469,286			
Dieldrin	358	40			
4,4'-DDE	16,833	1,879			
Endrin	613,200	23,464			
Endosulfan II	12,264,000	469,286			
4,4'-DDT	16,833	1,879			
Methoxychlor	10,220,000	391,071			
alpha-Chlordane	16,352	1,825			
DIOXINS (ug/kg)					
Total TCDF	0.38	0.043	32	Yes	24
Total HxCDD	0.38	0.043	2	No	

TABLE 5-65 (continued)

STATISTICAL EVALUATION OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard EPA Region III Industrial RBCs	**EPA Region III Residential RBCs**
Inorganics, Total (mg/kg)										
Aluminum	2,044,000	78,214	6	18,887	121,820,267	11,037	2.015	27,966	Yes	Yes
Antimony	818	31	16	6.04	35.4	5.95	1.753	8.65	Yes	Yes
Arsenic	3.8	0.4	16	4.29	44.2	6.65	1.753	7.20	**No**	**No**
Barium	143,080	5,475	16	193	26,269	162	1.753	264	Yes	Yes
Beryllium	4,100	160	16	0.28	0.12	0.35	1.753	0.43	Yes	Yes
Cadmium	2,044	78	16	1.74	6.45	2.54	1.753	2.85	Yes	Yes
Calcium	NE	NE	6	99,783	16,407,405,667	128,091	2.015	205,154	NE	NE
Chromium	6,132	235	16	32.8	560	23.7	1.753	43.2	Yes	Yes
Cobalt	122,640	4,693	16	36.6	1,184	34.4	1.753	51.7	Yes	Yes
Copper	81,760	3,129	16	197	152,334	390	1.753	368	Yes	Yes
Iron	613,200	23,464	6	69,408	7,552,196,417	86,903	2.015	140,897	Yes	**No**
Lead	NE	NE	16	454	2,093,564	1,447	1.753	1,088	NE	NE
Magnesium	NE	NE	6	10,260	9,883,480	3,144	2.015	12,846	NE	NE
Manganese	40,880	1,564	6	483	48,429	220	2.015	664	Yes	Yes
Mercury	NE	NE	16	0.12	0.03	0.16	1.753	0.19	NE	NE
Nickel	40,880	1,564	16	20.0	589	24.3	1.753	30.6	Yes	Yes
Potassium	NE	NE	6	1,718	1,329,427	1,153	2.015	2,666	NE	NE
Selenium	10,220	391	16	0.73	0.25	0.50	1.753	0.95	Yes	Yes
Silver	10,220	391	16	0.80	0.69	0.83	1.753	1.16	Yes	Yes
Sodium	NE	NE	6	14,312	313,555,097	17,707	2.015	28,878	NE	NE
Sulfide	NE	NE	4	692	684,869	828	2.353	1,666	NE	NE
Tin	1,226,400	46,929	10	8.76	370	19.2	1.833	19.9	Yes	Yes
Vanadium	14,308	548	16	167	6,188	78.7	1.753	201	Yes	Yes
Zinc	613,200	23,464	16	214	248,503	499	1.753	433	Yes	Yes

TABLE 5-65 (continued)

STATISTICAL EVALUATION OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	s_x Standard Error	Is the average sample concentration < the screening criteria? **Industrial RBCs**	Is the average sample concentration < the screening criteria? Residential RBCs	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? **Industrial RBCs**	Is the confidence interval > screening criteria? Residential RBCs	Industrial RBCs: n_2 Re-estimation of the number of samples required	Industrial RBCs: Are Additional Samples Required?	Industrial RBCs: If so How Many Additional Samples Required?
Inorganics, Total (mg/kg)												
Aluminum	2,044,000	78,214	4,506	Yes	Yes	1.476	25,537	No	No			
Antimony	818	31	1.49	Yes	Yes	1.341	8.04	No	No			
Arsenic	3.8	0.4	1.66	No	No	1.341	6.51	Yes	Yes	361	Yes	345
Barium	143,080	5,475	40.5	Yes	Yes	1.341	247	No	No			
Beryllium	4,100	160	0.09	Yes	Yes	1.341	0.40	No	No			
Cadmium	2,044	78	0.63	Yes	Yes	1.341	2.59	No	No			
Calcium	NE	NE	52,293	NE	NE	1.476	176,968	NE	NE			
Chromium	6,132	235	5.91	Yes	Yes	1.341	40.7	No	No			
Cobalt	122,640	4,693	8.60	Yes	Yes	1.341	48.2	No	No			
Copper	81,760	3,129	97.6	Yes	Yes	1.341	327	No	No			
Iron	613,200	23,464	35,478	Yes	No	1.476	121,774	No	Yes			
Lead	NE	NE	362	NE	NE	1.341	939	NE	NE			
Magnesium	NE	NE	1,283	NE	NE	1.476	12,154	NE	NE			
Manganese	40,880	1,564	89.8	Yes	Yes	1.476	615	No	No			
Mercury	NE	NE	0.04	NE	NE	1.341	0.17	NE	NE			
Nickel	40,880	1,564	6.07	Yes	Yes	1.341	28.1	No	No			
Potassium	NE	NE	471	NE	NE	1.476	2,413	NE	NE			
Selenium	10,220	391	0.12	Yes	Yes	1.341	0.90	No	No			
Silver	10,220	391	0.21	Yes	Yes	1.341	1.08	No	No			
Sodium	NE	NE	7,229	NE	NE	1.476	24,982	NE	NE			
Sulfide	NE	NE	414	NE	NE	1.638	1,370	NE	NE			
Tin	1,226,400	46,929	6.09	Yes	Yes	1.345	16.9	No	No			
Vanadium	14,308	548	19.7	Yes	Yes	1.341	193	No	No			
Zinc	613,200	23,464	125	Yes	Yes	1.341	381	No	No			

TABLE 5-65 (continued)

STATISTICAL EVALUATION OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	**EPA Region III Industrial RBCs** (mg/kg)	EPA Region III Residential RBCs (mg/kg)	Residential RBCs n_2 Re-estimation of the number of samples required	Residential RBCs Are Additional Samples Required?	Residential RBCs If so How Many Additional Samples Required?
Inorganics, Total (mg/kg)					
Aluminum	2,044,000	78,214			
Antimony	818	31			
Arsenic	3.8	0.4	5	No	
Barium	143,080	5,475			
Beryllium	4,100	160			
Cadmium	2,044	78			
Calcium	NE	NE			
Chromium	6,132	235			
Cobalt	122,640	4,693			
Copper	81,760	3,129			
Iron	613,200	23,464	8	Yes	2
Lead	NE	NE			
Magnesium	NE	NE			
Manganese	40,880	1,564			
Mercury	NE	NE			
Nickel	40,880	1,564			
Potassium	NE	NE			
Selenium	10,220	391			
Silver	10,220	391			
Sodium	NE	NE			
Sulfide	NE	NE			
Tin	1,226,400	46,929			
Vanadium	14,308	548			
Zinc	613,200	23,464			

TABLE 5-66

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SEDIMENT
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	ERL Sediment Screening Value (ug/kg)	**ERM Sediment Screening Value** (ug/kg)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard ERL Sediment Screening	**ERM Sediment Screening**
VOLATILES (ug/kg)										
2-Butanone	NE	NE	14	1,715	5,727,284	2,393	1.771	2,848	NE	NE
SEMIVOLATILES (ug/kg)										
Anthracene	85.3	1,100	13	288	56,373	237	1.782	405	**No**	Yes
Benzo(a)anthracene	261	1,600	13	493	332,123	576	1.782	778	**No**	Yes
Benzo(a)pyrene	430	1,600	13	529	234,141	484	1.782	768	**No**	Yes
Benzo(b)fluoranthene	NE	NE	13	623	602,972	777	1.782	1,006	NE	NE
Benzo(g,h,i)perylene	NE	NE	13	501	92,691	304	1.782	651	NE	NE
Benzo(k)fluoranthene	NE	NE	13	421	131,491	363	1.782	600	NE	NE
Bis(2-ethylhexyl)phthalate	NE	NE	13	2,076	17,918,809	4,233	1.782	4,168	NE	NE
Carbazole	NE	NE	7	478	46,565	216	1.943	636	NE	NE
Chrysene	384	2,800	13	556	481,809	694	1.782	899	**No**	Yes
Dibenzo(a,h)anthracene	63.4	1,600	13	439	61,808	249	1.782	562	**No**	Yes
Di-n-octylphthalate	NE	NE	13	389	35,191	188	1.782	482	NE	NE
Fluoranthene	600	5,100	13	688	972,547	986	1.782	1,176	**No**	Yes
Fluorene	19	540	13	304	62,528	250	1.782	428	**No**	Yes
Indeno(1,2,3-cd)pyrene	NE	NE	13	462	94,114	307	1.782	613	NE	NE
Phenanthrene	NE	NE	13	415	242,010	492	1.782	658	NE	NE
Pyrene	665	2,600	13	884	2,285,442	1,512	1.782	1,631	**No**	Yes
PESTICIDES/PCBS (ug/kg)										
beta-BHC	NE	NE	13	167	42,844	207	1.782	270	NE	NE
4,4'-DDE	2.2	27	13	151	37,556	194	1.782	247	**No**	**No**
DIOXINS (ug/kg)										
Total HxCDD	NE	NE	7	0.94	1.85	1.36	1.943	1.94	NE	NE
Total HxCDF	NE	NE	7	0.36	0.17	0.41	1.943	0.66	NE	NE
Total PeCDD	NE	NE	7	0.15	0.01	0.09	1.943	0.22	NE	NE

TABLE 5-66

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SEDIMENT
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	ERL Sediment Screening Value (ug/kg)	**ERM Sediment Screening Value** (ug/kg)	s_x Standard Error	Is the average sample concentration < the screening criteria? ERL SSV	**ERM SSV**	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? ERL SSV	**ERM SSV**	ERL Sediment Screening Value n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?	ERM Sediment Screening Value n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
VOLATILES (ug/kg)															
2-Butanone	NE	NE	640	NE	NE	1.35	2,578	NE	NE						
SEMIVOLATILES (ug/kg)															
Anthracene	85.3	1,100	65.9	No	Yes	1.356	377	Yes	No	3	No				
Benzo(a)anthracene	261	1,600	160	No	Yes	1.356	710	Yes	No	11	No				
Benzo(a)pyrene	430	1,600	134	No	Yes	1.356	711	Yes	No	44	Yes	31			
Benzo(b)fluoranthene	NE	NE	215	NE	NE	1.356	915	NE	NE						
Benzo(g,h,i)perylene	NE	NE	84.4	NE	NE	1.356	615	NE	NE						
Benzo(k)fluoranthene	NE	NE	101	NE	NE	1.356	557	NE	NE						
Bis(2-ethylhexyl)phthalate	NE	NE	1,174	NE	NE	1.356	3,668	NE	NE						
Carbazole	NE	NE	81.6	NE	NE	1.44	595	NE	NE						
Chrysene	384	2,800	193	No	Yes	1.356	817	Yes	No	30	Yes	17			
Dibenzo(a,h)anthracene	63.4	1,600	69.0	No	Yes	1.356	533	Yes	No	1	No				
Di-n-octylphthalate	NE	NE	52.0	NE	NE	1.356	460	NE	NE						
Fluoranthene	600	5,100	274	No	Yes	1.356	1,059	Yes	No	229	Yes	216			
Fluorene	19	540	69.4	No	Yes	1.356	398	Yes	No	1	No				
Indeno(1,2,3-cd)pyrene	NE	NE	85.1	NE	NE	1.356	577	NE	NE						
Phenanthrene	NE	NE	136	NE	NE	1.356	600	NE	NE						
Pyrene	665	2,600	419	No	Yes	1.356	1,452	Yes	No	88	Yes	75			
PESTICIDES/PCBS (ug/kg)															
beta-BHC	NE	NE	57.4	NE	NE	1.356	245	NE	NE						
4,4'-DDE	2.2	27	53.7	No	No	1.356	224	Yes	Yes	3	No		4	No	
DIOXINS (ug/kg)															
Total HxCDD	NE	NE	0.51	NE	NE	1.44	1.68	NE	NE						
Total HxCDF	NE	NE	0.16	NE	NE	1.44	0.58	NE	NE						
Total PeCDD	NE	NE	0.03	NE	NE	1.44	0.20	NE	NE						

TABLE 5-67 (continued)

STATISTICAL EVALUATION OF INORGANIC DETECTIONS IN SEDIMENT
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date Depth Range (ft.)	ERL Sediment Screening Value (mg/kg)	**ERM Sediment Screening Value** (mg/kg)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard ERL Sediment Screening	**ERM Sediment Screening**
Inorganics (mg/kg)										
Antimony	NE	NE	13	5.45	8.16	2.86	1.782	6.86	NE	NE
Arsenic	8.2	70	13	6.59	20.41	4.52	3.93	11.51	No	Yes
Barium	NE	NE	7	117	28,090	168	1.943	240	NE	NE
Beryllium	NE	NE	13	0.33	0.06	0.24	1.782	0.45	NE	NE
Cadmium	1.2	9.6	13	0.69	0.22	0.47	3.93	1.20	No	Yes
Chromium	81	370	13	18.5	133	11.6	1.782	24.2	Yes	Yes
Cobalt	NE	NE	7	12.2	158	12.6	1.943	21.4	NE	NE
Copper	34	270	13	169	62,175	249	1.782	292	No	No
Lead	46.7	218	14	85.8	17,599	133	1.771	149	No	Yes
Mercury	0.15	0.71	13	0.54	0.92	0.96	1.782	1.01	No	No
Nickel	20.9	51.6	13	8.43	30.5	5.52	1.782	11.2	Yes	Yes
Selenium	NE	NE	13	3.71	43.2	6.57	1.782	6.96	NE	NE
Sulfide	NE	NE	6	82.4	11,024	105	2.015	169	NE	NE
Tin	NE	NE	7	10.3	125	11.2	1.943	18.5	NE	NE
Vanadium	NE	NE	7	69.4	2,443	49.4	1.943	106	NE	NE
Zinc	150	410	13	176	62,613	250	1.782	299	No	Yes

TABLE 5-67 (continued)

STATISTICAL EVALUATION OF INORGANIC DETECTIONS IN SEDIMENT
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID / Sample ID / Sample Date / Depth Range (ft.)	ERL Sediment Screening Value (mg/kg)	**ERM Sediment Screening Value** (mg/kg)	s_x Standard Error	Is the average sample concentration < the screening criteria? ERL SSV	**ERM SSV**	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? ERL SSV	**ERM SSV**	ERL Sediment Screening Value: n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?	ERM Sediment Screening Value: n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
Inorganics (mg/kg)															
Antimony	NE	NE	0.79	NE	NE	1.356	6.52	NE	NE						
Arsenic	8.2	70	1.25	Yes	Yes	1.356	8.28	Yes	No	14	Yes	1			
Barium	NE	NE	63.3	NE	NE	1.44	208	NE	NE						
Beryllium	NE	NE	0.07	NE	NE	1.356	0.43	NE	NE						
Cadmium	1.2	9.6	0.13	Yes	Yes	1.356	0.87	No	No						
Chromium	81	370	3.20	Yes	Yes	1.356	22.8	No	No						
Cobalt	NE	NE	4.75	NE	NE	1.44	19.0	NE	NE						
Copper	34	270	69.2	No	Yes	1.356	262	Yes	No	6	No				
Lead	46.7	218	35.5	No	Yes	1.35	134	Yes	No	21	Yes	7			
Mercury	0.15	0.71	0.27	No	Yes	1.356	0.90	Yes	Yes	11	No		57	Yes	44
Nickel	20.9	51.6	1.53	Yes	Yes	1.356	10.5	No	No	0	No				
Selenium	NE	NE	1.82	NE	NE	1.356	6.18	NE	NE						
Sulfide	NE	NE	42.9	NE	NE	1.476	146	NE	NE						
Tin	NE	NE	4.22	NE	NE	1.44	16.4	NE	NE						
Vanadium	NE	NE	18.7	NE	NE	1.44	96.3	NE	NE						
Zinc	150	410	69.4	No	Yes	1.356	270	Yes	No	176	Yes	163			

TABLE 5-68 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN GROUNDWATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard Federal MCL	**EPA Region III Tap Water RBC**
VOLATILES (ug/l)										
Chloroform	100	0.15	7	4.81	2.77	1.67	1.943	6.04	Yes	No
Trichloroethene	5	1.55	7	4.86	3.48	1.86	1.943	6.23	No	No
SEMIVOLATILES (ug/l)										
Bis(2-ethylhexyl)phthalate	6	4.78	7	7.99	17.53	4.19	1.943	11.1	No	No
Isodrin	NE	NE	5	0.03	0.00	0.02	2.132	0.05	NE	NE
Pentachlorophenol	1	0.56	7	38.3	432.57	20.80	1.943	53.6	No	No
Phenols	NE	22,000	1	58.0	Insufficient number of samples for statistical analysis					
PESTICIDES/PCBs (ug/l)										
Aldrin	NE	0.0039	7	0.06	0.0015	0.04	1.943	0.09	NE	No
Heptachlor epoxide	0.2	0.0012	7	0.04	0.0003	0.02	1.943	0.06	Yes	No
Heptachlor	0.4	0.0023	7	0.04	0.0005	0.02	1.943	0.05	Yes	No
CHLORINATED HERBICIDES (ug/l)										
2,4,5-T	NE	365	5	0.11	0.0001	0.01	2.132	0.12	NE	Yes

TABLE 5-68 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN GROUNDWATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	s_x Standard Error	Is the average sample concentration < the screening criteria? Federal MCL	**Tap Water RBC**	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? Federal MCL	**Tap Water RBC**	Federal MCL n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
VOLATILES (ug/l)												
Chloroform	100	0.15	0.63	Yes	No	1.44	5.72	No	Yes			
Trichloroethene	5	1.55	0.70	Yes	No	1.44	5.87	Yes	Yes	353	Yes	346
SEMIVOLATILES (ug/l)												
Bis(2-ethylhexyl)phthalate	6	4.78	1.58	No	No	1.44	10.3	Yes	Yes	9	Yes	2
Isodrin	NE	NE	0.01	NE	NE	1.533	0.04	NE	NE			
Pentachlorophenol	1	0.56	7.86	No	No	1.44	49.6	Yes	Yes	1	No	
Phenols	NE	22,000		Insufficient number of samples for statistical analysis								
PESTICIDES/PCBs (ug/l)												
Aldrin	NE	0.0039	0.01	NE	No	1.44	0.08	NE	Yes			
Heptachlor epoxide	0.2	0.0012	0.01	Yes	No	1.44	0.05	No	Yes			
Heptachlor	0.4	0.0023	0.01	Yes	No	1.44	0.05	No	Yes			
CHLORINATED HERBICIDES (ug/l)												
2,4,5-T	NE	365	0.00	NE	Yes	1.533	0.12	NE	No			

TABLE 5-68 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN GROUNDWATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	EPA Region III Tap Water RBC (ug/l)	EPA Region III Tap Water RBC n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
VOLATILES (ug/l)					
Chloroform	100	0.15	0	No	
Trichloroethene	5	1.55	1	No	
SEMIVOLATILES (ug/l)					
Bis(2-ethylhexyl)phthalate	6	4.78	4	No	
Isodrin	NE	NE			
Pentachlorophenol	1	0.56	1	No	
Phenols	NE	22,000			
PESTICIDES/PCBs (ug/l)					
Aldrin	NE	0.0039	1	No	
Heptachlor epoxide	0.2	0.0012	0	No	
Heptachlor	0.4	0.0023	1	No	
CHLORINATED HERBICIDES (ug/l)					
2,4,5-T	NE	365	0	No	

TABLE 5-69 (continued)

STATISTICAL EVALUATION OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard Federal MCL	**EPA Region III Tap Water RBC**
Inorganics, Total (ug/l)										
Aluminum	NE	36,500	1	1,200		Insufficient number of samples for statistical analysis				
Antimony	6	14.6	4	21.7	131	11.4	2.353	35.1	No	No
Arsenic	50	0.045	7	2.99	2.45	1.56	1.943	4.13	Yes	No
Barium	2,000	2,555	6	355	82,519	287	2.015	591	Yes	Yes
Beryllium	4	73	7	0.80	0.16	0.40	1.943	1.09	Yes	Yes
Cadmium	5	18	7	2.41	0.18	0.43	1.943	2.73	Yes	Yes
Calcium	NE	NE	1	62,500		Insufficient number of samples for statistical analysis				
Chromium	100	110	7	23.0	471	21.7	1.943	38.9	Yes	Yes
Cobalt	NE	2,190	6	60.2	2,966	54.5	2.015	105	NE	Yes
Copper	1,300	1,460	7	78.7	7,289	85.4	1.943	141	Yes	Yes
Iron	NE	10,950	1	1,730		Insufficient number of samples for statistical analysis				
Lead	15	NE	7	24.1	1,863	43.2	1.943	55.8	No	NE
Magnesium	NE	NE	1	80,700		Insufficient number of samples for statistical analysis				
Mercury	2	NE	7	0.30	0.08	0.27	1.943	0.50	Yes	NE
Nickel	100	730	7	25.8	582	24.1	1.943	43.5	Yes	Yes
Selenium	50	183	7	4.73	9.82	3.13	1.943	7.03	Yes	Yes
Sodium	NE	NE	6	652,167	57,124,566,667	239,007	2.015	848,779	NE	NE
Vanadium	NE	256	6	259	67,371	260	2.015	472	NE	No
Zinc	NE	11,000	7	106	9,411	97.0	1.943	178	NE	Yes

TABLE 5-69 (continued)

STATISTICAL EVALUATION OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	s_x Standard Error	Is the average sample concentration < the screening criteria? Federal MCL	**Tap Water RBC**	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? Federal MCL	**Tap Water RBC**	Federal MCL: n_2 Re-estimation of the number of samples required	Federal MCL: Are Additional Samples Required?	Federal MCL: If so How Many Additional Samples Required?
otal (ug/l)											
NE	36,500		Insufficient	number	of samples	for	statistical	analysis			
6	14.6	5.72	No	No	1.638	31.1	Yes	Yes	1	No	
50	0.045	0.59	Yes	No	1.44	3.84	No	Yes			
2,000	2,555	117	Yes	Yes	1.476	528	No	No			
4	73	0.15	Yes	Yes	1.44	1.02	No	No			
5	18	0.16	Yes	Yes	1.44	2.65	No	No			
NE	NE		Insufficient	number	of samples	for	statistical	analysis			
100	110	8.20	Yes	Yes	1.44	34.8	No	No			
NE	2,190	22.2	NE	Yes	1.476	93.0	NE	No			
1,300	1,460	32.3	Yes	Yes	1.44	125	No	No			
NE	10,950		Insufficient	number	of samples	for	statistical	analysis			
15	NE	16.3	No	NE	1.44	47.6	Yes	NE	47	Yes	40
NE	NE		Insufficient	number	of samples	for	statistical	analysis			
2	NE	0.10	Yes	NE	1.44	0.45	No	NE			
100	730	9.12	Yes	Yes	1.44	38.9	No	No			
50	183	1.18	Yes	Yes	1.44	6.43	No	No			
NE	NE	97,574	NE	NE	1.476	796,186	NE	NE			
NE	256	106	NE	No	1.476	415	NE	Yes			
NE	11,000	36.7	NE	Yes	1.44	159	NE	No			

TABLE 5-69 (continued)

STATISTICAL EVALUATION OF INORGANIC (TOTAL) DETECTIONS IN GROUNDWATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

		EPA Region III Tap Water RBC		
Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	n_2 Re-estimation of the number of samples required	Are Additional Samples Required?	If so How Many Additional Samples Required?
otal (ug/l)				
NE	36,500			
6	14.6	7	Yes	3
50	0.045	1	No	
2,000	2,555			
4	73			
5	18			
NE	NE			
100	110			
NE	2,190			
1,300	1,460			
NE	10,950			
15	NE			
NE	NE			
2	NE			
100	730			
50	183			
NE	NE			
NE	256	12,949	Yes	12,943
NE	11,000			

TABLE 5-70 (continued)

STATISTICAL EVALUATION OF INORGANIC (DISSOLVED) DETECTIONS IN GROUNDWATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard Federal MCL	**EPA Region III Tap Water RBC**
Inorganics, Dissolved (ug/l)										
Aluminum	NE	36,500	1	48.9		Insufficient number of samples for statistical analysis				
Antimony	6	15	2	22.1	156	12.5	6.314	77.8	No	No
Barium	2,000	2,555	6	123	11,562	108	2.015	212	Yes	Yes
Cadmium	5	18	6	2.55	0.26	0.51	2.015	2.97	Yes	Yes
Calcium	NE	NE	1	58,700		Insufficient number of samples for statistical analysis				
Chromium	100	110	6	3.20	12.5	3.53	2.015	6.10	Yes	Yes
Cobalt	NE	2,190	6	7.37	41.9	6.47	2.015	12.7	NE	Yes
Copper	1,300	1,460	6	4.50	7.94	2.82	2.015	6.82	Yes	Yes
Magnesium	NE	NE	1	77,500		Insufficient number of samples for statistical analysis				
Selenium	50	183	6	3.60	9.38	3.06	2.015	6.12	Yes	Yes
Sodium	NE	NE	6	620,167	47,074,166,667	216,966	2.015	798,647	NE	NE
Vanadium	NE	256	6	25.2	162	12.7	2.015	35.7	NE	Yes
Zinc	NE	11,000	6	9.67	29.9	5.47	2.015	14.2	NE	Yes

TABLE 5-70 (continued)

STATISTICAL EVALUATION OF INORGANIC (DISSOLVED) DETECTIONS IN GROUNDWATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCL (ug/l)	**EPA Region III Tap Water RBC** (ug/l)	s_x Standard Error	Is the average sample concentration < the screening criteria? Federal MCL	**Tap Water RBC**	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? Federal MCL	**Tap Water RBC**	Federal MCL: n_2 Re-estimation of the number of samples required	Federal MCL: Are Additional Samples Required?	Federal MCL: If so How Many Additional Samples Required?	**EPA Region III Tap Water RBC**: n_2 Re-estimation of the number of samples required	**EPA Region III Tap Water RBC**: Are Additional Samples Required?	**EPA Region III Tap Water RBC**: If so How Many Additional Samples Required?
Inorganics, Dissolved (ug/l)															
Aluminum	NE	36,500		Insufficient	number	of samples	for	statistical	analysis						
Antimony	6	15	8.83	No	No	3.078	49.2	Yes	Yes	6	Yes	4	26	Yes	24
Barium	2,000	2,555	43.9	Yes	Yes	1.476	188	No	No						
Cadmium	5	18	0.21	Yes	Yes	1.476	2.86	No	No						
Calcium	NE	NE		Insufficient	number	of samples	for	statistical	analysis						
Chromium	100	110	1.44	Yes	Yes	1.476	5.33	No	No						
Cobalt	NE	2,190	2.64	Yes	Yes	1.476	11.3	NE	No						
Copper	1,300	1,460	1.15	Yes	Yes	1.476	6.20	No	No						
Magnesium	NE	NE		Insufficient	number	of samples	for	statistical	analysis						
Selenium	50	183	1.25	Yes	Yes	1.476	5.45	No	No						
Sodium	NE	NE	88,576	Yes	Yes	1.476	750,905	NE	NE						
Vanadium	NE	256	5.19	Yes	Yes	1.476	32.9	NE	No						
Zinc	NE	11,000	2.23	Yes	Yes	1.476	13.0	NE	No						

TABLE 5-71 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SURFACE WATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal Ambient Water Quality (ug/l)	**EPA Region III BTAG Screening Levels** (ug/l)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard Federal Ambient Water	**EPA Region III BTAG Screening**
SEMIVOLATILES (ug/l)										
Bis(2-ethylhexyl)phthalate	NE	360	6	1.17	0.47	0.69	2.015	1.73	NE	Yes
Di-n-octylphthalate	NE	3.4	6	1.25	0.46	0.68	2.015	1.81	NE	Yes
Phenols	NE	5,800	6	218	232,036	482	2.015	615	NE	Yes

TABLE 5-71 (continued)

STATISTICAL EVALUATION OF ORGANIC DETECTIONS IN SURFACE WATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal Ambient Water Quality (ug/l)	**EPA Region III BTAG Screening Levels** (ug/l)	s_x Standard Error	Is the average sample concentration < the screening criteria? Federal Ambient	Is the average sample concentration < the screening criteria? **BTAG Value**	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? Federal Ambient	Is the confidence interval > screening criteria? **BTAG Value**	BTAG Screening Value n_2 Re-estimation of the number of samples required	BTAG Screening Value Are Additional Samples Required?	BTAG Screening Value If so How Many Additional Samples Required?
SEMIVOLATILES (ug/l)												
Bis(2-ethylhexyl)phthalate	NE	360	0.28	NE	Yes	1.476	1.58	NE	No			
Di-n-octylphthalate	NE	3.4	0.28	NE	Yes	1.476	1.66	NE	No			
Phenols	NE	5,800	197	NE	Yes	1.476	509	NE	No			

TABLE 5-72 (continued)

STATISTICAL EVALUATION OF INORGANIC (TOTAL) DETECTIONS IN SURFACE WATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID Sample ID Sample Date	Federal Ambient Water Quality (ug/l)	**EPA Region III BTAG Screening Levels** (ug/l)	n Number of Samples	$\overline{x}$ Average Sample Concentration	s^2 Sample Variance	s Standard Deviation of Samples	alpha = 0.05	95% Confidence Mean Sample Concentration	95% Confidence that the mean concentration of the sample attains the respective cleanup standard Federal Ambient Water	**EPA Region III BTAG Screening**
Inorganics, Total (ug/l)										
Beryllium	NE	1,500	6	17.0	400	20.0	2.015	33.4	NE	Yes
Cadmium	9.3	9.3	6	3.90	5.51	2.35	2.015	5.83	Yes	Yes
Chromium	50	10,300	6	263	41,263	203	2.015	430	No	Yes
Copper	2.9	2.9	6	318	144,341	380	2.015	631	No	No
Lead	8.5	5.1	7	315	27,499	166	1.943	437	No	No
Mercury	0.025	0.025	6	0.58	0.17	0.41	2.015	0.92	No	No
Nickel	8.3	8.3	6	93.8	10,318	102	2.015	177	No	No
Selenium	71	35	6	243	29,149	171	2.015	384	No	No
Silver	2.3	0.0001	6	18.3	184	13.6	2.015	29.5	No	No
Thallium	NE	2,130	6	16.3	120	10.9	2.015	25.3	NE	Yes
Zinc	86	19.0	6	457	289,233	538	2.015	899	No	No

TABLE 5-72 (continued)

STATISTICAL EVALUATION OF INORGANIC (TOTAL) DETECTIONS IN SURFACE WATER
SWMU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Site ID / Sample ID / Sample Date	Federal Ambient Water Quality (ug/l)	**EPA Region III BTAG Screening Levels** (ug/l)	s_x Standard Error	Is the average sample concentration < the screening criteria? Federal Ambient	Is the average sample concentration < the screening criteria? **BTAG Value**	$t_{.20}s_x$	CI Confidence Interval	Is the confidence interval > screening criteria? Federal Ambient	Is the confidence interval > screening criteria? **BTAG Value**	Federal Ambient Water Quality Criteria: n_2 Re-estimation of the number of samples required	Federal Ambient Water Quality Criteria: Are Additional Samples Required?	Federal Ambient Water Quality Criteria: If so How Many Additional Samples Required?	BTAG Screening Value: n_2 Re-estimation of the number of samples required	BTAG Screening Value: Are Additional Samples Required?	BTAG Screening Value: If so How Many Additional Samples Required?
Inorganics, Total (ug/l)															
Beryllium	NE	1,500	8.16	NE	Yes	1.476	29.0	NE	No						
Cadmium	9.3	9.3	0.96	Yes	Yes	1.476	5.31	No	No						
Chromium	50	10,300	82.9	No	Yes	1.476	385	Yes	No	2	No				
Copper	2.9	2.9	155	No	No	1.476	547	Yes	Yes	3	No		3	No	
Lead	8.5	5.1	62.7	No	No	1.44	406	Yes	Yes	1	No		1	No	
Mercury	0.025	0.025	0.17	No	No	1.476	0.82	Yes	Yes	1	No		1	No	
Nickel	8.3	8.3	41.5	No	No	1.476	155	Yes	Yes	3	No		3	No	
Selenium	71	35	69.7	No	No	1.476	346	Yes	Yes	2	No		1	No	
Silver	2.3	0.0001	5.5	No	No	1.476	26.5	Yes	Yes	2	No		1	No	
Thallium	NE	2,130	4.5	NE	Yes	1.476	22.8	NE	No						
Zinc	86	19.0	220	No	No	1.476	781	Yes	Yes	5	No		3	No	

TABLE 6-1

SURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Volatiles (µg/kg):								
Acetone	20,000,000	780,000	5/21	15J - 83J	0	0	NA	No
Carbon Disulfide	20,000,000	780,000	4/21	10 - 18	0	0	NA	No
Ethylbenzene	20,000,000	780,000	1/21	1J	0	0	NA	No
Methylene Chloride	760,000	85,000	1/21	8	0	0	NA	No
Tetrachloroethene	110,000	12,000	1/21	3J	0	0	NA	No
Xylenes (Total)	410,000,000	16,000,000	1/15	5J	0	0	NA	No
Semivolatiles (µg/kg):								
2-Methylnaphthalene	4,100,000	160,000	1/21	71J	0	0	NA	No
Acenaphthylene	12,000,000[5]	470,000[5]	1/21	45J	0	0	NA	No
Anthracene	61,000,000	2,300,000	2/21	48J - 110J	0	0	NA	No
Fluoranthene	8,200,000	310,000	3/21	62J - 770	0	0	NA	No
Pyrene	6,100,000	230,000	3/21	82J - 2,600	0	0	NA	No
Benzo(a)anthracene	7,800	870	3/21	56J - 930	0	1	NA	Yes
Chrysene	780,000	87,000	3/21	58J - 1,000	0	0	NA	No

TABLE 6-1 (Continued)

SURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Semivolatiles (cont) (µg/kg):								
Benzo(b)fluoranthene	7,800	870	3/21	100J - 1,500	0	1	NA	Yes
Benzo(k)fluoranthene	78,000	8,700	3/21	46J - 660	0	0	NA	No
Bis(2-ethylhexy)phthalate	410,000	46,000	2/21	47J - 430J	0	0	NA	No
Benzo(a)pyrene	780	87	3/21	68J - 590	0	2	NA	Yes
Dibenz(a,h)anthracene	780	87	2/21	57J - 91J	0	1	NA	Yes
Indeno(1,2,3-cd)pyrene	7,800	870	3/21	47J - 300J	0	0	NA	No
Benzo(g,h,i)perylene	6,100,000[6]	230,000[6]	3/21	38J - 230J	0	0	NA	No
Butylbenzylphthalate	41,000,000	1,600,000	1/21	75J	0	0	NA	No
Pesticides (µg/kg):								
4,4'-DDD	24,000	2,700	3/21	0.26J - 180NJ	0	0	NA	No
4,4'-DDE	17,000	1,900	13/21	0.63J - 1,300	0	0	NA	No
4,4'-DDT	17,000	1,900	15/21	0.11NJ - 3,500CD	0	1	NA	Yes
Endrin	61,000	2,300	1/21	0.12NJ	0	0	NA	No
Heptachor	1,300	140	2/21	0.12J - 2.1NJ	0	0	NA	No
Methoxyclor	1,000,000	39,000	1/21	0.44NJ	0	0	NA	No

TABLE 6-1 (Continued)

SURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Inorganics (mg/kg)								
Aluminum	200,000	7,800	6/6	8,220 - 38,500	0	6	NA	Yes
Antimony	82	3.1	11/21	1.5J - 9.4J	0	4	ND	Yes
Arsenic (carc.)	3.8	0.43	3/21	0.67 - 2.8	0	3	2.43	Yes
Barium	14,000	550	21/21	46.5 - 180	0	0	181.20	No
Beryllium	410	16	21/21	0.11 - 1.30	0	0	0.45	No
Cadmium	200	7.8	14/21	0.2 - 83.8	0	1	ND	Yes
Calcium	--	--	6/6	2,920 - 10,800	--	--	NA	No
Chromium	610[7]	23[7]	21/21	5.9J - 46.6	0	10	59.30	Yes
Cobalt	12,000	470	21/21	13.8 - 34.6	0	0	43.95	No
Copper	8,200	310	21/21	19.8 - 359	0	1	234.20	Yes
Iron	61,000	2,300	6/6	13,300 - 69,900	1	6	NA	Yes
Lead	--	400[8]	20/20	1.9J - 101	--	0	15.25	No
Magnesium	--	--	6/6	3,550 - 5,600	--	--	NA	No
Manganese	4,100	160	6/6	381J - 1,170	0	6	NA	Yes
Mercury	--	--	13/21	0.03 - 0.11	--	--	0.11	Yes

TABLE 6-1 (Continued)

SURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Inorganics (cont) (mg/kg):								
Nickel	4,100	160	18/21	5.4 - 38.1	0	0	16.55	No
Potassium	--	--	2/6	320B - 742B	--	--	NA	No
Selenium	1,000	39	8/21	0.43J - 0.8J	0	0	1.46	No
Silver	1,000	39	3/21	1.7B - 2.6J	0	0	ND	No
Sodium	--	--	6/6	1,220 - 4,840J	--	--	NA	No
Tin	120,000	4,700	4/15	1.1 - 15.9	0	0	2.43	No
Vanadium	1,400	55	21/21	77.4 - 239J	0	21	354.5	Yes
Zinc	61,000	2,300	21/21	13.9J - 223	0	0	125.15	No

TABLE 6-1 (Continued)

SURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Notes:

-- - No criteria published
NA - Not analyzed.
ND - No background concentrations detected for constituent.-- = No criteria published

COC - Chemical of Concern
COPC - Chemical of Potential Concern
µg/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
RBC - Risk Based Concentration
USEPA - United States Environmental Protection Agency
GC/MS - Gas Chromatograph/Mass Spectrophotometer

(1) Organic concentrations are reported in µg/kg; inorganic concentrations are reported in mg/kg.

(2) Risk-based screening values derived from USEPA Region III RBC Tables (USEPA, 1998).

(3) J = Analyte was positively identified. Reported value may not be accurate or precise.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
CD - Results were confirmed by GC/MS. Parameter identified in an analysis at a secondary dilution factor.
B - Not detected substantially above the level in laboratory or field blanks.

(4) Background values presented represent two times the arithmetic mean concentration. Background values not used in the selection of COPCs.

(5) COC screening value for acenaphthene used as a surrogate for acenaphthylene.

(6) COC screening value for pyrene used as a surrogate for benzo(g,h,i)perylene.

(7) Chromium (VI) COC value used for chromium.

(8) Action level for residential soils (USEPA, 1994b).

TABLE 6-2

SUBSURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Volatiles (µg/kg):								
1,2-Dibromo-3-chloropropane	4,100	460	1/16	2J	0	0	NA	No
Acetone	20,000,000	780,000	3/22	54J - 260J	0	0	NA	No
Benzene	200,000	22,000	1/22	2J	0	0	NA	No
Carbon Disulfide	20,000,000	780,000	5/22	2J - 21	0	0	NA	No
Tetrachloroethene	110,000	12,000	1/22	2J	0	0	NA	No
Semivolatiles (µg/kg):								
Bis(2-ethylhexyl)phthalate	410,000	46,000	2/22	400J - 420J	0	0	NA	No
Di-n-butylphthalate	20,000,000	780,000	3/22	45J - 90J	0	0	NA	No
Pesticides (µg/kg):								
BHC, delta-	3,200	350	1/22	0.19J	0	0	NA	No
4,4'-DDD	24,000	2,700	2/22	0.23J - 44NJ	0	0	NA	No
4,4'-DDE	17,000	1,900	4/22	0.49J - 210	0	0	NA	No
4,4'-DDT	17,000	1,900	5/22	0.31NJ - 1,500CD	0	0	NA	No
Dieldrin	360	40	1/22	14	0	0	NA	No

TABLE 6-2 (Continued)

SUBSURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Pesticides (cont) (µg/kg):								
Endosulfan I	1,200,000 [5]	47,000 [5]	1/22	7.5	0	0	NA	No
Endrin	61,000	2,300	1/22	0.39J	0	0	NA	No
Dioxins/Furans (µg/kg)								
Total HxCDD	0.38 [6]	0.043 [6]	1/16	0.30J	0	1	NA	Yes
Total HxCDF	0.38 [6]	0.043 [6]	2/16	0.14J - 0.17J	0	2	NA	Yes
Total TCDF	0.38 [6]	0.043 [6]	1/16	0.09J	0	1	NA	Yes
Inorganics (mg/kg):								
Aluminum	200,000	7,800	6/6	6,240 - 40,700	0	4	NA	Yes
Antimony	82	3.1	12/22	0.17J - 3.8J	0	2	ND	Yes
Arsenic (carc.)	3.8	0.43	1/22	0.31	0	0	2.05	No
Barium	14,000	550	22/22	28.8 - 385	0	0	222.125	No
Beryllium	410	16	22/22	0.12J - 1.2	0	0	0.74	No
Cadmium	200	7.8	5/22	0.21 - 2.4	0	0	0.74	No
Calcium	--	--	6/6	2,210 - 12,500	--	--	NA	No

TABLE 6-2 (Continued)

SUBSURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Inorganics (cont) (mg/kg):								
Chromium	610[7]	23[7]	22/22	2.8J - 78	0	12	132.58	Yes
Cobalt	12,000	470	22/22	9.4 - 35.5	0	0	30	No
Copper	8,200	310	22/22	19.5 - 544	0	1	193.08	Yes
Iron	61,000	2,300	6/6	8,630 - 48,800	0	6	NA	Yes
Lead	--	400[8]	21/21	0.47J - 35.8	--	0	8.68	No
Magnesium	--	--	6/6	3,360 - 10,200	--	--	NA	No
Manganese	4,100	160	6/6	508 - 971J	0	6	NA	Yes
Mercury	--	--	2/22	0.03 - 1.1	--	--	0.092	Yes
Nickel	4,100	160	20/22	4.9B - 31.8J	0	0	31.9	No
Potassium	--	--	1/6	580B	--	--	NA	No
Selenium	1,000	39	1/22	0.31J	0	0	0.57	No
Silver	1,000	39	5/22	0.1J - 1.7B	0	0	ND	No
Sodium	--	--	6/6	730B - 6,520J	--	--	NA	No
Tin	120,000	4,700	7/16	1.6J - 18.5	0	0	2.96	No

TABLE 6-2 (Continued)

SUBSURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Inorganics (cont) (mg/kg):								
Vanadium	1,400	55	22/22	39.1J - 223J	0	21	462.22	Yes
Zinc	61,000	2,300	22/22	19.2 - 141	0	0	88.63	No

Notes:
-- - No criteria published
NA - Not analyzed.
ND - No background concentrations detected for constituent.-- = No criteria published

COC - Chemical of Concern
COPC - Chemical of Potential Concern
µg/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
RBC - Risk Based Concentration
USEPA - United States Environmental Protection Agency
GC/MS - Gas Chromatograph/Mass Spectrophotometer

(1) Organic concentrations are reported in µg/kg; inorganic concentrations are reported in mg/kg.
(2) Risk-based screening values derived from USEPA Region III RBC Tables (USEPA, 1998).
(3) J = Analyte was positively identified. Reported value may not be accurate or precise.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
CD - Results were confirmed by GC/MS. Parameter identified in an analysis at a secondary dilution factor.
B - Not detected substantially above the level in laboratory or field blanks.
(4) Background values presented represent two times the arithmetic mean concentration. Background values not used in the selection of COPCs.
(5) COC screening value for endosulfan used as a surrogate for endosulfan I.
(6) COC screening values for total HxCDD, HxCDF and TCDF were estimated using a 2,3,7,8-TCDD TEF of 0.1 (USEPA, 1994c).
(7) Chromium (VI) COC value used for chromium.
(8) Action level for residential soils (USEPA, 1994b).

TABLE 6-3

GROUNDWATER DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Groundwater Criteria[2]		Frequency/Range[3]		Comparison to Criteria		Station Background Values[4]	COPC Selection
	Federal MCL (µg/L)	USEPA Region III Tapwater COC Value (µg/L)	No. of Positive Detects/No. of Samples	Concentration Range (µg/L)	No. of Detects Above MCL	No. of Detects Above COC Value		Retained as a COPC?
Volatiles (µg/L):								
Chloroform	80	0.15	2/19	0.54 - 2J	0	2	NA	Yes
1,1,2,2-Tetrachloroethane	--	0.053	1/19	1.1	--	1	NA	Yes
Semivolatiles (µg/L):								
Pentachlorophenol	1	0.56	4/20	11 - 25	4	4	NA	Yes
Bis(2-ethylhexyl)phthalate	6	4.8	6/19	1 - 22	1	1	NA	Yes
Phenols	--	2,200	5/5	30 - 800	--	0	NA	No
Pesticides (µg/L):								
4,4'-DDE	--	0.2	1/20	0.056J	--	0	NA	No
Heptachlor	0.4	0.0023	1/20	0.0032J	0	1	NA	Yes
Aldrin	--	0.0039	3/20	0.03 - 0.1J	--	3	NA	Yes
BHC, beta-	--	0.037	1/20	0.02	--	0	NA	No
Herbicides (µg/L):								
2,4,5-T	--	37	1/9	0.26	--	0	NA	No
2,4,5-TP (Silvex)	50	29	1/9	0.081J	0	0	NA	No

TABLE 6-3 (Continued)

GROUNDWATER DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Groundwater Criteria[2]		Frequency/Range[3]		Comparison to Criteria		Station Background Values[4]	COPC Selection
	Federal MCL (µg/L)	USEPA Region III Tapwater COC Value (µg/L)	No. of Positive Detects/No. of Samples	Concentration Range (µg/L)	No. of Detects Above MCL	No. of Detects Above COC Value		Retained as a COPC?
Dioxins (µg/L):								
Total HxCDD	0.0000003	0.0000045[5]	1/9	0.0005J	1	1	NA	Yes
Total Inorganics (µg/L):								
Aluminum	--	3,700	1/1	598J	--	0	NA	No
Antimony	6	1.5	3/20	1.4J - 25.1	1	2	ND	Yes
Arsenic	50	0.045	5/13	2.5 - 93.4	3	5	3.55	Yes
Barium	2,000	260	10/10	45.5 - 806	0	4	706	Yes
Beryllium	4	7.3	4/20	0.67J - 5.06	2	0	2.7	Yes
Cadmium	5	1.8	4/20	5.5 J - 30.9J	4	4	5.93	Yes
Calcium	--	--	1/1	158,000	--	--	NA	No
Chromium	100	11[6]	15/20	2.3 - 259	5	11	89.3	Yes
Chromium VI	100	11	3/10	22 - 110	1	3		Yes
Cobalt	--	220	7/10	3.5 - 354	--	1	142.5	Yes
Copper	1,300[7]	150	18/20	5.9B - 2,950	4	7	299	Yes
Iron	--	1,100	1/1	857J	--	0		No
Lead	15[7]	--	4/15	4.9 - 144J	2	--	7.13	Yes
Total Inorganics (cont) (µg/L):								

TABLE 6-3 (Continued)

GROUNDWATER DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Groundwater Criteria[2]		Frequency/Range[3]		Comparison to Criteria		Station Background Values[4]	COPC Selection
	Federal MCL (µg/L)	USEPA Region III Tapwater COC Value (µg/L)	No. of Positive Detects/No. of Samples	Concentration Range (µg/L)	No. of Detects Above MCL	No. of Detects Above COC Value		Retained as a COPC?
Magnesium	--	--	1/1	150,000	--	--	NA	No
Manganese	--	73	1/1	162J	--	1		Yes
Mercury	2	--	3/20	0.1 - 6.5	1	--	ND	Yes
Nickel	100	73	13/20	4.32 - 188	1	2	89.75	Yes
Selenium	50	18	5/13	9.5 - 359	3	3		Yes
Silver	--	18	5/20	0.82J - 37.7	--	3	ND	Yes
Sodium	--	--	10/10	153,000 - 1,040,000J	--	--	NA	No
Thallium	2	0.26	6/20	9.64 - 4,310	6	6		Yes
Tin	--	2,200	3/9	2.5J - 43.8	--	0	ND	No
Vanadium	--	26	8/10	21.3 - 913	--	7	418.9	Yes
Zinc	--	1,100	19/20	2 - 4,580	--	1	360.85	Yes

TABLE 6-3 (Continued)

GROUNDWATER DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Groundwater Criteria[2]		Frequency/Range[3]		Comparison to Criteria		Station Background Values[4]	COPC Selection
	Federal MCL (µg/L)	USEPA Region III Tapwater COC Value (µg/L)	No. of Positive Detects/No. of Samples	Concentration Range (µg/L)	No. of Detects Above MCL	No. of Detects Above COC Value		Retained as a COPC?
Dissolved Inorganics (µg/L):								
Antimony	6	1.5	2/10	1.3J - 1.4J	0	0	ND	No
Barium	2,000	260	10/10	19.8J - 232	0	0	238.5	No
Cadmium	5	1.8	5/10	4.3J - 42.1J	3	5	ND	Yes
Calcium	--	--	1/1	145,000	--	--	NA	No
Chromium	100	11[6]	2/10	3.2J - 4.3J	0	0	3.8	No
Cobalt	--	220	5/10	0.93J - 144	--	0	58.63	No
Copper	1,300[7]	150	7/10	2.2 - 1,680	1	1	17.65	Yes
Iron	--	1,100	1/1	51.8B	--	0		No
Magnesium	--	--	1/1	143,000	--	--	NA	No
Manganese	--	73	1/1	97.7	--	1		Yes
Nickel	100	73	3/10	0.91J - 74	0	1	40.4	Yes
Sodium	--	--	8/8	152,000J - 21,700,000J	--	--	NA	No
Thallium	2	0.26	1/10	16.5J	1	1		Yes
Vanadium	--	26	7/10	16.6 - 71.1	--	4	6	Yes
Zinc	--	1,100	9/10	1.6J - 41.9	--	0	75.7	No

Notes:

TABLE 6-3 (Continued)

GROUNDWATER DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

-- - No criteria published
NA - Not analyzed.
ND - No background concentrations detected for constituent.-- = No criteria published

COC - Chemical of Concern
COPC - Chemical of Potential Concern
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
RBC - Risk Based Concentration
USEPA - United States Environmental Protection Agency

(1) All concentrations are reported in µg/L

(2) Federal MCL (USEPA, 1996a; Drinking Water Regulations and Health Advisories)
Risk-based screening values derived from USEPA Region III RBC Tables (USEPA, 1998).

(3) J = Analyte was positively identified. Reported value may not be accurate or precise.
B - Not detected substantially above the level in laboratory or field blanks.

(4) Background values presented represent two times the arithmetic mean concentration. Background values not used in the selection of COPCs.

(5) COC screening value for total HxCDD was estimated using a 2,3,7,8-TCDD TEF of 0.1 (USEPA, 1994c).

(6) Chromium (VI) COC value used for chromium.

(7) Action Level

TABLE 6-4

SURFACE WATER DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Surface Water Criteria[2]		Frequency/Range		Comparison to Criteria		COPC Selection
	Federal AWQC (Water & Org) (µg/L)	Federal AWQC (Org only) (µg/L)	No. of Positive Detects/No. of Samples	Concentration Range (µg/L)	No. of Detects Above AWQC (Water & Org)	No. of Detects Above AWQC (Org only)	Retained as a COPC?
Semivolatiles (µg/L):							
Bis(2-ethylhexyl)phthalate	1.8	5.9	8/10	1 - 10	3	1	Yes
Di-n-octylphthalate	--	--	4/10	1 - 7	--	--	Yes
Phenols	21,000	4,600,000	5/5	29 - 540	0	0	No
Total Inorganics (µg/L):							
Arsenic	0.018	0.14	5/10	96 - 105	5	5	Yes
Chromium	170 [3] [4]	3,400 [3] [4]	8/10	3.7 - 108	0	0	No
Chromium VI	170 [3]	3,400 [3]	1/10	31.9	0	0	No
Copper	1,300 [3]	--	2/10	2 - 24.8	0	--	No
Selenium	104 [3]	6,800 [3]	5/10	8 - 221	0	0	No
Silver	91 [3]	--	3/10	3.8 - 28.9	0	--	No
Thallium	1.7	6.3	5/10	83.3 - 116	5	5	Yes
Zinc	--	--	6/10	4.31 - 20.8	--	--	Yes

TABLE 6-4 (Continued)

SURFACE WATER DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Notes:

-- - No criteria published
NA - Not analyzed.

COC - Chemical of Concern
COPC - Chemical of Potential Concern
µg/L - micrograms per liter
AWQC - Ambient Water Quality Criteria
USEPA - United States Environmental Protection Agency

(1) All concentrations are reported in µg/L

(2) Federal AWQC (USEPA, 1992) for the consumption of water and organisms.
Federal AWQC (USEPA, 1992) for the consumption of organisms only.

(3) AWQC obtained from USEPA, 1991 tables.

(4) Chromium (VI) COC value used for chromium

TABLE 6-5

SEDIMENT DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Sediment Criteria[2]		Contaminant Frequency/Range[3]		Comparison to Criteria		COPC Selection
	SSV ER-M	Residential Soil COC Value	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above ER-M	Positive Detects Above Residential COC Value	Retained as a COPC?
Volatiles (µg/kg):							
Methylene Chloride	--	85,000	5/17	2,700 - 4,500	--	0	No
Tetrachloroethene	--	12,000	2/17	2J - 2J	--	0	No
Xylenes (Total)	--	16,000,000	1/17	2J	--	0	No
Semivolatiles (µg/kg):							
Benzo(a)anthracene	1,600	870	1/16	120J	0	0	No
Benzo(a)pyrene	1,600	87	1/16	160J	0	1	Yes
Benzo(b)fluoranthene	--	870	1/16	310J	--	0	No
Benzo(g,h,i)perylene	--	230,000[4]	1/16	140J	--	0	No
Benzo(k)fluoranthene	--	8,700	1/16	130J	--	0	No
Bis(2-ethylhexyl)phthalate	--	46,000	4/16	100 - 200J	--	0	No
Chrysene	2,800	87,000	1/16	180J	0	0	No
Di-n-octyl phthalate	--	160,000	4/16	500 - 4,000	--	0	No
Fluoranthene	5,100	310,000	1/16	130J	0	0	No
Indeno(1,2,3-cd)pyrene	--	870	1/16	140J	--	0	No
Phenols	--	4,700,000	4/5	2,500 - 29,800	--	0	No
Semivolatiles (cont) (µg/kg):							

TABLE 6-5 (Continued)

SEDIMENT DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Sediment Criteria[2]		Contaminant Frequency/Range[3]		Comparison to Criteria		COPC Selection
	SSV ER-M	Residential Soil COC Value	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above ER-M	Positive Detects Above Residential COC Value	Retained as a COPC?
Pyrene	2,600	230,000	2/16	62J - 180J	0	0	No
Pesticides/PCBs (µg/kg):							
4,4'-DDD	--	2,700	2/16	42 - 97	--	0	No
4,4'-DDE	27	1,900	4/16	32 - 930	4	0	Yes
4,4'-DDT	46.1[5]	1,900	2/16	63 - 130	2	0	Yes
BHC, delta-	--	350	2/16	701 - 1,030	--	2	Yes
Aroclor-1260	180[6]	320	1/16	440	1	1	Yes
Dioxins/Furans (µg/kg):							
Total HxCDD	--	0.043 [7]	2/5	0.64J - 2.40J	--	2	Yes
Total TCDF	--	0.043[7]	1/5	0.13J	--	1	Yes
Total PeCDF	--	0.0086 [7]	1/5	0.34J	--	1	Yes
Total HxCDF	--	0.043[7]	2/5	0.31J - 2.2J	--	2	Yes
Inorganics (mg/kg):							
Antimony	--	3.1	7/16	3.8 - 24	--	7	Yes
Arsenic (carc)	70	0.43	14/16	0.19J - 32	0	12	Yes
Inorganics (cont) (mg/kg):							

TABLE 6-5 (Continued)

SEDIMENT DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Sediment Criteria[2]		Contaminant Frequency/Range[3]		Comparison to Criteria		COPC Selection
	SSV ER-M	Residential Soil COC Value	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above ER-M	Positive Detects Above Residential COC Value	Retained as a COPC?
Barium	--	550	6/6	122 - 196J	--	0	No
Beryllium	--	16	5/16	0.22 - 1.33	--	0	No
Cadmium	9.6	7.8	8/16	0.34 - 4.7	0	0	No
Chromium	370	23[8]	16/16	10.2 - 54.1	0	10	Yes
Cobalt	--	470	6/6	4.6 - 28	--	0	No
Copper	270	310	16/16	14.5 - 1,020	2	2	Yes
Lead	218	400[9]	12/17	1.3J - 966J	2	2	Yes
Mercury	0.71	--	3/16	0.109 - 0.85	1	--	Yes
Nickel	51.6	160	13/16	3.1 - 63.3	1	0	Yes
Selenium	--	39	12/16	0.24J - 85.4	--	2	Yes
Silver	3.7	39	3/16	0.37 - 1.2	0	0	No
Tin	--	4,700	2/6	33.9 - 181	--	0	No
Vanadium	--	55	6/6	65.3 - 220	--	6	Yes
Zinc	410	2,300	16/16	9.9 - 1,780	2	0	Yes

TABLE 6-5 (Continued)

SEDIMENT DATA AND COPC SELECTION SUMMARY
SWMU 1, OU3 - ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Notes:

-- - No criteria published

COC - Chemical of Concern
COPC - Chemical of Potential Concern
µg/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
SSV - Sediment Screening Value (Long, et al, 1995)
ER-M - Effects Range - Medium
RBC - Risk Based Concentration
USEPA - United States Environmental Protection Agency

(1) Organic concentrations are reported in µg/kg; inorganic concentrations are reported in mg/kg.

(2) SSV = Sediment Screening Value (Long, et al, 1995);
Risk-based screening values derived from USEPA Region III RBC Tables (USEPA, 1998).

(3) J = Analyte was positively identified. Reported value may not be accurate or precise.

(4) COC screening value for pyrene used as a surrogate for benzo(g,h,i)perylene.

(5) ER-M value for total DDT.

(6) ER-M value and residential soil COC value for total PCBs.

(7) COC screening values for total HxCDD, HxCDF and TCDF were estimated using a 2,3,7,8-TCDD TEF of 0.1 (USEPA, 1994c).
The COC screening value for total PeCDF was estimated using a 2,3,7,8-TCDD TEF of 0.5 (USEPA, 1994c).

(8) Chromium (VI) COC value used for chromium.

(9) Action level for residential soils (USEPA, 1994b).

TABLE 6-6

SURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Volatiles (µg/kg):								
1,1,1-Trichloroethane	4,100,000	160,000	2/29	9 - 12J	0	0	NA	No
Acetone	20,000,000	780,000	5/14	180J - 560J	0	0	NA	No
Carbon Disulfide	20,000,000	780,000	1/14	3J	0	0	NA	No
Methylene Chloride	760,000	85,000	5/29	9J - 65	0	0	NA	No
Toluene	41,000,000	1,600,000	1/29	7	0	0	NA	No
Semivolatiles (µg/kg):								
Benzo(a)anthracene	7,800	870	7/29	30 - 210J	0	0	NA	No
Benzo(a)pyrene	780	87	7/29	40 - 340J	0	4	NA	Yes
Benzo(b)fluoranthene	7,800	870	8/29	60 - 510	0	0	NA	No
Benzo(k)fluoranthene	78,000	8,700	7/29	40 - 260J	0	0	NA	No
Benzo(g,h,i)perylene	6,100,000[5]	230,000[5]	5/29	72J - 300J	0	0	NA	No
Bis(2-ethylhexyl)phthalate	410,000	46,000	7/29	50 - 4,000	0	0	NA	No
Chrysene	780,000	87,000	8/29	43J - 280J	0	0	NA	No
Dibenz(a,h)anthracene	780	87	2/29	41J - 80J	0	0	NA	No

TABLE 6-6 (Continued)

SURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Semivolatiles (cont) (µg/kg):								
Di-n-octylphthalate	4,100,000	160,000	5/29	100 - 200	0	0	NA	No
Fluoranthene	8,200,000	310,000	9/29	20 - 420	0	0	NA	No
Indeno(1,2,3-cd)pyrene	7,800	870	3/29	69J - 290J	0	0	NA	No
Phenanthrene	6,100,000[5]	230,000[5]	2/29	30 - 240J	0	0	NA	No
Pyrene	6,100,000	230,000	7/29	20 - 220J	0	0	NA	No
Pesticides (µg/kg):								
4,4'-DDD	24,000	2,700	2/29	0.75NJ - 5.1	0	0	NA	No
4,4'-DDE	17,000	1,900	6/29	3NJ - 12	0	0	NA	No
4,4'-DDT	17,000	1,900	7/29	0.74J - 12	0	0	NA	No
Aldrin	340	38	1/29	0.27J	0	0	NA	No
BHC, alpha-	910	100	1/29	0.085NJ	0	0	NA	No
BHC, beta-	3,200	350	1/29	0.8NJ	0	0	NA	No
BHC, delta-	3,200	350	1/29	0.39NJ	0	0	NA	No
Dieldrin	360	40	1/29	2J	0	0	NA	No

TABLE 6-6 (Continued)

SURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Pesticides (cont) (µg/kg):								
Endosulfan I	1,200,000[6]	47,000[6]	1/29	2.8NJ	0	0	NA	No
Endosulfan II	1,200,000[6]	47,000[6]	1/29	0.15NJ	0	0	NA	No
Endosulfan Sulfate	1,200,000[6]	47,000[6]	1/29	1NJ	0	0	NA	No
Endrin	61,000	2,300	1/29	0.15NJ	0	0	NA	No
Endrin Aldehyde	61,000[7]	2,300[7]	1/29	0.71J	0	0	NA	No
Endrin Ketone	61,000[7]	2,300[7]	1/6	0.25NJ	0	0	NA	No
BHC, gamma-	4,400	490	1/29	1.2NJ	0	0	NA	No
Heptachlor	1,300	140	3/29	0.11J - 0.36J	0	0	NA	No
Heptachor Epoxide	630	70	1/29	0.46NJ	0	0	NA	No
Dioxins/Furans (µg/kg):								
Total HxCDD	0.38 [8]	0.043 [8]	1/8	0.37J	0	1	NA	Yes
Total HxCDF	0.38 [8]	0.043 [8]	1/8	0.17J	0	1	NA	Yes

TABLE 6-6 (Continued)

SURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Inorganics (mg/kg)								
Aluminum	200,000	7,800	6/6	1,660J - 36,600J	0	5	NA	Yes
Antimony	82	3.1	21/29	1.9J - 51	0	19	ND	Yes
Arsenic (carc.)	3.8	0.43	25/29	1.1 - 134	21	25	2.43	Yes
Barium	14,000	550	14/14	24B - 1,060	0	1	181.2	Yes
Beryllium	410	16	26/29	0.08 - 14.9	0	0	0.45	No
Cadmium	200	7.8	17/29	0.577 - 8.7	0	1	ND	Yes
Calcium	--	--	6/6	6,460 - 487,000	--	--	NA	No
Chromium	610[9]	23[9]	29/29	6.1 - 78.2	0	21	59.3	Yes
Cobalt	12,000	470	13/14	10.7B - 58.8J	0	0	43.95	No
Copper	8,200	310	29/29	4.3B - 5,850	0	10	234.2	Yes
Iron	61,000	2,300	6/6	4,040J - 168,000	2	6	NA	Yes
Lead	--	400[10]	37/42	3.1 - 4,760J	--	8	15.25	Yes
Magnesium	--	--	6/6	3,290 - 12,200	--	--	NA	No
Manganese	4,100	160	6/6	75.5 - 1,090	0	5	NA	Yes

TABLE 6-6 (Continued)

SURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Inorganics (cont) (mg/kg):								
Mercury	--	--	20/29	0.04J - 1.54	--	--	0.11	Yes
Nickel	4,100	160	27/29	5.07 - 165	0	1	16.55	Yes
Potassium	--	--	4/6	1,540B - 2,760	--	--	NA	No
Selenium	1,000	39	16/29	0.7J - 426	0	10	1.46	Yes
Sodium	--	--	6/6	2,800J - 13,100J	--	--	NA	No
Tin	120,000	4,700	3/8	2.2 - 9.9	0	0	2.43	No
Vanadium	1,400	55	14/14	9.3B - 386	0	13	354.5	Yes
Zinc	61,000	2,300	29/29	8.3 - 3,350	0	1	125.15	Yes

TABLE 6-6 (Continued)

SURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Notes:

-- - No criteria published
NA - Not analyzed.
ND - No background concentrations detected for constituent.-- = No criteria published

COC - Chemical of Concern
COPC - Chemical of Potential Concern
µg/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
RBC - Risk Based Concentration
USEPA - United States Environmental Protection Agency

(1) Organic concentrations are reported in µg/kg; inorganic concentrations are reported in mg/kg.

(2) Risk-based screening values derived from USEPA Region III RBC Tables (USEPA, 1998).

(3) J = Analyte was positively identified. Reported value may not be accurate or precise.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.

(4) Background values presented represent two times the arithmetic mean concentration. Background values not used in the selection of COPCs.

(5) COC screening value for pyrene used as a surrogate for benzo(g,h,i)perylene and phenanthrene.

(6) COC screening value for endosulfan used as a surrogate for endosulfan I, endosulfan II, and endosulfan sulfate.

(7) COC screening value for endrin used as a surrogate for endrin aldehyde and endrin ketone.

(8) COC screening values for total HxCDD and HxCDF were estimated using a 2,3,7,8-TCDD TEF of 0.1 (USEPA, 1994c).

(9) Chromium (VI) COC value used for chromium.

(10) Action level for residential soils (USEPA, 1994b).

TABLE 6-7

SUBSURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Volatiles (µg/kg):								
Acetone	20,000,000	780,000	5/12	21 - 450J	0	0	NA	No
Methylene Chloride	760,000	85,000	5/13	11 - 590	0	0	NA	No
2-Butanone	120,000,000	4,700,000	2/13	13J - 410J	0	0	NA	No
Benzene	200,000	22,000	1/13	1J	0	0	NA	No
4-Methyl-2-pentanone	16,000,000	630,000	1/13	11J	0	0	NA	No
Toluene	41,000,000	1,600,000	2/13	14J - 18J	0	0	NA	No
Ethylbenzene	20,000,000	780,000	1/13	2J	0	0	NA	No
m/p-Xylene	410,000,000	16,000,000	1/5	5J	0	0	NA	No
o-Xylene	410,000,000	16,000,000	1/5	3J	0	0	NA	No
Semivolatiles (µg/kg):								
2-Methylnaphthalene	4,100,000	160,000	1/13	83J	0	0	NA	No
Fluorene	8,200,000	310,000	1/13	240J	0	0	NA	No
Phenanthrene	6,100,000[5]	230,000[5]	2/13	56J - 1,900	0	0	NA	No
Anthracene	61,000,000	2,300,000	1/13	110J	0	0	NA	No

TABLE 6-7 (Continued)

SUBSURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Semivolatiles (cont) (µg/kg):								
Di-n-butylphthalate	20,000,000	780,000	1/13	94J	0	0	NA	No
Fluoranthene	8,200,000	310,000	1/13	3,200	0	0	NA	No
Pyrene	6,100,000	230,000	1/13	2,100	0	0	NA	No
Benzo(a)anthracene	7,800	870	1/13	1,000J	0	1	NA	Yes
Chrysene	780,000	87,000	1/13	1,400J	0	0	NA	No
Bis(2-ethylhexyl)phthalate	410,000	46,000	4/13	150J - 15,000	0	0	NA	No
Benzo(b)fluoranthene	7,800	870	1/13	1,300J	0	1	NA	Yes
Benzo(k)fluoranthene	78,000	8,700	1/13	2,000	0	0	NA	No
Benzo(a)pyrene	780	87	1/13	270J	0	1	NA	Yes
Indeno(1,2,3-cd)pyrene	7,800	870	1/13	700J	0	0	NA	No
Dibenzo(a,h)anthracene	780	87	1/13	450J	0	1	NA	Yes
Benzo(g,h,i)perylene	6,100,000[5]	230,000[5]	1/13	350J	0	0	NA	No
Carbazole	290,000	32,000	1/13	92J	0	0	NA	No

TABLE 6-7 (Continued)

SUBSURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Pesticides (µg/kg):								
beta-BHC	3,200	350	1/13	1.10J	0	0	NA	No
delta-BHC	3,200	350	1/13	0.86J	0	0	NA	No
gamma-BHC	4,400	490	1/13	0.13NJ	0	0	NA	No
Heptachlor	1,300	140	1/13	0.42J	0	0	NA	No
Aldrin	340	38	1/13	0.35J	0	0	NA	No
Heptachor Epoxide	630	70	1/13	0.35J	0	0	NA	No
Endosulfan I	1,200,000[6]	47,000[6]	1/13	1.50NJ	0	0	NA	No
Dieldrin	360	40	1/13	0.06NJ	0	0	NA	No
4,4'-DDE	17,000	1,900	1/13	0.68J	0	0	NA	No
Endrin	61,000	2,300	1/13	1.60J	0	0	NA	No
Endosulfan II	1,200,000[6]	47,000[6]	1/13	0.33J	0	0	NA	No
4,4'-DDT	17,000	1,900	1/13	1.70J	0	0	NA	No
Methoxychlor	1,000,000	39,000	1/13	1.50J	0	0	NA	No
Alpha-Chlordane	16,000[7]	1,800[7]	1/13	1.50NJ	0	0	NA	No

TABLE 6-7 (Continued)

SUBSURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Dioxins/Furans (µg/kg)								
Total HxCDD	0.38[8]	0.043[8]	1/6	0.21JS	0	1	NA	Yes
Total TCDF	0.38[8]	0.043[8]	2/6	0.07JS - 0.28JS	0	2	NA	Yes
Inorganics (mg/kg):								
Alumiunum	200,000	7,800	5/5	7,220J - 38,600J	0	4	NA	Yes
Antimony	82	3.1	10/13	2.9J - 21.4J	0	9	ND	Yes
Arsenic (carc.)	3.8	0.43	11/13	0.37J - 21.4	4	10	2.05	Yes
Barium	14,000	550	12/13	32.4B - 509	0	0	221.13	No
Beryllium	410	16	9/13	0.06 - 1.3B	0	0	0.74	No
Cadmium	200	7.8	10/13	0.29 - 9.3	0	1	0.74	Yes
Calcium	--	--	5/5	10,700 - 154,000	--	--	NA	No
Chromium	610[9]	23[9]	13/13	2.8 - 110	0	9	132.58	Yes
Cobalt	12,000	470	12/13	3.5B - 102	0	0	30	No
Copper	8,200	310	13/13	13.2 - 1,490	0	2	193.08	Yes
Iron	61,000	2,300	5/5	9,050J - 238,000	2	5	NA	Yes

TABLE 6-7 (Continued)

SUBSURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Inorganics (cont) (mg/kg):								
Lead	--	400[10]	13/13	3.5 - 5,850J	--	2	8.68	Yes
Magnesium	--	--	5/5	5,890 - 14,600	--	--	NA	No
Manganese	4,100	160	5/5	212 - 766	0	5	NA	Yes
Mercury	--	--	5/13	0.04 - 0.68	--	--	0.092	Yes
Nickel	4,100	160	10/13	11.1 - 108	0	0	31.9	No
Potassium	--	--	4/5	1,200B - 3,690	--	--	NA	No
Selenium	1,000	39	6/13	0.21J - 2.1J	0	0	0.57	No
Sodium	--	--	5/5	3,830J - 50,100J	--	--	NA	No
Tin	120,000	4,700	2/8	4.2 - 62.5	0	0	2.96	No
Vanadium	1,400	55	13/13	22.8 - 257	0	12	462.22	Yes
Zinc	61,000	2,300	13/13	24.3 - 2,010	0	0	88.63	No

TABLE 6-7 (Continued)

SUBSURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Notes:

-- - No criteria published
NA - Not analyzed.
ND - No background concentrations detected for constituent.-- = No criteria published

COC - Chemical of Concern
COPC - Chemical of Potential Concern
µg/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
RBC - Risk Based Concentration
USEPA - United States Environmental Protection Agency

(1) Organic concentrations are reported in µg/kg; inorganic concentrations are reported in mg/kg.

(2) Risk-based screening values derived from USEPA Region III RBC Tables (USEPA, 1998).

(3) J = Analyte was positively identified. Reported value may not be accurate or precise.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
B - Not detected substantially above the level in laboratory or field blanks.
JS - Estimated value. Signal to noise ratio threshold exceeded.

(4) Background values presented represent two times the arithmetic mean concentration. Background values not used in the selection of COPCs.

(5) COC screening value for pyrene used as a surrogate for phenanthene and benzo(g,h,i)perylene.

(6) COC screening value for endosulfan used as a surrogate for endosulfan I and endosulfan II.

(7) COC screening value for chlordane used as a surrogate for alpha-chlordane.

(8) COC screening values for total HxCDD, HxCDF and TCDF were estimated using a 2,3,7,8-TCDD TEF of 0.1 (USEPA, 1994c).

(9) Chromium (VI) COC value used for chromium.

(10) Action level for residential soils (USEPA, 1994b).

TABLE 6-8

GROUNDWATER DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Groundwater Criteria[2]		Frequency/Range[3]		Comparison to Criteria		Station Background Values[4]	COPC Selection
	Federal MCL (µg/L)	USEPA Region III Tapwater COC Value (µg/L)	No. of Positive Detects/ No. of Samples	Concentration Range (µg/L)	No. of Detects Above MCL	No. of Detects Above COC Value		Retained as a COPC?
Volatiles (µg/L):								
Chloroform	80	0.15	3/6	1.7 - 7	0	3	NA	Yes
Trichloroethene	5	1.6	2/6	6 - 7	2	2	NA	Yes
Semivolatiles (µg/L):								
Bis(2-ethylhexyl)phthalate	6	4.8	2/6	1.9 - 2J	0	0	NA	No
Isodrin	--	--	3/4	0.02 - 0.05	--	--	NA	Yes
Pentachlorophenol	1	0.56	2/6	5J - 11	2	2	NA	Yes
Phenol	--	2,200	1/1	58	--	0	NA	No
Pesticides (µg/L):								
Aldrin	--	0.0039	3/6	0.006 - 0.13	--	3	NA	Yes
Heptachlor Epoxide	0.2	0.0012	1/6	0.04	0	1	NA	Yes
Heptachlor	0.4	0.0023	1/6	0.0017NJ	0	0	NA	No
Herbicides (µg/L):								
2,4,5-T	--	37	1/4	0.13	--	0	NA	No

TABLE 6-8 (Continued)

GROUNDWATER DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Groundwater Criteria[2]		Frequency/Range[3]		Comparison to Criteria		Station Background Values[4]	COPC Selection
	Federal MCL (µg/L)	USEPA Region III Tapwater COC Value (µg/L)	No. of Positive Detects/ No. of Samples	Concentration Range (µg/L)	No. of Detects Above MCL	No. of Detects Above COC Value		Retained as a COPC?
Total Inorganics (µg/L):								
Aluminum	--	3,700	1/1	1,200	--	0	NA	No
Antimony	6	1.5	2/4	16.1J - 19.6J	2	2	ND	Yes
Arsenic	50	0.045	2/6	2.7 - 2.8	0	2	3.55	Yes
Barium	2,000	260	4/5	1.8 - 663	0	3	706	Yes
Beryllium	4	7.3	3/6	0.72 - 1.5B	0	0	2.7	No
Cadmium	5	1.8	2/6	2.2 - 3.2	0	2	5.93	Yes
Calcium	--	--	1/1	62,500	--	--	NA	No
Chromium	100	11[5]	3/6	19.2 - 57.4	0	3	89.3	Yes
Cobalt	--	220	3/5	37.9 - 131	--	0	142.45	No
Copper	1,300[6]	150	4/6	6.1 - 212	0	1	299	Yes
Iron	--	1,100	1/1	1,730	0	1		Yes
Lead	15[6]	--	4/6	4.4 - 121	2	--	7.13	Yes
Magnesium	--	--	1/1	80,700	--	--	NA	No
Mercury	2	--	1/6	0.71	0	--	ND	No
Nickel	100	73	3/6	15.5 - 66.3	0	0	89.75	No

TABLE 6-8 (Continued)

GROUNDWATER DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Groundwater Criteria[2]		Frequency/Range[3]		Comparison to Criteria		Station Background Values[4]	COPC Selection
	Federal MCL (µg/L)	USEPA Region III Tapwater COC Value (µg/L)	No. of Positive Detects/ No. of Samples	Concentration Range (µg/L)	No. of Detects Above MCL	No. of Detects Above COC Value		Retained as a COPC?
Total Inorganics (cont) (µg/L):								
Selenium	50	18	2/6	4.2 - 4.8J	0	0	2.95	No
Sodium	--	--	5/5	230,000 - 936,000	--	--	NA	No
Vanadium	--	26	5/5	30J - 631	--	5	ND	Yes
Zinc	--	1,100	6/6	8.9 - 252	--	0	360.85	No
Dissolved Inorganics (µg/L):								
Aluminum	--	3,700	1/1	48.9J	--	0		No
Barium	2,000	260	4/5	3.4 - 262	0	1	238.5	Yes
Cadmium	5	1.8	2/5	3 - 3.2	0	2	ND	Yes
Calcium	--	--	1/1	58,700	--	--	NA	No
Chromium	100	11[5]	1/5	2	0	0	3.8	No
Cobalt	--	220	3/5	3.2 - 15.9	--	0	58.63	No
Copper	1,300[6]	150	4/5	1.6 - 8.5J	0	0	17.65	No
Magnesium	--	--	1/1	77,500	--	--	NA	No
Selenium	50	18	3/5	1.8J - 9.2J	0	0	ND	No
Sodium	--	--	5/5	223,000 - 838,000	--	--	NA	No

TABLE 6-8 (Continued)

GROUNDWATER DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Groundwater Criteria[2]		Frequency/Range[3]		Comparison to Criteria		Station Background Values[4]	COPC Selection
	Federal MCL (µg/L)	USEPA Region III Tapwater COC Value (µg/L)	No. of Positive Detects/ No. of Samples	Concentration Range (µg/L)	No. of Detects Above MCL	No. of Detects Above COC Value		Retained as a COPC?
Dissolved Inorganics (cont) (µg/L):								
Vanadium	--	26	5/5	7.9 - 45.8	--	2	6	Yes
Zinc	--	1,100	5/5	5.2 - 16.5B	--	0	75.7	No

Notes:

-- - No criteria published
NA - Not analyzed.
ND - No background concentrations detected for constituent.-- = No criteria published

COC - Chemical of Concern
COPC - Chemical of Potential Concern
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
RBC - Risk Based Concentration
USEPA - United States Environmental Protection Agency

(1) All concentrations are reported in µg/L

(2) Federal MCL (USEPA, 1996a; Drinking Water Regulations and Health Advisories)
Risk-based screening values derived from USEPA Region III RBC Tables (USEPA, 1998).

(3) J = Analyte was positively identified. Reported value may not be accurate or precise.
NJ - Presumptive evidence for the presence of the parameter at an estimated value.
B - Not detected substantially above the level in laboratory or field blanks.

(4) Background values presented represent two times the arithmetic mean concentration. Background values not used in the selection of COPCs.

(5) Chromium (VI) COC value used for chromium.

(6) Value is an Action Level

TABLE 6-9

SURFACE WATER DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Surface Water Criteria[2]		Frequency/Range		Comparison to Criteria		COPC Selection
	Federal AWQC (Water & Org) (µg/L)	Federal AWQC (Org only) (µg/L)	No. of Positive Detects/No. of Samples	Concentration Range (µg/L)	No. of Detects Above AWQC (Water & Org)	No. of Detects Above AWQC (Org only)	Retained as a COPC?
Semivolatiles (µg/L):							
Bis(2-ethylhexyl)phthalate	1.8	5.9	5/6	1 - 2.4	1	0	Yes
Di-n-octylphthalate	--	--	2/6	2 - 2	--	--	Yes
Phenols	21,000	4,600,000	3/6	40 - 1,200	0	0	No
Total Inorganics (µg/L):							
Beryllium	0.0076 [3]	0.131 [3]	3/6	23.6 - 50.6	3	3	Yes
Cadmium	10 [3]	70 [3]	3/6	3.35 - 8.4	0	0	No
Chromium	170 [3][4]	3,400 [3][4]	6/6	97.4 - 611	3	0	Yes
Copper	1,300 [3]	--	4/6	67.8 - 966	0	--	No
Lead	--	--	3/7	211 - 526	--	--	Yes
Mercury	0.14	0.15	3/6	0.856 - 0.997	3	3	Yes
Nickel	610	4,600	3/6	138 - 252	0	0	No
Selenium	104 [3]	6,800 [3]	5/6	162 - 549	5	0	Yes
Silver	91 [3]	--	3/6	28.7 - 32.2	0	--	No
Thallium	1.7	6.3	3/6	19.2 - 29.3	3	3	Yes
Zinc	--	--	4/6	52.5 - 1,310	--	--	Yes

TABLE 6-9 (Continued)

SURFACE WATER DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Notes:

-- - No criteria published
NA - Not analyzed.
ND - No background concentations detected for constituent

COC - Chemical of Concern
COPC - Chemical of Potential Concern
µg/L - micrograms per liter
AWQC - Ambient Water Quality Criteria
USEPA - United States Environmental Protection Agency

(1) All concentrations are reported in µg/L

(2) Federal AWQC (USEPA, 1992) for the consumption of water and organisms.
Federal AWQC (USEPA, 1992) for the consumption of organisms only.

(3) AWQC obtained from USEPA, 1991 tables.

(4) Chromium (VI) COC value used for chromium

TABLE 6-10

SEDIMENT DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Sediment Criteria[2]		Contaminant Frequency/Range[3]		Comparison to Criteria		COPC Selection
	SSV ER-M	Residential Soil COC Value	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above ER-M	Positive Detects Above Residential COC Value	Retained as a COPC?
Volatiles (µg/kg):							
2-Butanone	--	4,700,000	1/13	1600	--	0	No
Semivolatiles (µg/kg):							
Anthracene	1,100	2,300,000	1/12	95J	0	0	No
Benzo(a)anthracene	1,600	870	2/12	530J - 970	0	1	Yes
Benzo(a)pyrene	1,600	87	1/12	920	0	1	Yes
Benzo(b)fluoranthene	--	870	2/12	63J - 1,800	--	1	Yes
Benzo(k)fluoranthene	--	8,700	1/12	140J	--	0	No
Bis(2-ethylhexyl)phthalate	--	46,000	5/12	90 - 13,000	--	0	No
Chrysene	2,800	87,000	2/12	720J - 1,200	0	0	No
Di-n-octyl phthalate	--	160,000	3/12	200 - 300	--	0	No
Fluoranthene	5,100	310,000	2/12	960 - 1,900	0	0	No
Indeno(1,2,3-cd)pyrene	--	870	1/12	90J	--	0	No
Phenanthrene	1,500	230,000 [4]	2/12	290J - 630	0	0	No
Pyrene	2,600	230,000	2/12	1,200 - 2,200	0	0	No

TABLE 6-10 (Continued)

SEDIMENT DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Sediment Criteria[2]		Contaminant Frequency/Range[3]		Comparison to Criteria		COPC Selection
	SSV ER-M	Residential Soil COC Value	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above ER-M	Positive Detects Above Residential COC Value	Retained as a COPC?
Pesticides (µg/kg):							
4,4'-DDE	27	1,900	1/12	29	1	0	Yes
Dioxins/Furans (µg/kg):							
Total HxCDD	--	0.043 [5]	1/6	2.50	--	1	Yes
Total HxCDF	--	0.043[5]	1/6	0.91J	--	1	Yes
Inorganics (mg/kg):							
Antimony	--	3.1	5/12	3.3J - 7.4	--	5	Yes
Arsenic (carc)	70	0.43	12/12	1.94 - 16.4	0	12	Yes
Barium	--	550	6/6	12.1 - 486J	--	0	No
Beryllium	--	16	5/12	0.07 - 0.48	--	0	No
Cadmium	9.6	7.8	6/12	0.32 - 1.71	0	0	No
Chromium	370	23[6]	12/12	6.58 - 45.9J	0	3	Yes
Cobalt	--	470	6/6	1.2 - 34.7	--	0	No
Copper	270	310	12/12	8.2 - 399	3	3	Yes
Lead	218	400[7]	9/13	3.8 - 390J	2	0	Yes
Mercury	0.71	--	6/12	0.04 - 2.6	2	--	Yes

TABLE 6-10 (Continued)

SEDIMENT DATA AND COPC SELECTION SUMMARY
SWMU 2, OU3 - LANGLEY DRIVE DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Sediment Criteria[2]		Contaminant Frequency/Range[3]		Comparison to Criteria		COPC Selection
	SSV ER-M	Residential Soil COC Value	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above ER-M	Positive Detects Above Residential COC Value	Retained as a COPC?
Inorganics (cont) (mg/kg):							
Nickel	51.6	160	9/12	2.4 - 24.1	0	0	No
Selenium	--	39	8/12	0.23J - 19.4	--	0	No
Tin	--	4,700	3/6	9.4 - 32.1	--	0	No
Vanadium	--	55	6/6	15 - 154J	--	3	Yes
Zinc	410	2,300	12/12	9.6 - 841	2	0	Yes

Notes:

-- - No criteria published

COC - Chemical of Concern
µg/kg - micrograms per kilogram
SSV - Sediment Screening Value (Long, et al, 1995)
RBC - Risk Based Concentration
COPC - Chemical of Potential Concern
mg/kg - milligrams per kilogram
ER-M - Effects Range - Medium
USEPA - United States Environmental Protection Agency

(1) Organic concentrations are reported in µg/kg; inorganic concentrations are reported in mg/kg.
(2) SSV = Sediment Screening Value (Long, et al, 1995);
Risk-based screening values derived from USEPA Region III RBC Tables (USEPA, 1998).
(3) J = Analyte was positively identified. Reported value may not be accurate or precise.
(4) COC screening value for pyrene used as a surrogate for phenanthrene.
(5) COC screening values for total HxCDD and HxCDF were estimated using a 2,3,7,8-TCDDTEF of 0.1 (USEPA, 1994c).
(6) Chromium (VI) COC value used for chromium.
(7) Action level for residential soils (USEPA, 1994b).

TABLE 6-11

SURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 45, OU5 - BUILDING 38
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
PCBs (µg/kg):								
Aroclor-1260	2900	320	2/4	100 - 150	0	0	NA	No
Inorganics (mg/kg):								
Arsenic (carc.)	3.8	0.43	3/4	2.3J - 3.3J	0	3	2.43	Yes
Barium	14,000	550	4/4	108 - 284	0	0	181.2	No
Cadmium	200	7.8	4/4	0.25 - 0.42	0	0	ND	No
Chromium	610[5]	23[5]	4/4	10.9 - 29.9	0	3	59.3	Yes
Lead	--	400[6]	4/4	2.8J - 8.2	--	0	15.3	No
Mercury	--	--	4/4	0.03 - 0.04	--	--	0.11	Yes

TABLE 6-11 (Continued)

SURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 45, OU5 - BUILDING 38
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

Notes:

-- - No criteria published
NA - Not analyzed.
ND - No background concentrations detected for constituent.-- = No criteria published

COC - Chemical of Concern
COPC - Chemical of Potential Concern
µg/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
RBC - Risk Based Concentration
USEPA - United States Environmental Protection Agency

(1) Organic concentrations are reported in µg/kg; inorganic concentrations are reported in mg/kg.

(2) Risk-based screening values derived from USEPA Region III RBC Tables (USEPA, 1998).

(3) J = Analyte was positively identified. Reported value may not be accurate or precise.

(4) Background values presented represent two times the arithmetic mean concentration. Background values not used in the selection of COPCs.

(5) Chromium (VI) COC value used for chromium.

(6) Action level for residential soils (USEPA, 1994b).

TABLE 6-12

SUBSURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 45, OU5 - BUILDING 38
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Volatiles (µg/kg):								
Acetone	20,000,000	780,000	5/25	12J - 83J	0	0	NA	No
2-Hexanone	8,200,000	310,000	1/25	8J	0	0	NA	No
4-Methyl-2-pentanone	16,000,000	630,000	1/25	4J	0	0	NA	No
Toluene	41,000,000	1,600,000	2/25	8 - 24	0	0	NA	No
Semivolatiles (µg/kg):								
Acenaphthene	12,000,000	470,000	1/25	180J	0	0	NA	No
Benzo(a)anthracene	7,800	870	1/25	110J	0	0	NA	No
Benzo(a)pyrene	780	87	4/25	57J - 260J	0	3	NA	Yes
Benzo(g,h,i)perylene	6,100,000[5]	230,000[5]	1/25	120J	0	0	NA	No
Benzoic acid	82,000,000	31,000,000	2/25	510J - 510J	0	0	NA	No
Chrysene	780,000	87,000	1/25	340J	0	0	NA	No
Diethylphthalate	160,000,000	6,300,000	1/25	44J	0	0	NA	No
Di-n-butylphthalate	20,000,000	780,000	4/25	84J - 270J	0	0	NA	No
Phenol	120,000,000	4,700,000	1/25	130J	0	0	NA	No

TABLE 6-12 (Continued)

SUBSURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 45, OU5 - BUILDING 38
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Semivolatiles (cont) (µg/kg):								
Pyrene	6,100,000	230,000	2/25	47J - 180J	0	0	NA	No
PCBs (µg/kg):								
Aroclor-1260	2,900	320	5/26	46 - 320J	0	0	NA	No
Inorganics (mg/kg):								
Antimony	82	3.1	3/17	0.22J - 0.43J	0	0	ND	No
Arsenic (carc.)	3.8	0.43	22/25	0.49J - 4.5J	3	22	2.05	Yes
Barium	14,000	550	25/25	6.7 - 119	0	0	222.13	No
Beryllium	410	16	7/17	0.06J - 0.28J	0	0	0.74	No
Cadmium	200	7.8	15/25	0.05J - 0.86	0	0	0.74	No
Chromium	610[6]	23[6]	25/25	2.7 - 320	0	2	132.58	Yes
Cobalt	12,000	470	17/17	0.31J - 20.4	0	0	30	No
Copper	8,200	310	9/9	2.4J - 131J	0	0	193.08	No
Lead	--	400[7]	25/25	0.42J - 7.7J	--	0	8.67	No
Mercury	--	--	1/25	0.04J	--	--	0.093	Yes

TABLE 6-12 (Continued)

SUBSURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 45, OU5 - BUILDING 38
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Risk-Based COC Screening Criteria[2]		Detection Frequency and Range[3]		Comparison to Criteria		Station Background Values[4]	Selected as a COPC? (Yes/No)
	Industrial Scenario	Residential Scenario	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above Industrial COC Value	Positive Detects Above Residential COC Value		
Inorganics (cont) (mg/kg):								
Nickel	4,100	160	17/17	0.85J - 17	0	0	31.9	No
Silver	1,000	39	7/25	0.07J - 0.36J	0	0	ND	No
Tin	120,000	4,700	16/17	0.87J - 2.7J	0	0	2.96	No
Vanadium	1,400	55	17/17	5.6J - 158	0	9	462.23	Yes
Zinc	61,000	2,300	3/3	42.6 - 90.9	0	0	88.63	No

TABLE 6-12 (Continued)

SUBSURFACE SOIL DATA AND COPC SELECTION SUMMARY
SWMU 45, OU5 - BUILDING 38
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Notes:

-- - No criteria published
NA - Not analyzed.
ND - No background concentrations detected for constituent.-- = No criteria published

COC - Chemical of Concern
COPC - Chemical of Potential Concern
µg/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
RBC - Risk Based Concentration
USEPA - United States Environmental Protection Agency

(1) Organic concentrations are reported in µg/kg; inorganic concentrations are reported in mg/kg.

(2) Risk-based screening values derived from USEPA Region III RBC Tables (USEPA, 1998).

(3) J = Analyte was positively identified. Reported value may not be accurate or precise.

(4) Background values presented represent two times the arithmetic mean concentration. Background values not used in the selection of COPCs.

(5) COC screening value for pyrene used as a surrogate for benzo(g,h,i)perylene.

(6) Chromium (VI) COC value used for chromium.

(7) Action level for residential soils (USEPA, 1994b).

TABLE 6-13

GROUNDWATER DATA AND COPC SELECTION SUMMARY
SWMU 45, OU5 - BUILDING 38
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Groundwater Criteria[2]		Frequency/Range[3]		Comparison to Criteria		Station Background Values[4]	COPC Selection
	Federal MCL (µg/L)	USEPA Region III Tapwater COC Value (µg/L)	No. of Positive Detects/No. of Samples	Concentration Range (µg/L)	No. of Detects Above MCL	No. of Detects Above COC Value		Retained as a COPC?
Volatiles (µg/L):								
Acetone	--	370	7/22	12J - 34	--	0	NA	No
Semivolatiles (µg/L):								
2,4-Dichlorophenol	--	11	1/22	2J	--	0	NA	No
Acenaphthene	--	220	1/22	2J	--	0	NA	No
Anthracene	--	1,100	2/22	5J - 9J	--	0	NA	No
Benzo(a)anthracene	--	0.092	1/22	6J	--	1	NA	Yes
Benzo(a)pyrene	0.2	0.0092	1/22	7J	1	1	NA	Yes
Benzoic Acid	--	15,000	3/22	23J - 26J	--	0	NA	No
Benzyl Alcohol	--	1,100	1/22	3J	--	0	NA	No
Bis(2-ethylhexyl)phthalate	6	4.8	2/22	24 - 64J	2	2	NA	Yes
Chrysene	--	9.2	1/22	13J	--	1	NA	Yes
Diethylphthalate	--	2,900	2/22	12 - 34	--	0	NA	No
Dimethylphthalate	--	37,000	2/22	2J - 27	--	0	NA	No
Diphenylamine	--	91	1/22	18J	--	0	NA	No
Semivolatiles (cont) (µg/L):								

TABLE 6-13 (Continued)

GROUNDWATER DATA AND COPC SELECTION SUMMARY
SWMU 45, OU5 - BUILDING 38
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Groundwater Criteria[2]		Frequency/Range[3]		Comparison to Criteria		Station Background Values[4]	COPC Selection
	Federal MCL (µg/L)	USEPA Region III Tapwater COC Value (µg/L)	No. of Positive Detects/No. of Samples	Concentration Range (µg/L)	No. of Detects Above MCL	No. of Detects Above COC Value		Retained as a COPC?
m&p Cresol	--	18[5]	2/22	2J - 7J	--	0	NA	No
O-Cresol	--	180	1/22	1J	--	0	NA	No
Phenol	--	2,200	3/22	2J - 4J	--	0	NA	No
Pyrene	--	110	3/22	1J - 15J	--	0	NA	No
PCBs (µg/L):								
Aroclor-1260	0.5	0.033	1/22	0.35	0	1	NA	Yes
Total Inorganics (µg/L):								
Antimony	6	1.5	11/16	2J - 3.7J	0	11	ND	Yes
Arsenic	50	0.045	17/25	1.7J - 103	2	17	3.55	Yes
Barium	2,000	260	25/25	6.1J - 483	0	4	706	Yes
Cadmium	5	1.8	10/25	0.54J - 27.8	4	9	5.93	Yes
Chromium	100	11[6]	22/25	0.7J - 182	6	14	89.3	Yes
Cobalt	--	220	8/16	1.2J - 4.8J	--	0	142.5	No
Copper	1,300[7]	150	13/16	0.78J - 98.9J	0	0	299	No
Total Inorganics (cont) (µg/L):								
Lead	15[7]	--	10/24	1.5J - 30	5	--	7.13	Yes

TABLE 6-13 (Continued)

GROUNDWATER DATA AND COPC SELECTION SUMMARY
SWMU 45, OU5 - BUILDING 38
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Groundwater Criteria[2]		Frequency/Range[3]		Comparison to Criteria		Station Background Values[4]	COPC Selection
	Federal MCL (µg/L)	USEPA Region III Tapwater COC Value (µg/L)	No. of Positive Detects/No. of Samples	Concentration Range (µg/L)	No. of Detects Above MCL	No. of Detects Above COC Value		Retained as a COPC?
Mercury	2	--	6/25	0.1J - 0.53	0	--	ND	No
Nickel	100	73	7/16	0.92J - 7.9J	0	0	89.75	No
Tin	--	2,200	4/16	2J - 2.1J	--	0	ND	No
Vanadium	--	26	14/16	1.7J - 67.8	--	5	418.9	Yes
Zinc	--	1,100	16/16	1.3J - 24.8	--	0	360.85	No
Dissolved Inorganics (µg/L):								
Antimony	6	1.5	5/14	2J - 3.6J	0	5	ND	Yes
Arsenic	50	0.045	14/22	1.3J - 16.1J	0	15	ND	Yes
Barium	2,000	260	22/22	2.8J - 278	0	1	238.5	Yes
Cadmium	5	1.8	4/22	2.4 - 5.6	1	4	ND	Yes
Chromium	100	11[6]	5/22	0.7J - 8.6J	0	0	3.8	No
Cobalt	--	220	1/14	4.2J	--	0	58.63	No
Copper	1,300[7]	150	1/14	2.4J	0	0	17.65	No
Dissolved Inorganics (cont) (µg/L):								
Lead	15[7]	--	2/20	1.6 - 1.6	0	--	ND	No
Mercury	2	--	5/22	0.12J - 2.6	1	3	ND	Yes

TABLE 6-13 (Continued)

GROUNDWATER DATA AND COPC SELECTION SUMMARY
SWMU 45, OU5 - BUILDING 38
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Groundwater Criteria[2]		Frequency/Range[3]		Comparison to Criteria		Station Background Values[4]	COPC Selection
	Federal MCL (µg/L)	USEPA Region III Tapwater COC Value (µg/L)	No. of Positive Detects/No. of Samples	Concentration Range (µg/L)	No. of Detects Above MCL	No. of Detects Above COC Value		Retained as a COPC?
Tin	--	2,200	3/14	1.9J - 2.4J	--	0	ND	No
Vanadium	--	26	7/14	1.1J - 29.3J	--	2	6	Yes
Zinc	--	1,100	14/14	1.5J - 9.4J	--	0	75.7	No

TABLE 6-13 (Continued)

GROUNDWATER DATA AND COPC SELECTION SUMMARY
SWMU 45, OU5 - BUILDING 38
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Notes:

-- - No criteria published
NA - Not analyzed.
ND - No background concentrations detected for constituent.-- = No criteria published

COC - Chemical of Concern
COPC - Chemical of Potential Concern
µg/L - micrograms per liter
MCL - Maximum Contaminant Level
RBC - Risk Based Concentration
USEPA - United States Environmental Protection Agency

(1) All concentrations are reported in µg/L

(2) Federal MCL (USEPA, 1996a; Drinking Water Regulations and Health Advisories)
Risk-based screening values derived from USEPA Region III RBC Tables (USEPA, 1998).

(3) J = Analyte was positively identified. Reported value may not be accurate or precise.

(4) Background values presented represent two times the arithmetic mean concentration. Background values not used in the selection of COPCs.

(5) COC screening value for p-cresol.

(6) Chromium (VI) COC value used for chromium.

(7) Value is Action Level

TABLE 6-14

SEDIMENT DATA AND COPC SELECTION SUMMARY
SWMU 45, OU5 - BUILDING 38
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Sediment Criteria[2]		Contaminant Frequency/Range[3]		Comparison to Criteria		COPC Selection
	SSV ER-M	Residential Soil COC Value	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above ER-M	Positive Detects Above Residential COC Value	Retained as a COPC?
Volatiles (µg/kg):							
Acetone	--	780,000	9/9	28J - 97J	--	0	No
Semivolatiles (µg/kg):							
Acenaphthylene	640	470,000	2/9	81J - 100J	0	0	No
Anthracene	1,100	2,300,000	3/9	96J - 160J	0	0	No
Benzo(a)anthracene	1,600	870	6/9	85J - 320J	0	0	No
Benzo(a)pyrene	1,600	87	7/9	96J - 1,800	1	7	Yes
Benzo(b)fluoranthene	--	870	7/9	140J - 2,700	--	2	Yes
Benzo(g,h,i)perylene	--	230,000[4]	5/9	120J - 1,100	--	0	No
Benzo(k)fluoranthene	--	8,700	4/9	160J - 1,200	--	0	No
Bis(2-ethylhexyl)phthalate	--	46,000	8/9	200J - 700J	--	0	No
Carbazole	--	32,000	5/9	330J - 390J	--	0	No
Chrysene	2,800	87,000	7/9	76J - 1,000	0	0	No
Dibenzo(a,h)anthracene	260	87	3/9	75J - 380J	1	2	Yes
Di-n-butylphthalate	--	780,000	8/9	88J - 460J	--	0	No
Fluoranthene	5,100	310,000	7/9	83J - 680J	0	0	No
Semivolatiles (cont) (µg/kg):							

TABLE 6-14 (Continued)

SEDIMENT DATA AND COPC SELECTION SUMMARY
SWMU 45, OU5 - BUILDING 38
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Sediment Criteria[2]		Contaminant Frequency/Range[3]		Comparison to Criteria		COPC Selection
	SSV ER-M	Residential Soil COC Value	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above ER-M	Positive Detects Above Residential COC Value	Retained as a COPC?
Indeno(1,2,3-cd)pyrene	--	870	7/9	75J - 1,300	--	1	Yes
Phenanthrene	1,500	230,000	4/9	78J - 470J	0	0	No
Pyrene	2,600	230,000	7/9	79J - 680J	0	0	No
PCBs (µg/kg):							
Aroclor-1260	180[5]	320[5]	9/9	28J - 130	0	0	No
Inorganics (mg/kg):							
Antimony	--	3.1	7/11	0.37J - 0.7J	--	0	No
Arsenic (carc)	70	0.43	11/11	3.3J - 12	0	11	Yes
Barium	--	550	11/11	13J - 26.1J	--	0	No
Beryllium	--	16	3/11	0.06J - 0.06J	--	0	No
Cadmium	9.6	7.8	3/11	0.08J - 0.66J	0	0	No
Chromium	370	23[6]	11/11	8 - 14.4	0	0	No
Cobalt	--	470	10/11	1.8J - 7.3J	--	0	No
Copper	270	310	9/9	18.1J - 44.6J	0	0	No
Lead	218	400[7]	11/11	8.7 - 30.4	0	0	No
Inorganics (cont) (mg/kg):							
Mercury	0.71	--	2/11	0.31 - 0.42	0	--	No

TABLE 6-14 (Continued)

SEDIMENT DATA AND COPC SELECTION SUMMARY
SWMU 45, OU5 - BUILDING 38
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Contaminant[1]	Sediment Criteria[2]		Contaminant Frequency/Range[3]		Comparison to Criteria		COPC Selection
	SSV ER-M	Residential Soil COC Value	No. of Positive Detects/ No. of Samples	Range of Positive Detections	Positive Detects Above ER-M	Positive Detects Above Residential COC Value	Retained as a COPC?
Nickel	51.6	160	11/11	1.7J - 5J	0	0	No
Selenium	--	39	1/11	0.78J	--	0	No
Silver	3.7	39	3/11	0.13J - 0.36J	0	0	No
Tin	--	4,700	11/11	2.2J - 5.5J	--	0	No
Vanadium	--	55	11/11	15.8 - 73.4J	--	1	Yes
Zinc	410	2,300	9/9	26.1 - 83.9	0	0	No

TABLE 6-14 (Continued)

SEDIMENT DATA AND COPC SELECTION SUMMARY
SWMU 45, OU5 - BUILDING 38
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Notes:

-- - No criteria published
COC - Chemical of Concern
COPC - Chemical of Potential Concern
µg/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
SSV - Sediment Screening Value (Long, et al, 1995)
ER-M - Effects Range - Medium
RBC - Risk Based Concentration
USEPA - United States Environmental Protection Agency

(1) Organic concentrations are reported in µg/kg; inorganic concentrations are reported in mg/kg.

(2) SSV = Sediment Screening Value (Long, et al, 1995);
Risk-based screening values derived from USEPA Region III RBC Tables (USEPA, 1998).

(3) J = Analyte was positively identified. Reported value may not be accurate or precise.

(4) COC screening value for pyrene used as a surrogate for benzo(g,h,i)perylene.

(5) ER-M value and residential soil COC value for total PCBs.

(6) Chromium (VI) COC value used for chromium.

(7) Action level for residential soils (USEPA, 1994b).

TABLE 6-15

SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

	SWMU 1					SWMU 2					SWMU 45			
COPCs	SS	SB	GW	SW	SD	SS	SB	GW	SW	SD	SS	SB	GW	SD
Volatiles														
Chloroform			X					X						
Tetrachloroethane, 1,1,2,2-			X											
Trichloroethene								X						
Semivolatiles														
Benzo(a)anthracene	X						X			X				
Benzo(a)pyrene	X				X	X	X			X		X		X
Benzo(b)fluoranthene	X						X			X				X
Bis(2-ethylhexyl)phthalate			X	X					X				X	
Dibenz(a,h)anthracene	X						X							X
Di-n-octylphthalate				X					X					
Indeno(1,2,3-cd)pyrene														X
Isodrin								X						
Pentachlorophenol			X					X						
Phenol					X									
Pesticides														
Aldrin			X					X						
BHC, delta-					X									
DDE, 4,4'-					X					X				
DDT, 4,4'-	X				X									
Heptachlor			X											
Heptachlor Epoxide								X						
PCBs														
Aroclor-1260					X								X	

TABLE 6-15 (continued)

SUMMARY OF CHEMICALS OF POTENTIAL CONCERN
OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

	SWMU 1					SWMU 2					SWMU 45			
COPCs	SS	SB	GW	SW	SD	SS	SB	GW	SW	SD	SS	SB	GW	SD
Dioxins / Furans														
HxCDD, total		X	X		X	X	X			X				
HxCDF, total		X			X	X				X				
TCDF, total		X			X		X							
PeCDF, total					X									
Inorganics														
Aluminum	X	X				X	X							
Antimony	X	X	X		X	X	X	X		X			X	
Arsenic	X		X	X	X	X	X	X		X	X	X	X	X
Barium			X			X		X					X	
Beryllium			X						X					
Cadmium (soil/sediment)	X					X	X							
Cadmium (water)			X					X	X				X	
Chromium	X	X	X	X	X	X	X	X	X	X	X	X	X	
Cobalt			X											
Copper	X	X	X	X	X	X	X	X	X	X				
Iron	X	X				X	X	X						
Lead			X		X	X	X	X	X	X			X	
Manganese (non-food)	X	X	X			X	X							
Mercury	X	X	X		X	X	X		X	X	X	X	X	
Nickel			X		X	X								
Selenium			X	X	X	X			X					
Silver			X	X					X					
Thallium			X	X					X					
Vanadium	X	X	X		X	X	X	X		X		X	X	X
Zinc			X	X	X	X			X	X				

TABLE 6-16

PHYSICAL AND CHEMICAL PROPERTIES FOR ORGANIC CHEMICALS OF POTENTIAL CONCERN
OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Constituents	Water Solubility (mg/L)	Vapor Pressure (mm Hg)	Log Koc	Log Kow	Specific Gravity	Henry's Law Constant (atm-m^3/mole)	Mobility Index
Volatiles							
Chloroform	8.20E+03	1.51E+02	1.49	1.97	1.49	2.87E-03	5
Tetrachloroethane, 1,1,2,2-	2.90E+03	5.00E+00	2.07	2.39	1.60	3.81E-04	2
Trichloroethene	1.10E+03	5.79E+01	2.10	2.38	1.44	9.10E-03	3
Semivolatiles							
Benzo(a)anthracene	5.70E-03	2.20E-08	6.14	5.60	1.25	1.16E-06	-16
Benzo(a)pyrene	1.20E-03	5.60E-09	6.74	6.06	1.35	1.55E-06	-18
Benzo(b)fluoranthene	1.40E-02	5.00E-07	5.74	6.06	NA	1.19E-05	-14
Bis(2-ethylhexyl)phthalate	2.85E-01	6.20E-08	5.00	5.11	0.99	1.07E-07	-13
Dibenz(a,h)anthracene	5.00E-04	1.00E-10	6.52	6.80	NA	7.33E-08	-20
Di-n-octylphthalate	5.00E-04	9.98E-08	6.30	8.06	0.98	1.03E-04	-17
Indeno(1,2,3-cd)pyrene	5.30E-04	1.00E-10	6.20	6.51	NA	6.86E-08	-19
Isodrin	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	1.40E+01	1.10E-04	4.72	5.00	1.98	2.75E-06	-8
Phenol	9.30E+04	3.41E-01	1.15	1.50	1.07	4.54E-07	3
Pesticides							
Aldrin	1.80E-01	6.00E-06	4.98	5.30	1.70	1.60E-05	-11
BHC, delta-	3.14E+01	1.70E-05	3.82	4.10	NA	2.07E-07	-7
DDE, 4,4'-	4.00E-02	6.50E-06	6.64	5.70	NA	6.80E-05	-13
DDT, 4,4'-	5.00E-03	5.50E-06	5.39	6.40	1.55	5.13E-04	-13
Heptachlor	1.80E-01	3.00E-04	4.08	4.30	1.66	8.19E-04	-8
Heptachlor Epoxide	3.50E-01	3.00E-04	2.34	2.70	NA	4.39E-04	-6

TABLE 6-16 (continued)

PHYSICAL AND CHEMICAL PROPERTIES FOR ORGANIC CHEMICALS OF POTENTIAL CONCERN
OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Constituents	Water Solubility (mg/L)	Vapor Pressure (mm Hg)	Log Koc	Log Kow	Specific Gravity	Henry's Law Constant (atm-m^3/mole)	Mobility Index
PCBs							
Aroclor-1260	2.70E-03	4.05E-05	5.54	6.90	1.58	8.69E-04	-12
Dioxins / Furans							
HxCDD, total	4.19E-04	1.49E-06	7.50	7.70	NA	1.68E-05	-17
HxCDF, total	4.19E-04	1.49E-06	7.50	7.70	NA	1.68E-05	-17
TCDF, total	4.19E-04	1.49E-06	7.50	7.70	NA	1.68E-05	-17
PeCDF, total	4.19E-04	1.49E-06	7.50	7.70	NA	1.68E-05	-17

Notes:

NA - Information not available

mg/L - milligrams per liter
mm HG - millimeters of Mercury
atm-m^3/mole - atmosphere meters cubed per mole

K_{oc} - Organic Carbon Partition Coefficient
K_{ow} - Octanol Water Partition Coefficient

TABLE 6-17

EXPOSURE INPUT PARAMETERS FOR CURRENT ON-SITE WORKERS
SURFACE SOIL, SURFACE WATER AND SEDIMENT
OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

Input Parameter	Media	Units	Input Values	Comments&References
ED, Exposure Duration	All media	years	25	USEPA, 1991a
IR, Ingestion Rate	Soil/Sediment	mg/day	100	USEPA, 1991a
	Surface Water	L / hour	0.05	USEPA, 1989b
EF, Exposure Frequency	Soil/Sediment	days&yr	250	Professional Judgment
	Surface Water	days&yr	52	Professional Judgment
AF, Adherence Factor	Soil/Sediment	mg/cm^2	1.0	USEPA, 1991/1992a
ABS, Dermal Absorption Factor for Organics/Inorganics	Soil/Sediment	unitless	Chemical-specific(1)	USEPA, 1995c
ET, Exposure Time	All media	hrs&day	8	USEPA, 1991a
SA, Surface Area	All media	cm^2/day	4,100(2)	USEPA, 1992a
PC, Permeability Constant	Soil/Sediment	cm/hr	Chemical-Specific	USEPA, 1992a
FI, Fraction Ingested	Soil/Sediment	unitless	0.5	USEPA, 1997a, 1989b
AT_{nc}, Averaging Time - Noncarcinogens	All media	days	9,125	USEPA, 1989b
AT_c, Averaging Time - Carcinogens	All media	days	25,550	USEPA, 1989b
BW, Body Weight	All media	kg	70	USEPA, 1997a, 1989b
RR, Respiration Rate	Soil	m^3/hr	1.25	USEPA, 1997a

Notes:

(1) The The following USEPA Region III default absorbance factors will be applied to estimate dermal intake of COPCs in soil and sediment (USEPA, 1995c):

VOCs (Vapor Pressure > 95.2 mmHg) - 0.05%
VOCs (Vapor Pressure < 95.2 mmHg) - 3%
SVOCs/Pesticides
PCBs - 6%
Dioxins/Furans - 3%
Arsenic - 3.2%
Inorganics - 1%

(2) Skin surface area available for contact assuming an adult wears a sleevless shirt, long pants, and shoes.

TABLE 6-17 (Continued)

EXPOSURE INPUT PARAMETERS FOR CURRENT ON-SITE WORKERS
SURFACE SOIL AND SEDIMENT
OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

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USEPA, 1989b. Risk Assessment Guidance for Superfund Volume I. Human Health Evaluation Manual (Part A) Interim Final. Office of Solid Waste and Emergency Response. Washington, D.C. EPA/540/1-89-002. December 1989.

TABLE 6-18

EXPOSURE INPUT PARAMETERS FOR FUTURE ADULT AND ADOLESCENT TRESPASSERS
SURFACE SOIL, SURFACE WATER, AND SEDIMENT
OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Input Parameter	Media	Units	Input Values		Comments&References
			Adolescent (7-15 years)	Adult	
ED, Exposure Duration	All media	year	4	4	Professional Judgment
EF, Exposure Frequency	All media	days/year	15[1]	5[1]	Professional Judgment
ET, Exposure Time	Soil	hours/day	1	1	Professional Judgment
	Surface Water	hours/day	2.6	2.6	Professional Judgment
IR, Ingestion Rate	Soil/Sediment	mg/day	100	100	USEPA, 1989b
	Surface Water	l / hr	0.5	0.5	USEPA, 1989b
SA, Surface Area	Soil/Sediment	cm^2	3,925[2]	5,300[2]	USEPA, 1997a/1992a
	Surface Water	cm^2	3,925	5,800	USEPA, 1997a/1992a
FI, Fraction Ingested	Soil/Sediment	unitless	0.5	0.5	Professional Judgment
RR, Respiration Rate	Soil	m^3/hour	0.83	0.83	USEPA, 1997a
ABS, Absorption Factor	All media	unitless	Chemical Specific[3]	Chemical Specific[3]	USEPA, 1995c
AF, Adherence Factor	Soil/Sediment	mg&cm^2	1	1	USEPA, 1992a
BW, Body Weight	All media	kg	37	70	USEPA, 1989b
AT_{nc}, Averaging Time - Noncarcinogens	All media	day	1,460	1,460	USEPA, 1989b
AT_c, Averaging Time - Carcinogens	All media	day	25,550	25,550	USEPA, 1989b

Notes:

(1) These sites are densely wooded to the point of being essentially impassable thereby limiting the potential for (and desirability of) trespassing. Given the lack of access and motive for trespassing, the assumed exposure scenarios employed are considered to be conservative

(2) 25 Percent of total body surface area is conservatively assumed to be available for exposure.

(3) The following USEPA Region III default absorbance factors will be applied to estimate dermal intake of COPCs (USEPA, 1995c):

VOCs (Vapor Pressure > 95.2 mmHg) - 0.05%
VOCs (Vapor Pressure < 95.2 mmHg) - 3%
SVOCs/Pesticides - 10%
Dioxins/Furans - 3% (USEPA, 1992a)
PCBs - 6%
Arsenic - 3.2%
Inorganics - 1%

TABLE 6-18 (Continued)

EXPOSURE INPUT PARAMETERS FOR FUTURE ADULT AND ADOLESCENT TRESPASSERS
SURFACE SOIL, SURFACE WATER, AND SEDIMENT
OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

References:

USEPA, 1997a. Exposure Factors Handbook, Volume 1: General Factors. Office of Health and Environmental Assessment, Washington, D.C. EPA/600/8-89-043. August, 1997.

USEPA, 1995c. Assessing Dermal Exposure from Soil. Hazardous Waste Management Division, Office of Superfund Programs. Region III, Philadelphia, Pennsylvania. December 1995.

USEPA, 1992a. Dermal Exposure Assessment: Principles and Applications. Interim Report. Office of Health and Environmental Assessment. Washington, D.C. EPA/600/8-91/011B. January, 1992.

USEPA, 1991a. Risk Assessment Guidance for Superfund Volume I. Human Health Evaluation Manual Supplemental Guidance. "Standard Default Exposure Factors" Interim Final. Office of Solid Waste and Emergency Response. Washington, D.C. OSWER Directive 9285.6-03. March 25, 1991.

USEPA, 1989b. Risk Assessment Guidance for Superfund Volume I. Human Health Evaluation Manual (Part A) Interim Final. Office of Solid Waste and Emergency Response. Washington, D.C. EPA/540/1-89-002. December 1989.

TABLE 6-19

EXPOSURE INPUT PARAMETERS FOR FUTURE CONSTRUCTION WORKERS
SUBSURFACE SOIL
OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Input Parameter	Units	Input Values	Comments&References
ED, Exposure Duration	years	1	USEPA, 1991a
EF, Exposure Frequency	days&year	250	USEPA, 1991a
ET, Exposure Time	hrs&day	8	USEPA, 1991a
IR, Ingestion Rate	mg&day	480	USEPA, 1991a
SA, Exposed Surface Area	cm^2&day	4,100[1]	USEPA, 1992a
RR, Respiration Rate	m^3&hr	1.25	USEPA, 1997a
FI, Fraction Ingested	unitless	1.0	Professional Judgment
ABS, Dermal Absorption Factor	unitless	Chemical-specific[2]	USEPA, 1995c
AF, Adherence Factor	mg&cm^2	1	USEPA, 1991a/1992a
BW, Body Weight	kg	70	USEPA, 1989b
AT_{nc}, Averaging Time - Noncarcinogens	days	365	USEPA, 1989b
AT_c, Averaging Time - Carcinogens	days	25,550	USEPA, 1989b

Notes:

(1) Skin surface area available for contact for an individual wearing a sleeveless shirt, long pants, and shoes.

(2) The following USEPA Region III default absorbance factors will be applied to estimate dermal intake of COPCs in soil (USEPA, 1995c):

VOCs (Vapor Pressure > 95.2 mmHg) - 0.05%
VOCs (Vapor Pressure < 95.2 mmHg) - 3%
SVOCs/Pesticides - 10%
Dioxins/Furans - 3% (USEPA, 1992a)
PCBs - 6%
Arsenic - 3.2%
Inorganics - 1%

TABLE 6-19 (Continued)

EXPOSURE INPUT PARAMETERS FOR FUTURE CONSTRUCTION WORKERS
SUBSURFACE SOIL
OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

References:

USEPA, 1997a. Exposure Factors Handbook, Volume 1: General Factors. Office of Health and Environmental Assessment, Washington, D.C. EPA/600/8-89-043. August, 1997.

USEPA, 1995c. Assessing Dermal Exposure from Soil. Hazardous Waste Management Division, Office of Superfund Programs. Region III, Philadelphia, Pennsylvania. December 1995.

USEPA, 1992a. Dermal Exposure Assessment: Principles and Applications. Interim Report. Office of Health and Environmental Assessment. Washington, D.C. EPA/600/8-91/011B. January, 1992.

USEPA, 1991a. Risk Assessment Guidance for Superfund Volume I. Human Health Evaluation Manual Supplemental Guidance. "Standard Default Exposure Factors" Interim Final. Office of Solid Waste and Emergency Response. Washington, D.C. OSWER Directive 9285.6-03. March 25, 1991.

USEPA, 1989b. Risk Assessment Guidance for Superfund Volume I. Human Health Evaluation Manual (Part A) Interim Final. Office of Solid Waste and Emergency Response. Washington, D.C. EPA/540/1-89-002. December 1989.

TABLE 6-20

EXPOSURE INPUT PARAMETERS FOR FUTURE RESIDENT CHILDREN AND ADULTS
SURFACE SOIL, GROUNDWATER, SURFACE WATER AND SEDIMENT
OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Input Parameter	Media	Units	Input Values		Comments&References
			Child (1 to 6 years)	Adult	
ED, Exposure Duration	All Media	years	4	4	USEPA, 1991a
EF, Exposure Frequency	Soil/Groundwater	days&year	350	350	USEPA, 1991a
	Surface Water /Sediment	days&year	52	52	Professional Judgment
ET, Exposure Time	Soil (Fug. Dusts)	hrs&day	24	24	Professional Judgment
	Groundwater	hrs&day	0.2	0.2	USEPA, 1997a
	Surface Water	hrs&day	2.6	2.6	USEPA, 1989b
IR, Ingestion Rate	Soil/Sediment	mg&day	200	100	USEPA, 1989b
	Groundwater	L&day	1	2	USEPA, 1991a
	Surface Water	L/hour	0.05	0.05	USEPA, 1989b
SA, Surface Area	Soil/Sediment	cm^2	2,006(2)	5,300(2)	USEPA, 1997a and 1992a
	Groundwater	cm^2	8,023 (1)	20,000(1)	USEPA, 1992a
	Surface Water	cm^2	2,006(2)	5,800(2)	USEPA, 1997a and 1992a
RR, Respiration Rate	Air (Fugitive Dusts)	m^3&hr	0.83	0.83	USEPA, 1991a
FI, Fraction Ingested	Soil/Sediment	unitless	1.0	1.0	USEPA, 1989b/ Professional Judgement
ABS, Absorbance Factor	Soil/Sediment	unitless	Chemical Specific(3)	Chemical Specific(3)	USEPA, 1995c
AF, Adherence Factor	Soil/Sediment	mg&cm^2	1	1	USEPA, 1992b
BW, Body Weight	All Media	kg	15	70	USEPA, 1989b
PC, Permeability Constant	Groundwater	cm&hr	Chemical-Specific	Chemical-Specific	USEPA, 1992a
AT_{nc}, Averaging Time - Noncarcinogens	All Media	day	1,460	1,460	USEPA, 1989b
AT_c, Averaging Time - Carcinogens	All Media	day	25,550	25,550	USEPA, 1989b

TABLE 6-20 (Continued)

EXPOSURE INPUT PARAMETERS FOR FUTURE RESIDENT CHILDREN AND ADULTS
SURFACE SOIL, GROUNDWATER, SURFACE WATER AND SEDIMENT
OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Notes:

(1) Represents total body surface area.

(2) Represents approximately 25% of the total body surface area.

(3) The following USEPA Region III default absorbance factors will be applied to estimate dermal intake of COPCs in soil and sediment (USEPA, 1995c):

VOCs (Vapor Pressure > 95.2 mmHg) - 0.05%
VOCs (Vapor Pressure < 95.2 mmHg) - 3%
SVOCs/Pesticides - 10%
Dioxins/Furans - 3% (USEPA, 1992a)
PCBs - 6%
Arsenic - 3.2%
Inorganics - 1%

References:

USEPA, 1997a. Exposure Factors Handbook, Volume 1: General Factors. Office of Health and Environmental Assessment, Washington, D.C. EPA/600/8-89-043. August, 1997.

USEPA, 1995c. Assessing Dermal Exposure from Soil. Hazardous Waste Management Division, Office of Superfund Programs. Region III, Philadelphia, Pennsylvania. December 1995.

USEPA, 1992a. Dermal Exposure Assessment: Principles and Applications. Interim Report. Office of Health and Environmental Assessment. Washington, D.C. EPA/600/8-91/011B. January, 1992.

USEPA, 1991a. Risk Assessment Guidance for Superfund Volume I. Human Health Evaluation Manual Supplemental Guidance. "Standard Default Exposure Factors" Interim Final. Office of Solid Waste and Emergency Response. Washington, D.C. OSWER Directive 9285.6-03. March 25, 1991.

USEPA, 1989b. Risk Assessment Guidance for Superfund Volume I. Human Health Evaluation Manual (Part A) Interim Final. Office of Solid Waste and Emergency Response. Washington, D.C. EPA/540/1-89-002. December 1989.

TABLE 6-21

HUMAN HEALTH RISK ASSESSMENT TOXICITY FACTORS
OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Constituents	Oral CSF $(mg/kg/day)^{-1}$	Inhalation CSF $(mg/kg/day)^{-1}$	Oral RfD $(mg/kg/day)^{-1}$	Inhalation RfD $(mg/kg/day)^{-1}$	Oral Absorption Factors (1)	WOE	Target Organ (Systemic Toxicity)	Critical Effect (Systemic Toxicity)
Volatiles								
Chloroform	0.0061	0.081	0.01	0.000086	100%	B2	Liver	Fatty cyst formation
Tetrachloroethane, 1,1,2,2-	0.2	0.2	0.06	NA	80%	C	NA	NA
Trichloroethene	0.011	0.006	0.006	NA	80%	D	NA	NA
Semivolatiles								
Benzo(a)anthracene	0.73	NA	NA	NA	50%	B2	Liver	NA
Benzo(a)pyrene	7.3	3.1	NA	NA	50%	B2	Liver	NA
Benzo(b)fluoranthene	0.73	NA	NA	NA	50%	B2	Liver	NA
Bis(2-ethylhexyl)phthalate	0.014	0.014	0.02	NA	50%	B2	Liver	Increased relative liver weight
Dibenz(a,h)anthracene	7.3	NA	NA	NA	50%	B2	Liver	NA
Di-n-octylphthalate	NA	NA	0.02	NA	50%	D	Liver/Kidney	Increased weight
Indeno(1,2,3-cd)pyrene	0.73	NA	NA	NA	50%	B2	Liver	NA
Isodrin	NA	NA	NA	NA	50%	D	NA	NA
Pentachlorophenol	0.12	NA	0.03	NA	50%	B2	Liver/Kidney	Liver and Kidney Pathology
Phenol	NA	NA	0.6	NA	50%	D	Fetus	Reduced fetal body weight in rats
Pesticides								
Aldrin	17	17	0.00003	NA	50%	B2	Liver	Liver toxicity
BHC, delta-	1.8	1.8	NA	NA	50%	D	NOEL	NA
DDE, 4,4'-	0.34	NA	NA	NA	50%	B2	NA	NA
DDT, 4,4'-	0.34	0.34	0.0005	NA	50%	B2	Liver	Liver Lesions
Heptachlor	4.5	4.5	0.0005	NA	50%	B2	Liver	Liver weight increases in males
Heptachlor Epoxide	9.1	9.1	0.000013	NA	50%	B2	Liver	Increased liver-to-body weight ratio

TABLE 6-21 (continued)

HUMAN HEALTH RISK ASSESSMENT TOXICITY FACTORS
OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Constituents	Oral CSF $(mg/kg/day)^{-1}$	Inhalation CSF $(mg/kg/day)^{-1}$	Oral RfD $(mg/kg/day)^{-1}$	Inhalation RfD $(mg/kg/day)^{-1}$	Oral Absorption Factors (1)	WOE	Target Organ (Systemic Toxicity)	Critical Effect (Systemic Toxicity)
PCBs								
Aroclor-1260	2	2	NA	NA	89%	B2	NA	NA
Dioxins / Furans								
HxCDD, total	150000	150000	NA	NA	90%	B2	Liver, Immune System	Hepatic tumors, reproductive effects
HxCDF, total	150000	150000	NA	NA	90%	B2	Liver, Immune System	Hepatic tumors, reproductive effects
TCDF, total	150000	150000	NA	NA	90%	B2	Liver, Immune System	Hepatic tumors, reproductive effects
PeCDF, total	150000	150000	NA	NA	90%	B2	Liver, Immune System	Hepatic tumors, reproductive effects
Inorganics								
Aluminum	NA	NA	1	0.001	20%	D	NOEL	NA
Antimony	NA	NA	0.0004	NA	20%	D	Whole Body/Blood	Longevity, blood glucose and cholesterol
Arsenic	1.5	15.1	0.0003	NA	95%	A	Skin	Hyperpigmentation, keratosis, possible vascular complications
Barium	NA	NA	0.07	0.00014	100%	D	Cardiovascular System	Increased blood pressure
Beryllium	NA	8.4	0.002	0.0000057	100%	B2	Lung	NA
Cadmium (soil/sediment)	NA	6.3	0.001	NA	3%	B1	Kidney	Significant proteinuria
Cadmium (water)	NA	6.3	0.0005	NA	5%	B1	Kidney	Significant proteinuria
Chromium	NA	41	0.003	0.00003	100%	A	NOEL	NA
Cobalt	NA	NA	0.06	NA	20%	D	NOEL	NA
Copper	NA	NA	0.04	NA	60%	D	Gastrointestinal System	NA
Iron	NA	NA	0.3	NA	20%	D	Liver	NA
Lead	NA	NA	NA	NA	20%	B2	Hematopoietic, CNS, Cardiovascular, Reproductive	Changes in levels of certain blood enzymes and in aspects of children's' neurobehavioral development
Manganese (non-food)	NA	NA	0.02	0.0000143	5%	D	CNS, Lung	CNS

TABLE 6-21 (continued)

HUMAN HEALTH RISK ASSESSMENT TOXICITY FACTORS
OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Constituents	Oral CSF $(mg/kg/day)^{-1}$	Inhalation CSF $(mg/kg/day)^{-1}$	Oral RfD $(mg/kg/day)^{-1}$	Inhalation RfD $(mg/kg/day)^{-1}$	Oral Absorption Factors (1)	WOE	Target Organ (Systemic Toxicity)	Critical Effect (Systemic Toxicity)
Inorganics (cont)								
Mercury	NA	NA	NA	0.000086	15%	D	CNS	Hand tremor, increases in memory disturbances, some evidence of autonomic dysfunction
Nickel	NA	NA	0.02	NA	4%	D	Kidney, Lungs, CNS	Decreased body and organ weights in rats
Selenium	NA	NA	0.005	NA	20%	D	Clinical selenosis	Clinical selenosis
Silver	NA	NA	0.005	NA	20%	D	Argyria	Argyria
Thallium	NA	NA	0.00007	NA	20%	D	NA	NA
Vanadium	NA	NA	0.007	NA	20%	D	Gastrointestinal disturbances, Discoloration of mouth and tongue	Gastrointestinal disturbances, Discoloration of mouth and tongue
Zinc	NA	NA	0.3	NA	25%	D	Blood	47% decrease in erythrocyte superoxide dismutase (ESOD) concentration in adult females

Notes:

CSF - Cancer Slope Factor
RfD - Reference Dose
WOE - Weight of Evidence
NA - Information not available - not published

A Human carcinogen
B1 Probable human carcinogen - limited evidence
B2 Probable human carcinogen - sufficient evidence
C Possible carcinogen
D Not classifiable as to human carcinogenicity

(1) Oral absorption factors are used to adjust oral CSFs and RfDs to derive dermal toxicity criteria. Oral CSFs are divided by the absorption factor; oral RfDs are multiplied by the factors when evaluating derma lcontact scenarios.

TABLE 6-22
TOTAL SITE INCREMENTAL LIFETIME CANCER RISKS (ILCRs) AND
HAZARD INDICIES (HIs) FOR CURRENT AND FUTURE POTENTIAL HUMAN RECEPTORS
SWMUs 1, 2, AND 45, OUs 3 AND 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Receptors	SWMU 1		SWMU 2		SWMU 45	
	Total ILCR	Total HI	Total ILCR	Total HI	Total ILCR	Total HI
Current On-site Commercial/Maintenance Workers (1)	1.3E-04	3.70	1.2E-04	4.81	1.1E-05	0.04
Current Adult Trespassers (2)	1.7E-06	0.13	1.1E-06	0.08	1.6E-07	0.00
Current Adolescent Trespassers (2)	7.7E-06	0.58	4.8E-06	0.37	7.0E-07	0.01
Future Construction Workers (3)	3.0E-06	1.91	6.0E-06	5.17	6.4E-07	0.22
Future Adult On-site Residents (4) (Organics and Total Inorganics)	6.2E-04	473.58	5.2E-05	9.06	4.5E-04	3.48
Future Adult On-site Residents (4) (Organics and Dissolved Inorganics)	5.2E-04	9.75	4.6E-05	5.09	4.0E-04	0.96
Future Child On-site Residents (4) (Organics and Total Inorganics)	1.3E-03	1101.20	1.9E-04	26.14	9.0E-04	8.31
Future Child On-site Residents (4) (Organics and Dissolved Inorganics)	1.1E-03	25.08	1.7E-04	17.04	8.0E-04	2.45

Notes:

Shading indicates exceedances of USEPA acceptable target risk criteria

(1) Current on-site workers were evaluated for exposures to surface soil and sediment COPCs for all SWMUs and surface water COPCs for SWMUs 1 and 2.

(2) Current adult and adolescent trespassers were evaluated for exposures to surface soil and sediment COPCs at SWMU 45.

(3) Future construction workers were evaluated for exposures to shallow subsurface soil COPCs for all SWMUs.

(4) Future on-site residents were evaluated for exposure to surface soil, groundwater, and sediment COPCs for all SWMUs, and surface water COPCs for SWMUs 1 and 2.

TABLE 6-23
INCREMENTAL LIFETIME CANCER RISKS (ILCRs) AND HAZARD INDICIES (HIs)
FOR CURRENT ON-SITE WORKERS
SWMU 1, OU 3
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Pathway	Current On-Site Workers	
	ILCR	HI
Surface Soil		
Ingestion	1.1E-06	0.16
Dermal Contact	1.5E-05	**1.1**
Inhalation [(1)]	3.2E-08	0.01
Subtotal	1.6E-05	1.3
Surface Water		
Ingestion	3.6E-05	**1.1**
Dermal Contact	9.3E-06	**1.2**
Subtotal	4.5E-05	2.3
Sediment		
Ingestion	1.9E-05	0.01
Dermal Contact	5.4E-05	0.04
Subtotal	7.3E-05	0.05
Total [(2)]	1.3E-04	3.7

Notes:

Bolding indicates exceedances of USEPA acceptable target risk criteria by pathway exposures
Shading indicates exceedances of USEPA acceptable target risk criteria by subtotal and total risk value

(1) Inhalation of fugative dust.

(2) Total ILCR exceeded USEPA's target risk range due to dermal exposure to total HxCDD and total HxCDF in sediment (45.1% and 40.1% risk contribution, respectively). The individual ILCRs for both total HxCDD and total HxCDF were less than 1×10^{-4}.

Total HI exceeded USEPA's target risk value of 1.0 due to dermal contact with thallium in surface water (95.1% risk contribution), ingestion exposure to thallium and arsenic in surface water (80.7% and 19.3% risk contribution, respectively), and dermal contact with manganese, iron, and cadmium in surface soil (39.2%, 31.9%, and 16.3% risk contribution, respectively). Only the individual HQ for dermal contact with thallium in surface water was greater than 1.0.

TABLE 6-24
INCREMENTAL LIFETIME CANCER RISKS (ILCRs) AND HAZARD INDICIES (HIs)
FOR CURRENT ON-SITE WORKERS
SWMU 2, OU 3
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Pathway	Current On-Site Workers	
	ILCR	HI
Surface Soil		
Ingestion	1.9E-05	0.34
Dermal Contact	5.9E-05	**1.6**
Inhalation [(1)]	6.1E-08	0.01
Subtotal	7.8E-05	2.0
Surface Water		
Ingestion	3.4E-08	**2.3**
Dermal Contact	3.8E-08	0.47
Subtotal	7.2E-08	2.8
Sediment		
Ingestion	1.0E-05	0.01
Dermal Contact	3.0E-05	0.02
Subtotal	4.0E-05	0.03
Total [(2)]	1.2E-04	4.8

Notes:

Bolding indicates exceedances of USEPA acceptable target risk criteria by pathway exposures
Shading indicates exceedances of USEPA acceptable target risk criteria by subtotal and total risk value

(1) Inhalation of fugative dust.

(2) Total ILCR exceeded USEPA's target risk range due to dermal contact with arsenic, total HxCDD and total HxCDF in surface soil (42.9%, 25.6%, and 19.5% risk contribution, respectively) and dermal contact with total HxCDD and total HxCDF in sediment (64.3% and 24.4% risk contribution, respectively). The individual ILCRs for these were all within the acceptable risk range.

Total HI exceeded USEPA's target risk value of 1.0 due to ingestion exposure to thallium, chromium and selenium in surface water (59.8%, 24.0% and 12.9% risk contribution, respectively) and dermal contact with iron and mananese in surface soil (47.1% and 25.4% risk contribution, respectively). Only the HQ for thallium in surface water was greater than 1.0.

TABLE 6-25
INCREMENTAL LIFETIME CANCER RISKS (ILCRs) AND HAZARD INDICIES (HIs)
FOR FUTURE CONSTRUCTION WORKERS
SWMU 1, OU 3
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Pathway	Future Construction Workers	
	ILCR	HI
Subsurface Soil		
Ingestion	2.3E-06	**1.2**
Dermal Contact	6.6E-07	0.74
Inhalation [(1)]	1.4E-09	0.01
Subtotal	3.0E-06	1.9
Total [(2)]	3.0E-06	1.9

Notes:

Bolding indicates exceedances of USEPA acceptable target risk criteria by pathway exposures
Shading indicates exceedances of USEPA acceptable target risk criteria by subtotal and total risk value

[(1)] Inhalation of fugative dust.

[(2)] Total HI exceeded USEPA's target risk value of 1.0 due to ingestion exposure to iron, manganese, and aluminum in subsurface soil (53.6%, 18.1%, and 10.9% risk contribution, respectively). The individual HQs for iron, manganese, and aluminum were all less than 1.0.

	Potential Magnitude for Over ! Estimation of Risks	Potential Magnitude for Under ! Estimation of Risks	Potential Magnitude for Over or Under ! Estimation of Risks
risks without consideration of synergism, antagonism, promotion and initiation.			
Assumption of additivity in the estimation of systemic health effects without consideration of synergism, antagonism, etc.			Moderate
Additivity of risks by individual exposure pathways (dermal, ingestion and inhalation)			Low
Compounds not quantitatively evaluated.		Low	

Notes:

Low ! Assumptions categorized as ?low@ may effect risk estimates by less than one order of magnitude.

Moderate ! Assumptions categorized as ?moderate@ may effect estimates of risk by between one and two orders of magnitude.

High ! Assumptions categorized as ?high@ may effect estimates of risk by more than two orders of magnitude.

Source: Risk Assessment Guidance for Superfund, Volume 1, Part A: Human Health Evaluation Manual. USEPA, 1989b.

TABLE 6-26
INCREMENTAL LIFETIME CANCER RISKS (ILCRs) AND HAZARD INDICIES (HIs)
FOR FUTURE CONSTRUCTION WORKERS
SWMU 2, OU 3
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Pathway	Future Construction Workers	
	ILCR	HI
Subsurface Soil		
Ingestion	4.2E-06	**3.5**
Dermal Contact	1.8E-06	**1.7**
Inhalation [(1)]	2.2E-09	0.01
Subtotal	6.0E-06	5.2
Total [(2)]	6.0E-06	5.2

Notes:

Bolding indicates exceedances of USEPA acceptable target risk criteria by pathway exposures
Shading indicates exceedances of USEPA acceptable target risk criteria by subtotal and total risk value

[(1)] Inhalation of fugative dust.

[(2)] Total HI exceeded USEPA's target risk value of 1.0 due to ingestion exposure to iron in subsurface soil (75.9% risk contribution) and dermal contact with iron and manganese in subsurface soil (66.7% and 17.2% risk contribution, respectively). The individual HQs for dermal contact and ingestion of iron were greater than 1.0.

TABLE 6-27
INCREMENTAL LIFETIME CANCER RISKS (ILCRs) AND HAZARD INDICIES (HIs)
FOR FUTURE ADULT AND YOUNG CHILD RECEPTORS
SWMU 1, OU 3
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Pathway	Residents							
	Adult				Young Child			
	ILCR		HI		ILCR		HI	
	Total Inorg	Diss Inorg	Total Inorg	Diss Inorg	Total Inorg	Diss Inorg	Total Inorg	Diss Inorg
Surface Soil								
Ingestion	4.9E-07	4.9E-07	0.45	0.45	4.6E-06	4.6E-06	**4.2**	**4.2**
Dermal Contact	4.4E-06	4.4E-06	**2.1**	**2.1**	7.7E-06	7.7E-06	**3.6**	**3.6**
Inhalation (1)	1.4E-08	1.4E-08	0.02	0.02	6.6E-08	6.6E-08	0.10	0.10
Subtotal	4.9E-06	4.9E-06	2.5	2.5	1.2E-05	1.2E-05	7.9	7.9
Groundwater								
Ingestion	**2.2E-04**	**1.2E-04**	**456**	**5.8**	**5.2E-04**	**2.9E-04**	**1065**	**14**
Dermal Contact	**3.8E-04**	**3.8E-04**	**14**	0.34	**7.1E-04**	**7.0E-04**	**26**	0.64
Inhalation (2)	4.0E-08	4.0E-08	0.06	0.06	NA	NA	NA	NA
Subtotal	6.0E-04	5.0E-04	470	6.2	1.2E-03	9.9E-04	1090.36	14
Surface Water								
Ingestion	1.9E-06	1.9E-06	0.37	0.37	8.6E-06	8.6E-06	**1.7**	**1.7**
Dermal Contact	6.8E-07	6.8E-07	0.55	0.55	1.1E-06	1.1E-06	0.89	0.89
Subtotal	2.5E-06	2.5E-06	0.92	0.92	9.7E-06	9.7E-06	2.6	2.6
Sediment								
Ingestion	6.1E-06	6.1E-06	0.02	0.02	5.7E-05	5.7E-05	0.22	0.22
Dermal Contact	1.1E-05	1.1E-05	0.05	0.05	2.0E-05	2.0E-05	0.09	0.09
Subtotal	1.7E-05	1.7E-05	0.07	0.07	7.7E-05	7.7E-05	0.31	0.31
Total (3)	6.2E-04	5.2E-04	474	9.7	1.3E-03	1.1E-03	1101	25

NA - Not analyzed for this receptor

Bolding indicates exceedances of USEPA acceptable target risk criteria by pathway exposures.
Shading indicates exceedances of USEPA acceptable target risk criteria by subtotal and total risk value.

TABLE 6-27 (continued)
INCREMENTAL LIFETIME CANCER RISKS (ILCRs) AND HAZARD INDICIES (HIs)
FOR FUTURE ADULT AND YOUNG CHILD RECEPTORS
SWMU 1, OU 3
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Notes:

(1) Inhalation of fugative dust.

(2) Inhalation of volatile organics while showering.

(3) Organics plus total inorganics

Total ILCRs exceeded USEPA's target risk range due to dermal exposures to total HxCDD in groundwater (96.9% risk contribution), and ingestion exposures to total HxCDD and total arsenic in groundwater (52.7% and 44.4% risk contribution, respectively). The individual ILCRs for adult ingestion exposures to total arsenic were less than 1×10^{-4}. All others were greater than 1×10^{-4}.

Total HI exceeded USEPA's target risk value of 1.0 due to ingestion and dermal exposures to total thallium in groundwater (97.7% and 97.8% risk contribution, respectively), accidental ingestion of iron and manganese in the surface soil (55.4% and 17.0% risk contribution, respectively), dermal contact with manganese and iron in the surface soil (39.2% and 31.9% risk contribution, respectively) and accidental ingestion of thallium and arsenic in surface water (80.7 and 19.3% risk contribution, respectively). The individual HQs for total thallium in groundwater (both ingestion and dermal, both adult and young child), young child ingestion of iron in surface soil, young child dermal contact with manganese and iron in surface soil, and young child ingestion of thallium in surface water were greater than 1.0. All other individual HQs were below the target risk value of 1.0.

Organics plus dissolved inorganics

Total ILCRs exceeded USEPA's target risk range due to dermal and ingestion exposures to total HxCDD in groundwater (97.1% and 94.6% risk contribution, respectively). The individual ILCRs for total HxCDD were greater than 1×10^{-4}.

Total HI exceeded USEPA's target risk value of 1.0 due to ingestion of dissolved thallium and dissolved cadmium in groundwater (66.8% and 20.2% risk contribution, respectively), accidental ingestion of iron and manganese in the surface soil (55.4% and 17.0% risk contribution, respectively), dermal contact with manganese and iron in the surface soil (39.2% and 31.9% risk contribution, respectively) and accidental ingestion of thallium and arsenic in surface water (80.7 and 19.3% risk contribution, respectively). The individual HQs for dissolved thallium and dissolved cadmium in groundwater (both adult and young child), young child ingestion of iron in surface soil, young child dermal contact with manganese and iron in surface soil, and young child ingestion of thallium in surface water were greater than 1.0. All other individual HQs were below the target risk value of 1.0.

TABLE 6-28
INCREMENTAL LIFETIME CANCER RISKS (ILCRs) AND HAZARD INDICIES (HIs)
FOR FUTURE ADULT AND YOUNG CHILD RECEPTORS
SWMU 2, OU 3
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Pathway	Residents							
	Adult				Young Child			
	ILCR		HI		ILCR		HI	
	Total Inorg	Diss Inorg	Total Inorg	Diss Inorg	Total Inorg	Diss Inorg	Total Inorg	Diss Inorg
Surface Soil								
Ingestion	8.6E-06	8.6E-06	0.96	0.96	8.1E-05	8.1E-05	**9.0**	**9.0**
Dermal Contact	1.7E-05	1.7E-05	**2.9**	**2.9**	3.0E-05	3.0E-05	**5.2**	**5.2**
Inhalation (1)	2.7E-08	2.7E-08	0.02	0.02	1.3E-07	1.3E-07	0.10	0.10
Subtotal	2.6E-05	2.6E-05	3.9	3.9	1.1E-04	1.1E-04	14	14
Groundwater								
Ingestion	1.2E-05	5.0E-06	**4.4**	0.60	2.7E-05	1.2E-05	**10**	**1.4**
Dermal Contact	5.5E-06	5.4E-06	0.15	0.00	1.0E-05	1.0E-05	0.28	0.10
Inhalation (2)	6.3E-08	6.3E-08	0.15	0.15	NA	NA	NA	NA
Subtotal	1.7E-05	1.1E-05	4.7	0.75	3.7E-05	2.2E-05	11	1.5
Surface Water								
Ingestion	3.7E-10	3.7E-10	0.16	0.16	1.7E-09	1.7E-09	0.74	0.74
Dermal Contact	2.8E-09	2.8E-09	0.22	0.22	4.6E-09	4.6E-09	0.35	0.35
Subtotal	3.2E-09	3.2E-09	0.37	0.37	6.3E-09	6.3E-09	1.1	1.1
Sediment								
Ingestion	3.3E-06	3.3E-06	0.01	0.01	3.1E-05	3.1E-05	0.14	0.14
Dermal Contact	6.2E-06	6.2E-06	0.03	0.03	1.1E-05	1.1E-05	0.05	0.05
Subtotal	9.5E-06	9.5E-06	0.04	0.04	4.2E-05	4.2E-05	0.19	0.19
Total (3)	5.2E-05	4.6E-05	9.1	5.1	1.9E-04	1.7E-04	26	17

NA - Not analyzed for this receptor

Bolding indicates exceedances of USEPA acceptable target risk criteria by pathway exposures.
Shading indicates exceedances of USEPA acceptable target risk criteria by subtotal and total risk value.
0.00 indicates that the number was less than 0.01

TABLE 6-28 (continued)
INCREMENTAL LIFETIME CANCER RISKS (ILCRs) AND HAZARD INDICIES (HIs)
FOR FUTURE ADULT AND YOUNG CHILD RECEPTORS
SWMU 2, OU 3
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Notes:

(1) Inhalation of fugative dust.

(2) Inhalation of volatile organics while showering.

(3) Organics plus total inorganics

Total ILCRs exceeded USEPA's target risk range due to accidental ingestion of arsenic, total HxCDD, and total HxCDF in surface soil (47.4%, 28.6%, and 21.8% risk contribution, respectively). The individual ILCRs were all less than the USEPA's target risk of 1×10^{-4}.

Total HI exceeded USEPA's target risk value of 1.0 due to accidental ingestion of total vanadium and total antimony in groundwater (38.7% and 30.3% risk contribution, respectively), accidental ingestion of iron and arsenic in the surface soil (54.5% and 16.6% risk contribution, respectively), and dermal contact with iron and manganese in the surface soil (47.1% and 25.4% risk contribution, respectively). The individual HQs for groundwater ingestion exposures to total vanadium and total antimony (both adult and child), young child ingestion exposures to iron and arsenic in surface soil, adult dermal exposures to iron, and young child dermal exposures to iron and manganese in surface soil were greater than 1.0. All other individual HQs were below the target risk value of 1.0.

Organics plus dissolved inorganics

Total ILCRs exceeded USEPA's target risk range due to accidental ingestion of arsenic, total HxCDD, and total HxCDF in surface soil (47.4%, 28.6%, and 21.8% risk contribution, respectively). The individual ILCRs were all less than the USEPA's target risk of 1×10^{-4}.

Total HI exceeded USEPA's target risk value of 1.0 due to accidental ingestion of iron and arsenic in the surface soil (54.5% and 16.6% risk contribution, respectively), dermal contact with iron and manganese in the surface soil (47.1% and 25.4% risk contribution, respectively), and accidental ingestion of dissolved cadmium, dissolved vanadium, and dissolved barium in groundwater (26.8%, 25.3% and 15.7% risk contribution, respectively). The individual HQs for young child ingestion exposures to iron and arsenic in surface soil, adult dermal exposures to iron in surface soil, and young child dermal exposures to iron and manganese in surface soil were greater than 1.0. All other individual HQs were below the target risk value of 1.0.

TABLE 6-29
INCREMENTAL LIFETIME CANCER RISKS (ILCRs) AND HAZARD INDICIES (HIs)
FOR FUTURE ADULT AND YOUNG CHILD RECEPTORS
SWMU 45, OU 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Pathway	Residents							
	Adult				Young Child			
	ILCR		HI		ILCR		HI	
	Total Inorg	Diss Inorg	Total Inorg	Diss Inorg	Total Inorg	Diss Inorg	Total Inorg	Diss Inorg
Surface Soil								
Ingestion	3.9E-07	3.9E-07	0.03	0.03	3.6E-06	3.6E-06	0.27	0.27
Dermal Contact	6.9E-07	6.9E-07	0.03	0.03	1.2E-06	1.2E-06	0.06	0.06
Inhalation (1)	1.5E-08	1.5E-08	0.00	0.00	7.0E-08	7.0E-08	0.00	0.00
Subtotal	1.1E-06	1.1E-06	0.06	0.06	4.9E-06	4.9E-06	0.33	0.33
Groundwater								
Ingestion	**1.3E-04**	8.3E-05	**3.3**	0.85	**3.0E-04**	**1.9E-04**	**7.8**	**2.0**
Dermal Contact	**3.2E-04**	**3.2E-04**	0.06	0.02	**6.0E-04**	**5.9E-04**	0.10	0.04
Inhalation (2)	NE	NE	NE	NE	NE	NE	NE	NE
Subtotal	4.5E-04	4.0E-04	3.4	0.88	8.9E-04	7.9E-04	7.9	2.0
Sediment								
Ingestion	2.5E-07	2.5E-07	0.01	0.01	2.3E-06	2.3E-06	0.06	0.06
Dermal Contact	1.4E-06	1.4E-06	0.01	0.01	2.5E-06	2.5E-06	0.02	0.02
Subtotal	1.7E-06	1.7E-06	0.02	0.02	4.8E-06	4.8E-06	0.08	0.08
Total (3)	4.5E-04	4.0E-04	3.5	0.96	9.0E-04	8.0E-04	8.3	2.4

NE - Not evaluated because volatiles were not retained as COPCs.

Bolding indicates exceedances of USEPA acceptable target risk criteria by pathway exposures.
Shading indicates exceedances of USEPA acceptable target risk criteria by subtotal and total risk value.
0.00 indicates that the number was less than 0.01

TABLE 6-29 (continued)
INCREMENTAL LIFETIME CANCER RISKS (ILCRs) AND HAZARD INDICIES (HIs)
FOR FUTURE ADULT AND YOUNG CHILD RECEPTORS
SWMU 45, OU 5
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

Notes:

(1) Inhalation of fugative dust.

(2) Inhalation of volatile organics while showering.

(3) Organics plus total inorganics

Total ILCRs exceeded USEPA's target risk range due to dermal exposures to benzo(a)pyrene in groundwater (92.6% risk contribution), and ingestion exposures to benzo(a)pyrene and total arsenic in groundwater (48.3% and 45.7% risk contribution, respectively). The individual ILCRs for adult ingestion exposures to benzo(a)pyrene and total arsenic were less than 1×10^{-4}. All others were greater than 1×10^{-4}.

Total HI exceeded USEPA's target risk value of 1.0 due to ingestion exposures to total arsenic and total chromium in groundwater (67.7% and 18.3% risk contribution, respectively). The individual HQ for adult ingestion exposures to total chromium in groundwater was below the target risk value of 1.0. All other individual HQs exceeded 1.0.

Organics plus dissolved inorganics

Total ILCRs exceeded USEPA's target risk range due to dermal exposures to benzo(a)pyrene in groundwater (92.7% risk contribution), and ingestion exposures to benzo(a)pyrene and dissolved arsenic in groundwater (74.2% and 16.6% risk contribution, respectively). The individual ILCR for adult ingestion exposures to benzo(a)pyrene exceeded 1×10^{-4}. All others were less than 1×10^{-4}.

Total HI exceeded USEPA's target risk value of 1.0 due to ingestion exposures to dissolved arsenic, dissolved antimony, and dissolved cadmium in groundwater (62.6%, 16.3% and 10.6% risk contribution, respectively). The individual HQ for young child ingestion exposures to dissolved arsenic in groundwater exceeded the target risk value of 1.0. All other individual HQs were less than 1.0.

TABLE 6-30

SUMMARY OF UNCERTAINTIES IN THE RESULTS OF THE HUMAN HEALTH RISK ASSESSMENT OUs 3 AND 5 NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

	Potential Magnitude for Over ! Estimation of Risks	Potential Magnitude for Under ! Estimation of Risks	Potential Magnitude for Over or Under ! Estimation of Risks
Environmental Sampling and Analysis Sufficient samples may not have been taken to characterize the media being evaluated.			Low
Systematic or random errors in the chemical analysis may yield erroneous data.			Low
Selection of COPCs The use of USEPA Region III COC screening values in selecting COPCs in soil and groundwater.			Low
The use of USEPA Region III tapwater COC screening values and the AWQC in selecting COPCs in surface water for human health evaluation.	Moderate		
The use of SSVs and USEPA Region III residential COPC screening values in selecting COPCs in sediment for human health evaluation.	Moderate		
Exposure Assessment The standard assumptions regarding body weight, exposure period, life expectancy, population characteristics, and lifestyle may not be representative of the actual exposure situations.			Moderate
The use of the 95% UCL of the arithmetic mean in the estimation of the soil, groundwater and sediment exposure point concentrations.	Low		
Using one-half of the CRQL as a surrogate concentration in the derivation of the 95% UCL.			Moderate
Assessing future residential property use when the likelihood of residential development is low.	High		
The amount of media intake is assumed to be constant and representative of any actual exposure.			Low
Toxicological Assessment Toxicological indices derived from high dose animal studies, extrapolated to low dose human exposure.	Moderate		
Lack of promulgated toxicological indices for the inhalation pathway.		Low	
Adjusting toxicity values for a difference in toxicity between an administered dose and an absorbed dose.	Moderate		

TABLE 6-30 (Continued)

SUMMARY OF UNCERTAINTIES IN THE RESULTS OF THE HUMAN HEALTH RISK ASSESSMENT OUs 3 AND 5 NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

	Potential Magnitude for Over ! Estimation of Risks	Potential Magnitude for Under ! Estimation of Risks	Potential Magnitude for Over or Under ! Estimation of Risks
Risk Characterization Assumption of additivity in the quantitation of cancer risks without consideration of synergism, antagonism, promotion and initiation.			Moderate
Assumption of additivity in the estimation of systemic health effects without consideration of synergism, antagonism, etc.			Moderate
Additivity of risks by individual exposure pathways (dermal, ingestion and inhalation)			Low
Compounds not quantitatively evaluated.		Low	

Notes:

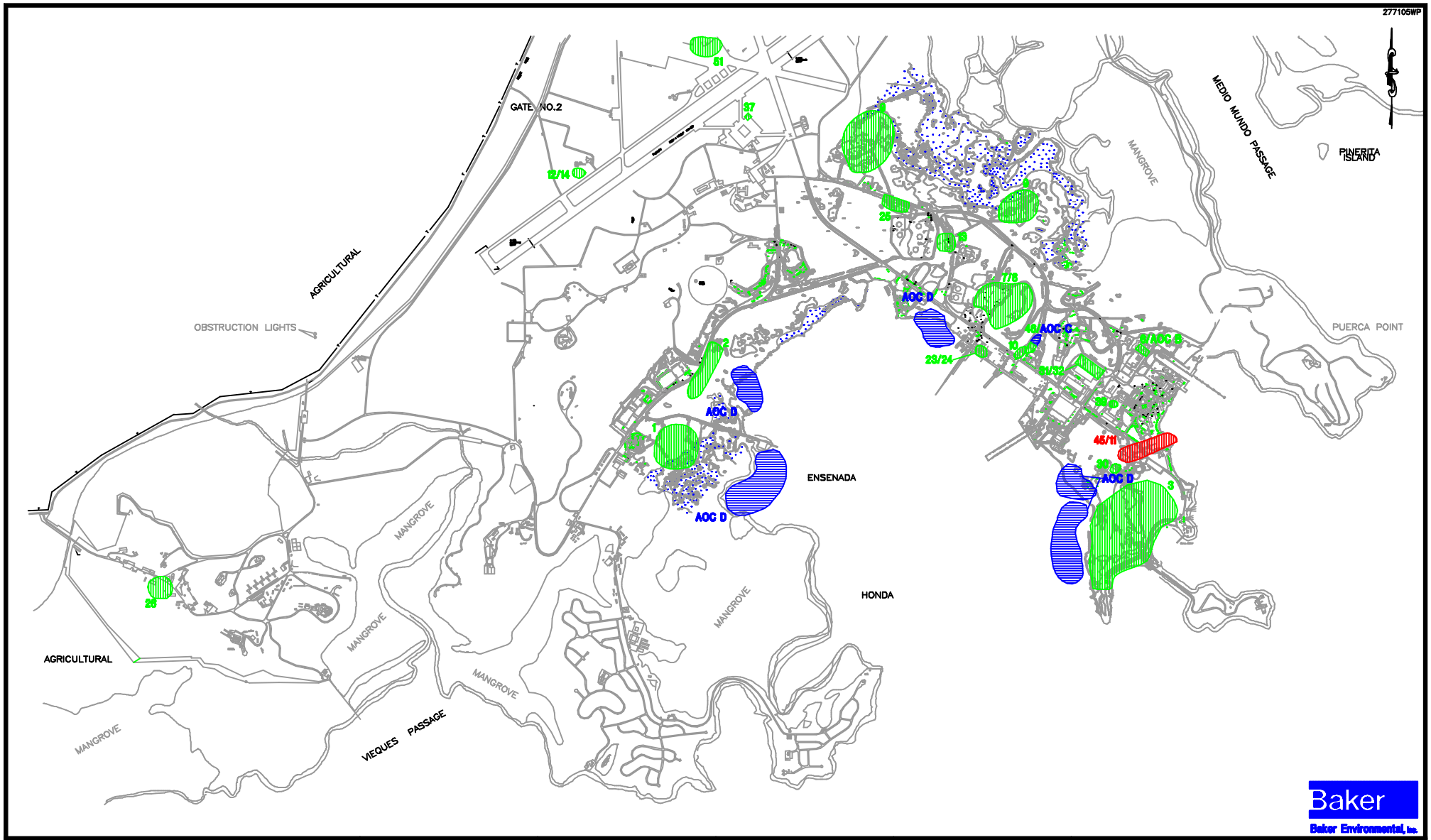
Low ! Assumptions categorized as ?low" may effect risk estimates by less than one order of magnitude.

Moderate ! Assumptions categorized as ?moderate" may effect estimates of risk by between one and two orders of magnitude.

High ! Assumptions categorized as ?high" may effect estimates of risk by more than two orders of magnitude.

Source: Risk Assessment Guidance for Superfund, Volume 1, Part A: Human Health Evaluation Manual. USEPA, 1989b.

FIGURES



LEGEND

13 – SWMUs

AOC D – AOCs

45/11 – AREA WHICH THIS INVESTIGATION PERTAINS TO

SOURCE: LANTDIV, FEB. 1992/1997

2500 0 1250 2500

1 inch = 2500 ft.

FIGURE 1
SWMU/AOC LOCATION MAP
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

277207WP

4.5 0 2.25 4.5

1 inch = 4.5 miles

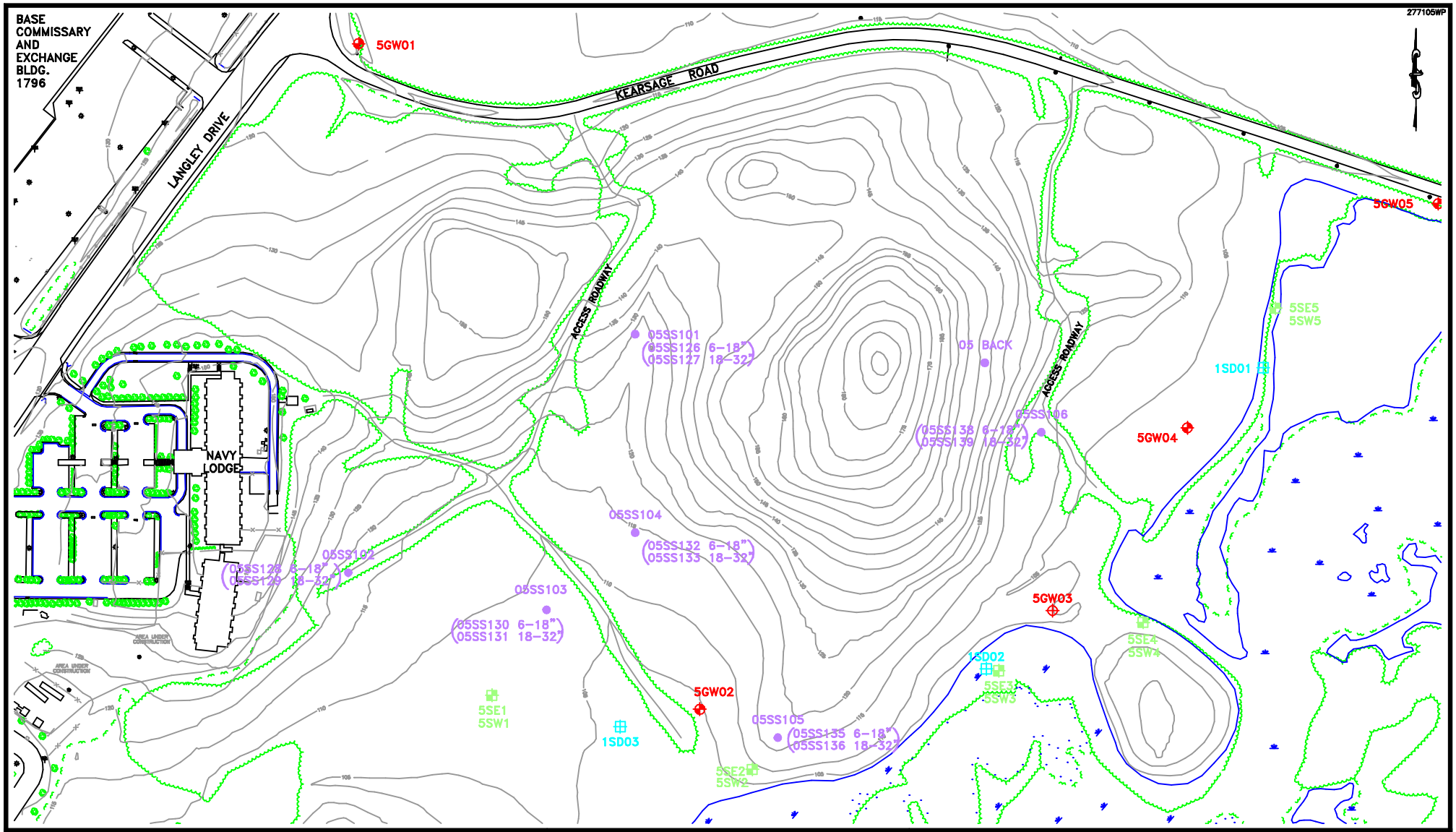
Baker

Baker Environmental, Inc.

FIGURE 2-1
REGIONAL LOCATION MAP

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

SOURCE: H.M. GOUSHA, 1988.



LEGEND

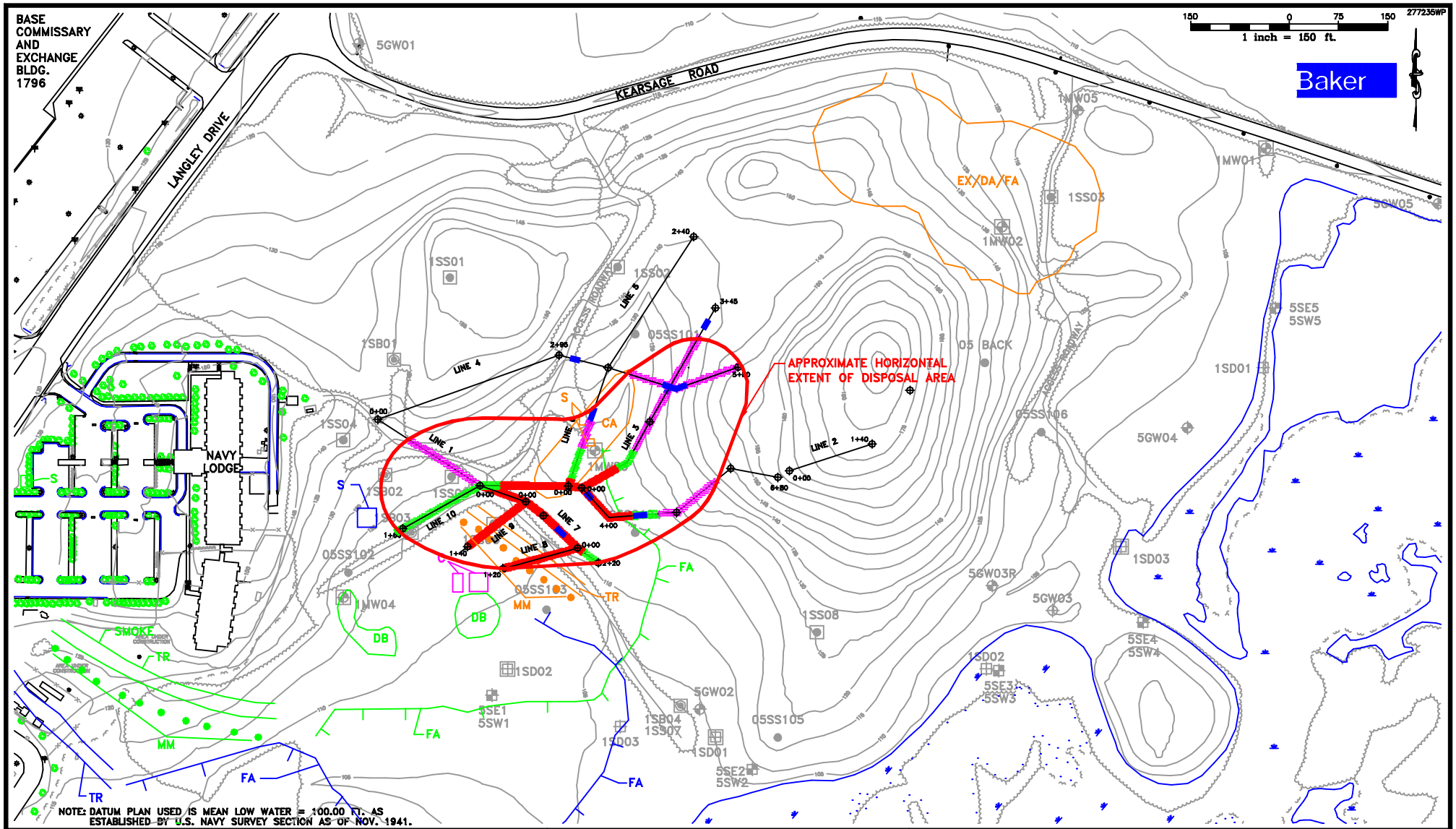
- ⊕ – REPORTED LOCATION OF 5GW03 (NOT LOCATED DURING RFI FIELD WORK)
- ◆ – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- ▣ – SEDIMENT/SURFACE WATER SAMPLE (CONFIRMATION STUDY)
- ● – SOIL SAMPLING LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- ⊞ – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING SYSTEM)

150 0 75 150

1 inch = 150 ft.

Baker

FIGURE 2–2
EXISTING CONDITIONS
OU #3 – SWMU 1
ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- 110 — SURFACE ELEVATION CONTOUR
- JANUARY 8, 1951 AERIAL PHOTO INTREPRETATION
- JUNE 18, 1958 AERIAL PHOTO INTERPRETATION
- OCTOBER 29, 1958 AERIAL PHOTO INTERPRETATION
- JANUARY 15, 1964 AERIAL PHOTO INTERPRETATION

LEGEND

- GPS CONTROL POINT
- 05SS102 SOIL SAMPLE LOCATION
- GEOPHYSICAL LINES OF COVERAGE EM AND MAG

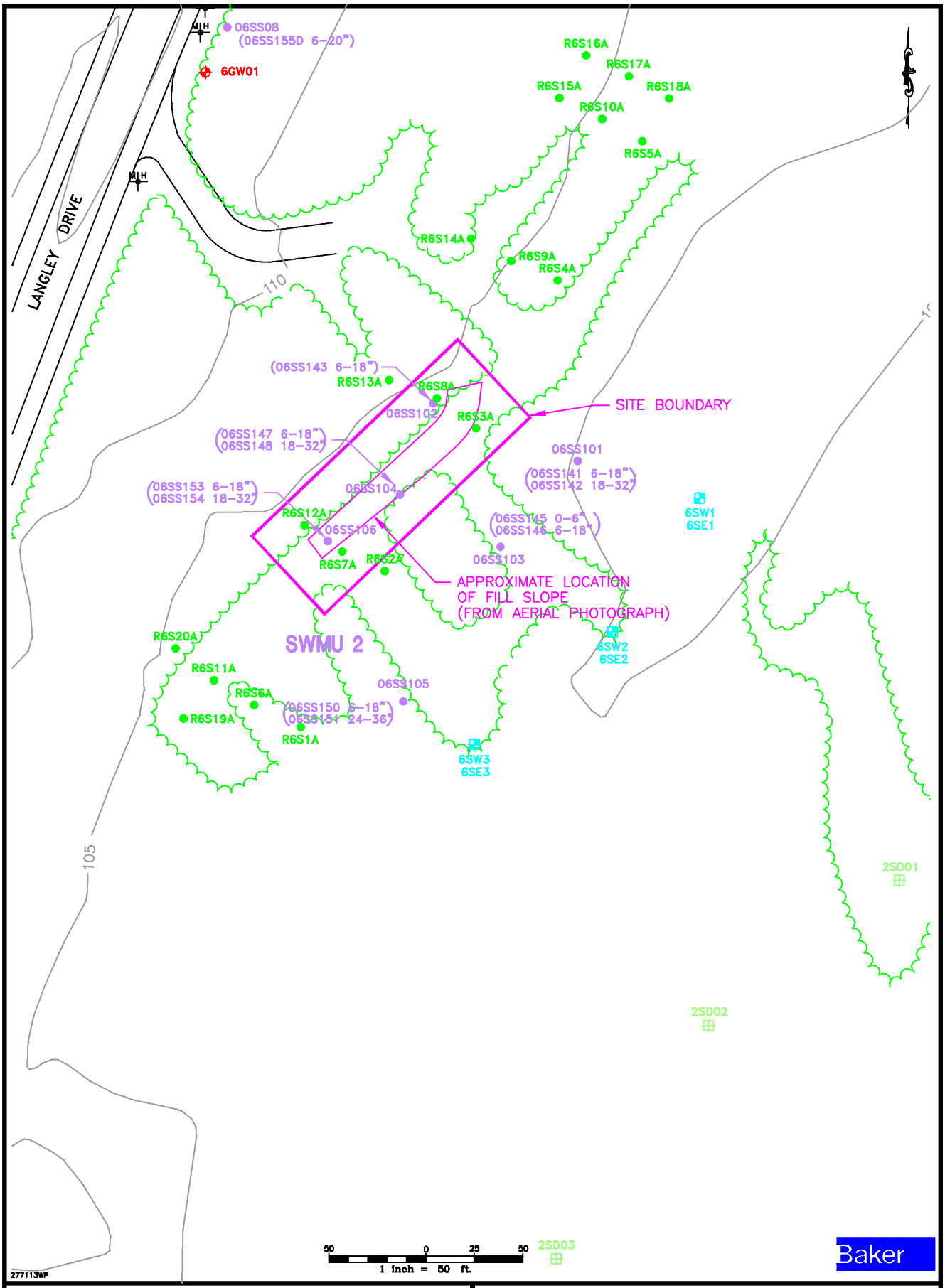
CONDUCTIVITY LEVELS

- > 20 mmhos/m
- > 50 mmhos/m
- > 100 mmhos/m
- AREA OF BURIED FERROUS METAL

>20 mmhos/m INTERPRETED LIMITS OF DISPOSAL

SOURCE: BAKER ENVIRONMENTAL GPS SURVEY, NOV. 1992

FIGURE 2-3
GEOPHYSICAL RESULTS AND AERIAL PHOTO INTERPRETATION RESULTS
OU #3 – SWMU 1
ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

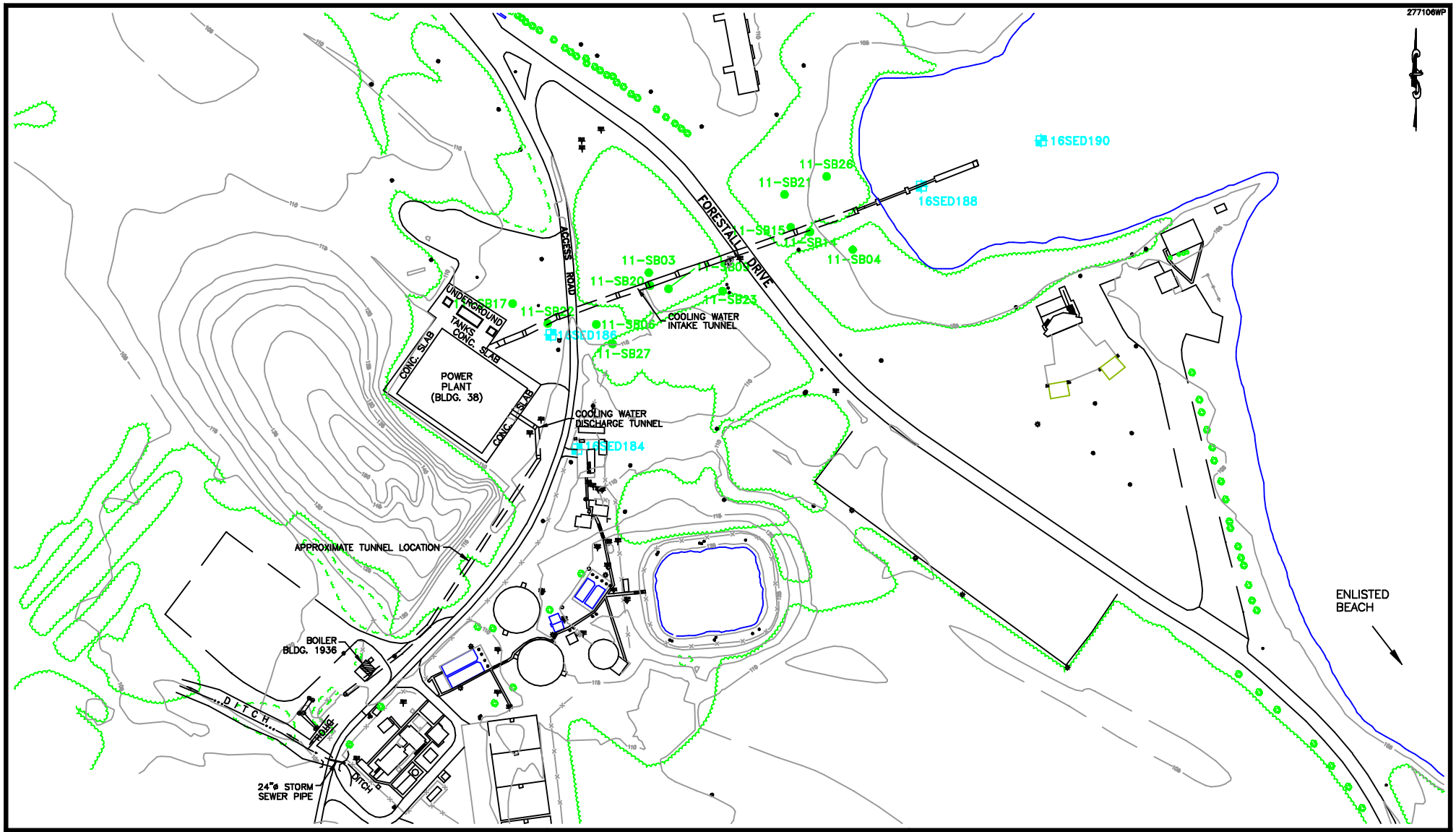


LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLING LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SOIL SAMPLING LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

FIGURE 2-4
EXISTING CONDITIONS
OU #3 – SWMU 2
LANGLEY DRIVE DISPOSAL SITE

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

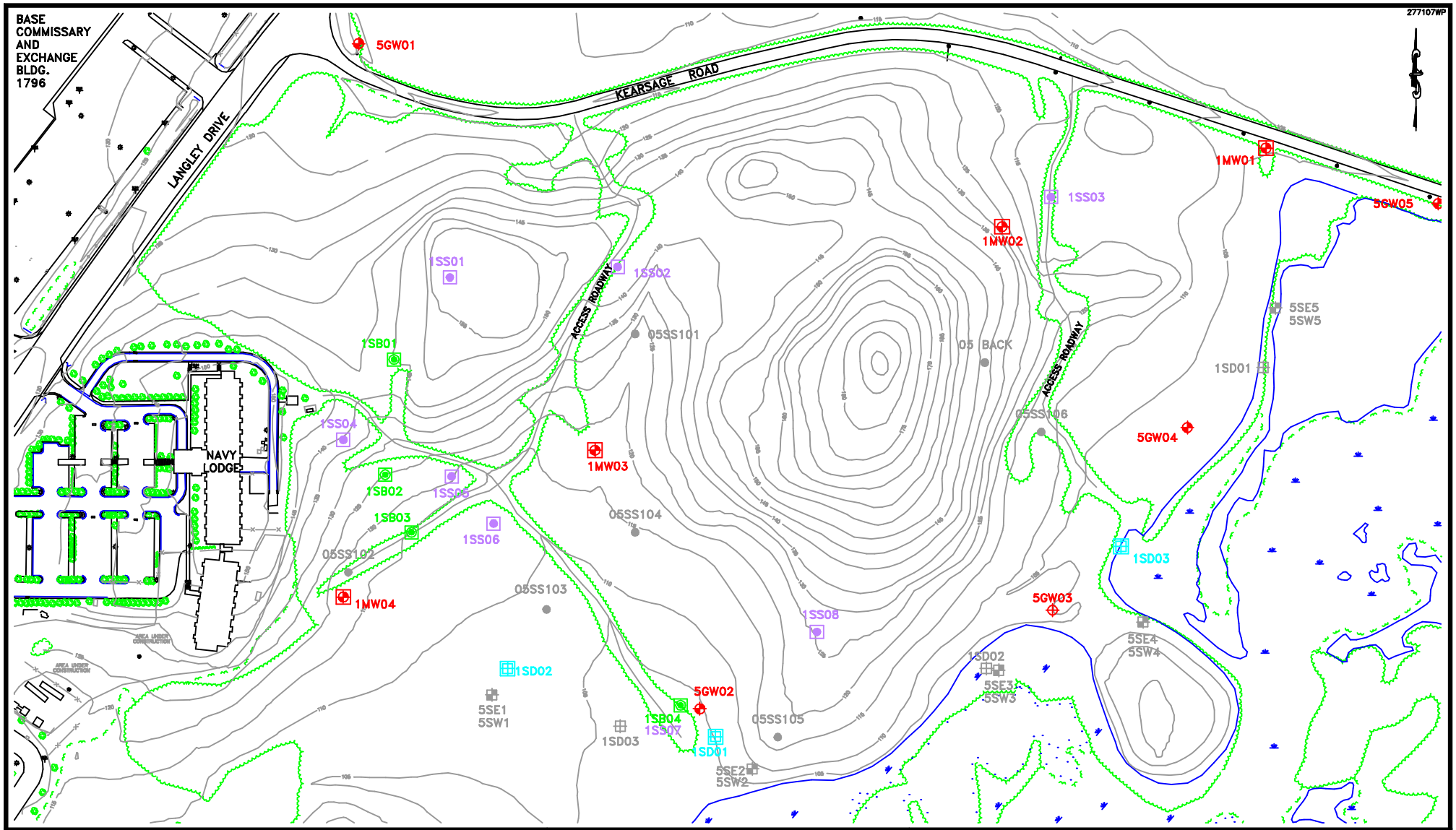
- SEDIMENT SAMPLE LOCATION
- SURFACE ELEVATION CONTOUR

150 0 75 150

1 inch = 150 ft.

Baker

FIGURE 2-5
EXISTING CONDITIONS
OU #5 - SWMU 45
BUILDING 38 EXTERIOR
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

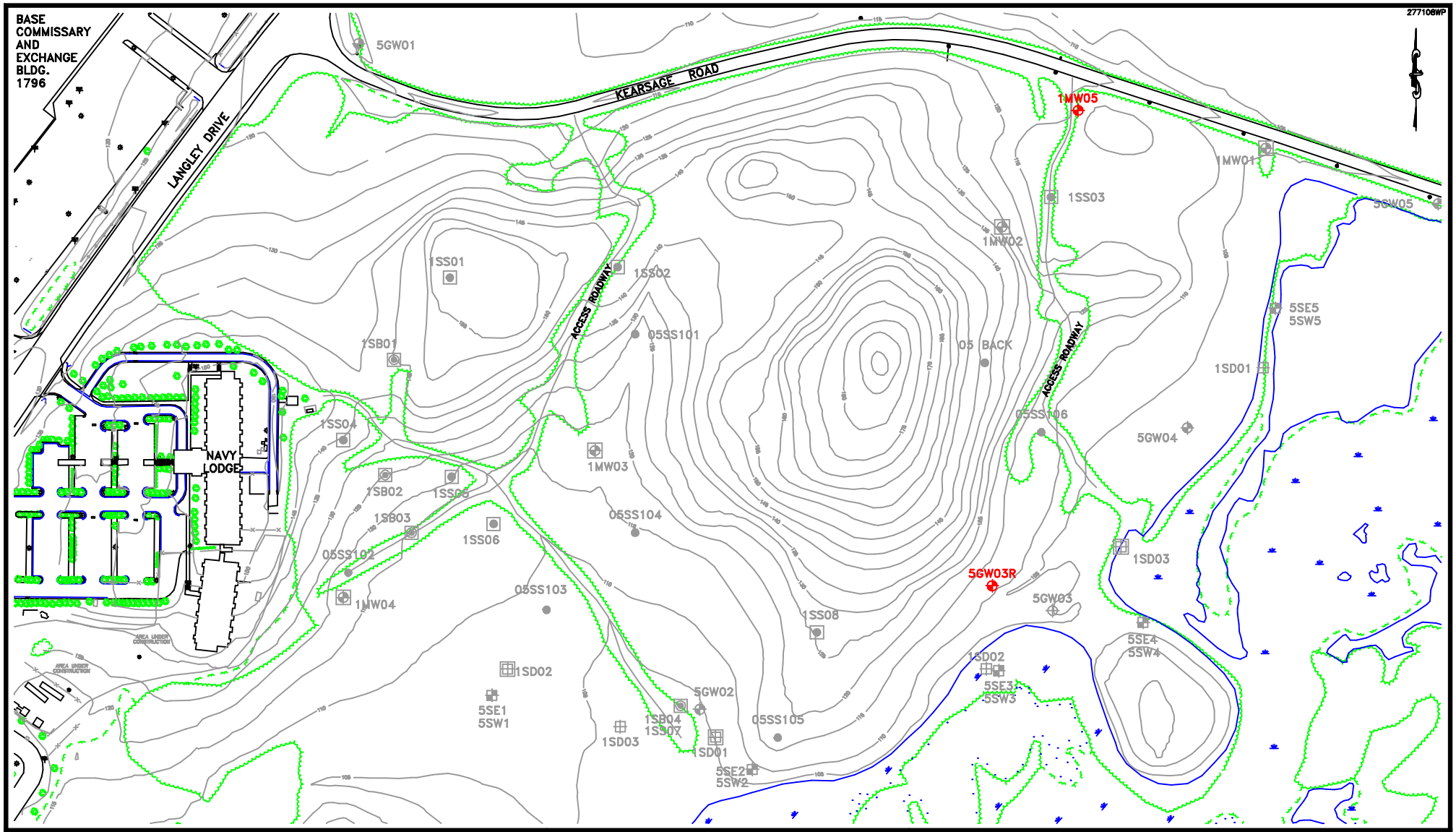
- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- REPORTED LOCATION OF 5GW03 (NOT LOCATED DURING 1996 RFI FIELD WORK)

150 0 75 150

1 inch = 150 ft.

Baker

FIGURE 3-1
SAMPLING LOCATIONS – 1996 RFI
OU #3 – SWMU 1
ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



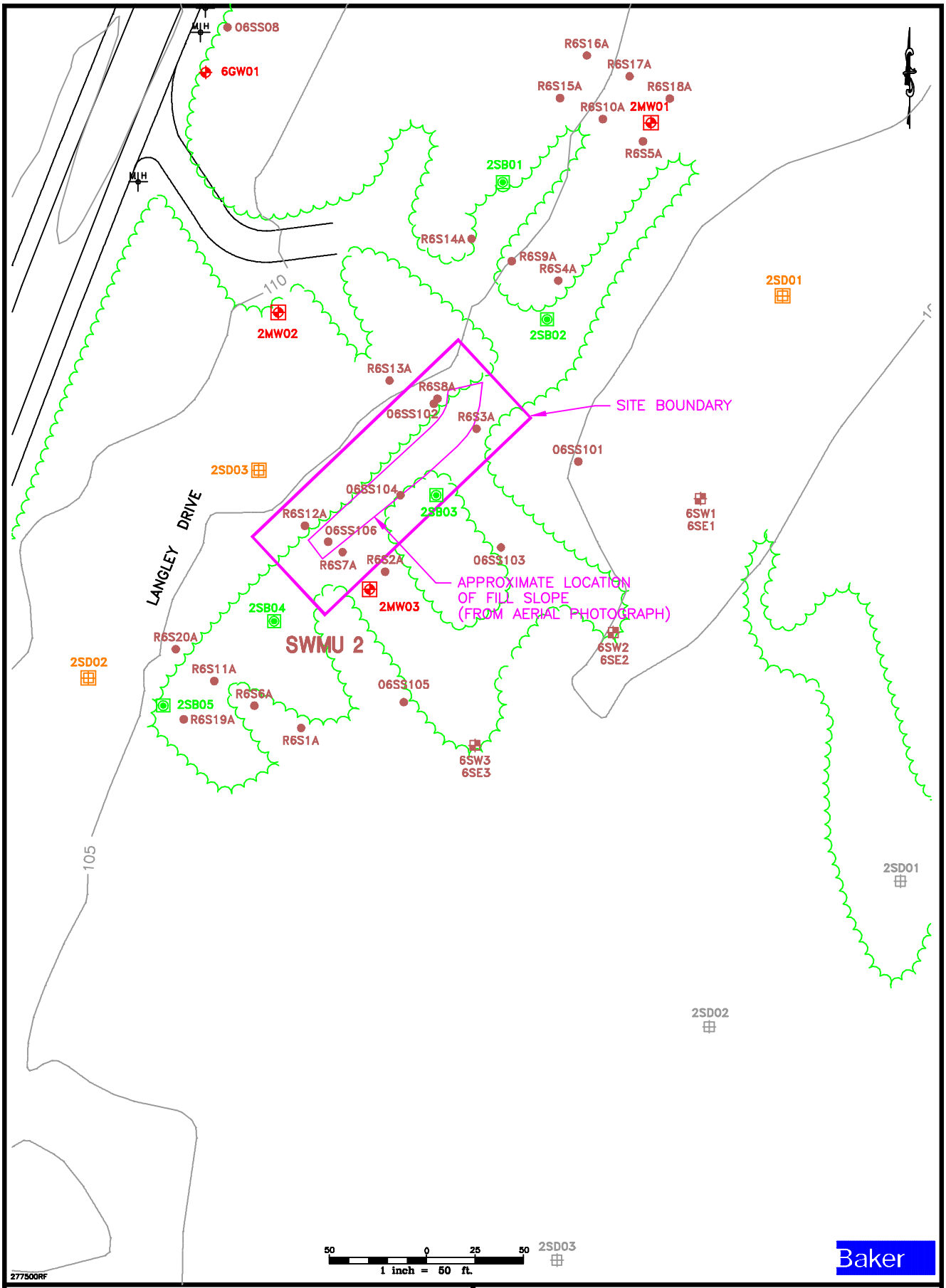
LEGEND

- MONITORING WELL LOCATION (1997 RFI)
- SURFACE ELEVATION CONTOUR

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 3-2
SAMPLING LOCATIONS – 1997 RFI
OU #3 – SWMU 1
ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

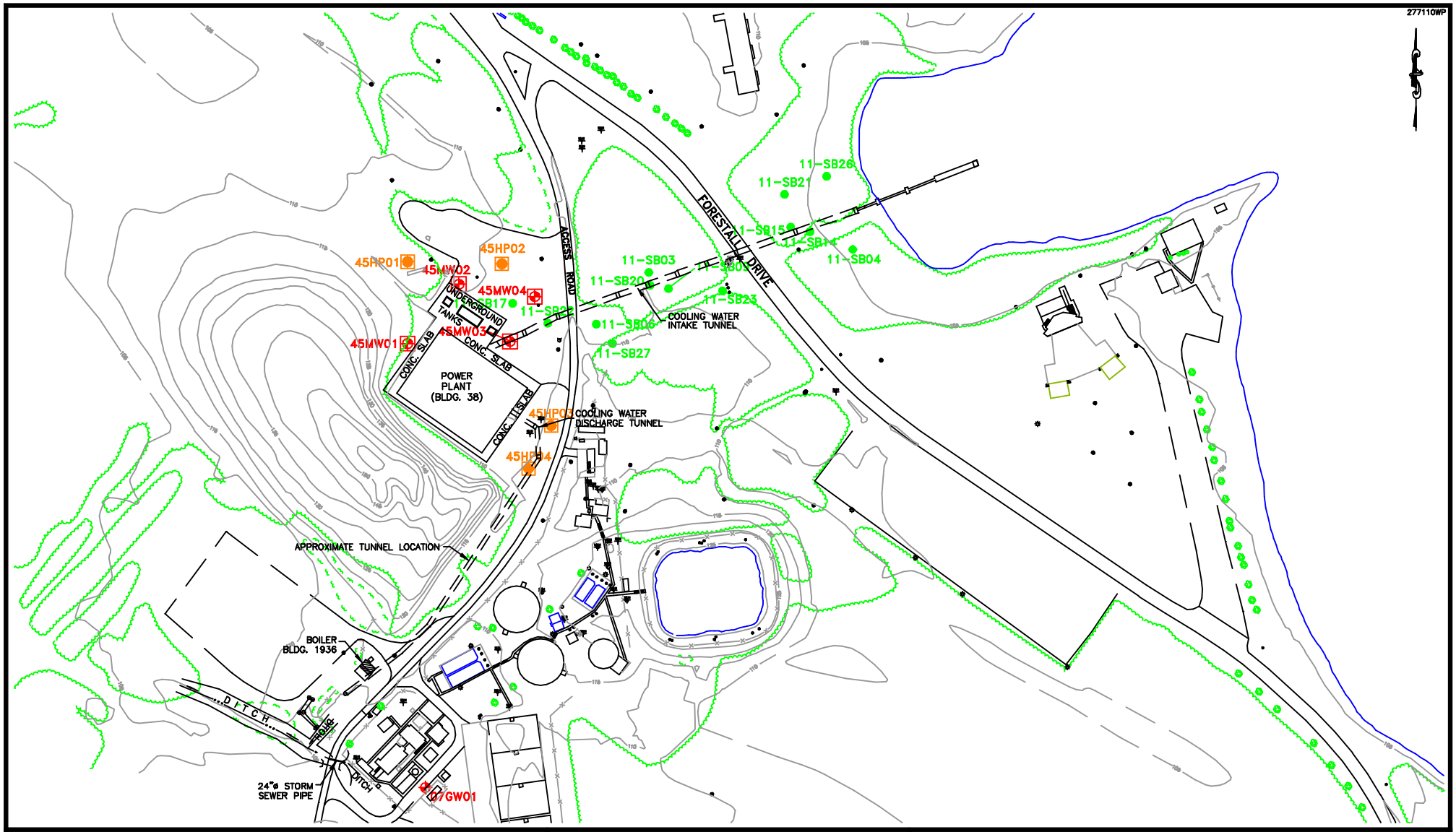


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 110 — SURFACE ELEVATION CONTOUR
- 6GW01 — EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)

FIGURE 3-3
SAMPLING LOCATIONS – 1996 RFI
OU #3 – SWMU 2
LANGLEY DRIVE DISPOSAL SITE

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- EXISTING GROUNDWATER SAMPLE LOCATION
- MONITORING WELL LOCATION (1996 RFI)
- HYDROPUNCH LOCATION (1996 RFI)
- SURFACE ELEVATION CONTOUR

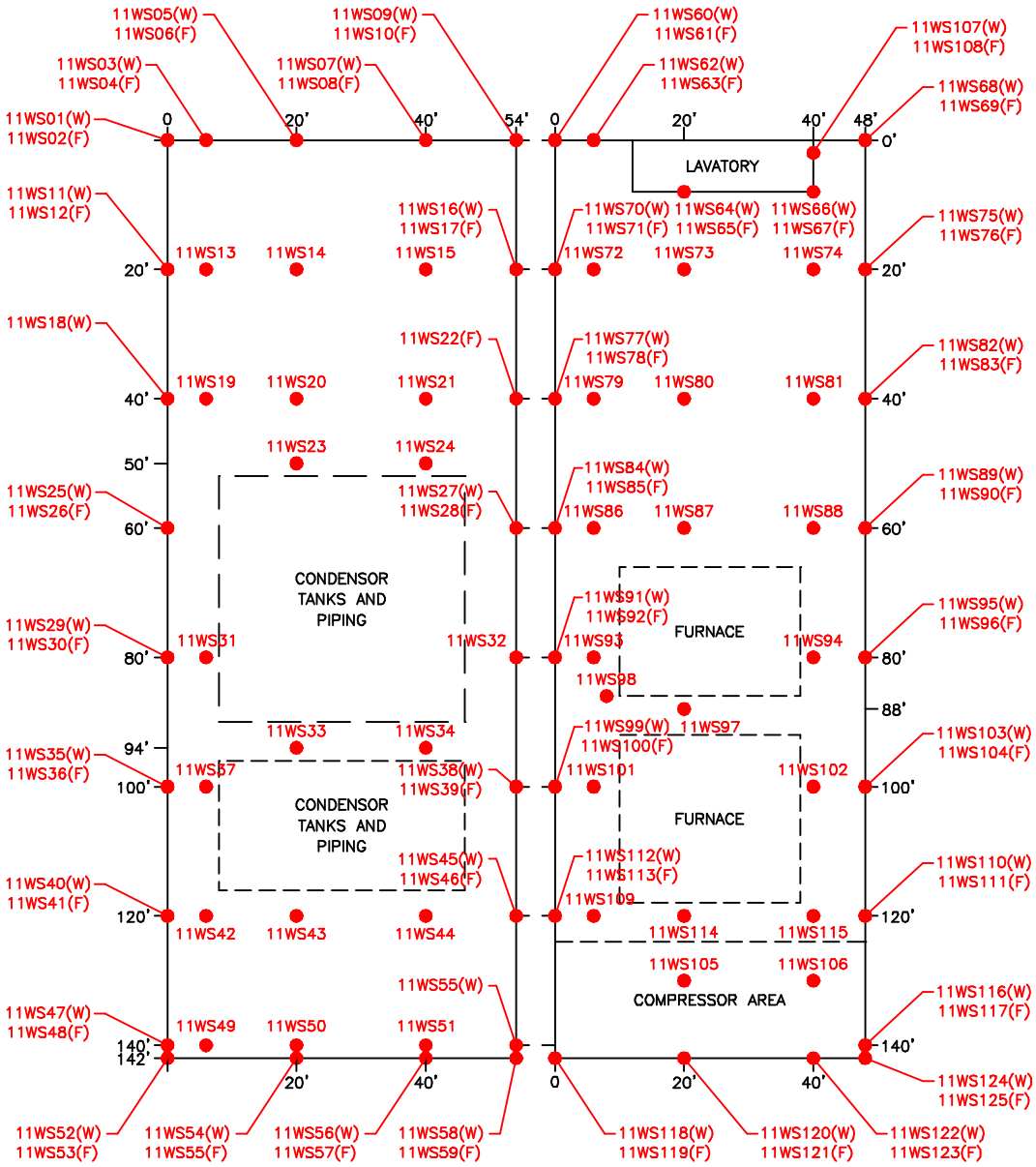
150 0 75 150

1 inch = 150 ft.

Baker

FIGURE 3-4
SAMPLE LOCATIONS – 1996 RFI
OU #5 – SWMU 45
BUILDING 38 EXTERIOR
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

277129WP



30 0 15 30

1 inch = 30 ft.

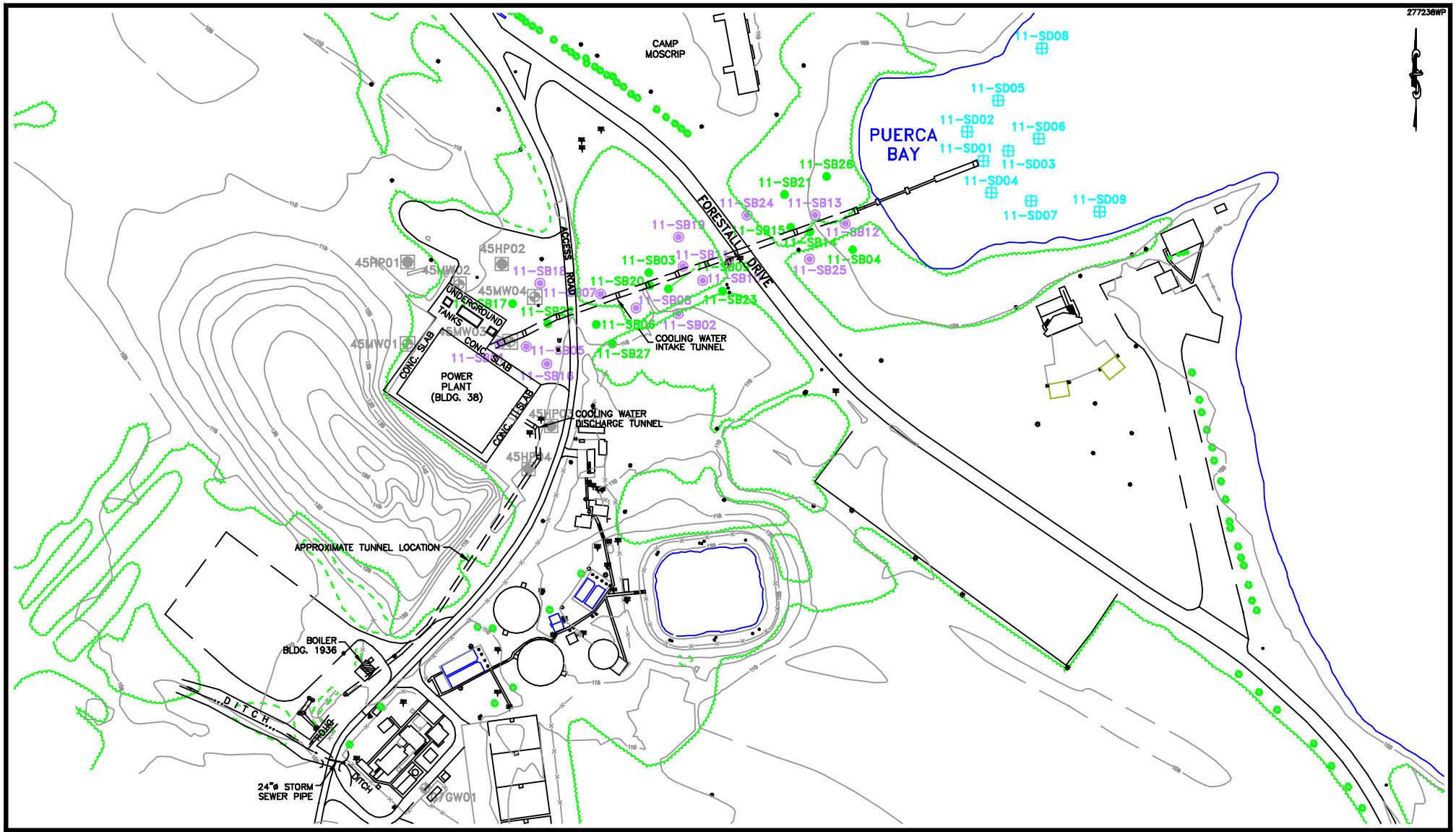
Baker

LEGEND

● – WIPE SAMPLE
(W) – SAMPLE COLLECTED FROM WALL
(F) – SAMPLE COLLECTED FROM FLOOR

FIGURE 3–5
SAMPLE LOCATIONS – 1996 RFI
OU#5 – SWMU 11
BUILDING 38 INTERIOR

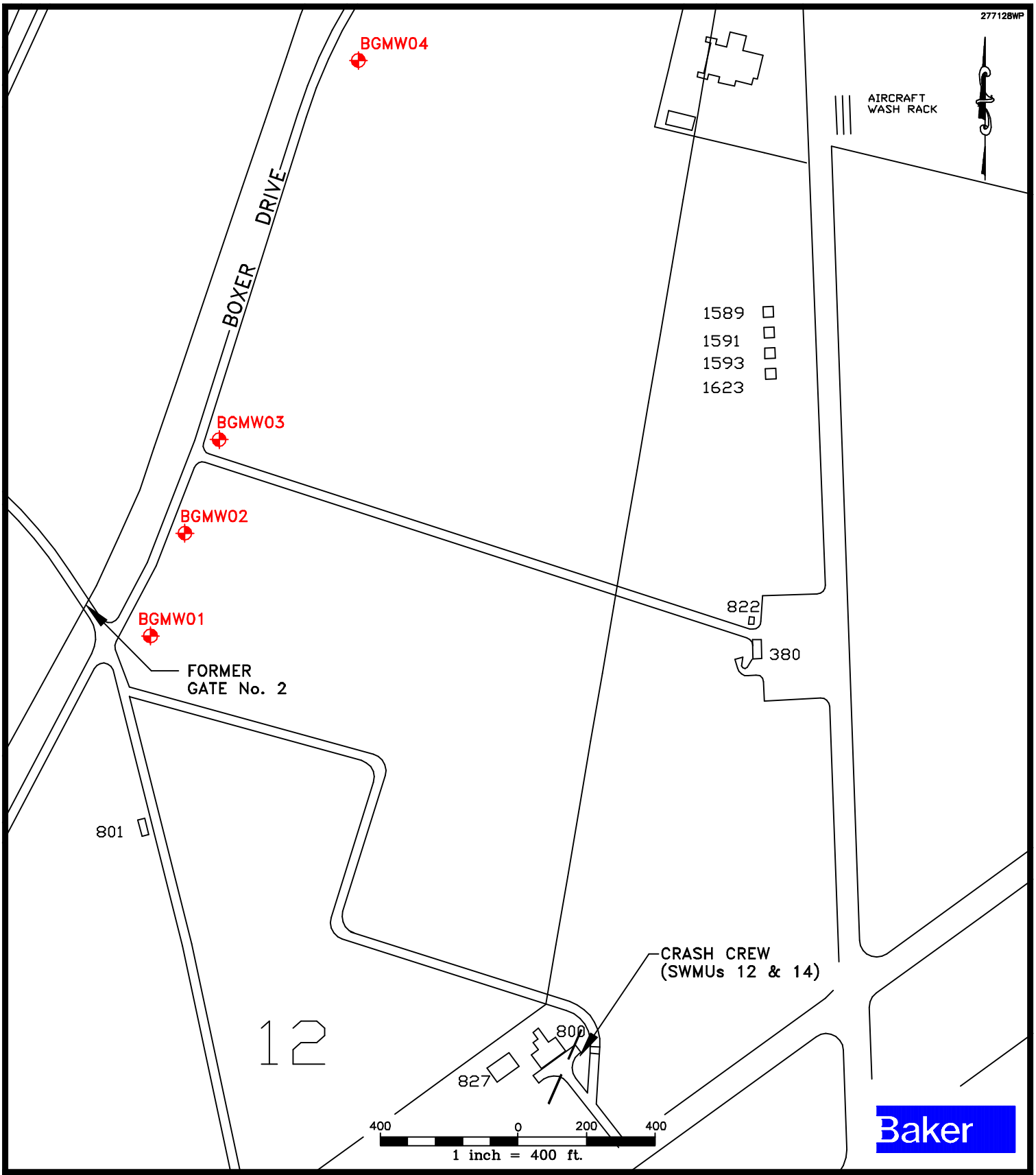
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- DIRECT PUSH SOIL AND GROUNDWATER SAMPLE LOCATION (1997 RFI)
- DIRECT PUSH SOIL SAMPLE LOCATION (1997 RFI)
- SEDIMENT SAMPLE LOCATION (1997 RFI)

FIGURE 3-6
SAMPLE LOCATIONS – 1997 RFI
OU #5 – SWMU 45
BUILDING 38 EXTERIOR
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

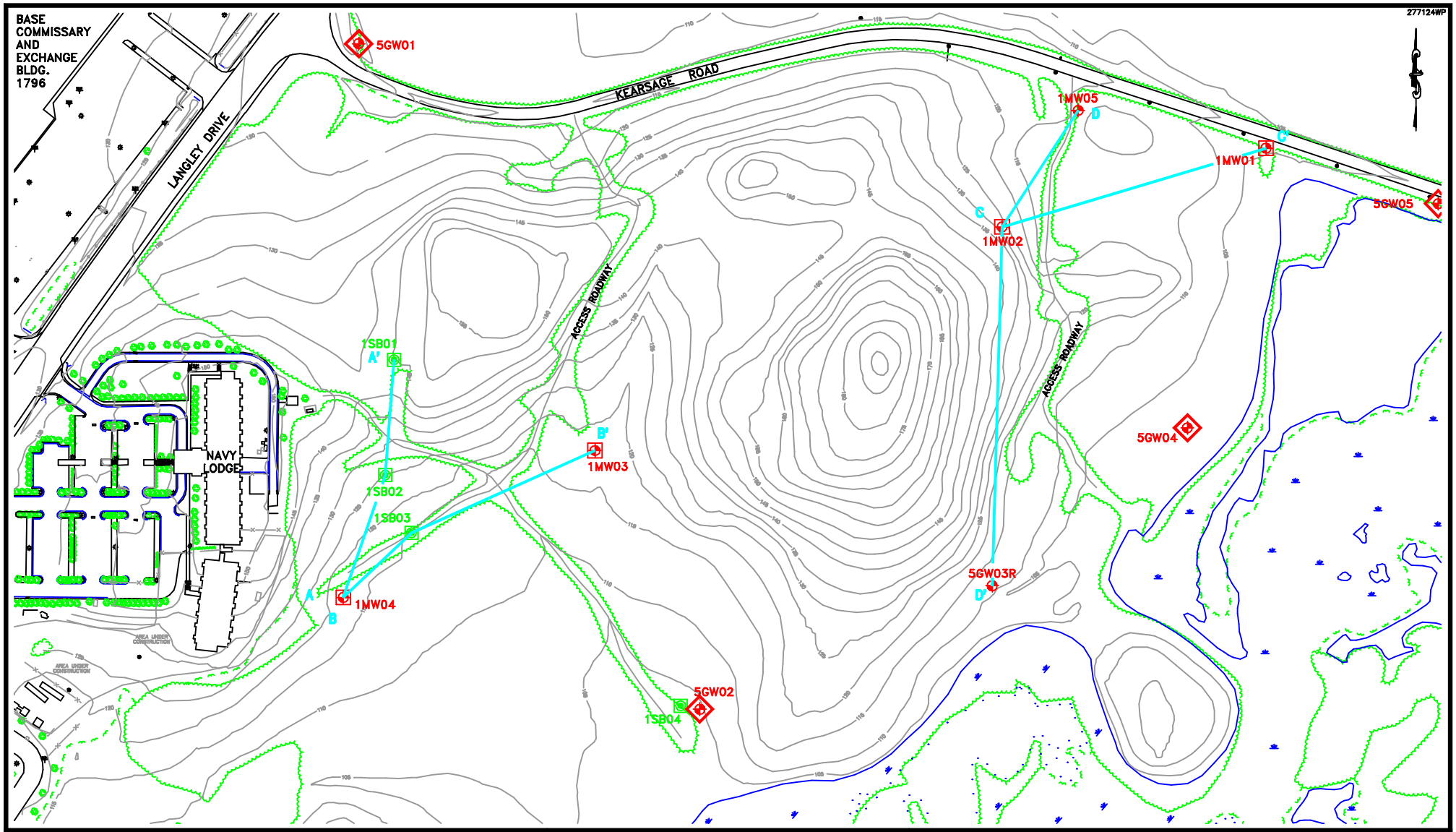


LEGEND

BGMW01 – BACKGROUND MONITORING WELL

FIGURE 3–7
BACKGROUND SAMPLE LOCATIONS
RCRA FACILITY INVESTIGATION

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



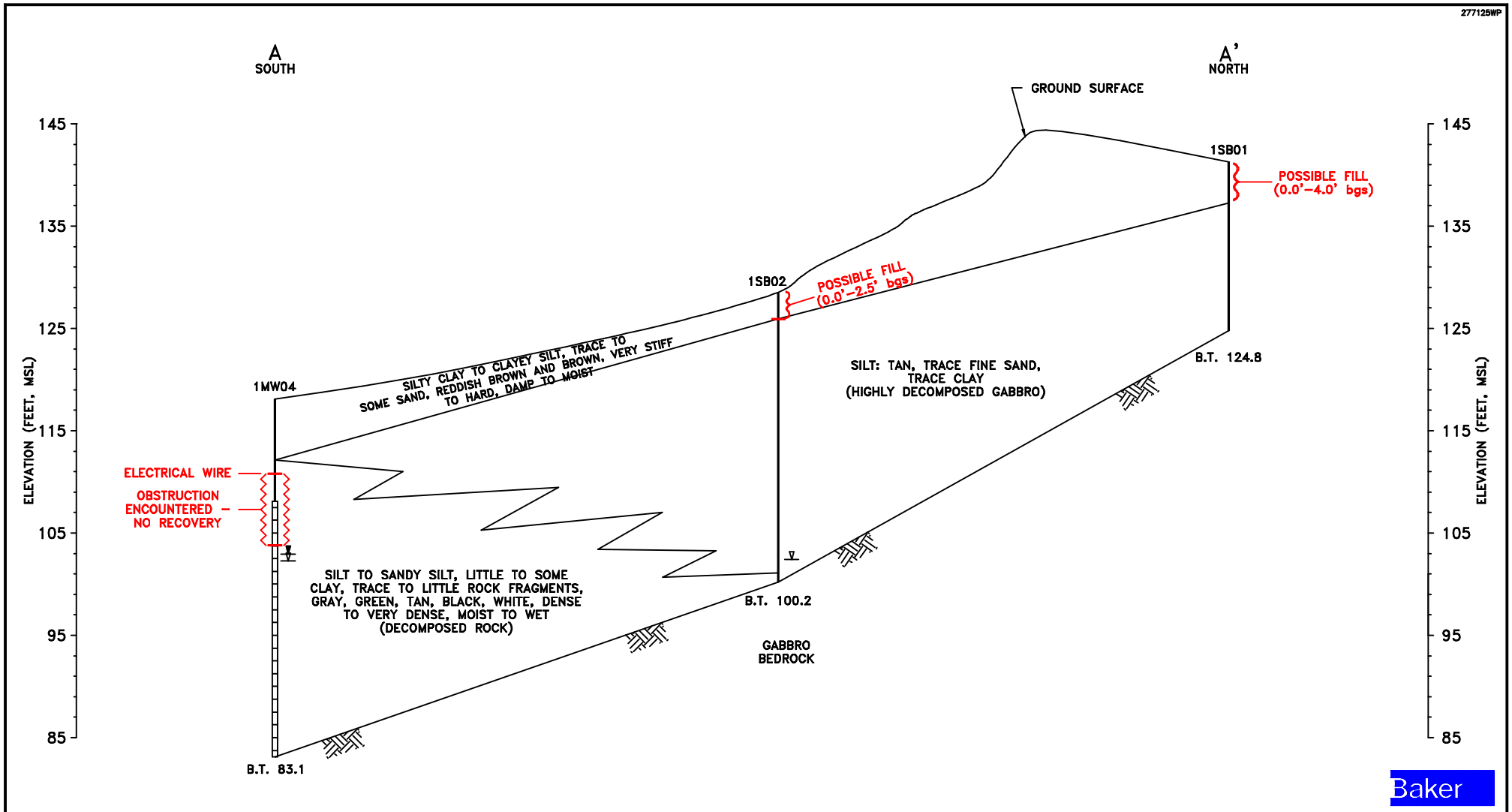
LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- MONITORING WELL LOCATION (1997 RFI)
- SOIL BORING LOCATION (1996 RFI)
- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- A—A' HYDROGEOLOGIC CROSS SECTION LOCATION

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 4-1
LOCATION OF HYDROGEOLOGIC CROSS-SECTIONS
OU #3 – SWMU 1
ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- GROUNDWATER ELEVATION (11/96)
- GROUNDWATER ENCOUNTERED DURING DRILLING
- B.T. X' — BORING TERMINATED, ELEVATION MSL
- WELL SCREEN INTERVAL
- ESTIMATED — — — PROJECTED

40 0 20 40 80

Horizontal Scale: 1 inch = 40 ft.

10 0 5 10 20

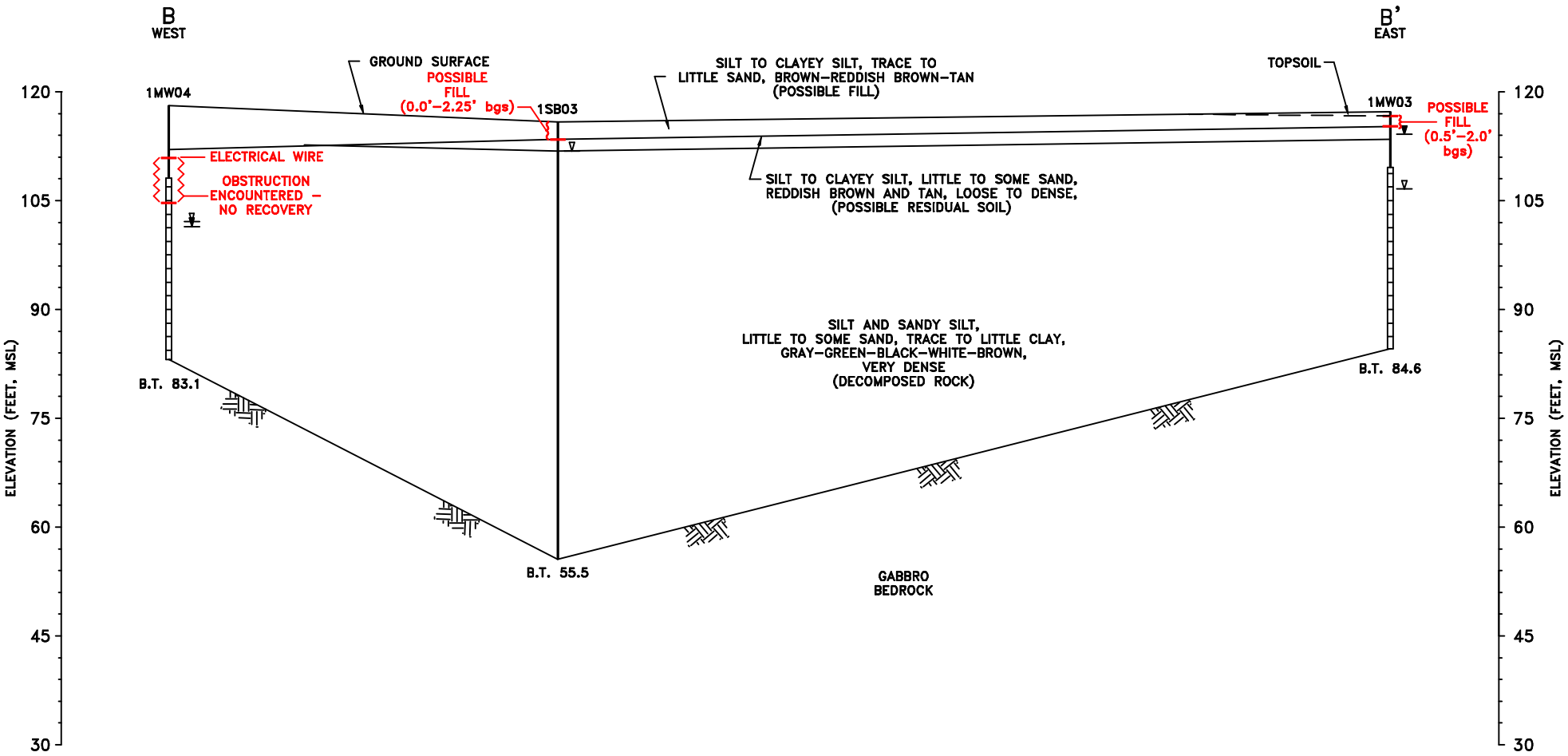
Vertical Scale: 1 inch = 10 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

FIGURE 4–2
HYDROGEOLOGIC CROSS–SECTION A–A'
OU#3 – SWMU 1
ARMY CREMATOR DISPOSAL SITE

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

277295WP



Baker

LEGEND

- GROUNDWATER ELEVATION (11/96)
- GROUNDWATER ENCOUNTERED DURING DRILLING
- B.T. X' — BORING TERMINATED, ELEVATION MSL
- WELL SCREEN INTERVAL
- ESTIMATED — — — PROJECTED

40 0 20 40 80
Horizontal Scale: 1 inch = 40 ft.

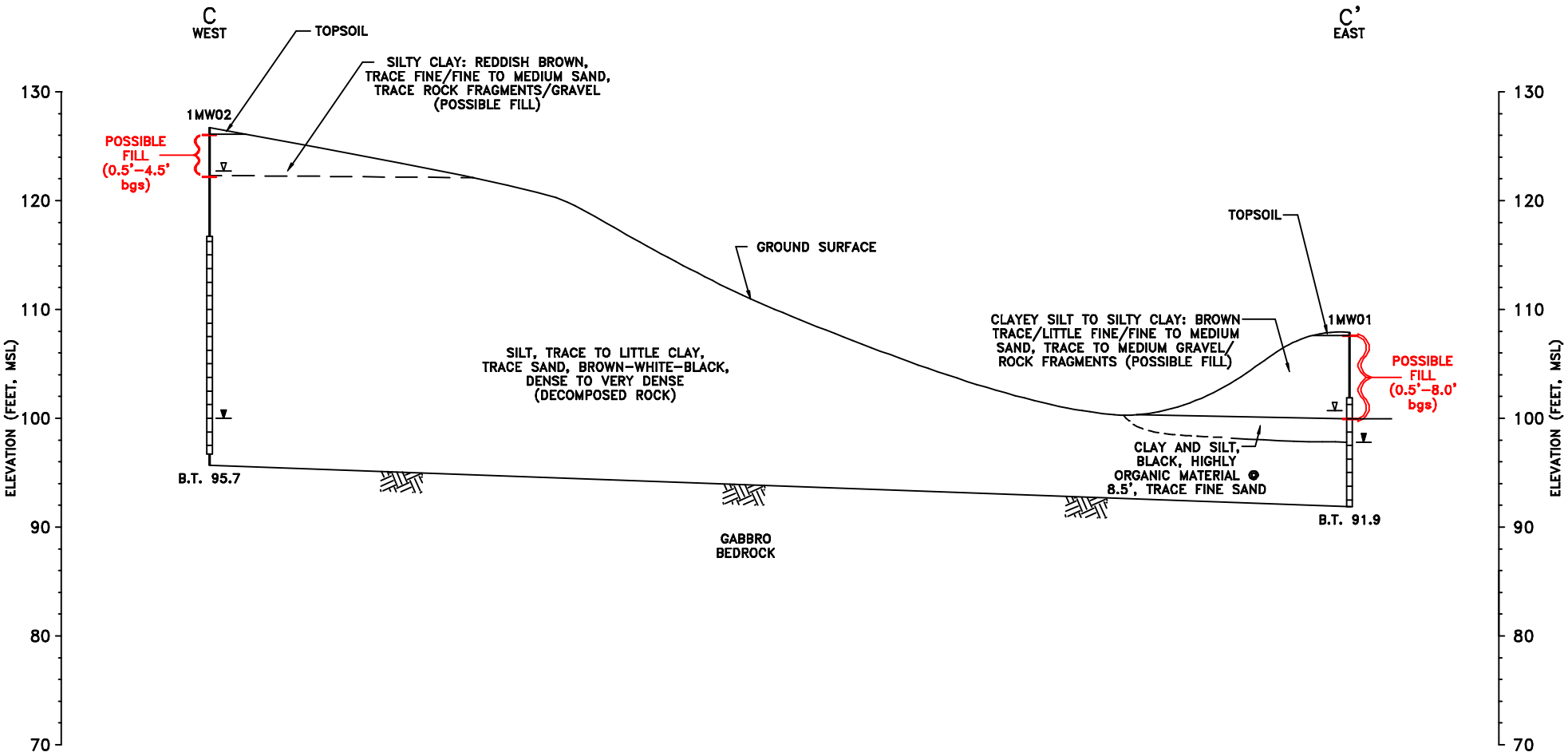
15 0 7.5 15 30
Vertical Scale: 1 inch = 15 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

FIGURE 4–3
HYDROGEOLOGIC CROSS–SECTION B–B'
OU#3 – SWMU 1
ARMY CREMATOR DISPOSAL SITE

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

277127WP



Baker

LEGEND

- GROUNDWATER ELEVATION (11/96)
- GROUNDWATER ENCOUNTERED DURING DRILLING
- B.T. X' BORING TERMINATED, ELEVATION MSL
- WELL SCREEN INTERVAL
- ESTIMATED — — — PROJECTED

40 0 20 40 80

Horizontal Scale: 1 inch = 40 ft.

10 0 5 10 20

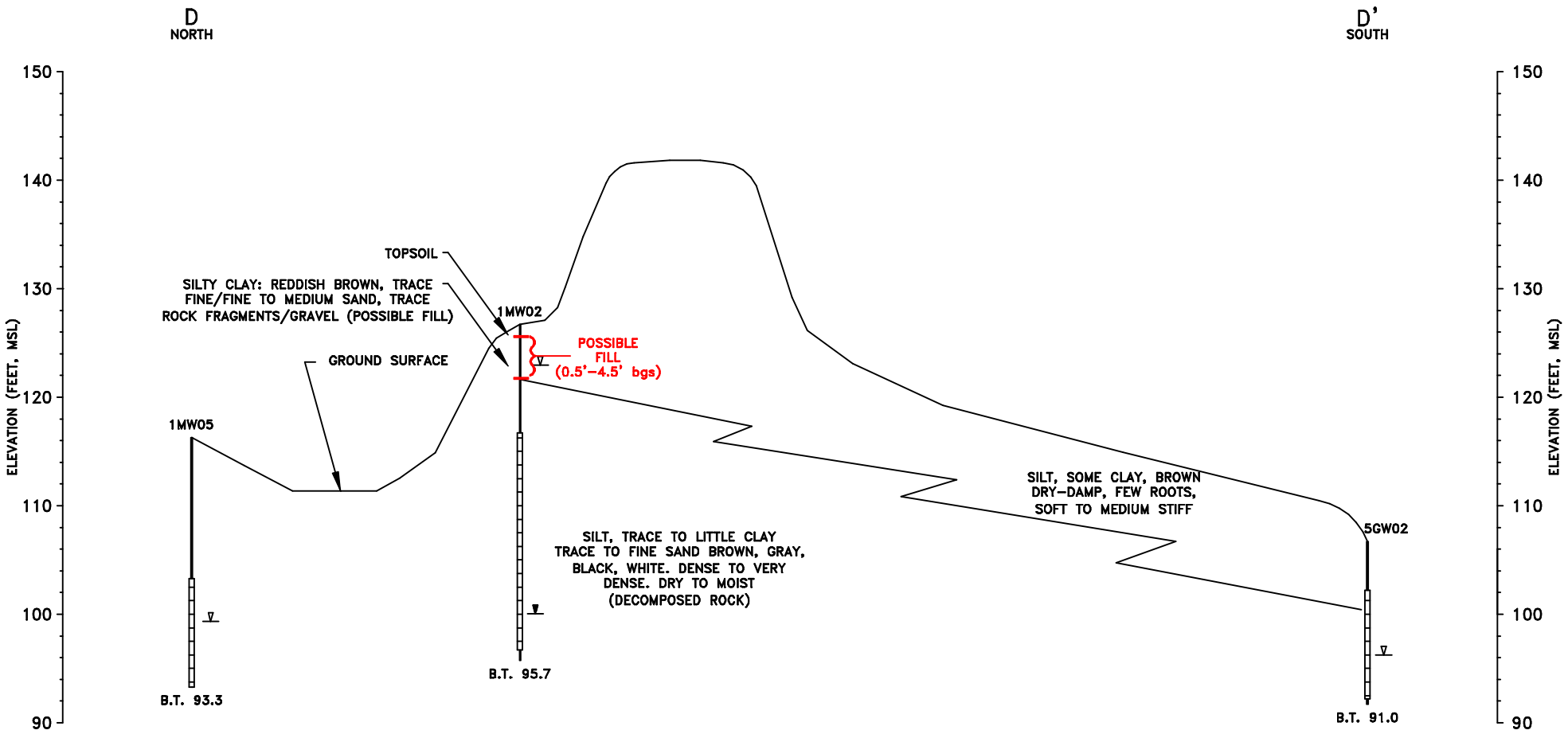
Vertical Scale: 1 inch = 10 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

FIGURE 4–4
HYDROGEOLOGIC CROSS–SECTION C–C'
OU#3 – SWMU 1
ARMY CREMATOR DISPOSAL SITE

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

277144WP



Baker

LEGEND

B.T. X'	BORING TERMINATED, ELEVATION MSL
	WELL SCREEN INTERVAL
———	ESTIMATED — — — PROJECTED
	GROUNDWATER ELEVATION (11/96)
	GROUNDWATER ENCOUNTERED DURING DRILLING

70 0 35 70 140

Horizontal Scale: 1 inch = 70 ft.

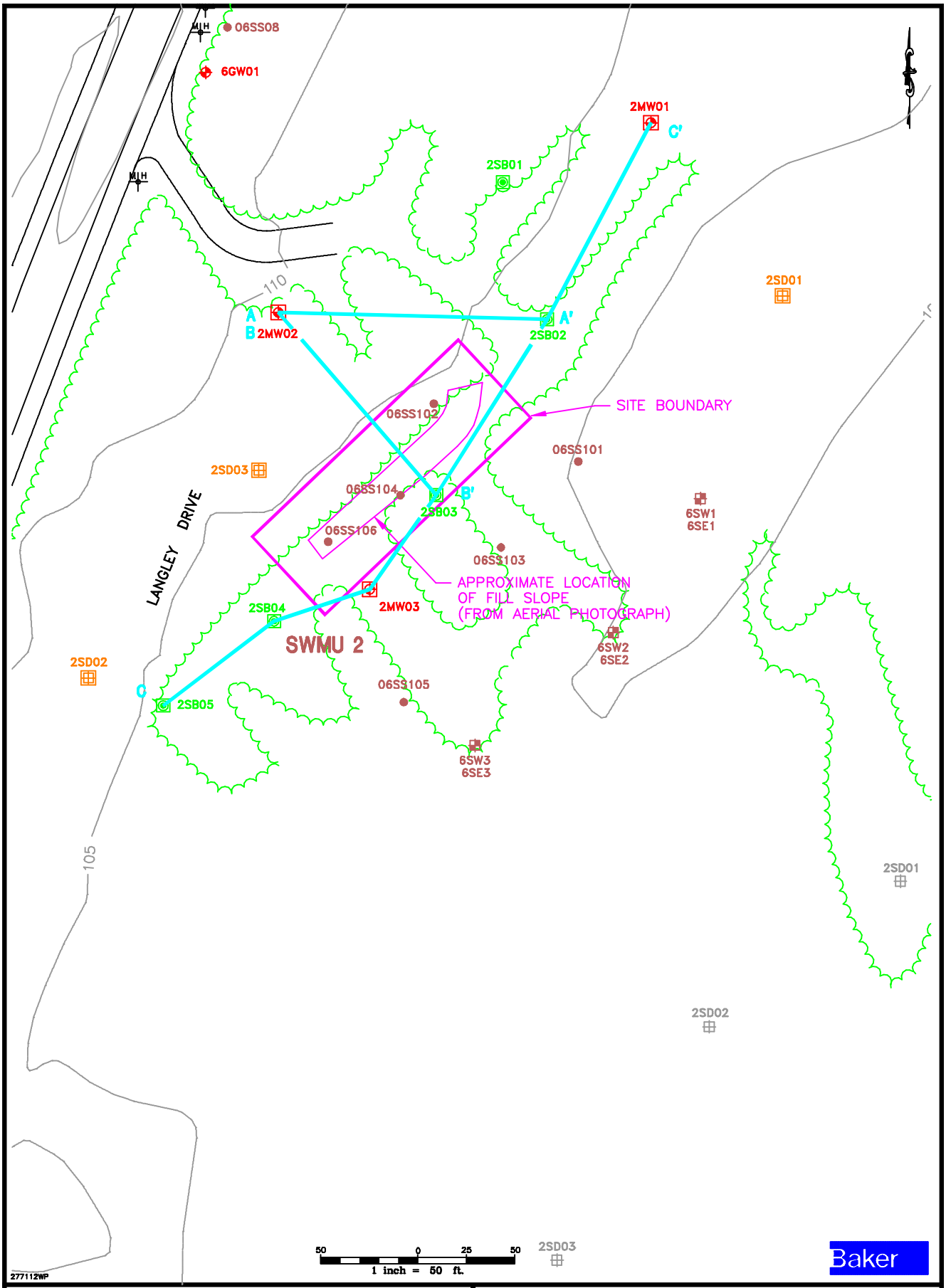
10 0 5 10 20

Vertical Scale: 1 inch = 10 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

FIGURE 4-5
HYDROGEOLOGIC CROSS-SECTION D-D'
OU #3 - SWMU 1
ARMY CREMATOR DISPOSAL SITE

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



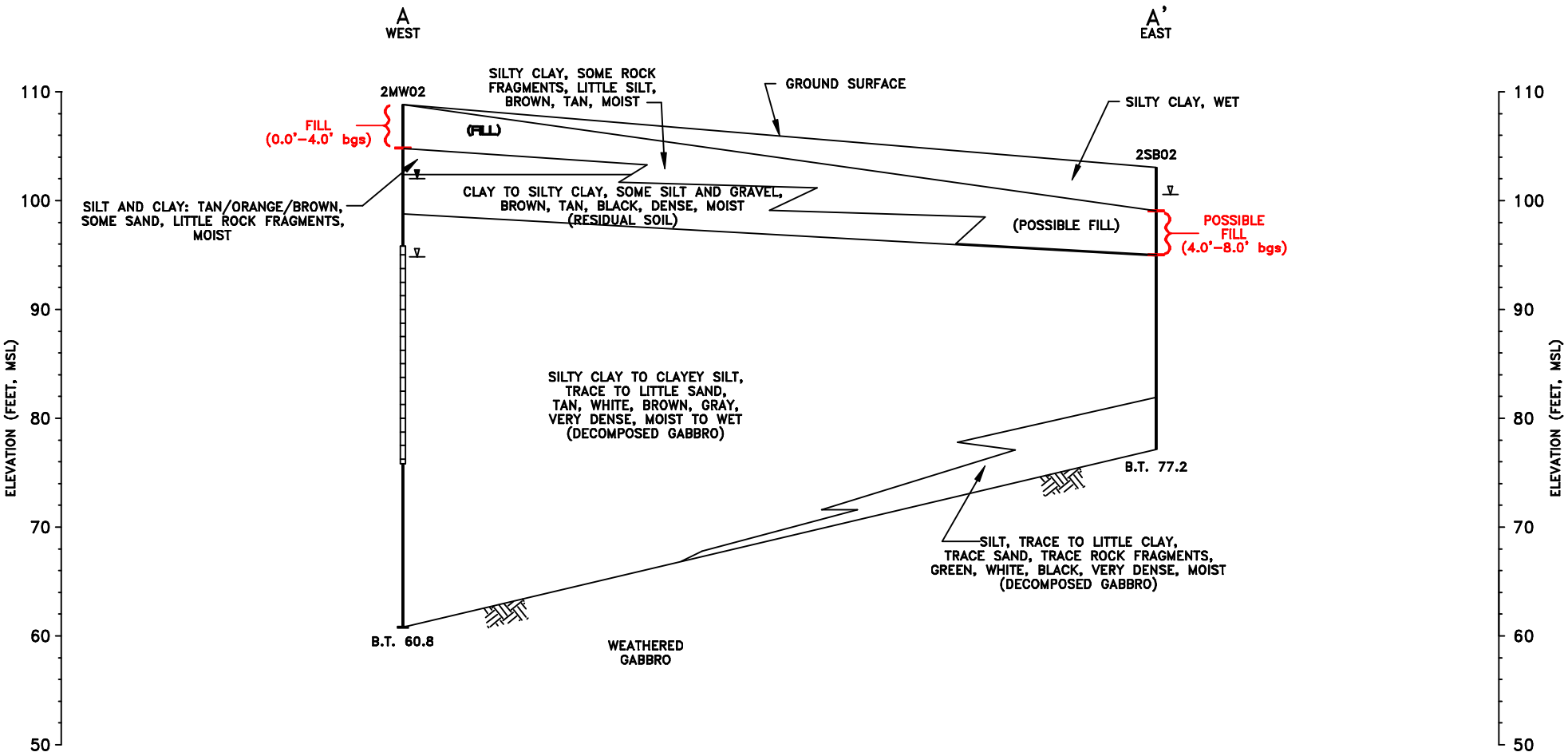
LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- B—B' HYDROGEOLOGIC CROSS SECTION LOCATION

FIGURE 4-6
LOCATION OF HYDROGEOLOGIC CROSS-SECTIONS
OU #3 – SWMU 2
LANGLEY DRIVE DISPOSAL SITE

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

277297WP



Baker

LEGEND

- GROUNDWATER ELEVATION (11/96)
- GROUNDWATER ENCOUNTERED DURING DRILLING
- B.T. X' — BORING TERMINATED, ELEVATION MSL
- WELL SCREEN INTERVAL
- ESTIMATED — — — PROJECTED

20 0 10 20 40
Horizontal Scale: 1 inch = 20 ft.

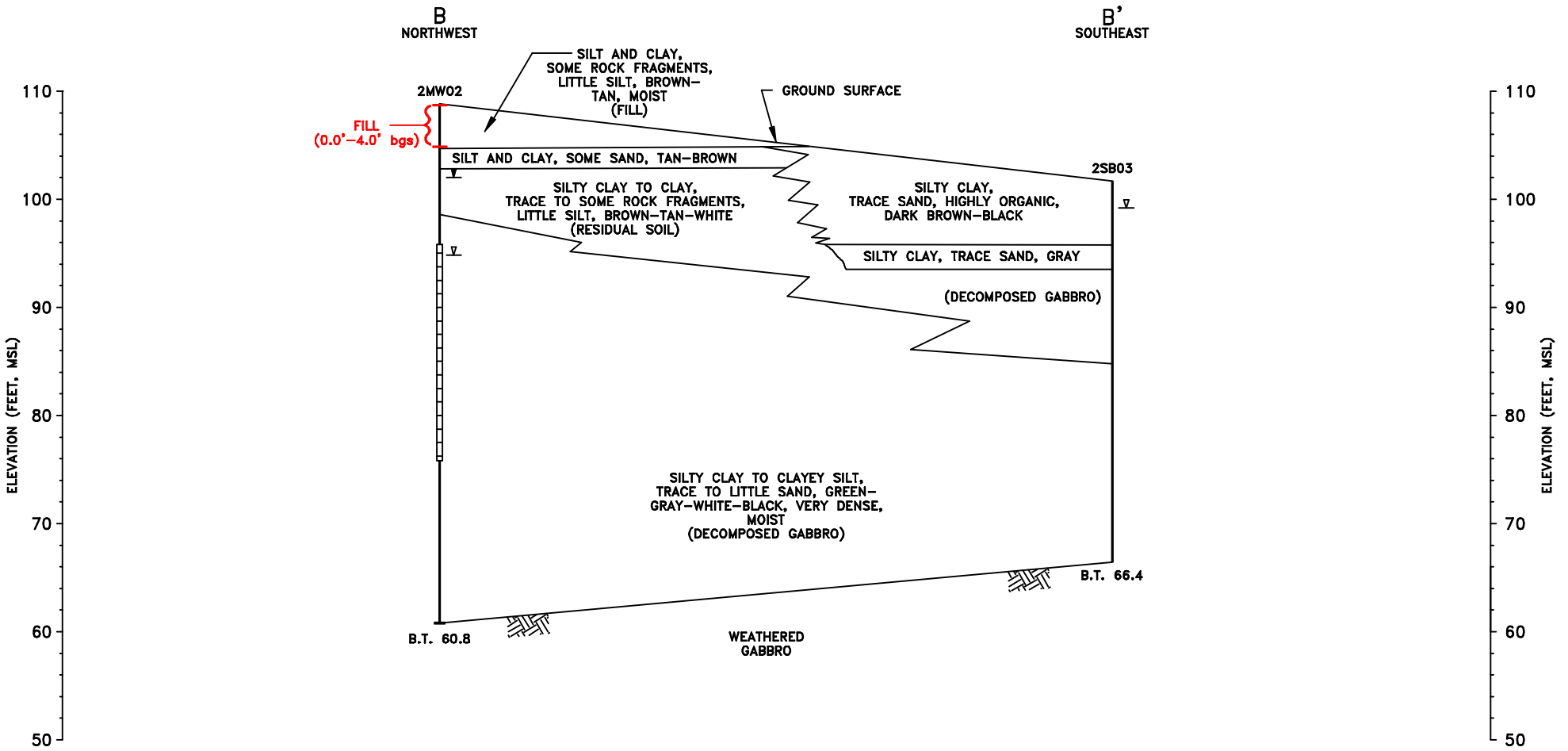
10 0 5 10 20
Vertical Scale: 1 inch = 10 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

FIGURE 4–7
HYDROGEOLOGIC CROSS–SECTION A–A'
OU#3 – SWMU 2
LANGLEY DRIVE DISPOSAL SITE

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

277185WP



Baker

LEGEND

- GROUNDWATER ELEVATION (11/96)
- GROUNDWATER ENCOUNTERED DURING DRILLING
- B.T. X' BORING TERMINATED, ELEVATION MSL
- WELL SCREEN INTERVAL
- ESTIMATED — — — PROJECTED

20 0 10 20 40
Horizontal Scale: 1 inch = 20 ft.

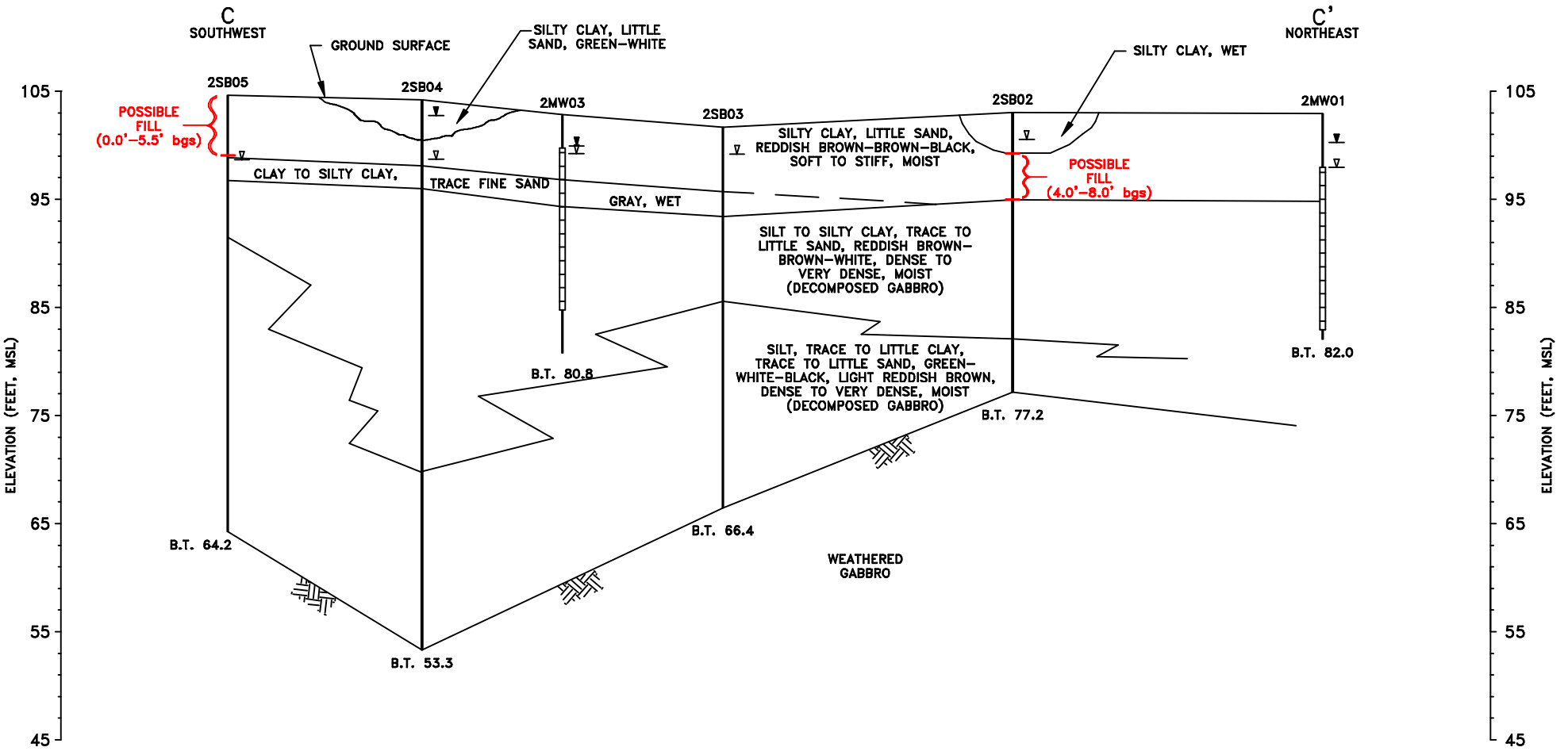
10 0 5 10 20
Vertical Scale: 1 inch = 10 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

FIGURE 4-8
HYDROGEOLOGIC CROSS-SECTION B-B'
OU#3 - SWMU 2
LANGLEY DRIVE DISPOSAL SITE

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

277298WP



Baker

LEGEND

- GROUNDWATER ELEVATION (11/96)
- GROUNDWATER ENCOUNTERED DURING DRILLING
- B.T. X' — BORING TERMINATED, ELEVATION MSL
- WELL SCREEN INTERVAL
- ESTIMATED — — — PROJECTED

40 0 20 40 80

Horizontal Scale: 1 inch = 40 ft.

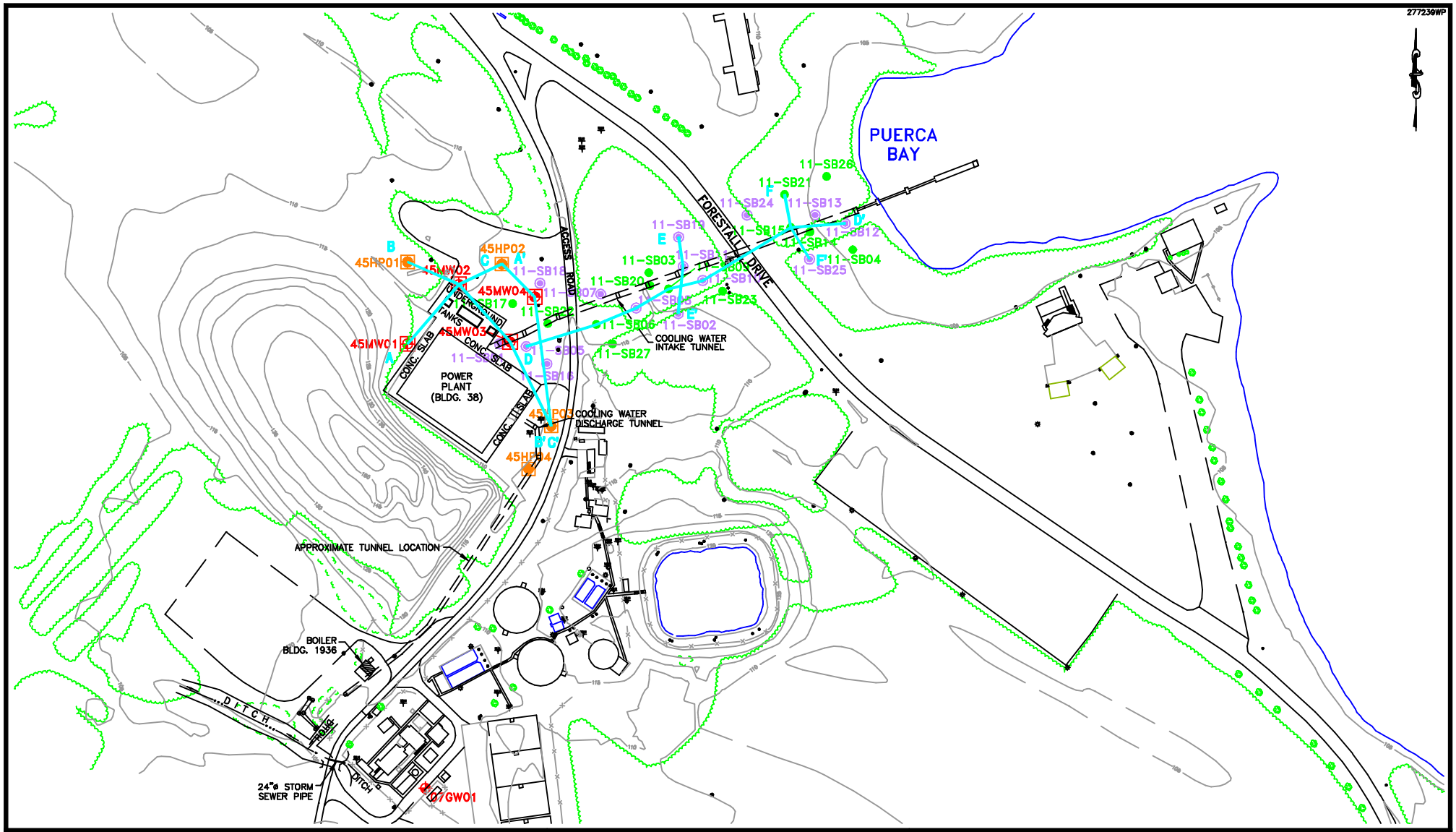
10 0 5 10 20

Vertical Scale: 1 inch = 10 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

FIGURE 4–9
HYDROGEOLOGIC CROSS–SECTION C–C'
OU#3 – SWMU 2
LANGLEY DRIVE DISPOSAL SITE

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

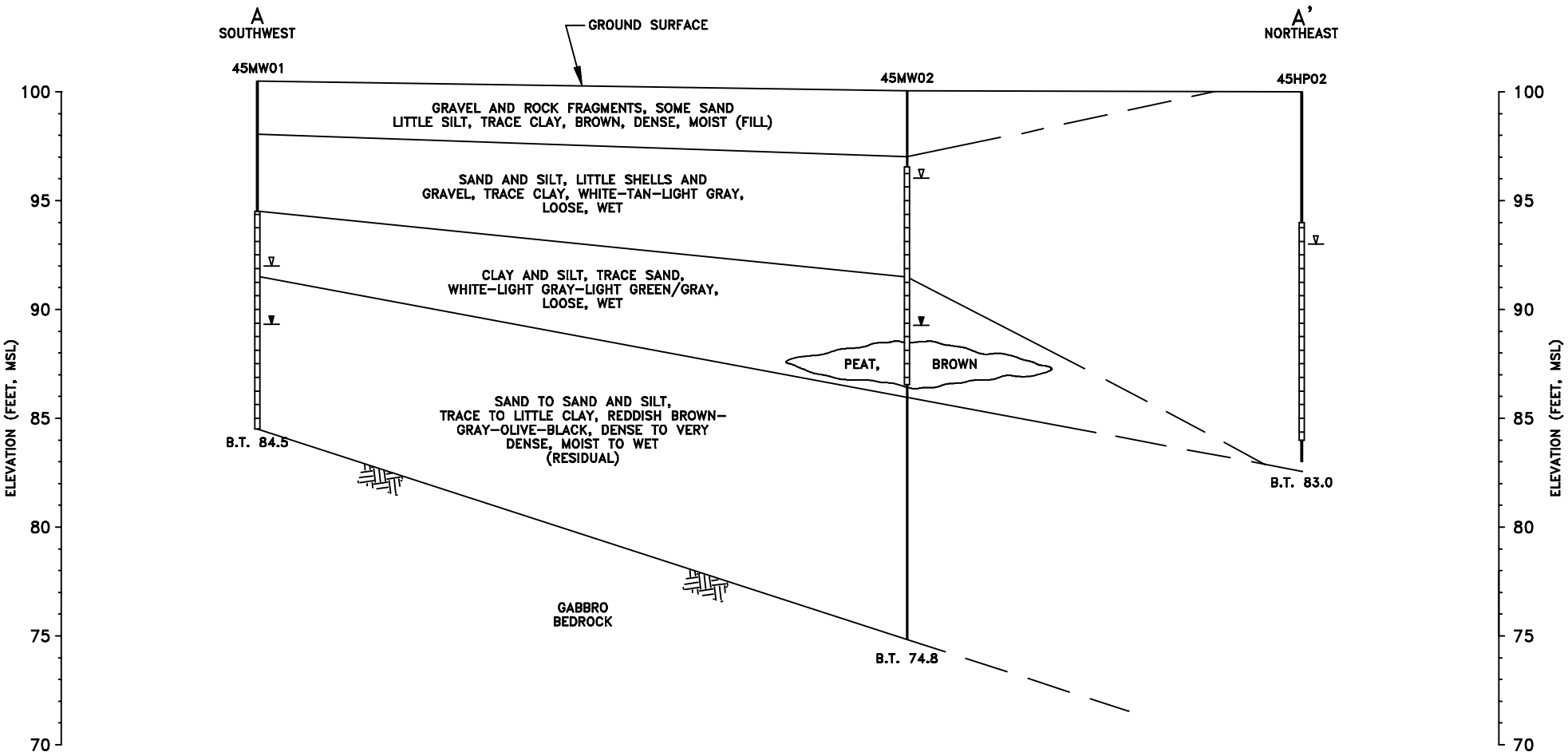
- EXISTING GROUNDWATER SAMPLE LOCATION
- MONITORING WELL LOCATION (1996 RFI)
- HYDROPUNCH LOCATION (1996 RFI)
- DIRECT PUSH SOIL AND GROUNDWATER SAMPLE LOCATION (1997 RFI)
- DIRECT PUSH SOIL SAMPLE LOCATION (1997 RFI)
- E—E' – HYDROGEOLOGIC CROSS SECTION LOCATION

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 4-10
LOCATION OF HYDROGEOLOGIC CROSS-SECTIONS
OU #5 – SWMU 45
BUILDING 38 EXTERIOR
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

277117WP



Baker

LEGEND

- GROUNDWATER ELEVATION (11/96)
- GROUNDWATER ENCOUNTERED DURING DRILLING
- B.T. X' BORING TERMINATED, ELEVATION MSL
- WELL SCREEN INTERVAL
- ESTIMATED — — — PROJECTED

20 0 10 20 40

Horizontal Scale: 1 inch = 20 ft.

5 0 2.5 5 10

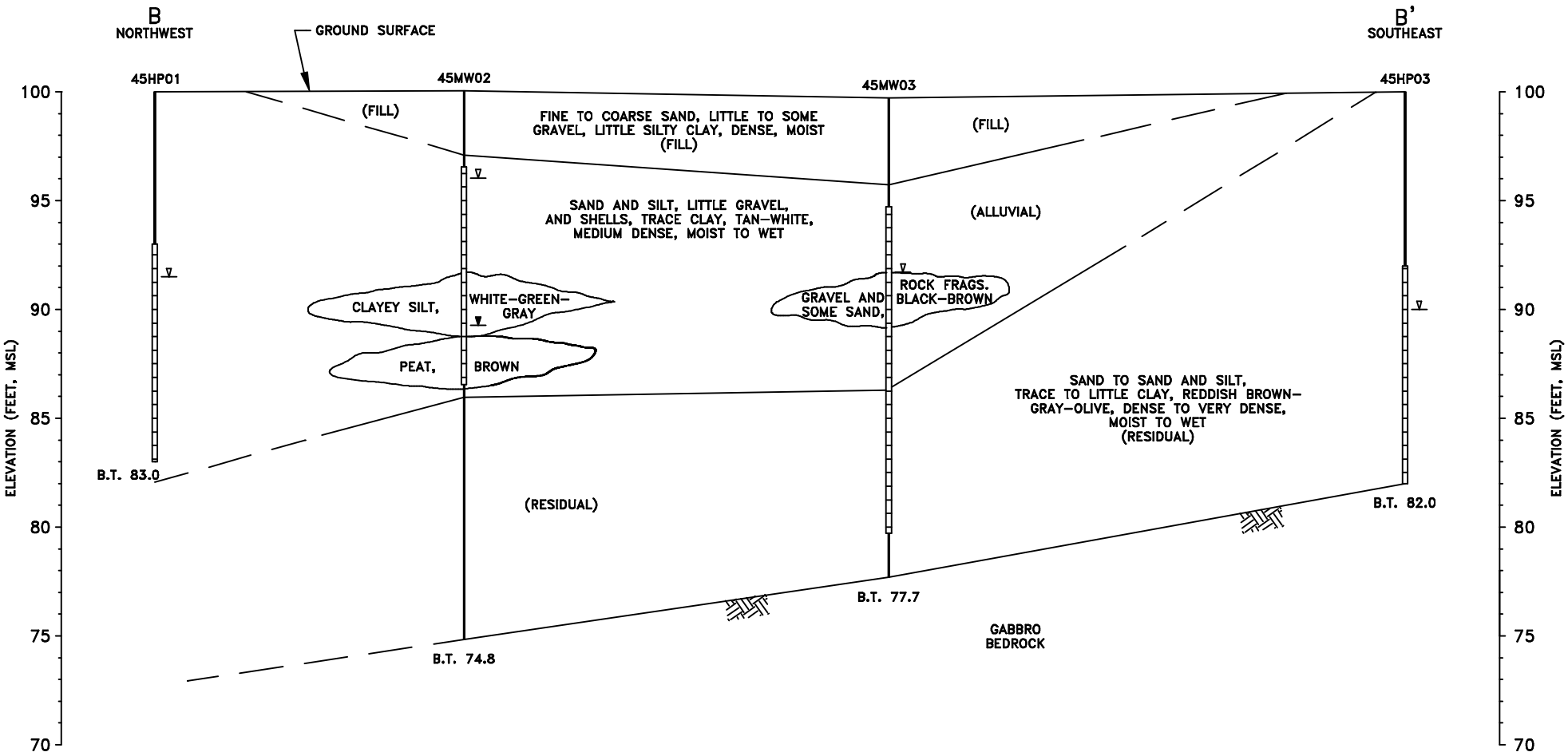
Vertical Scale: 1 inch = 5 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

FIGURE 4-11
HYDROGEOLOGIC CROSS-SECTION A-A'
OU#5 - SWMU 45
BUILDING 38 EXTERIOR

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

277118WP



Baker

LEGEND

- GROUNDWATER ELEVATION (11/96)
- GROUNDWATER ENCOUNTERED DURING DRILLING
- B.T. X' BORING TERMINATED, ELEVATION MSL
- WELL SCREEN INTERVAL
- ESTIMATED — — — PROJECTED

30 0 15 30 60
Horizontal Scale: 1 inch = 30 ft.

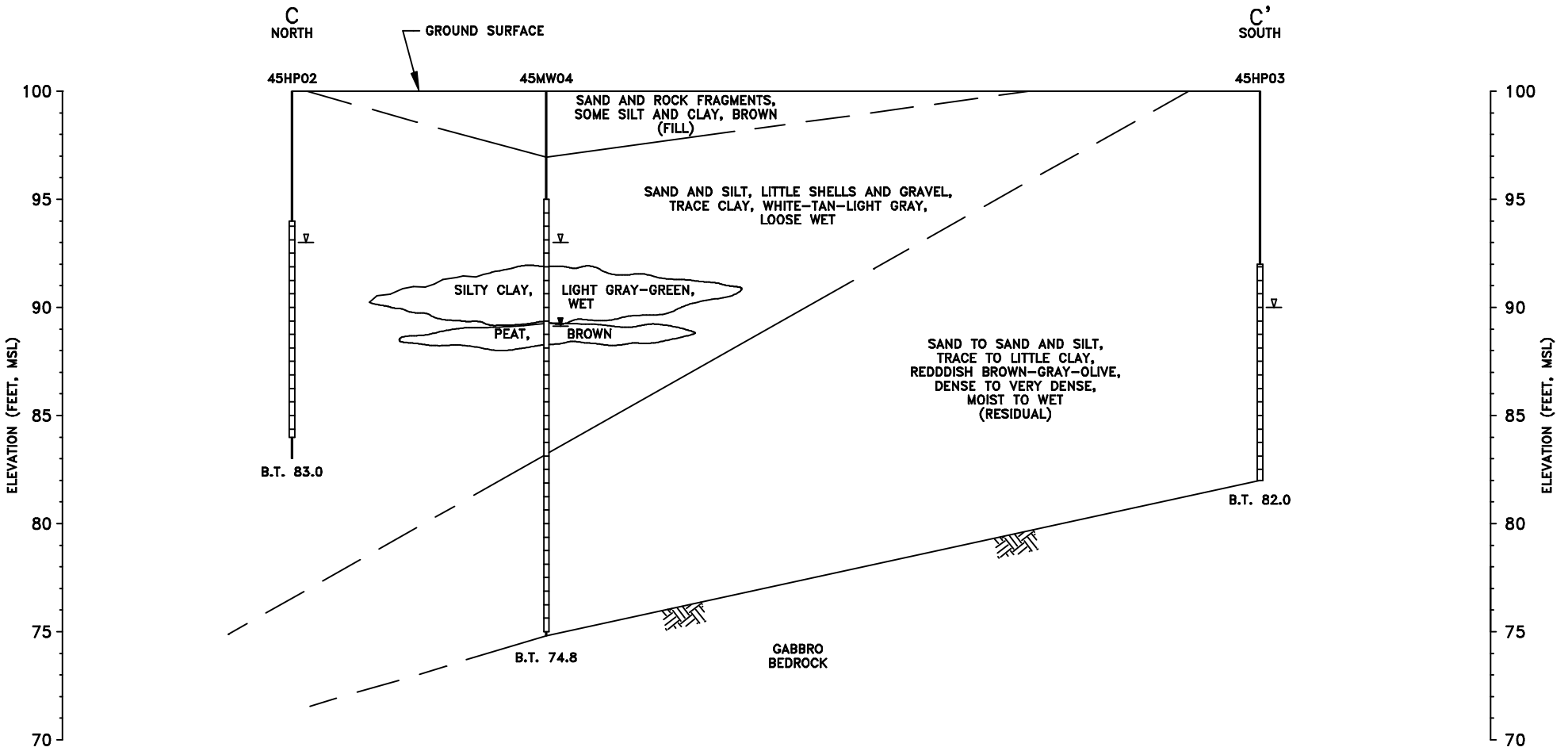
5 0 2.5 5 10
Vertical Scale: 1 inch = 5 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

FIGURE 4–12
HYDROGEOLOGIC CROSS–SECTION B–B'
OU#5 – SWMU 45
BUILDING 38 EXTERIOR

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

277119WP



Baker

LEGEND

- GROUNDWATER ELEVATION (11/96)
- GROUNDWATER ENCOUNTERED DURING DRILLING
- B.T. X' BORING TERMINATED, ELEVATION MSL
- WELL SCREEN INTERVAL
- ESTIMATED — — — PROJECTED

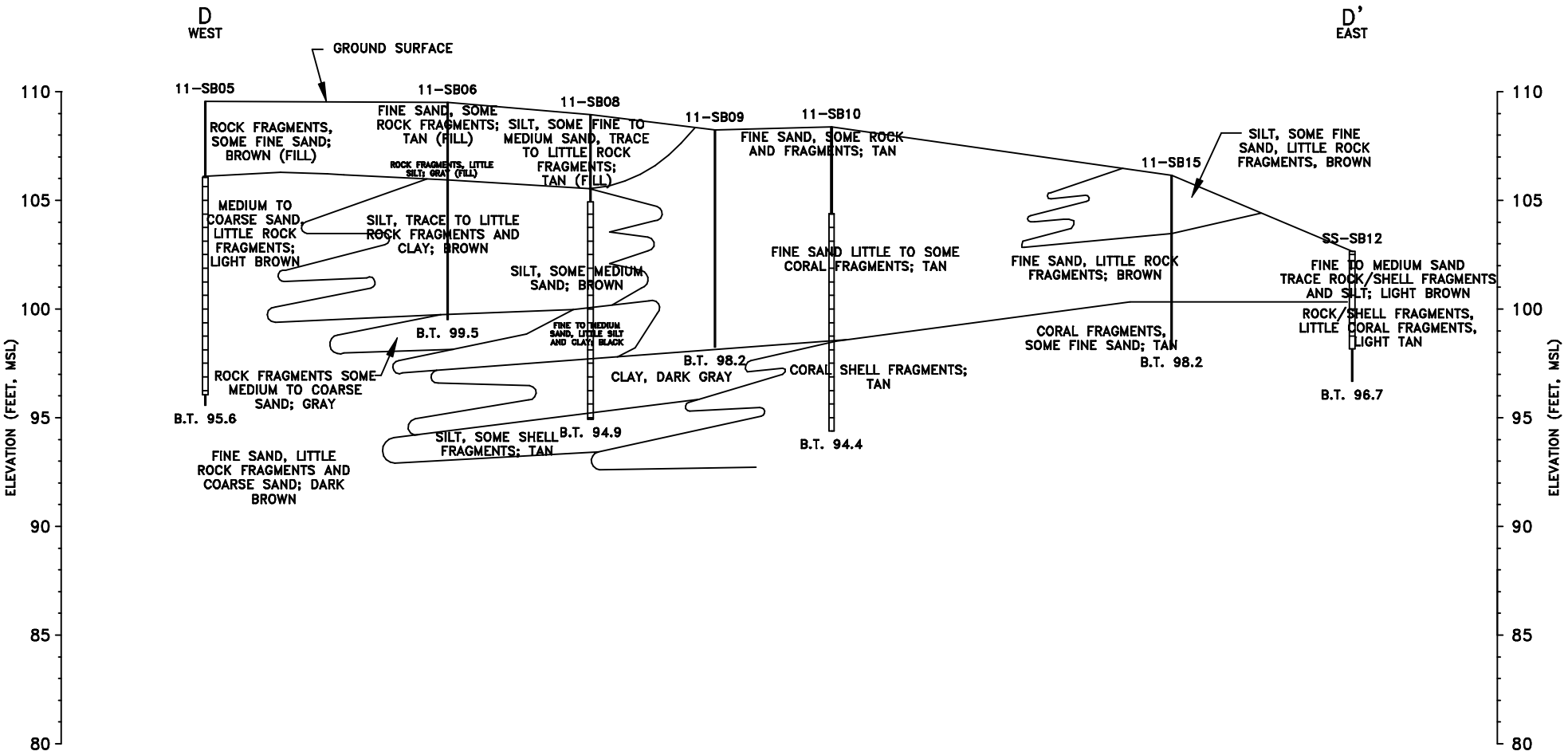
30 0 15 30 60
Horizontal Scale: 1 inch = 30 ft.

5 0 2.5 5 10
Vertical Scale: 1 inch = 5 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

FIGURE 4-13
HYDROGEOLOGIC CROSS-SECTION C-C'
OU#5 - SWMU 45
BUILDING 38 EXTERIOR

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



Baker

LEGEND

B.T. X' — BORING TERMINATED, ELEVATION MSL

WELL SCREEN INTERVAL

ESTIMATED — — — PROJECTED

50 0 25 50 100

Horizontal Scale: 1 inch = 50 ft.

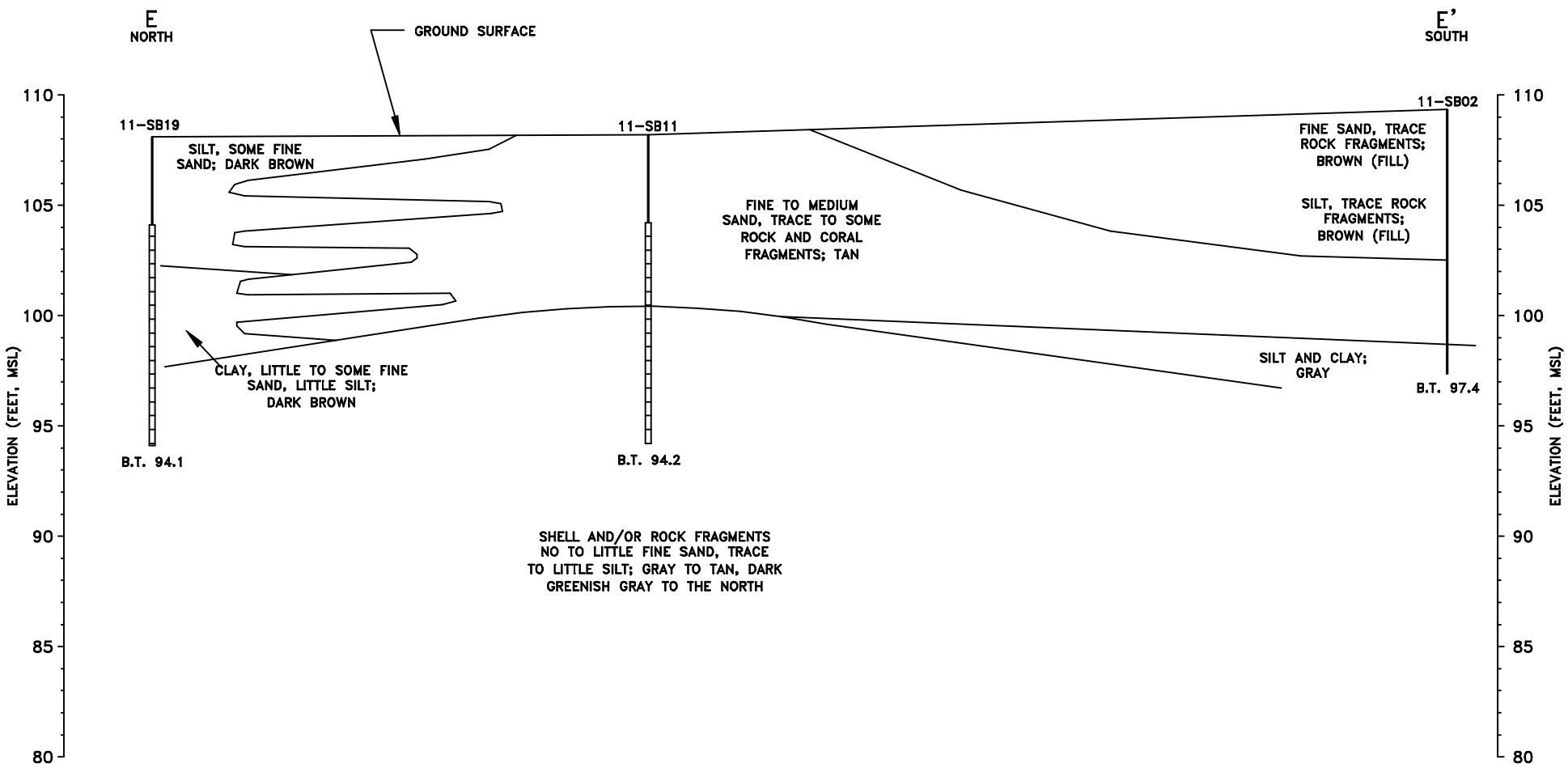
5 0 2.5 5 10

Vertical Scale: 1 inch = 5 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

FIGURE 4-14
GEOLOGIC CROSS-SECTION D-D'
OU #5 - SWMU 45
BUILDING 38 EXTERIOR

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



Baker

LEGEND

B.T. X' — BORING TERMINATED, ELEVATION MSL

WELL SCREEN INTERVAL

ESTIMATED ——— ----- PROJECTED

10 0 5 10 20

Horizontal Scale: 1 inch = 10 ft.

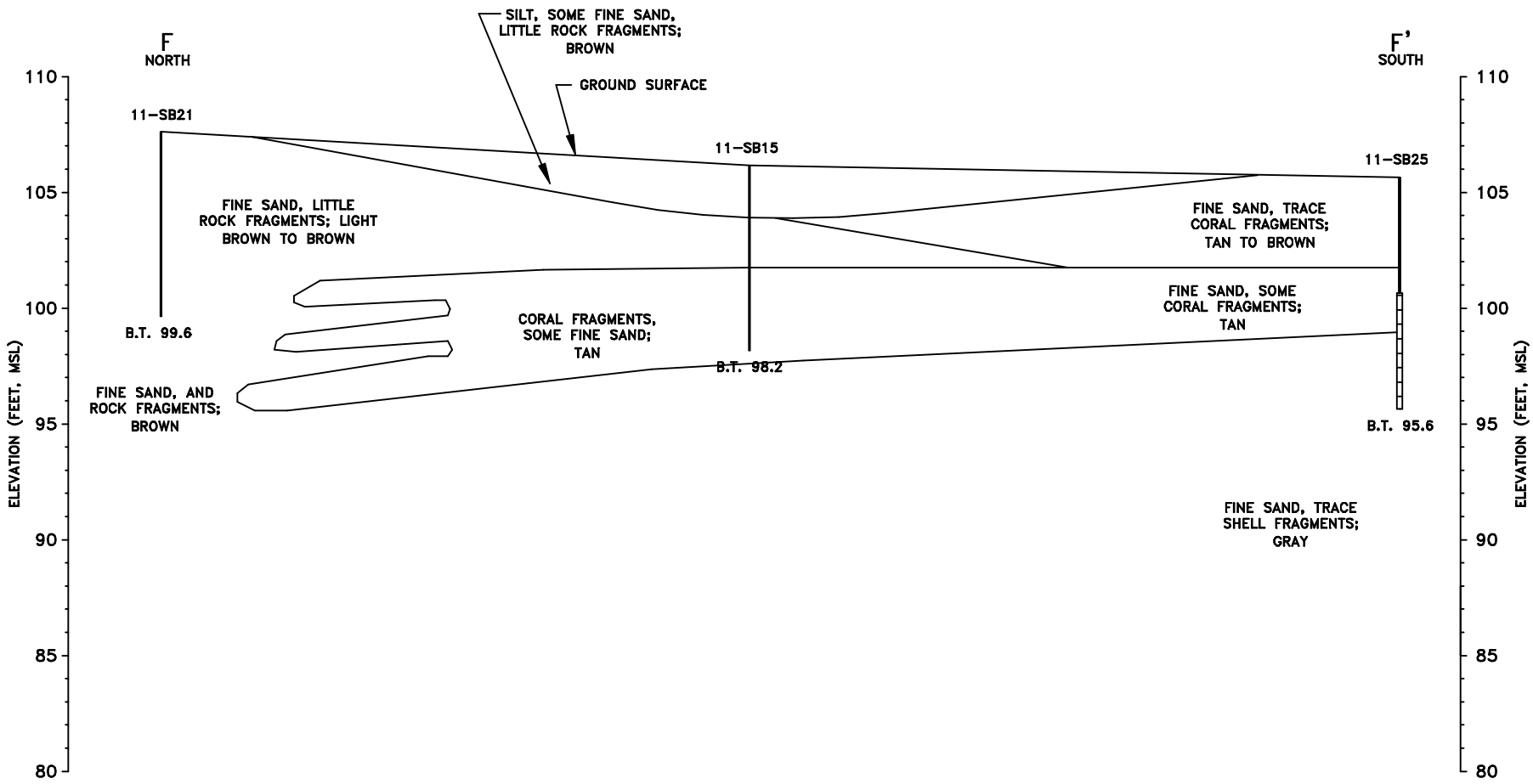
5 0 2.5 5 10

Vertical Scale: 1 inch = 5 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

FIGURE 4-15
GEOLOGIC CROSS-SECTION E-E'
OU #5 - SWMU 45
BUILDING 38 EXTERIOR

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



Baker

LEGEND

B.T. X' BORING TERMINATED, ELEVATION MSL

WELL SCREEN INTERVAL

ESTIMATED ----- PROJECTED

10 0 5 10 20

Horizontal Scale: 1 inch = 10 ft.

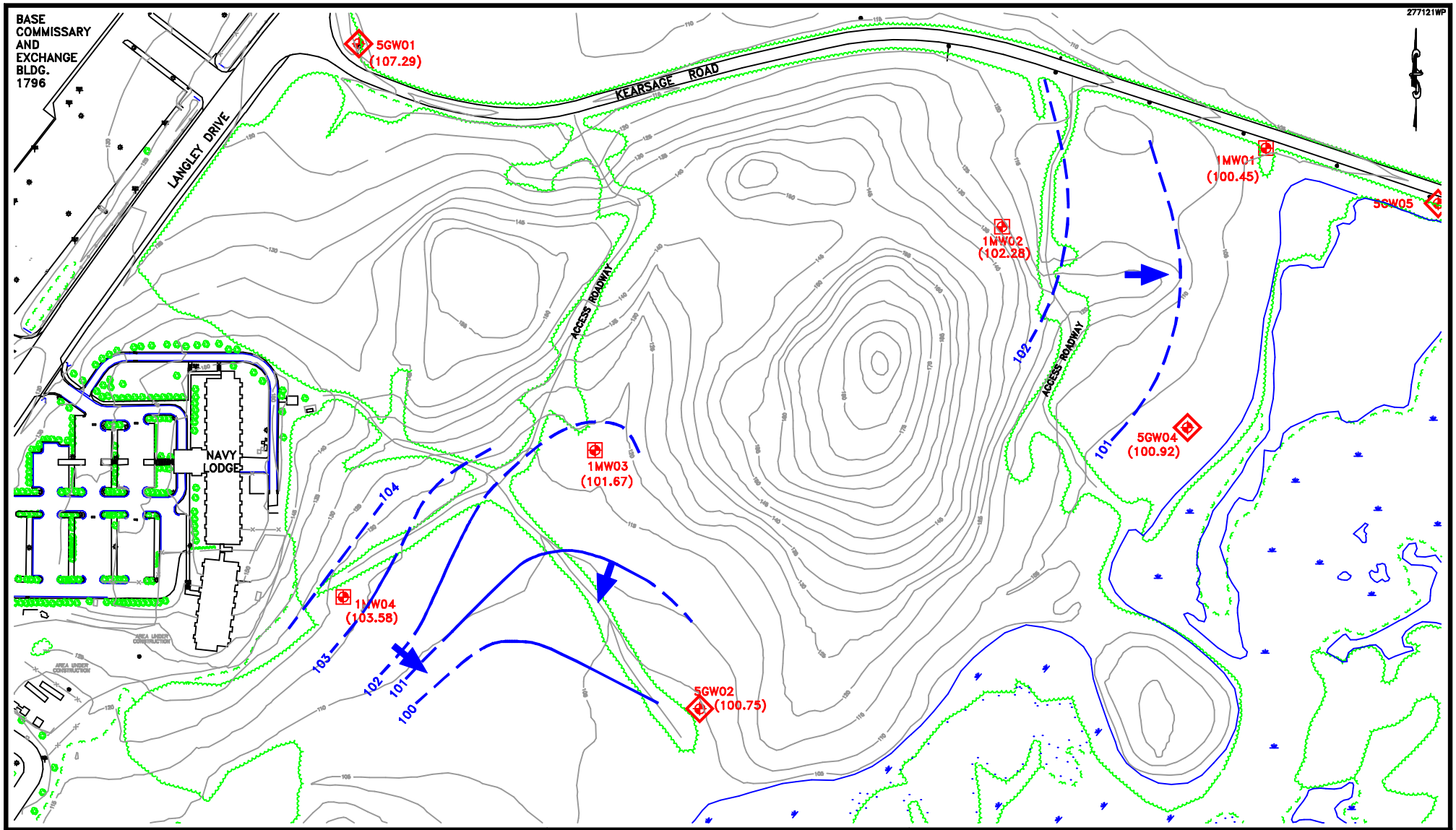
5 0 2.5 5 10

Vertical Scale: 1 inch = 5 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

FIGURE 4-16
GEOLOGIC CROSS-SECTION F-F'
OU #5 - SWMU 45
BUILDING 38 EXTERIOR

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



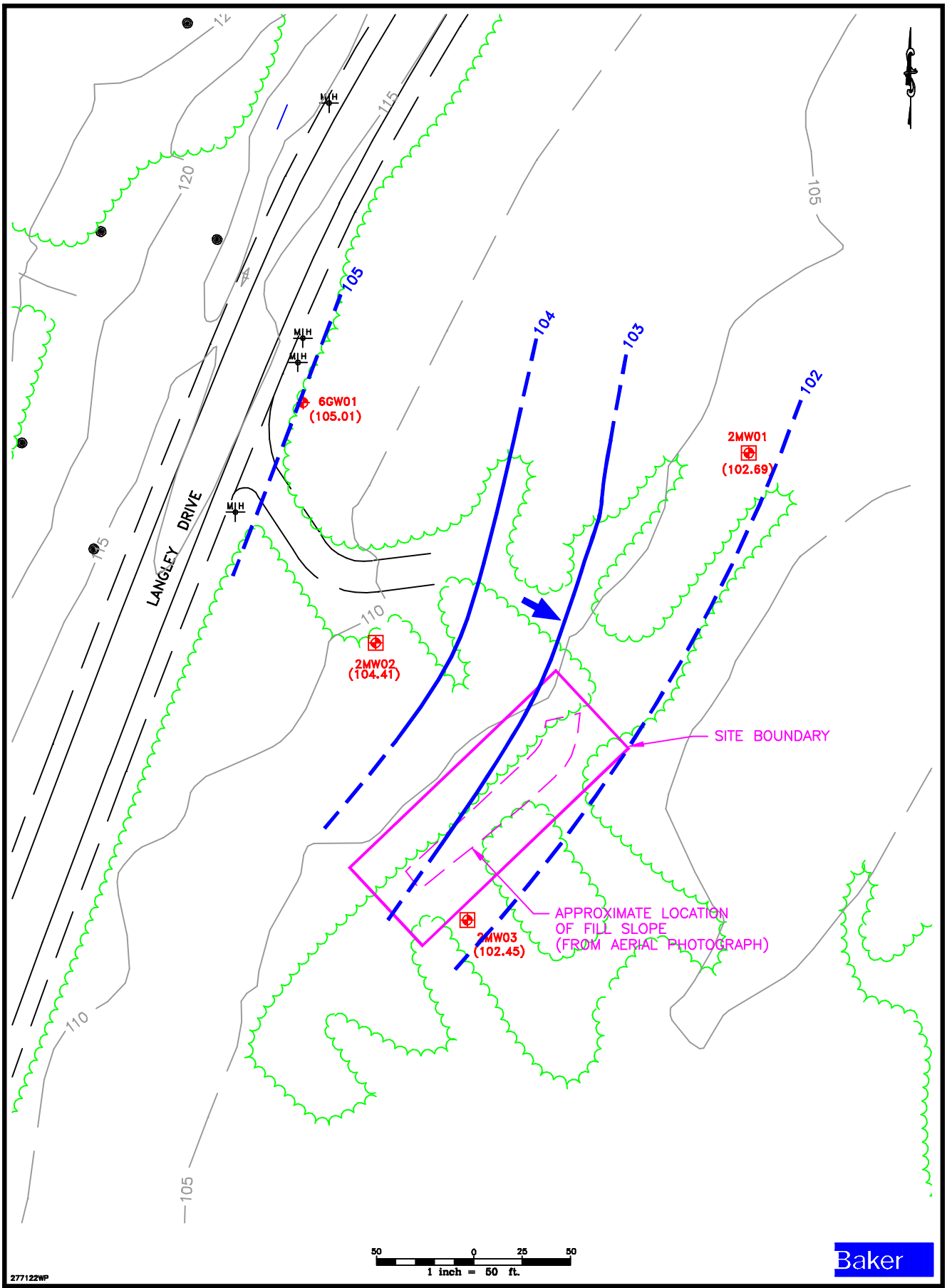
LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- (100.45) – GROUNDWATER ELEVATION (FT. MSL)
- 101 – GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 4–17
GROUNDWATER CONTOUR MAP – NOVEMBER 1996
OU #3 – SWMU 1
ARMY CREMATOR DISPOSAL SITE
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

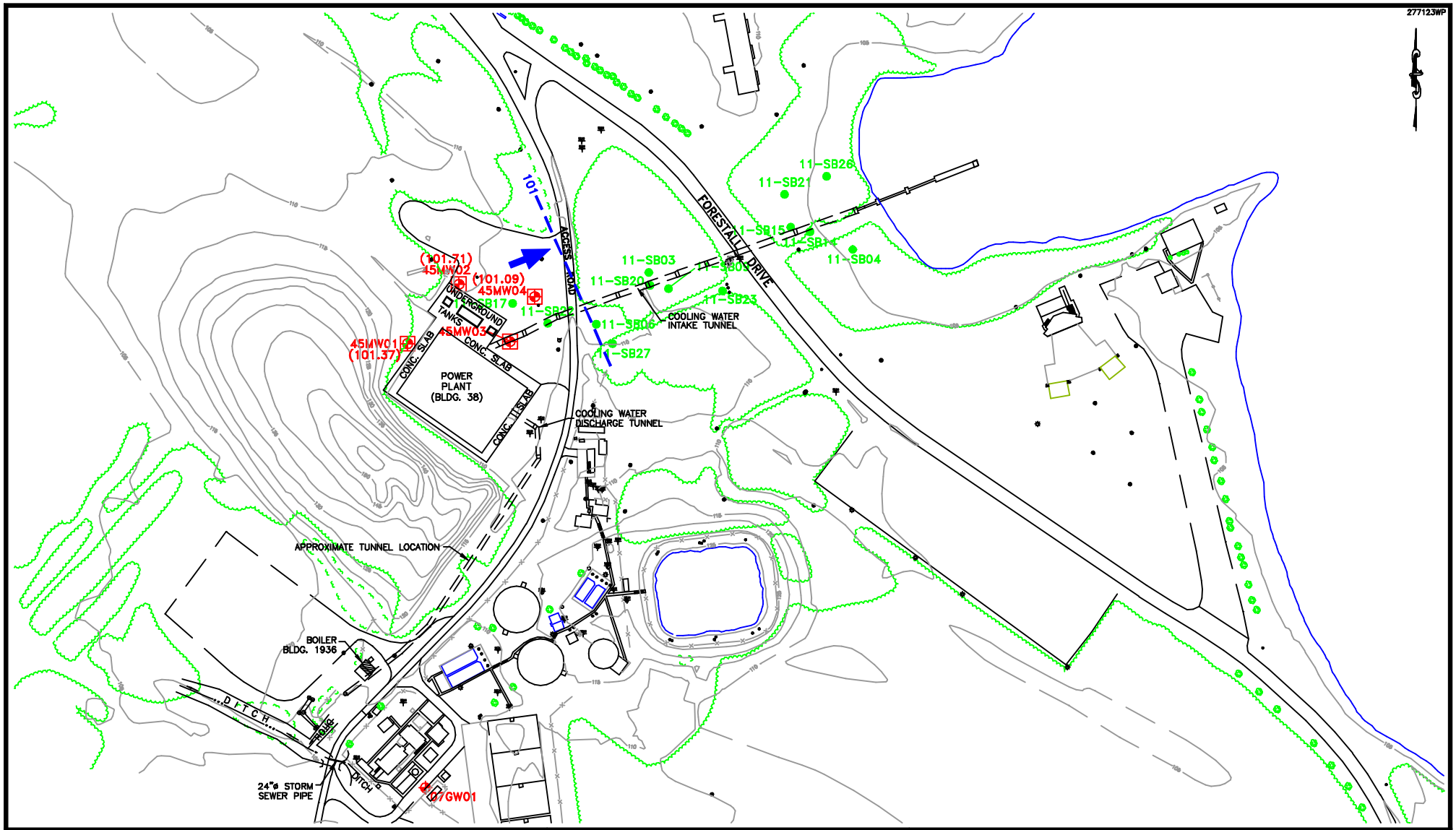


LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- (102.45) – GROUNDWATER ELEVATION (FT. MSL)
- 102 – GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

FIGURE 4–18
GROUNDWATER CONTOUR MAP – NOVEMBER 1996
OU #3 – SWMU 2
LANGLEY DRIVE DISPOSAL SITE

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



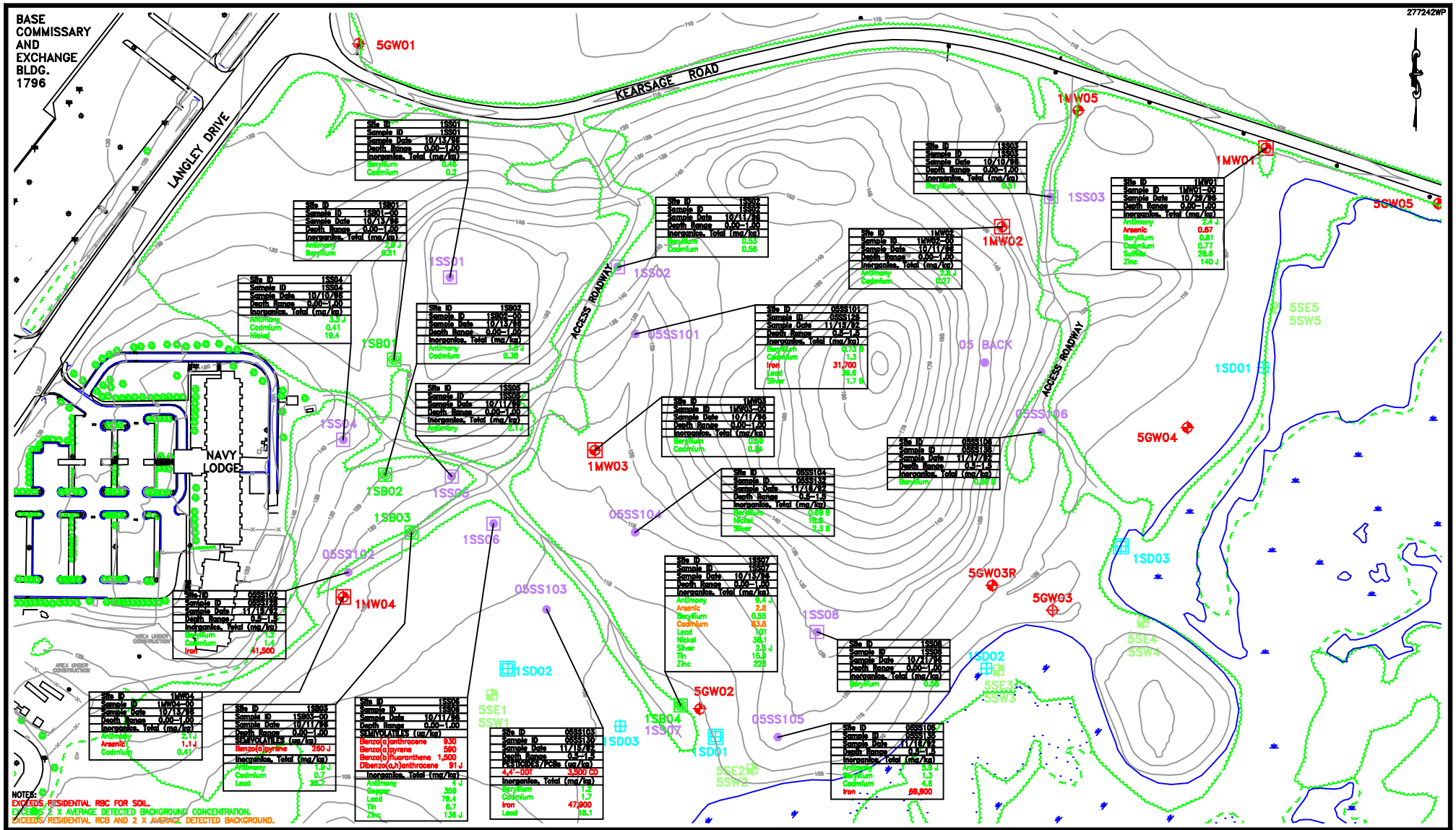
LEGEND

- EXISTING GROUNDWATER SAMPLE LOCATION
- MONITORING WELL LOCATION (1996 RFI)
- (91.12) – GROUNDWATER ELEVATION (FT. MSL)
- 90 – GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 4-19
GROUNDWATER CONTOUR MAP – NOVEMBER 1996
OU #5 – SWMU 45
BUILDING 38 EXTERIOR
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

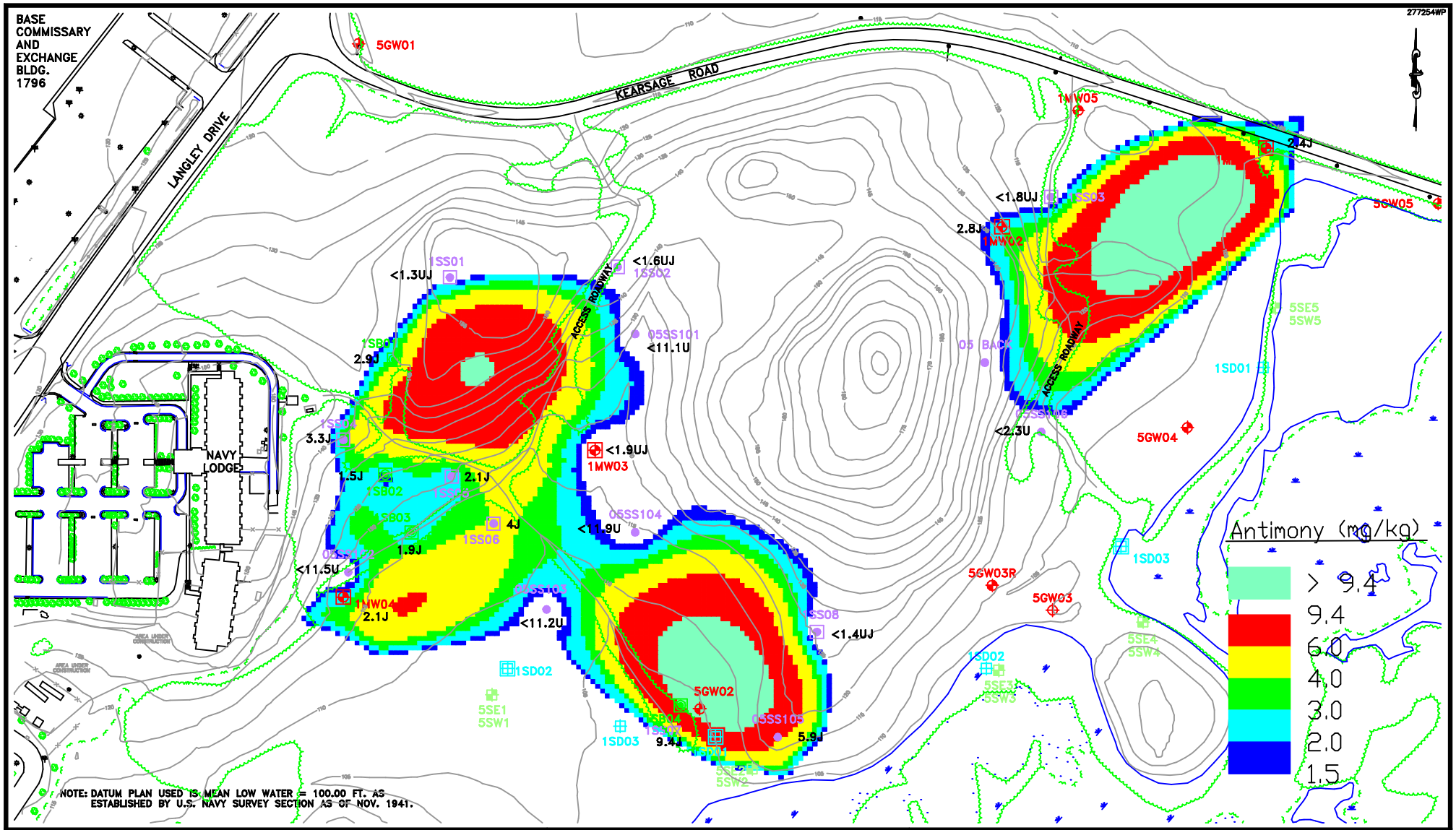
- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- REPORTED LOCATION OF 5GW03 (NOT LOCATED DURING 1996 RFI FIELD WORK)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- 05SS101 SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150

1 inch = 150 ft.

Baker

FIGURE 5-1
SURFACE SOIL DETECTIONS
ABOVE SCREENING CRITERIA
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



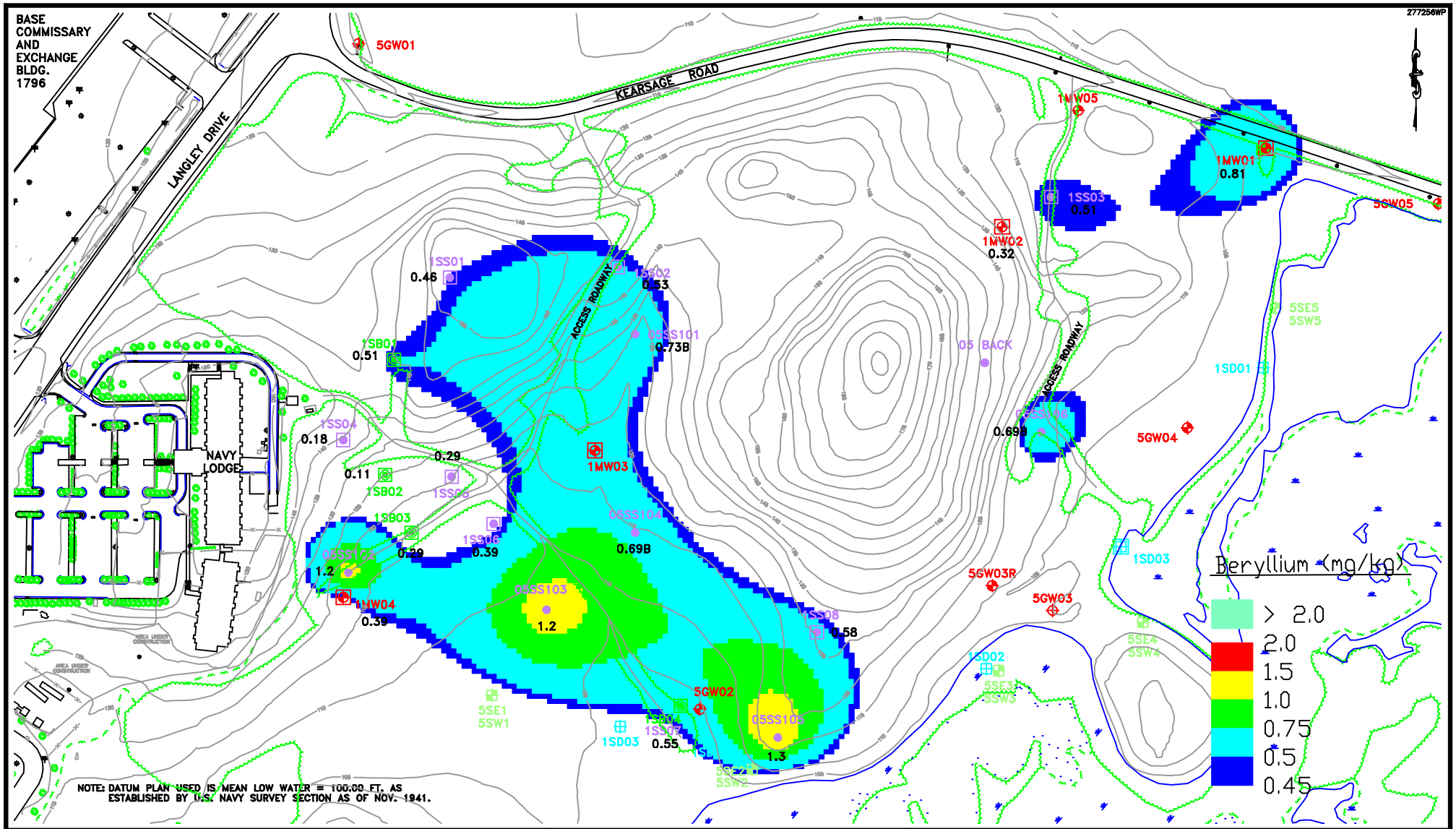
LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- REPORTED LOCATION OF 5GW03 (NOT LOCATED DURING 1996 RFI FIELD WORK)
- 5SE1 5SW1 – SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- 05SS101 – SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5–2
ANTIMONY IN SURFACE SOIL
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



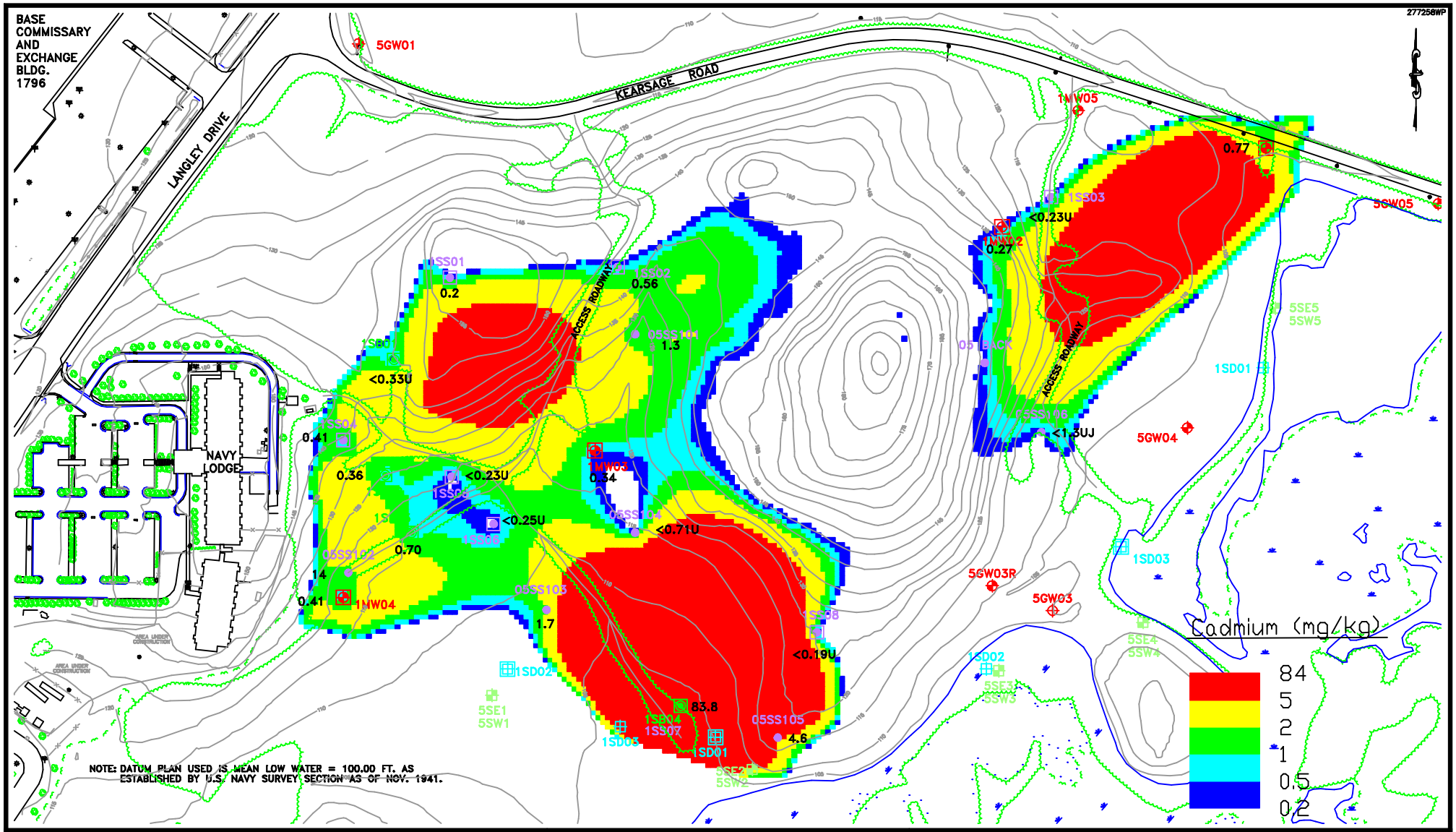
LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- REPORTED LOCATION OF 5GW03 (NOT LOCATED DURING 1996 RFI FIELD WORK)
- 5SE1 5SW1 – SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- 05SS101 – SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-3
BERYLLIUM IN SURFACE SOIL
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



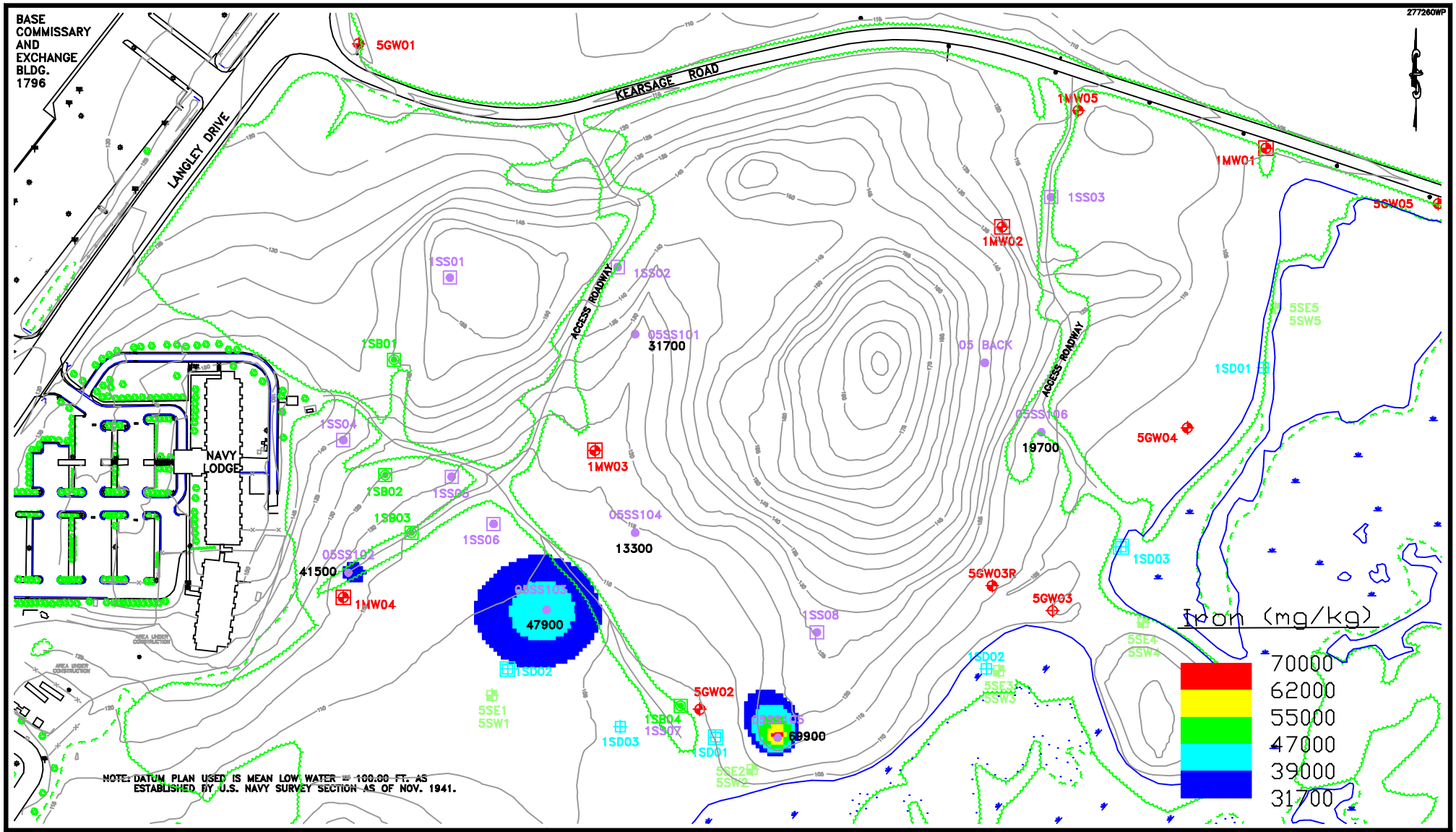
LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- REPORTED LOCATION OF 5GW03 (NOT LOCATED DURING 1996 RFI FIELD WORK)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- 05SS101 SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-4
CADMIUM IN SURFACE SOIL
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



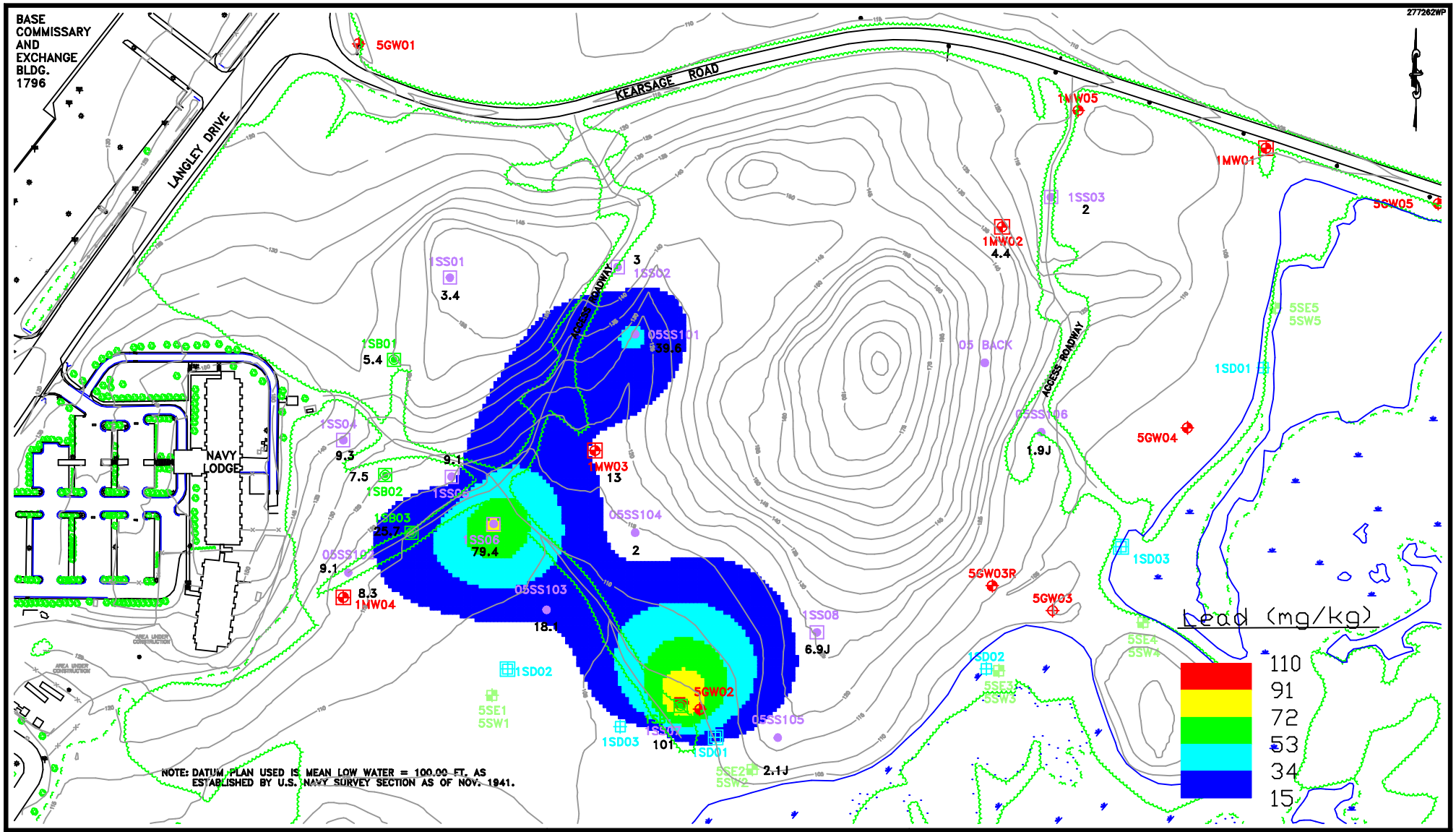
LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- REPORTED LOCATION OF 5GW03 (NOT LOCATED DURING 1996 RFI FIELD WORK)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- 05SS101 SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-5
IRON IN SURFACE SOIL
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- REPORTED LOCATION OF 5GW03 (NOT LOCATED DURING 1996 RFI FIELD WORK)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- 05SS101 SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-6
LEAD IN SURFACE SOIL
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

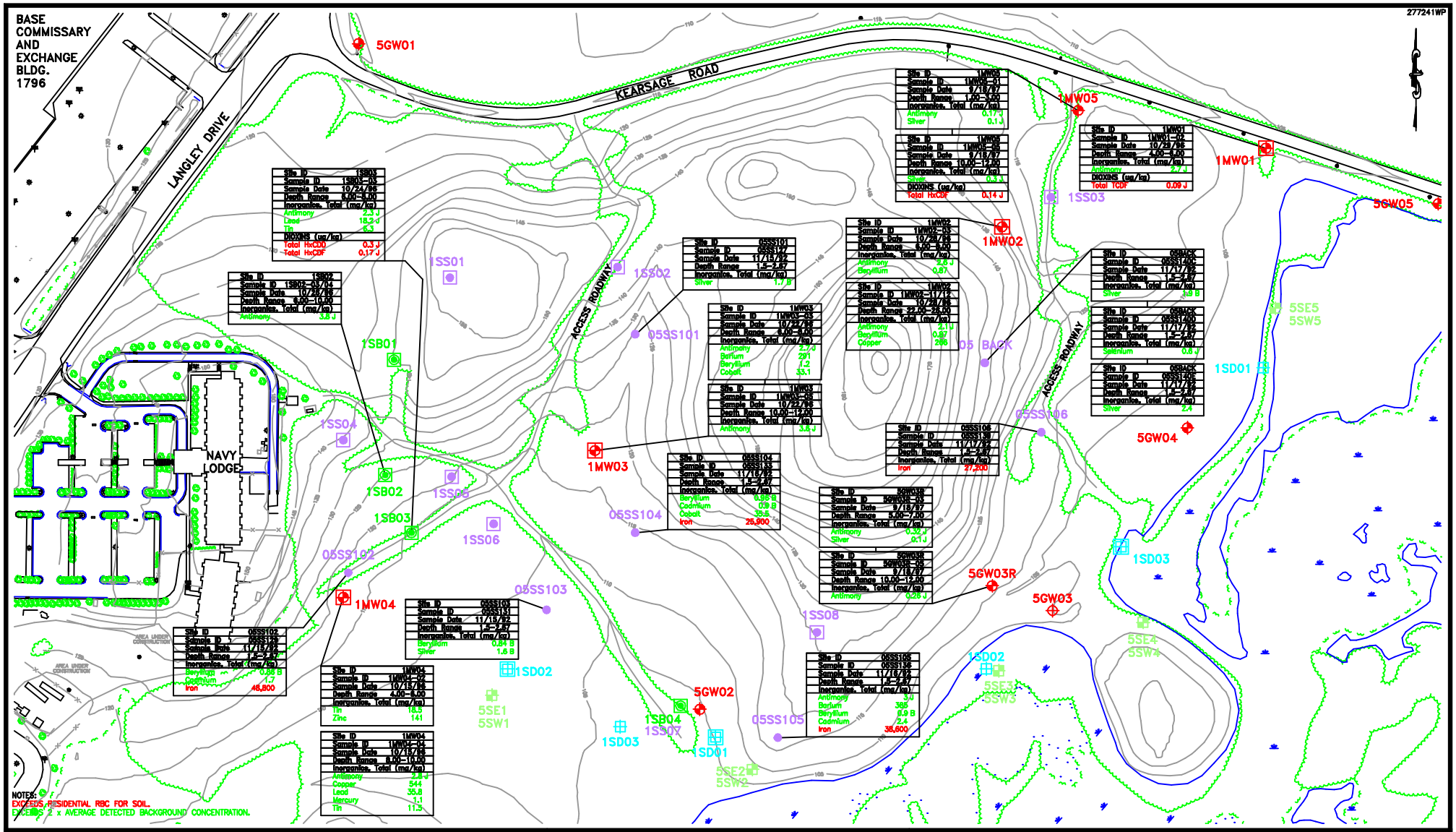
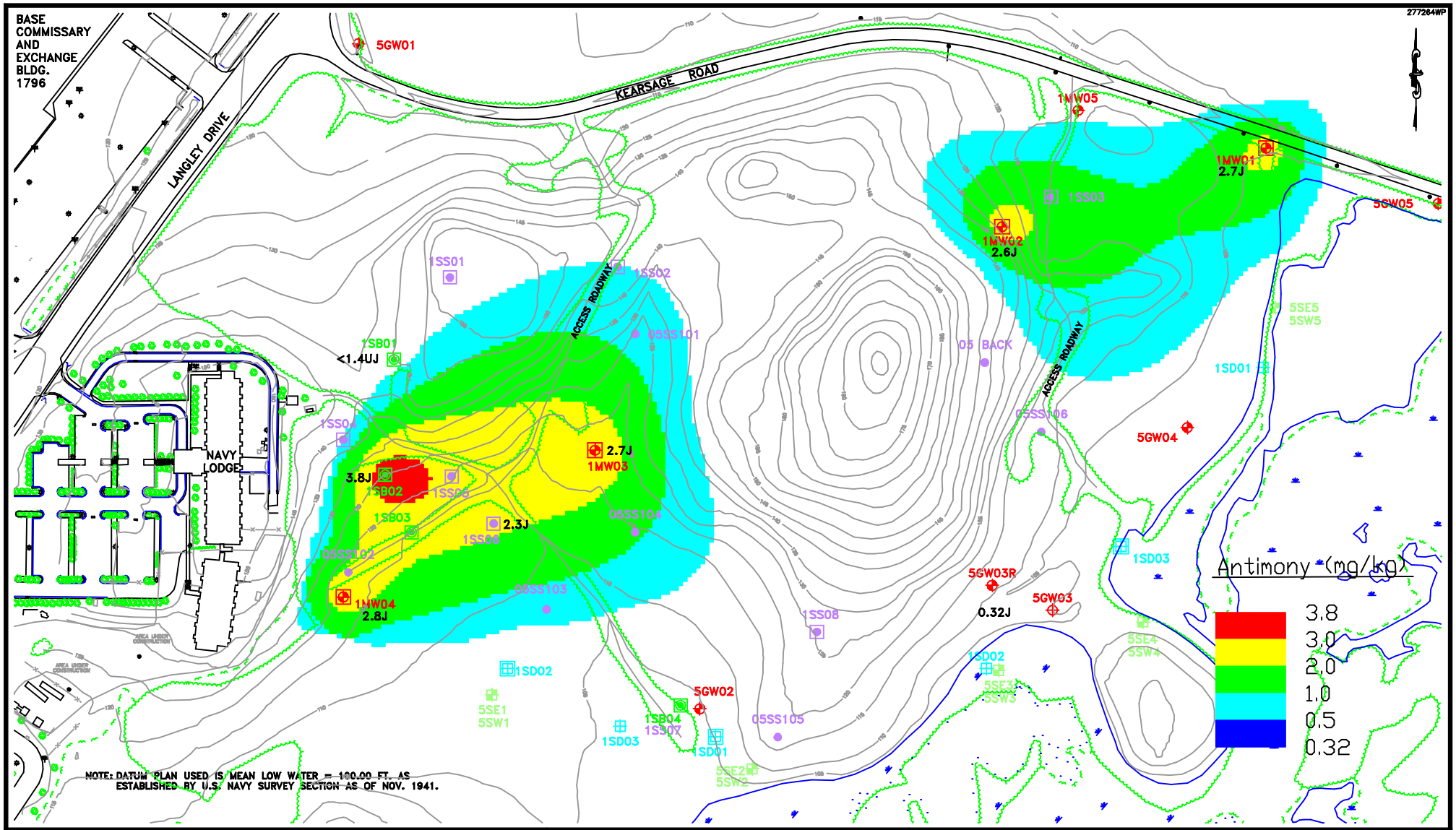


FIGURE 5-7
SUBSURFACE SOIL DETECTIONS
ABOVE SCREENING CRITERIA
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
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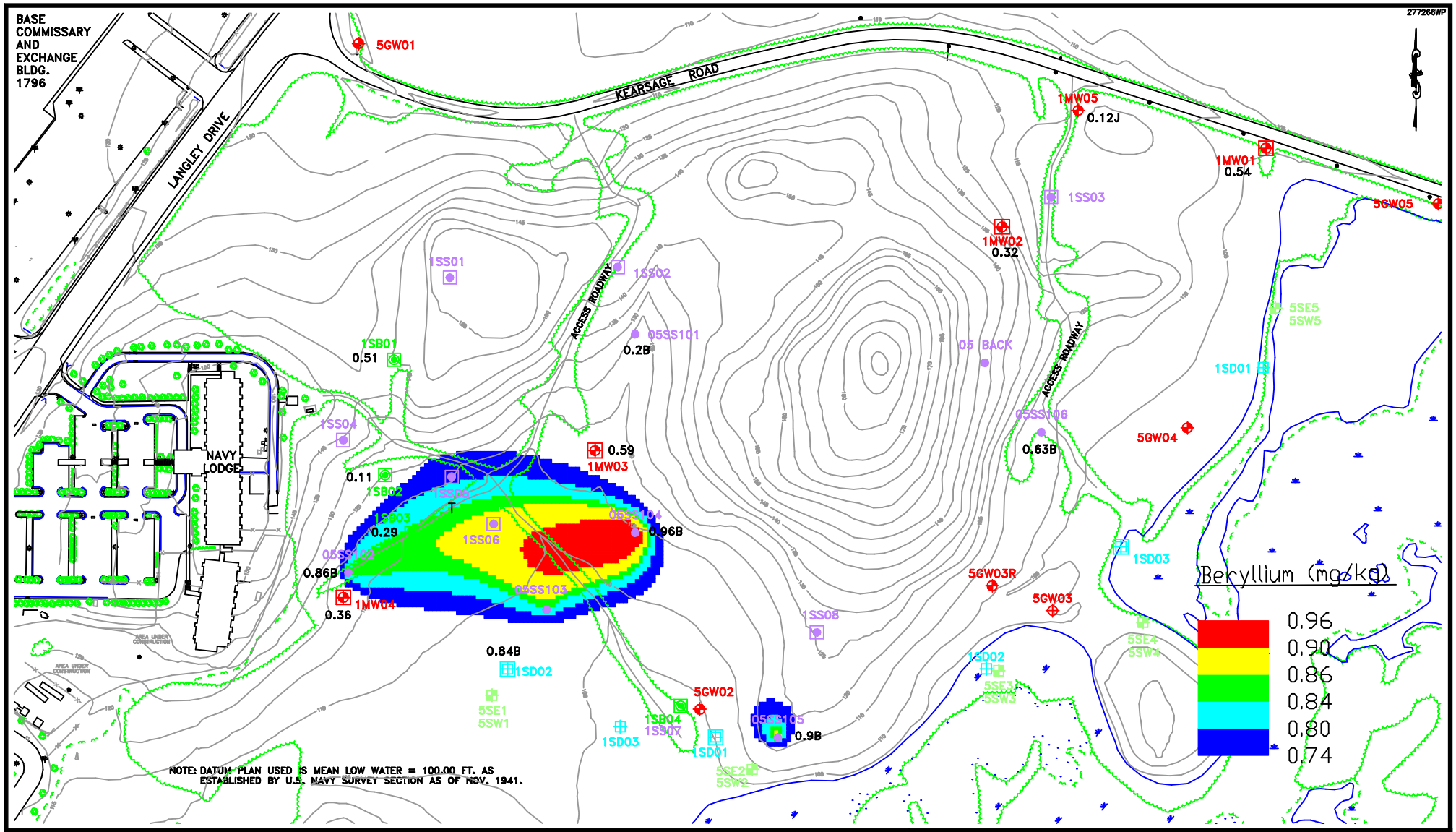
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- REPORTED LOCATION OF 5GW03 (NOT LOCATED DURING 1996 RFI FIELD WORK)
- 5SE1 5SW1 – SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- 05SS101 – SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-8
ANTIMONY IN SUBSURFACE SOIL
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
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- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
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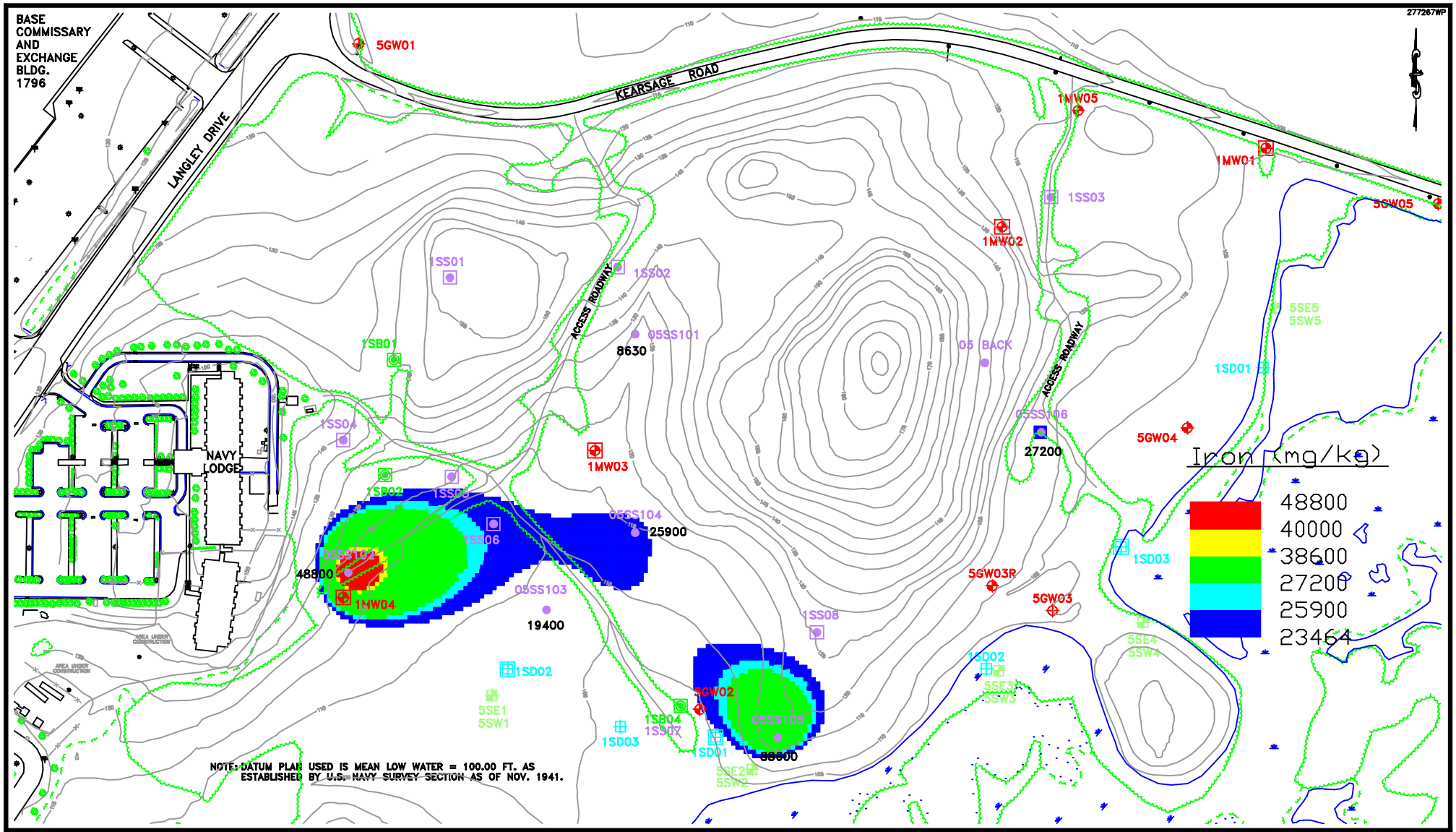
- 05SS101 – SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-9
BERYLLIUM IN SUBSURFACE SOIL
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



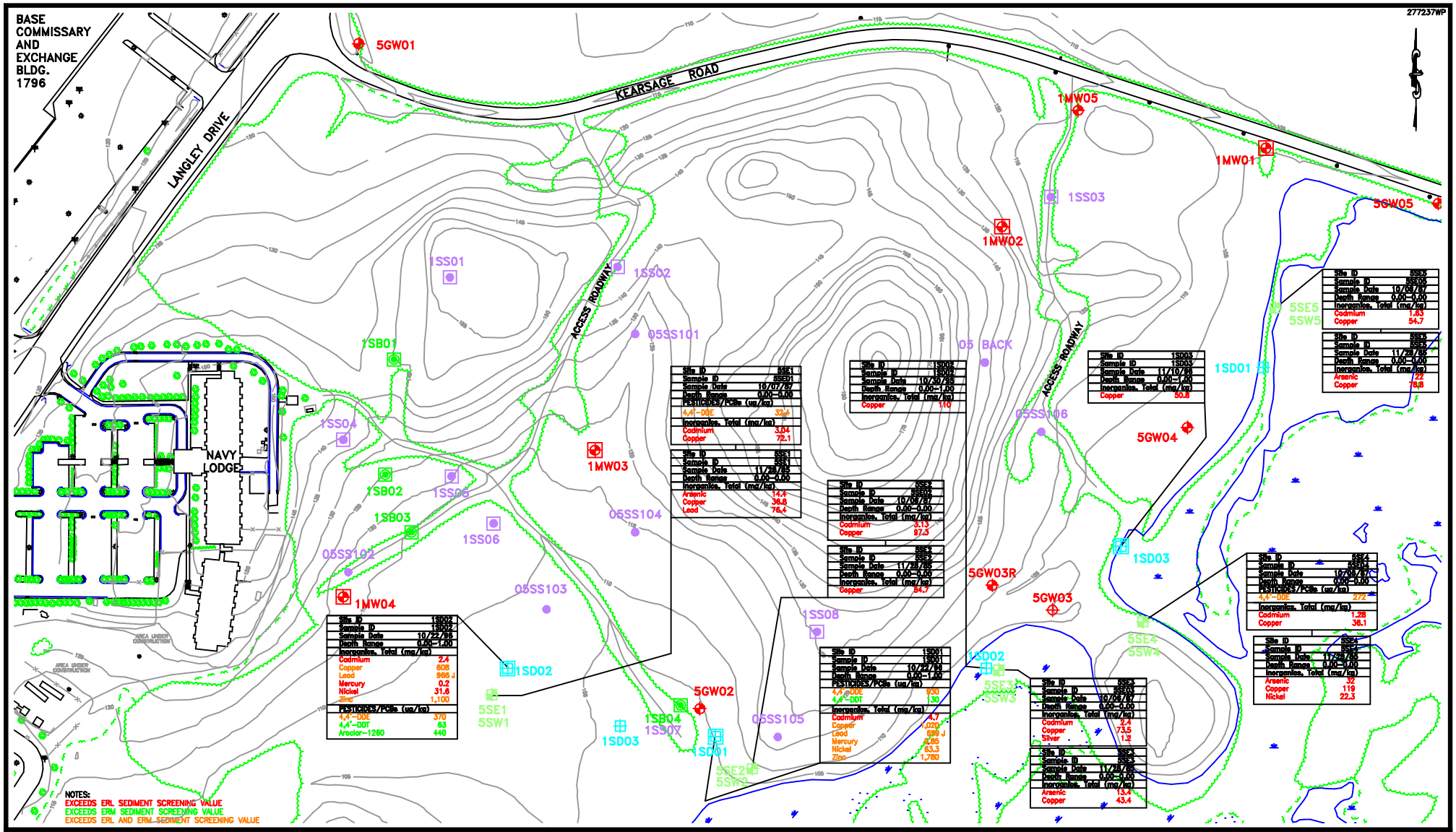
LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- REPORTED LOCATION OF 5GW03 (NOT LOCATED DURING 1996 RFI FIELD WORK)
- 5SE1 5SW1 – SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- 05SS101 – SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-10
IRON IN SUBSURFACE SOIL
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- REPORTED LOCATION OF 5GW03 (NOT LOCATED DURING 1996 RFI FIELD WORK)
- 5SE1 5SW1 – SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- 05SS101 – SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

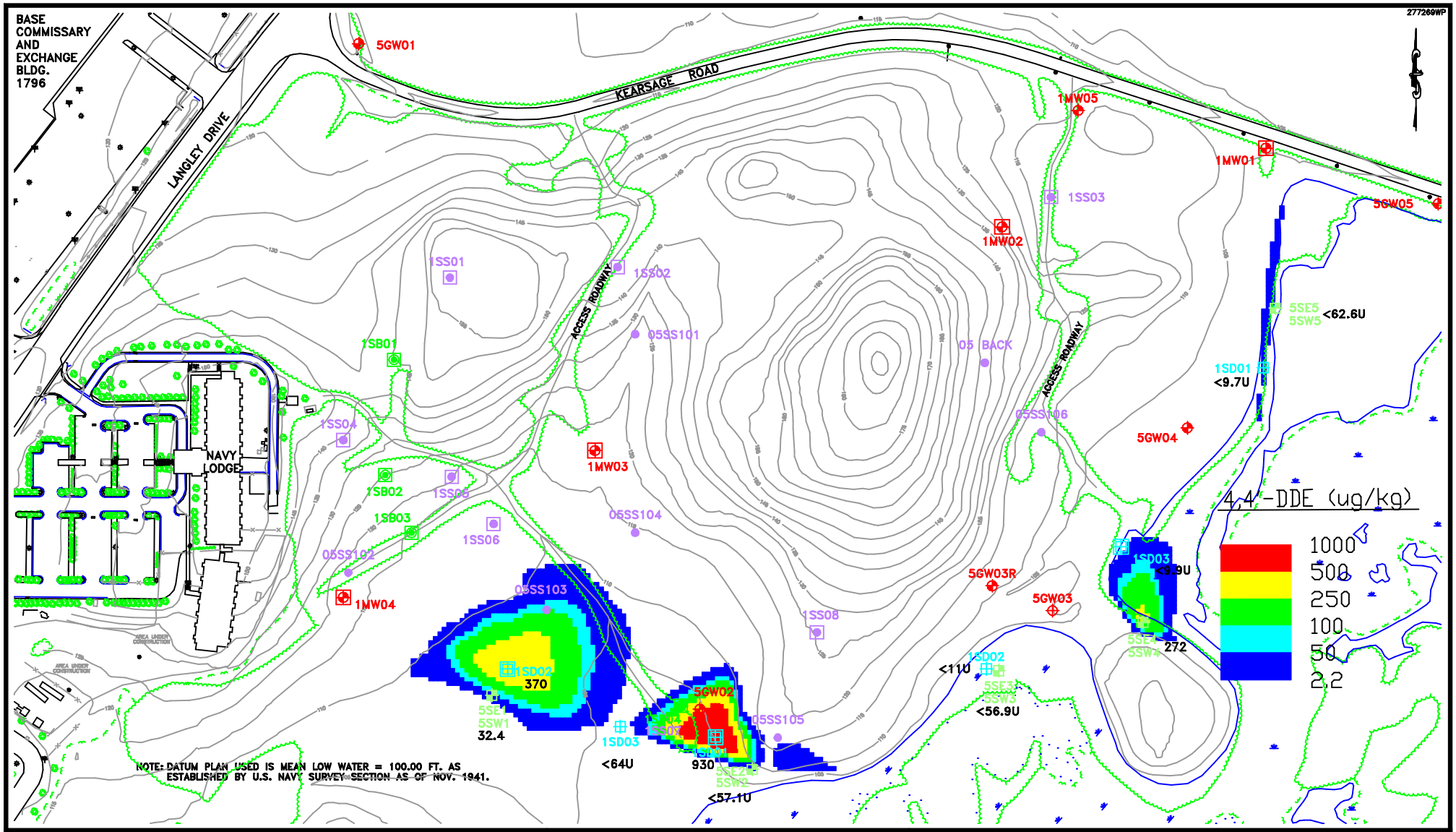
150 0 75 150

1 inch = 150 ft.

Baker

FIGURE 5-11
SEDIMENT DETECTIONS ABOVE SCREENING CRITERIA
SWMU 1

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
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- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- REPORTED LOCATION OF 5GW03 (NOT LOCATED DURING 1996 RFI FIELD WORK)
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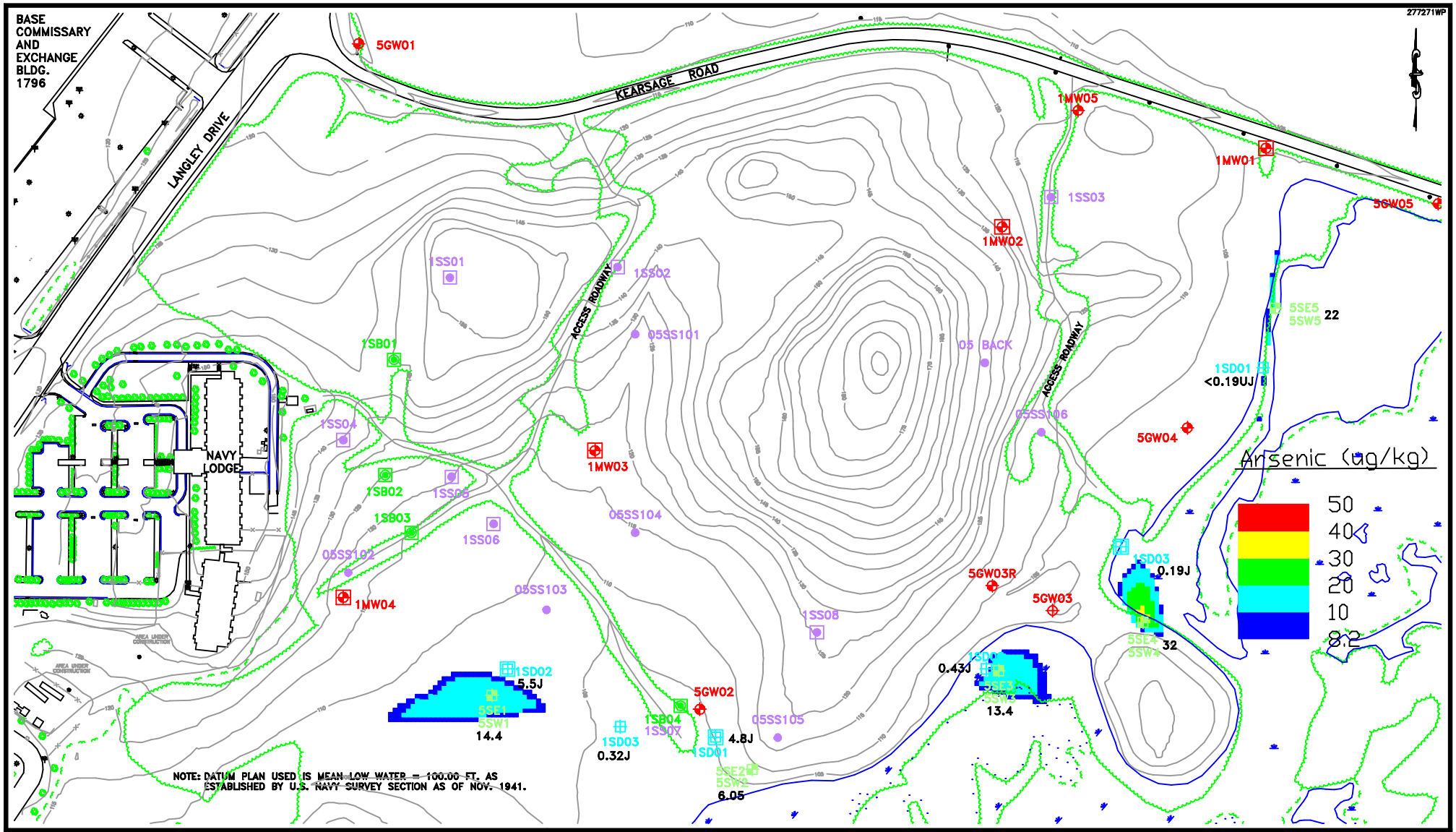
- 05SS101 – SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-12
4,4'-DDE IN SEDIMENT
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



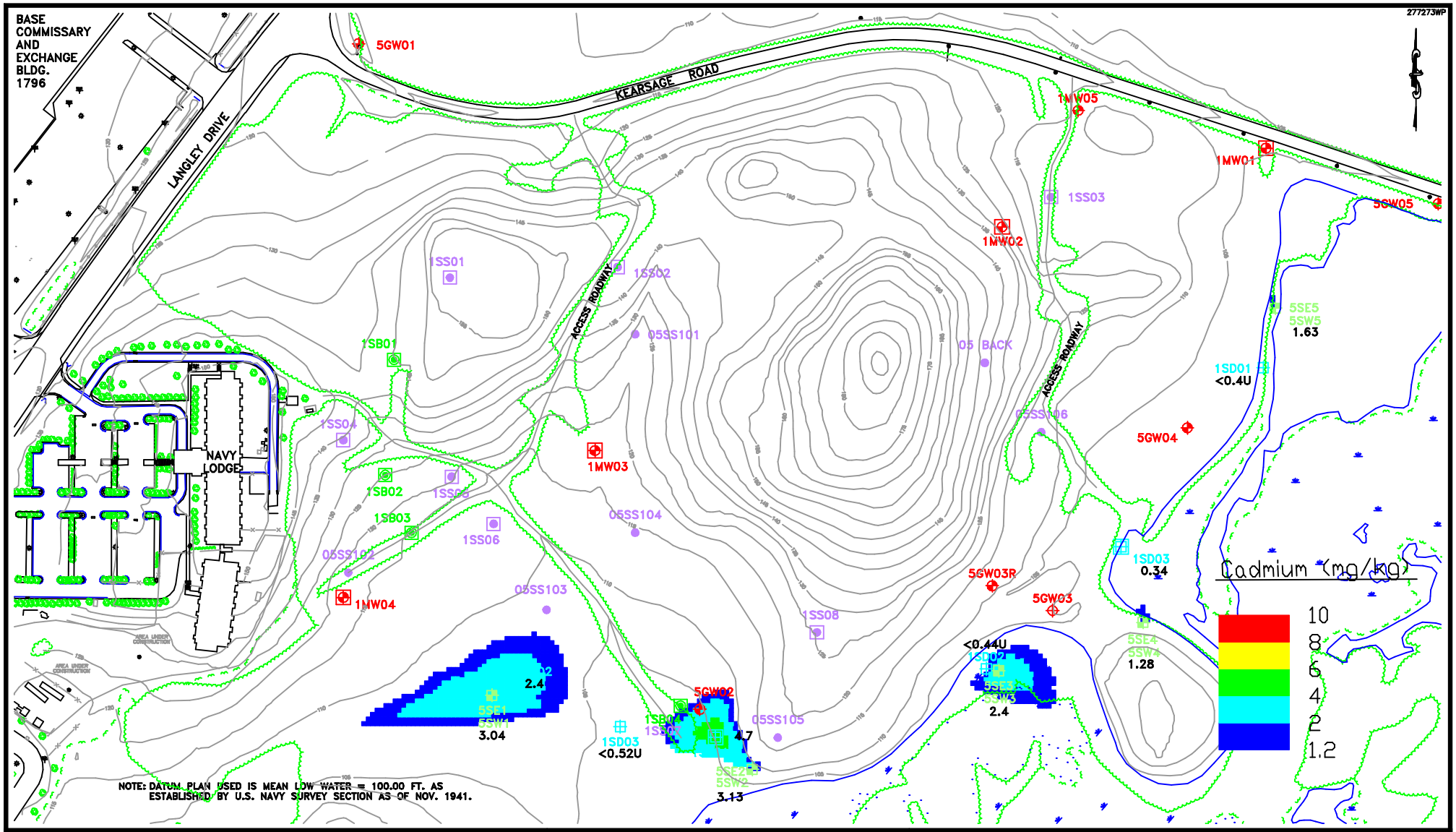
LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- REPORTED LOCATION OF 5GW03 (NOT LOCATED DURING 1996 RFI FIELD WORK)
- 5SE1 5SW1 – SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- 05SS101 – SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-13
ARSENIC IN SEDIMENT
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
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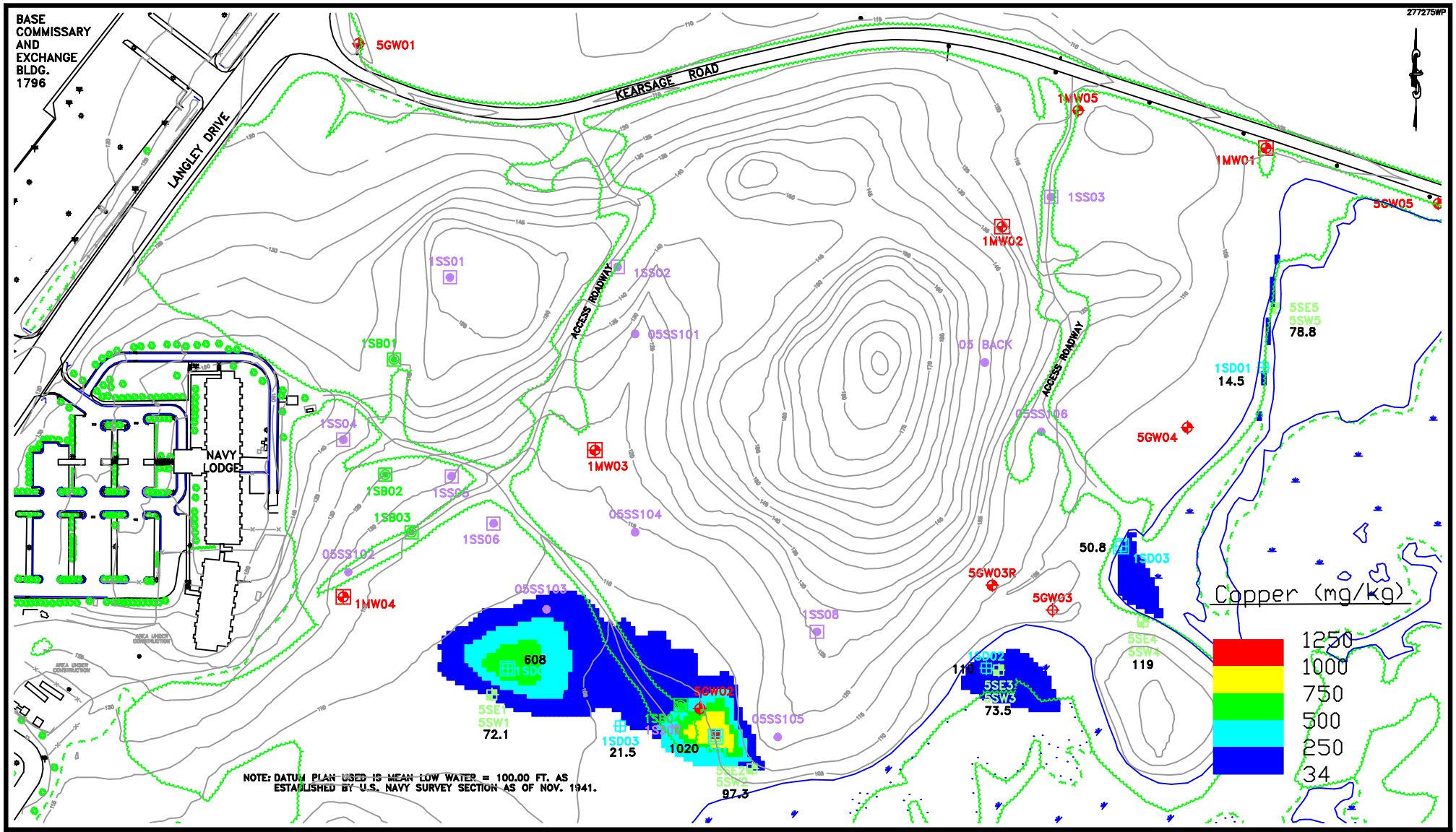
- 05SS101 – SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-14
CADMIUM IN SEDIMENT
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- REPORTED LOCATION OF 5GW03 (NOT LOCATED DURING 1996 RFI FIELD WORK)
- 5SE1 5SW1 – SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- 05SS101 – SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-15
COPPER IN SEDIMENT
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

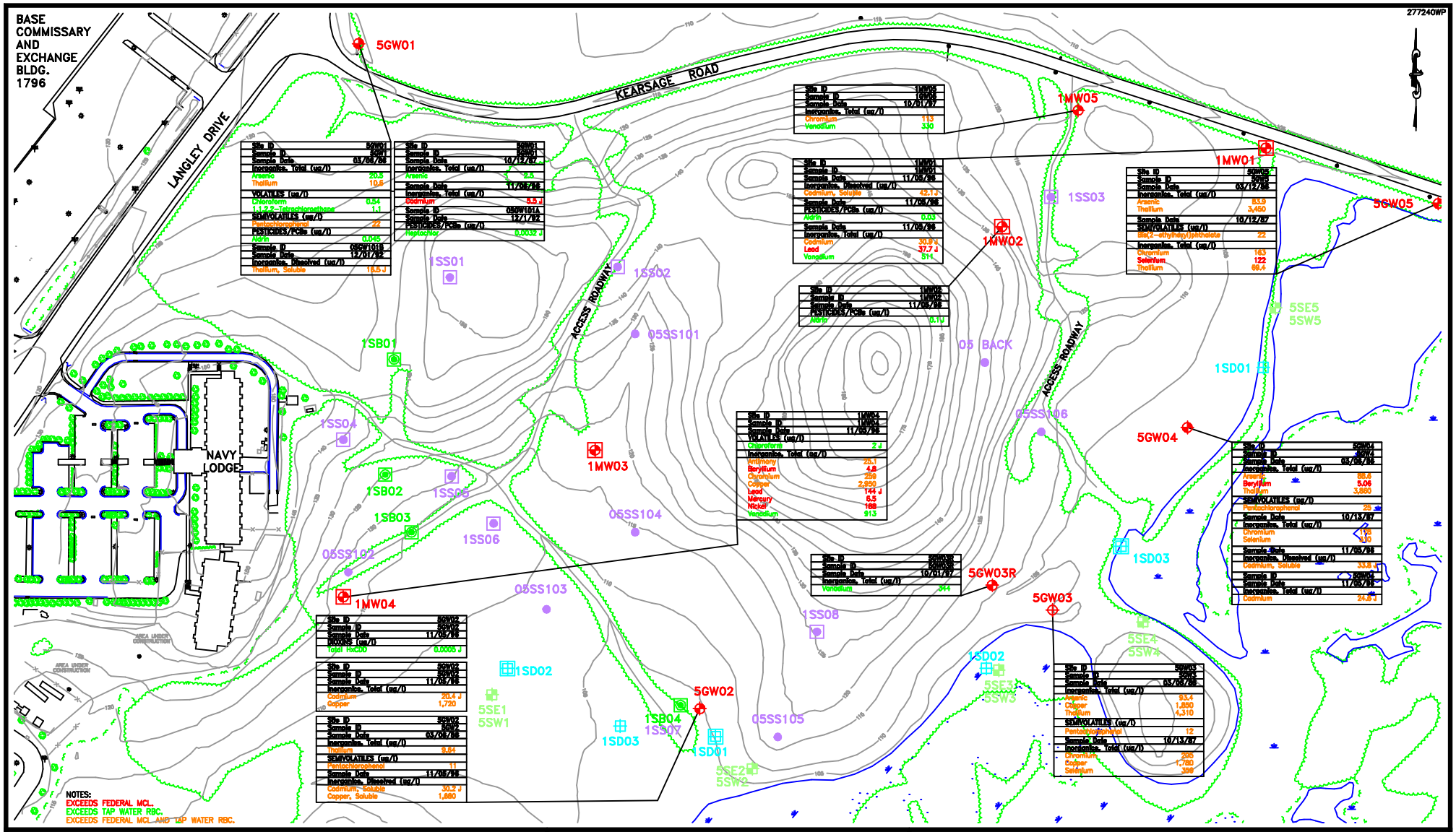
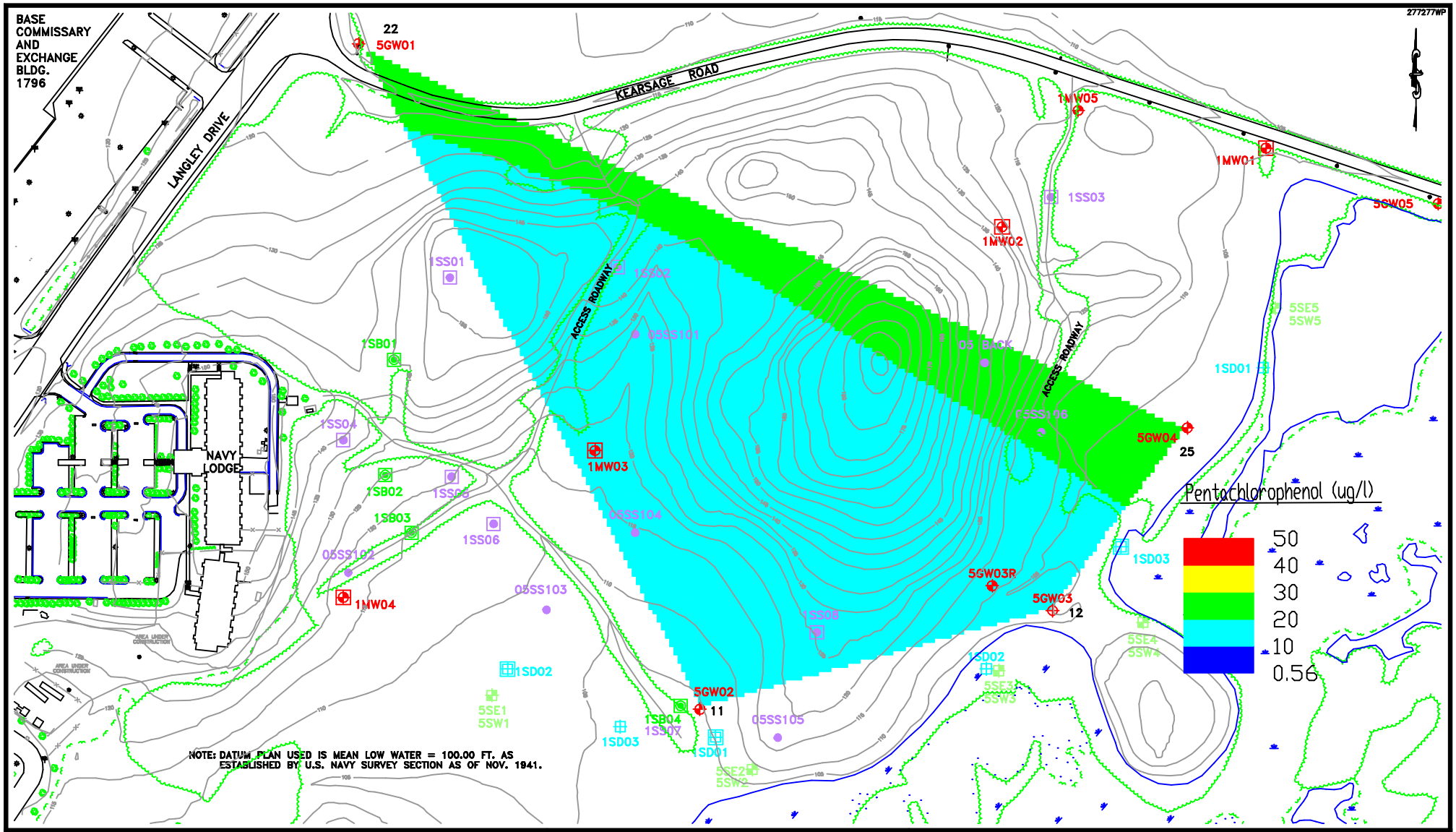


FIGURE 5-16
GROUNDWATER DETECTIONS
ABOVE SCREENING CRITERIA
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
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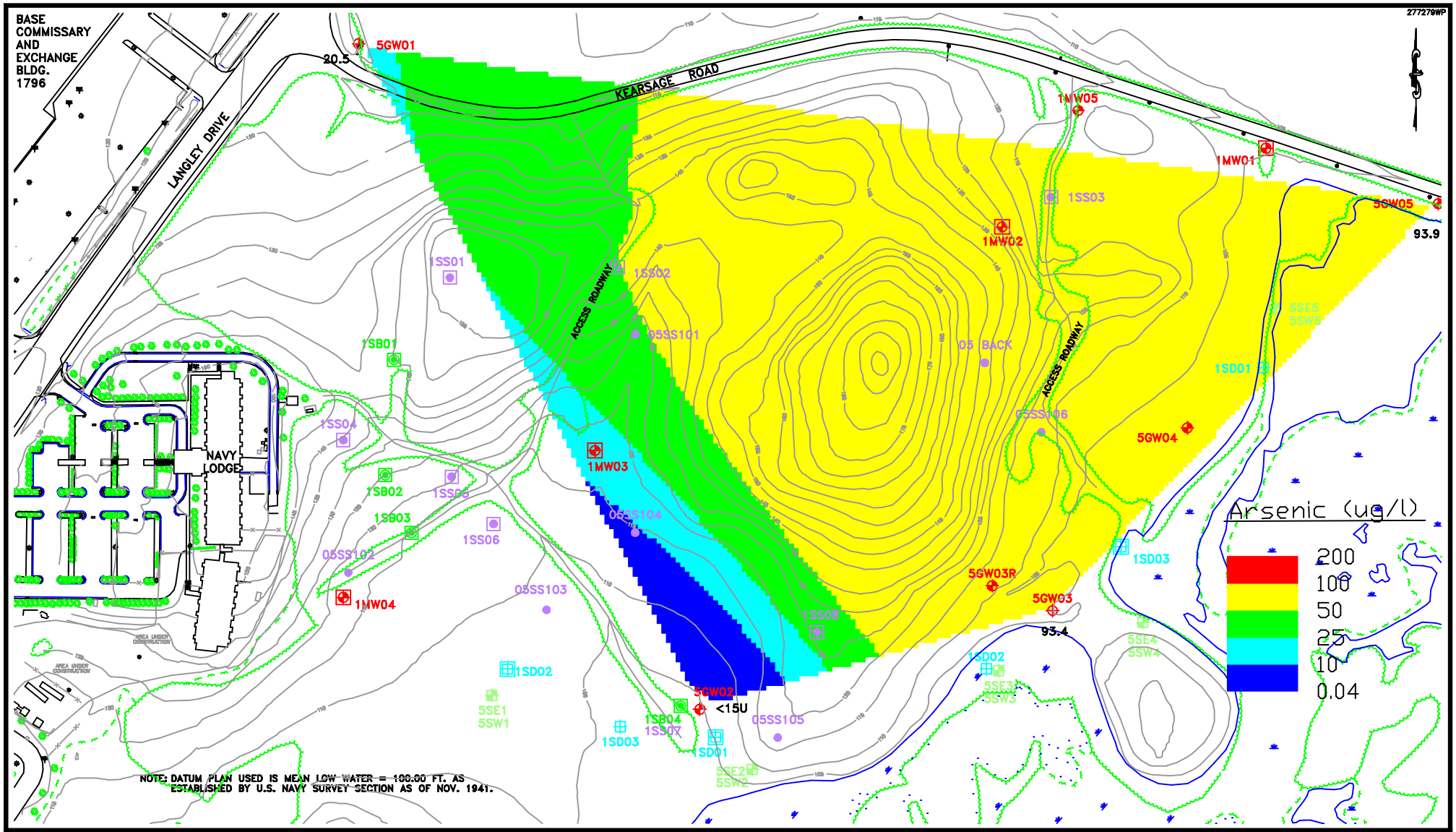
- 05SS101 – SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-17
PENTACHLOROPHENOL IN GROUNDWATER
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



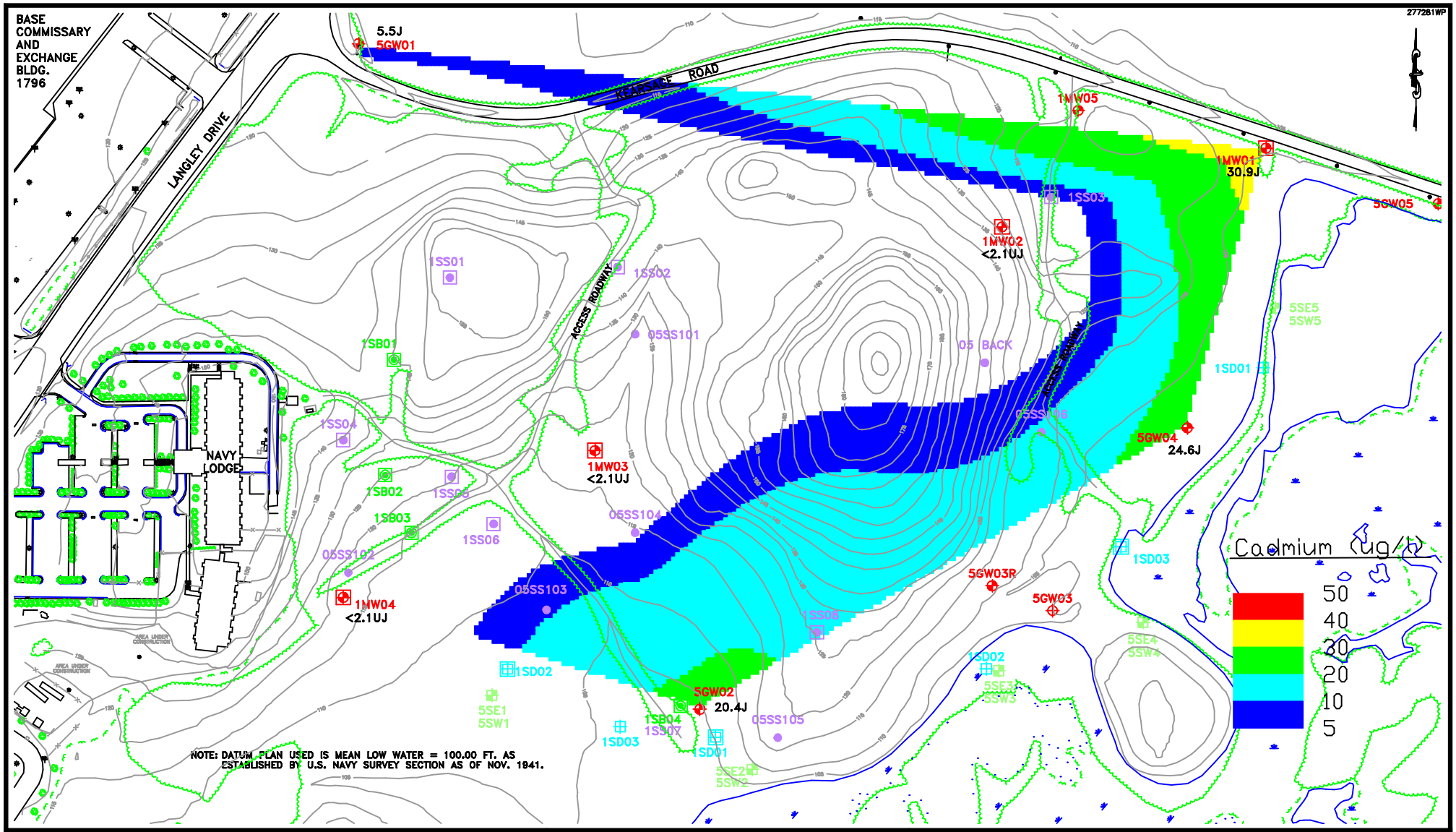
LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- REPORTED LOCATION OF 5GW03 (NOT LOCATED DURING 1996 RFI FIELD WORK)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- 05SS101 SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-18
ARSENIC IN GROUNDWATER
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
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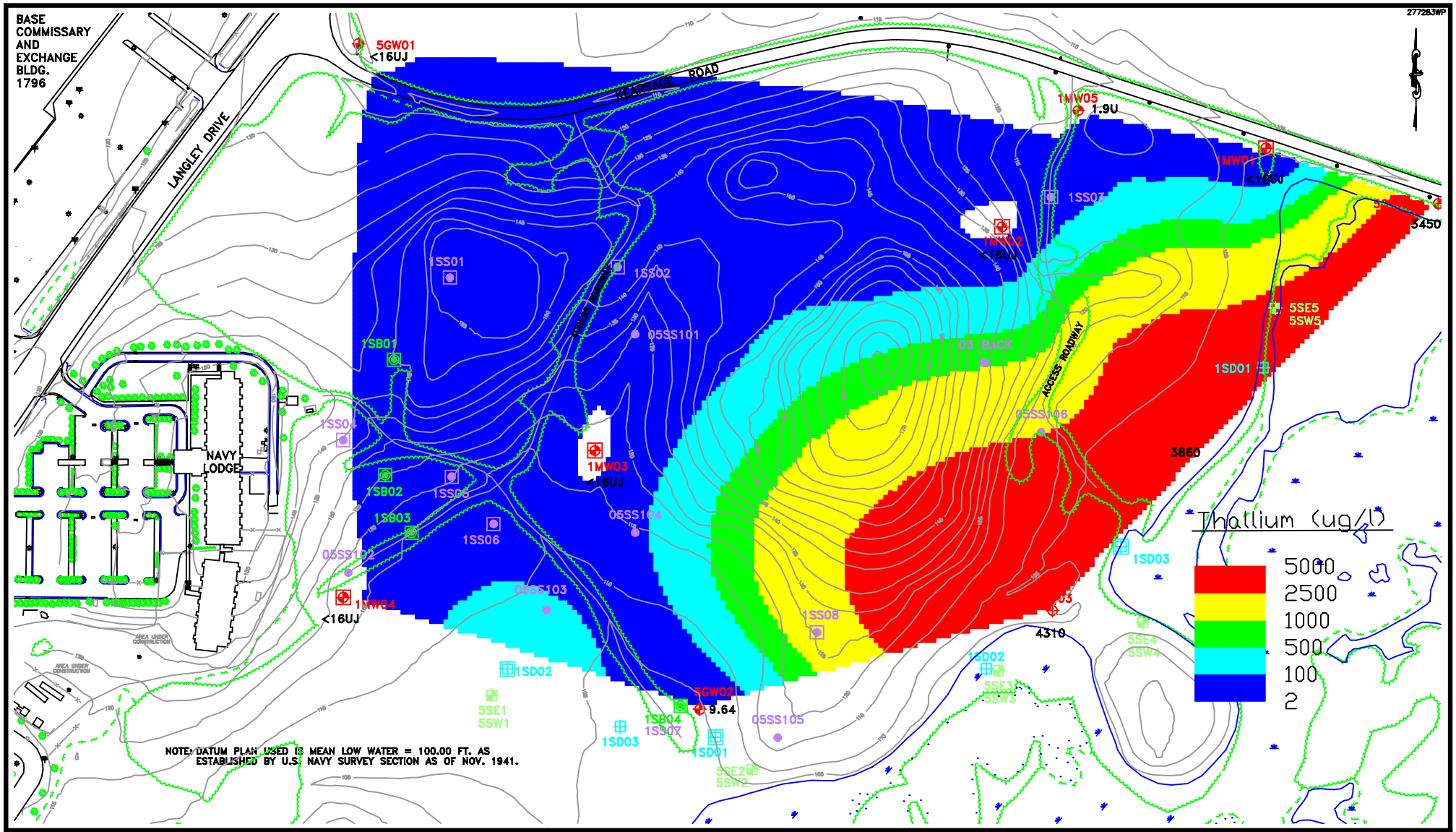
- 05SS101 – SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-19
CADMIUM IN GROUNDWATER
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
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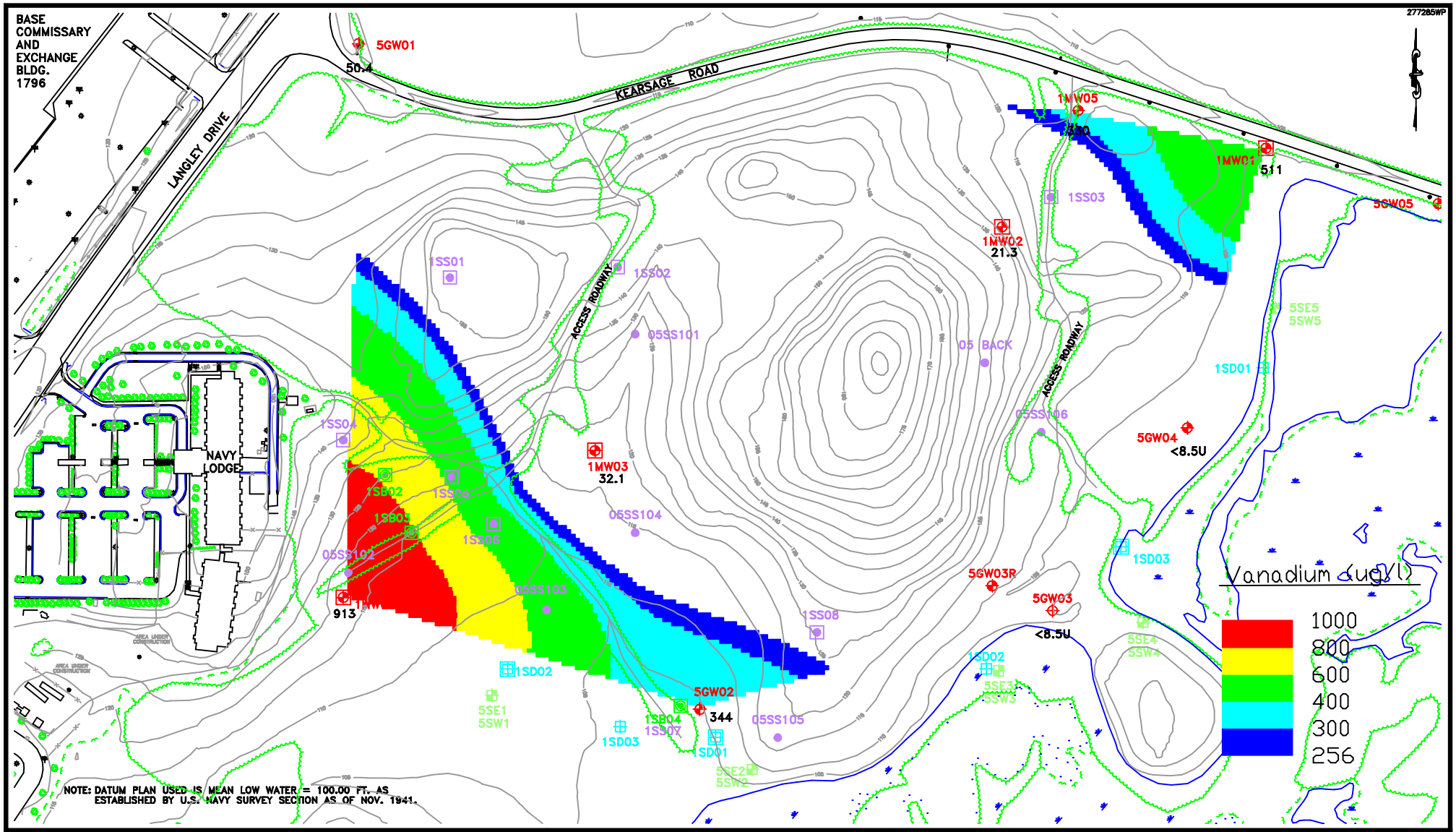
- 05SS101 SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-20
THALLIUM IN GROUNDWATER
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
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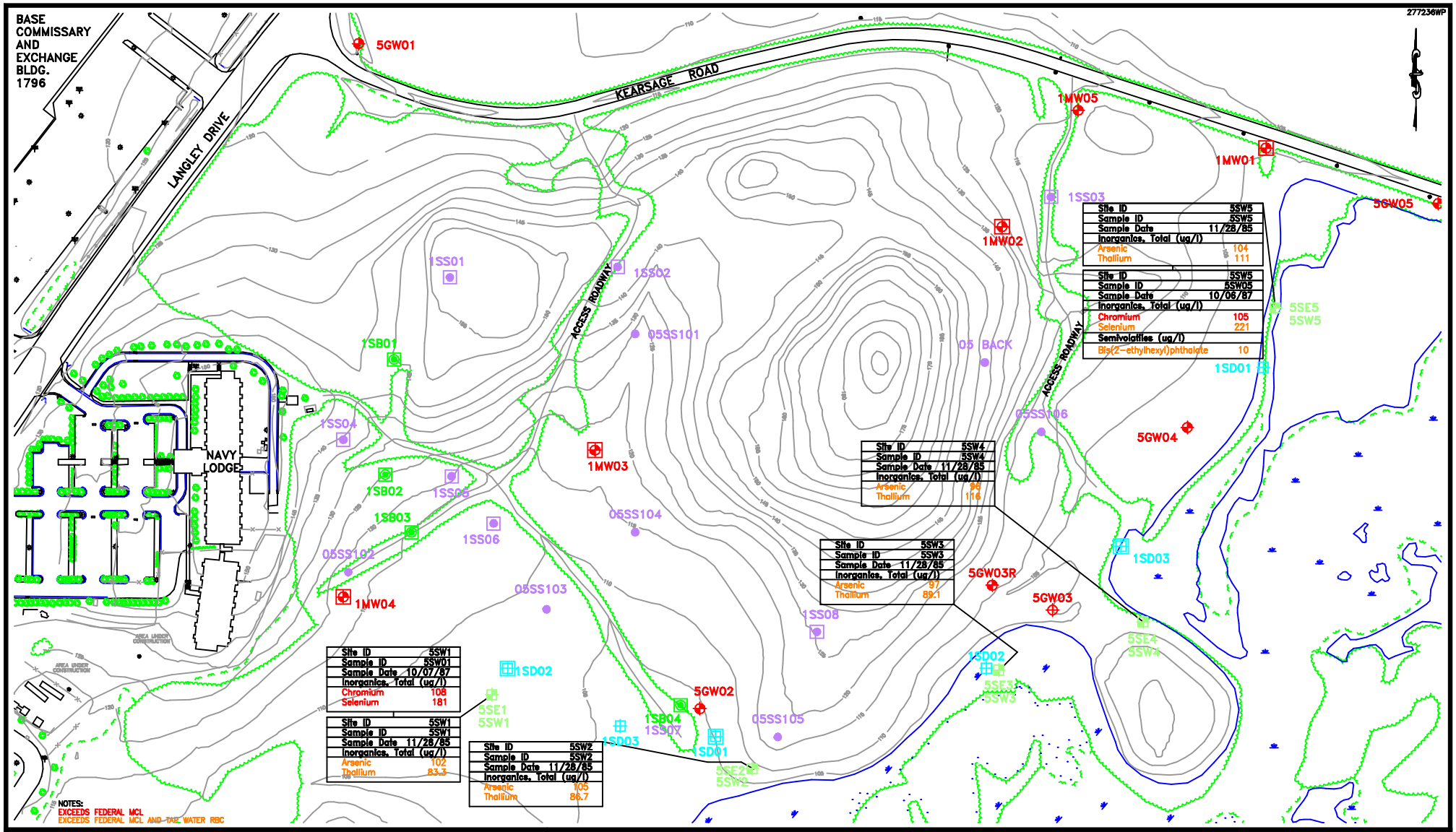
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-21
VANADIUM IN GROUNDWATER
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
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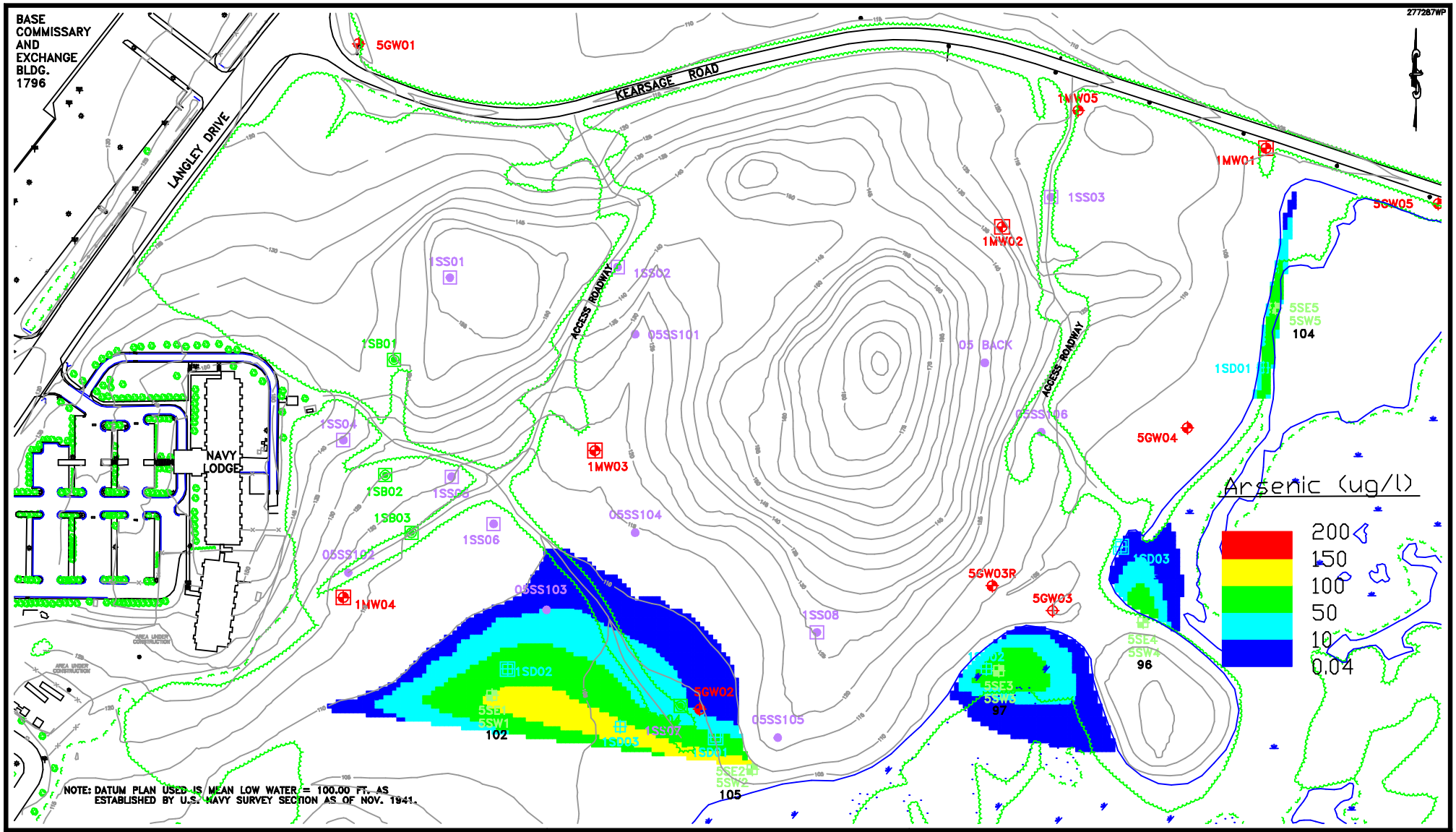
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-22
SURFACE WATER DETECTIONS ABOVE SCREENING CRITERIA
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- MONITORING WELL LOCATION (1996 RFI)
- SURFACE SOIL SAMPLE LOCATION (1996 RFI)
- SOILBORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
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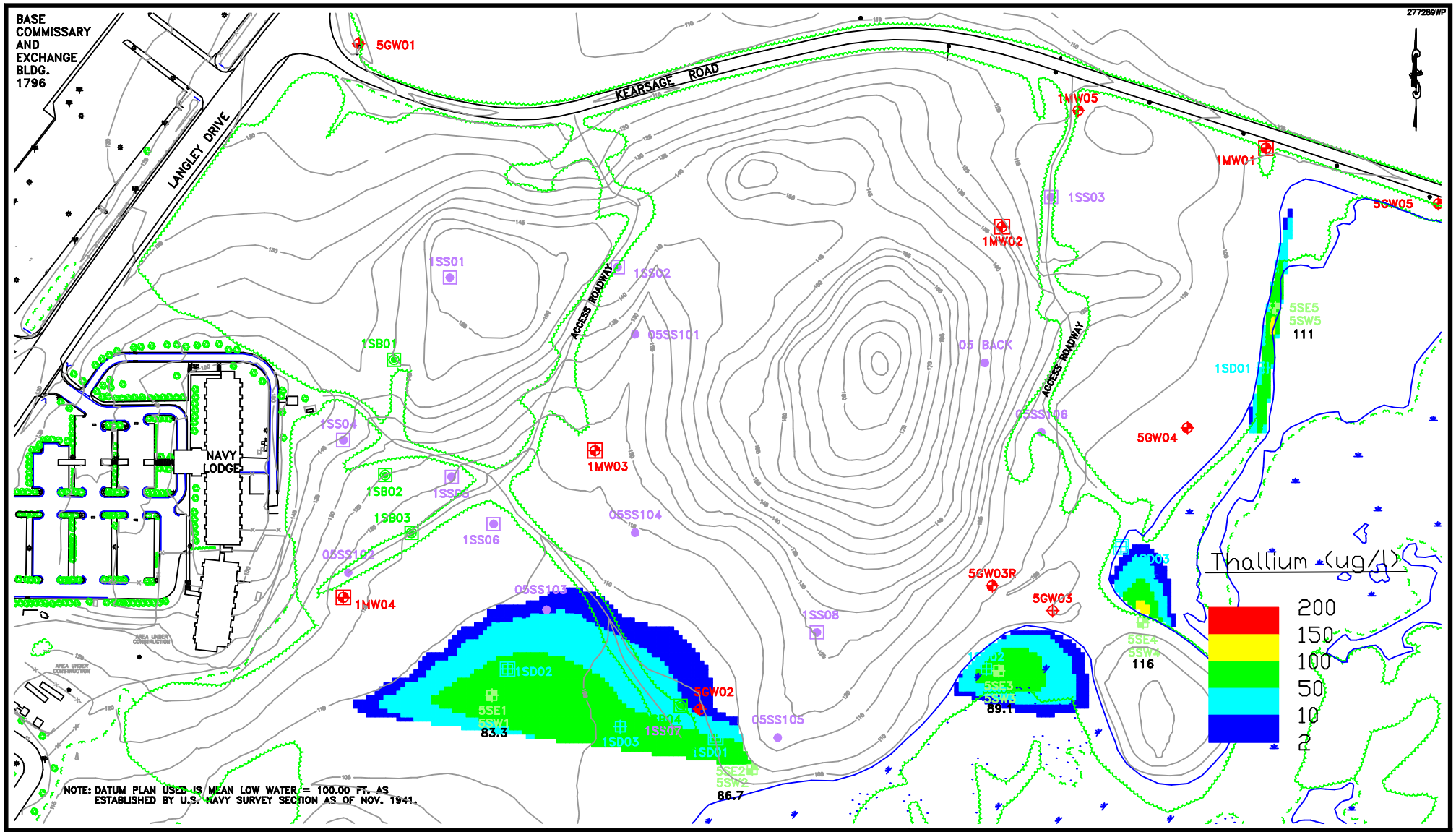
- 05SS101 – SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-23
ARSENIC IN SURFACE WATER
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
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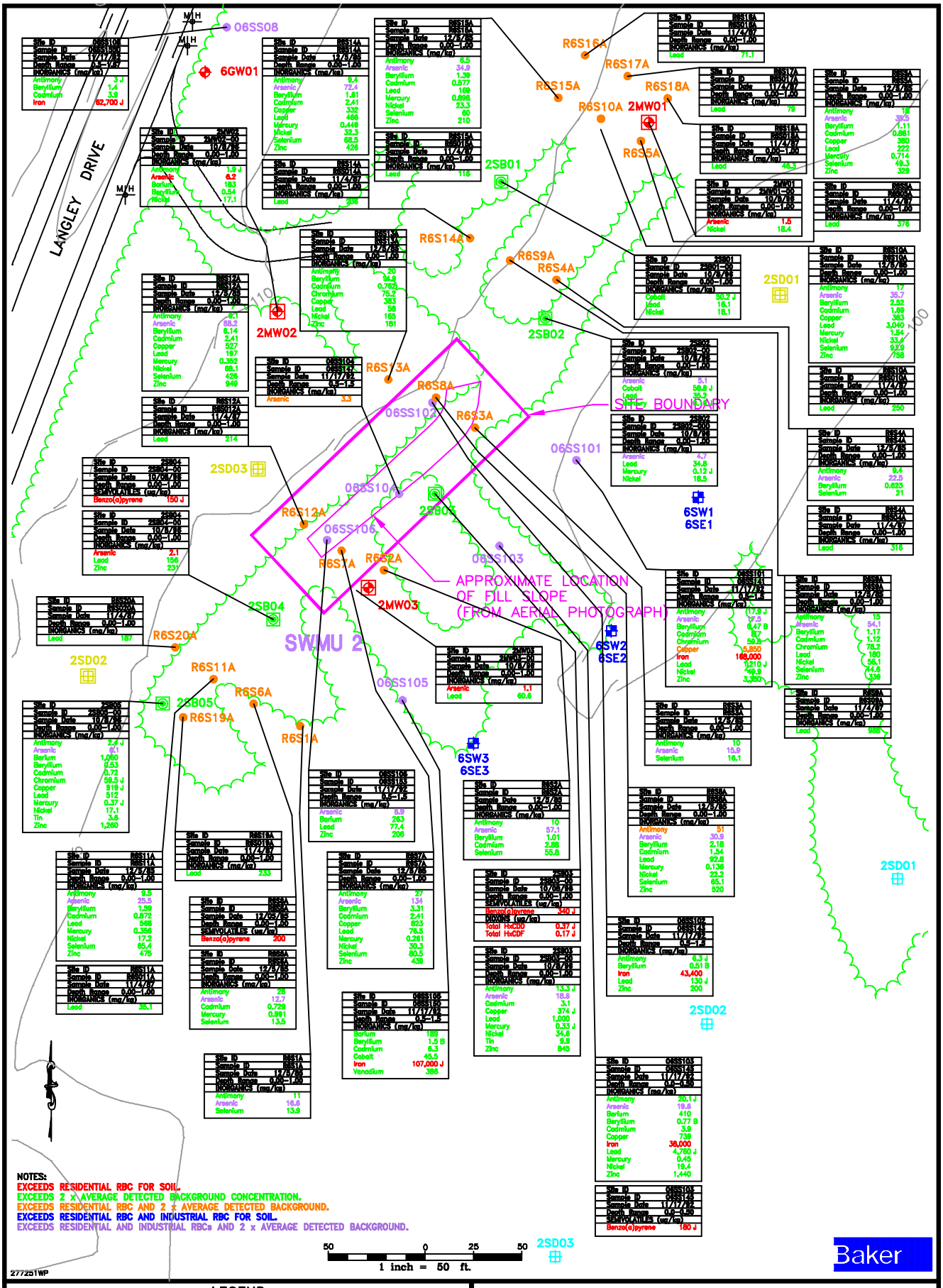
- 05SS101 – SOIL SAMPLE LOCATION (SUPPLEMENTAL INVESTIGATION)
- 1SD02 – SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-24
THALLIUM IN SURFACE WATER
ISOPLETH MAP
SWMU 1
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



NOTES:
EXCEEDS RESIDENTIAL RBC FOR SOIL.
EXCEEDS 2 x AVERAGE DETECTED BACKGROUND CONCENTRATION.
EXCEEDS RESIDENTIAL RBC AND 2 x AVERAGE DETECTED BACKGROUND.
EXCEEDS RESIDENTIAL RBC AND INDUSTRIAL RBC FOR SOIL.
EXCEEDS RESIDENTIAL AND INDUSTRIAL RBCs AND 2 x AVERAGE DETECTED BACKGROUND.

50 0 25 50
1 inch = 50 ft.

Baker

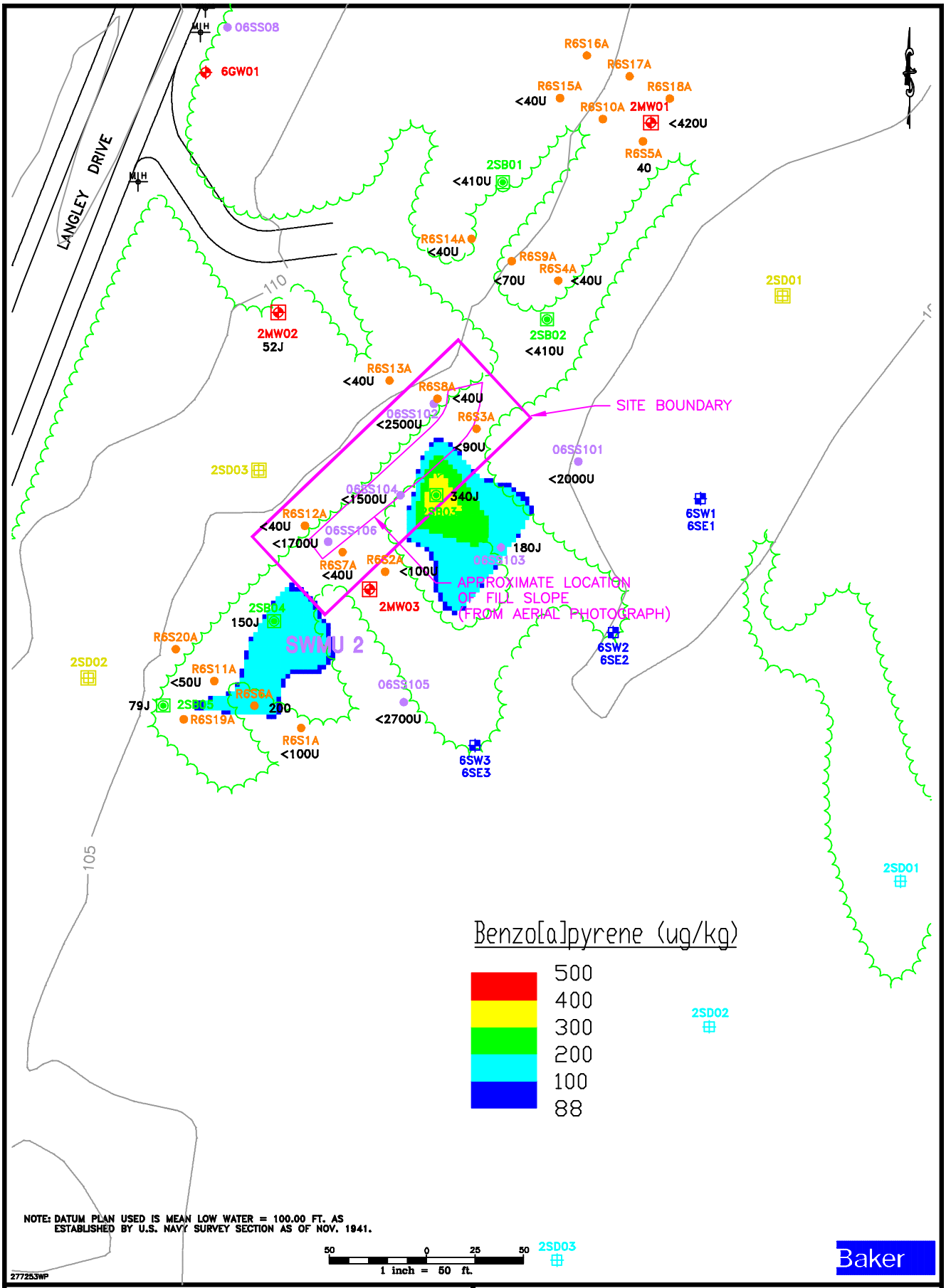
277251WP

LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-25
SURFACE SOIL DETECTIONS
ABOVE SCREENING CRITERIA
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

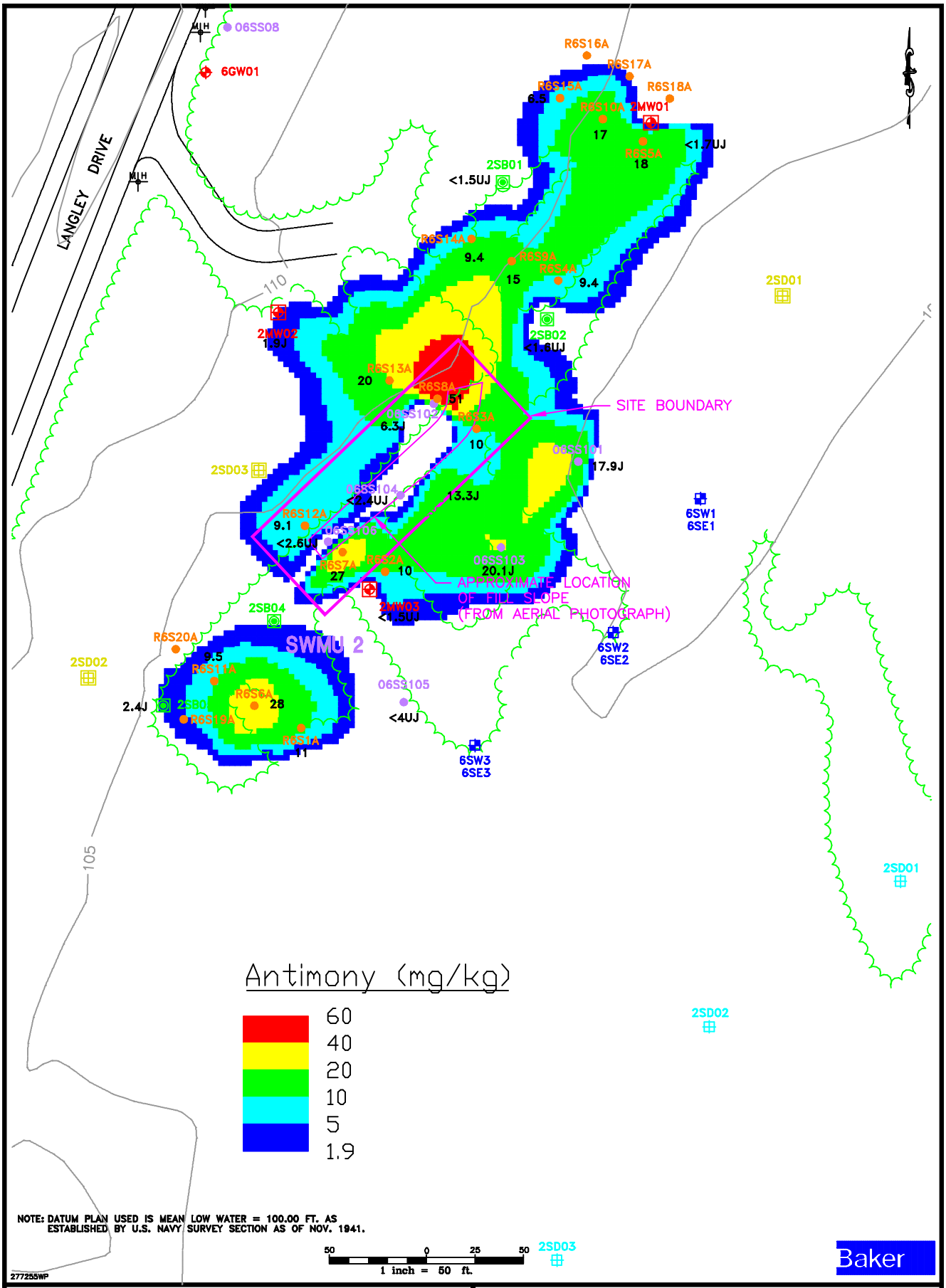


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-26
BENZO(A)PYRENE IN SURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

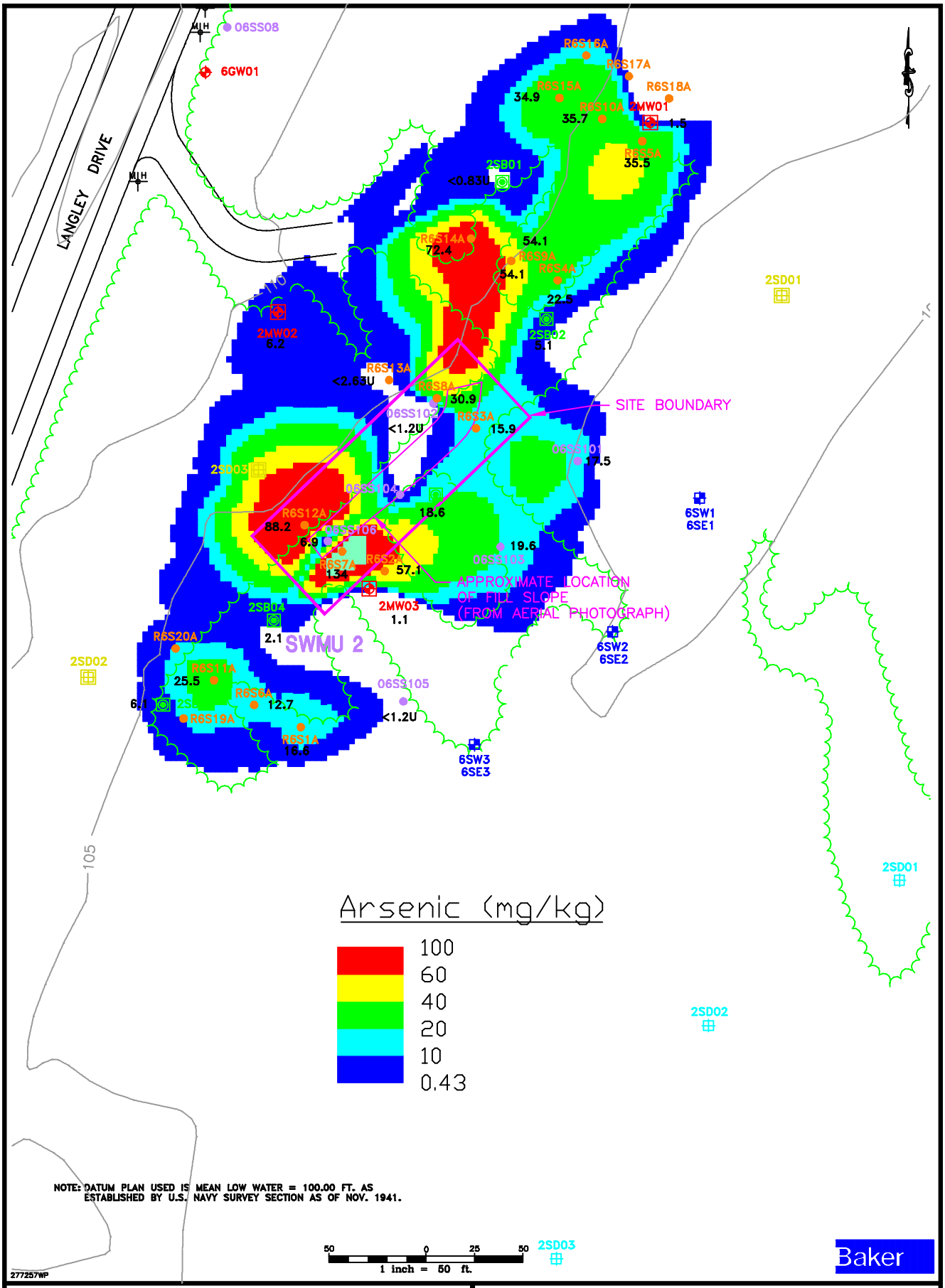


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-27
ANTIMONY IN SURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

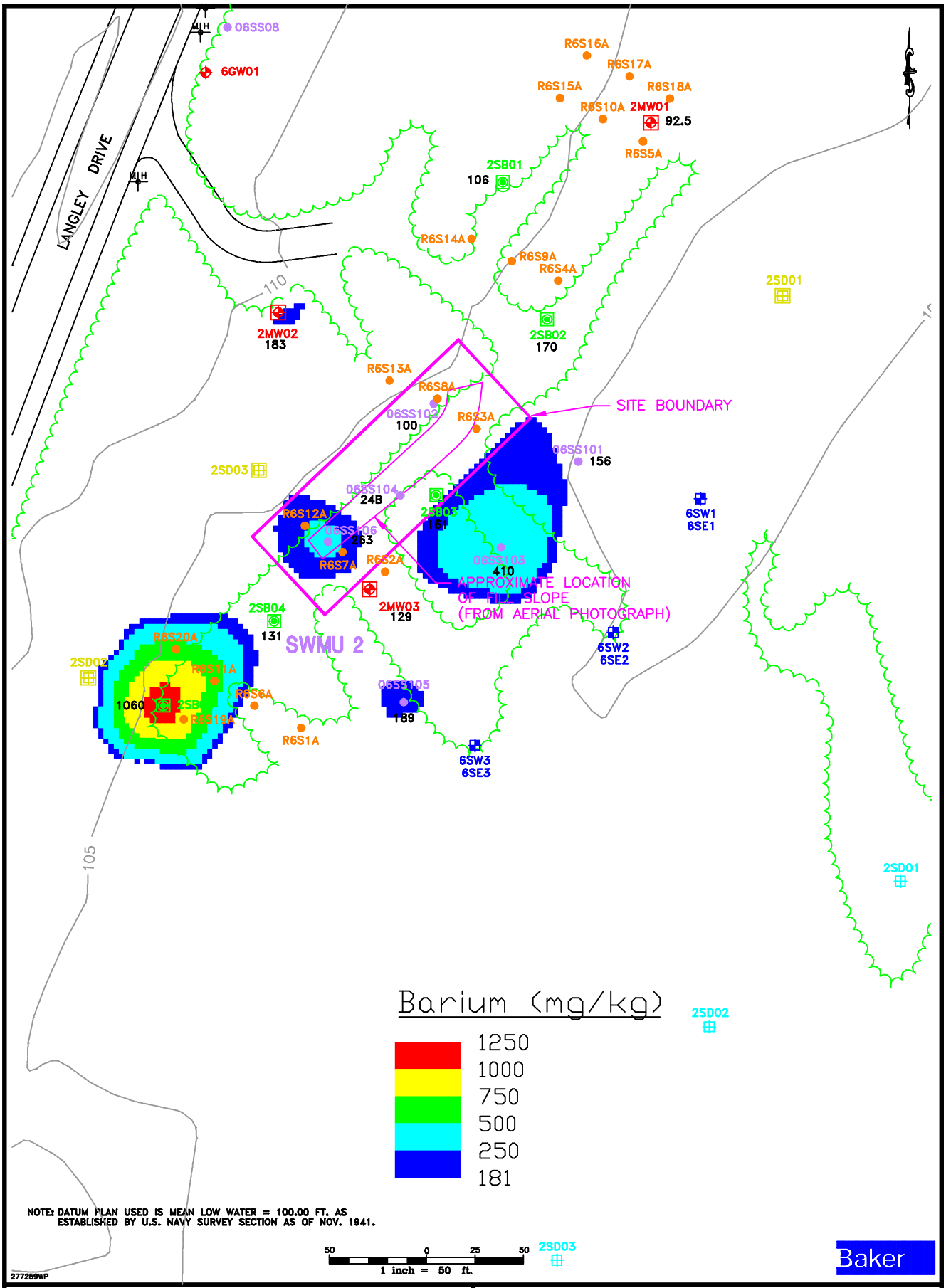


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- SURFACE ELEVATION CONTOUR

FIGURE 5-28
ARSENIC IN SURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

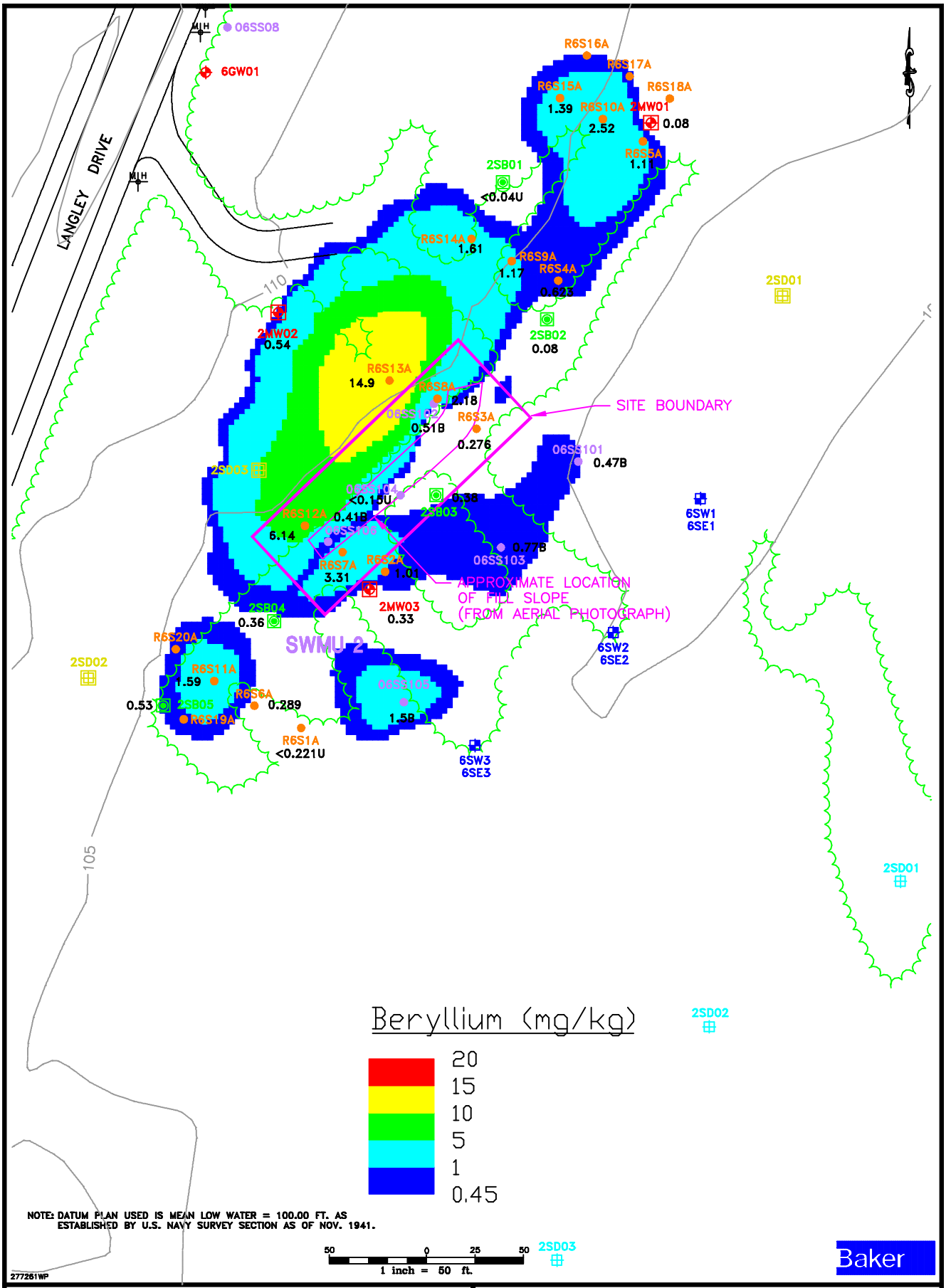


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-29
BARIUM IN SURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

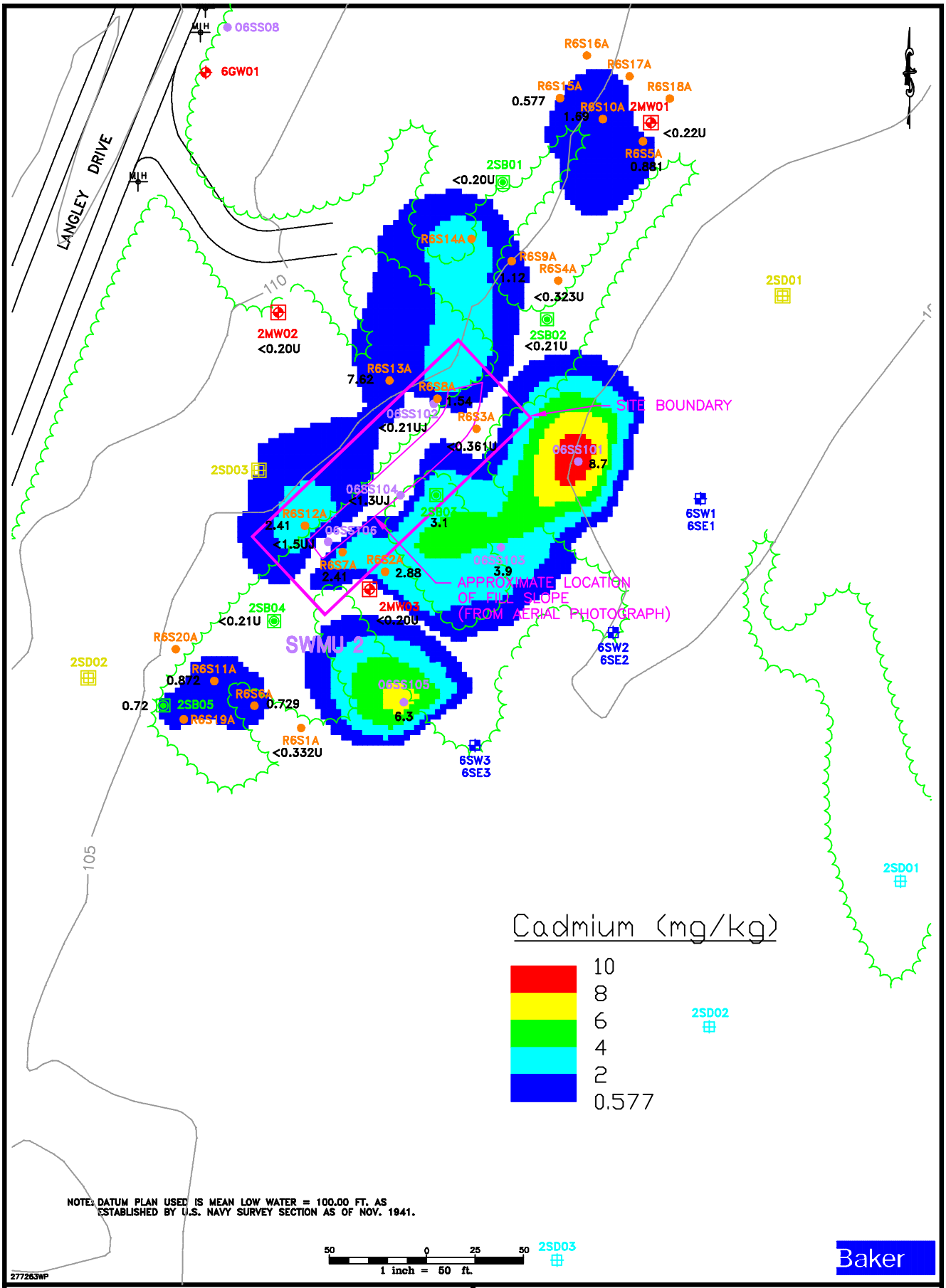


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-30
BERYLLIUM IN SURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

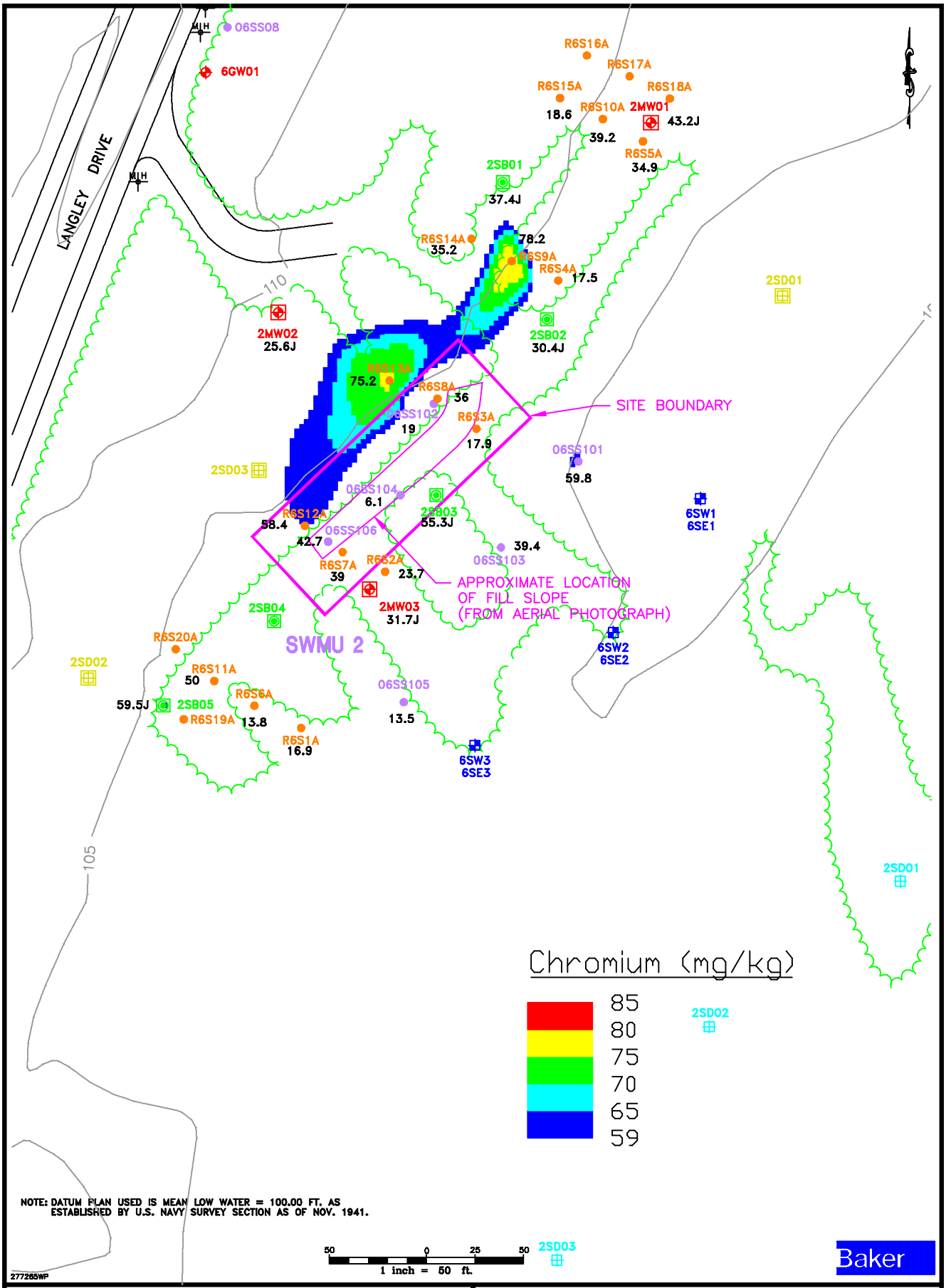


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-31
CADMIUM IN SURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

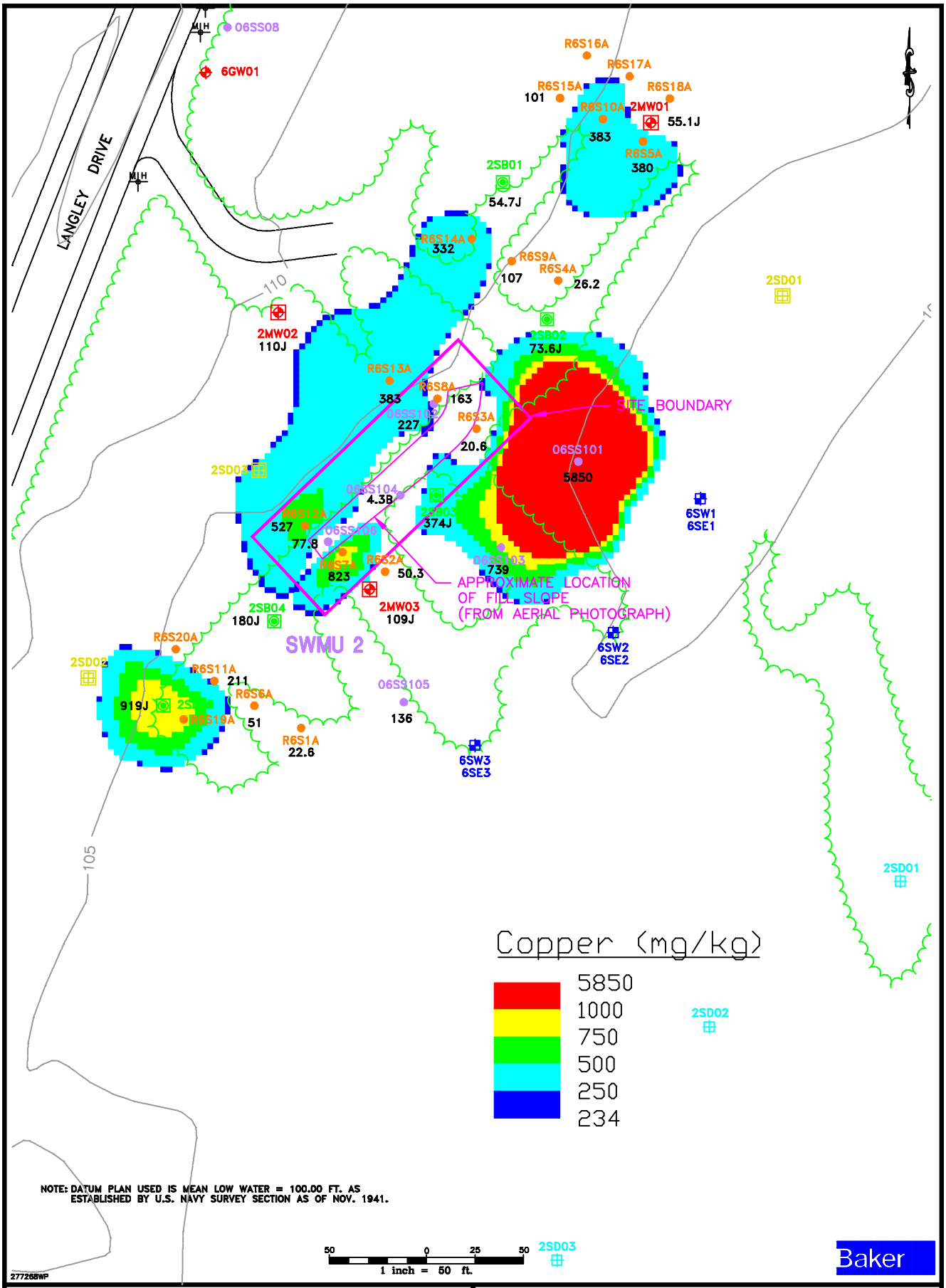


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-32
CHROMIUM IN SURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



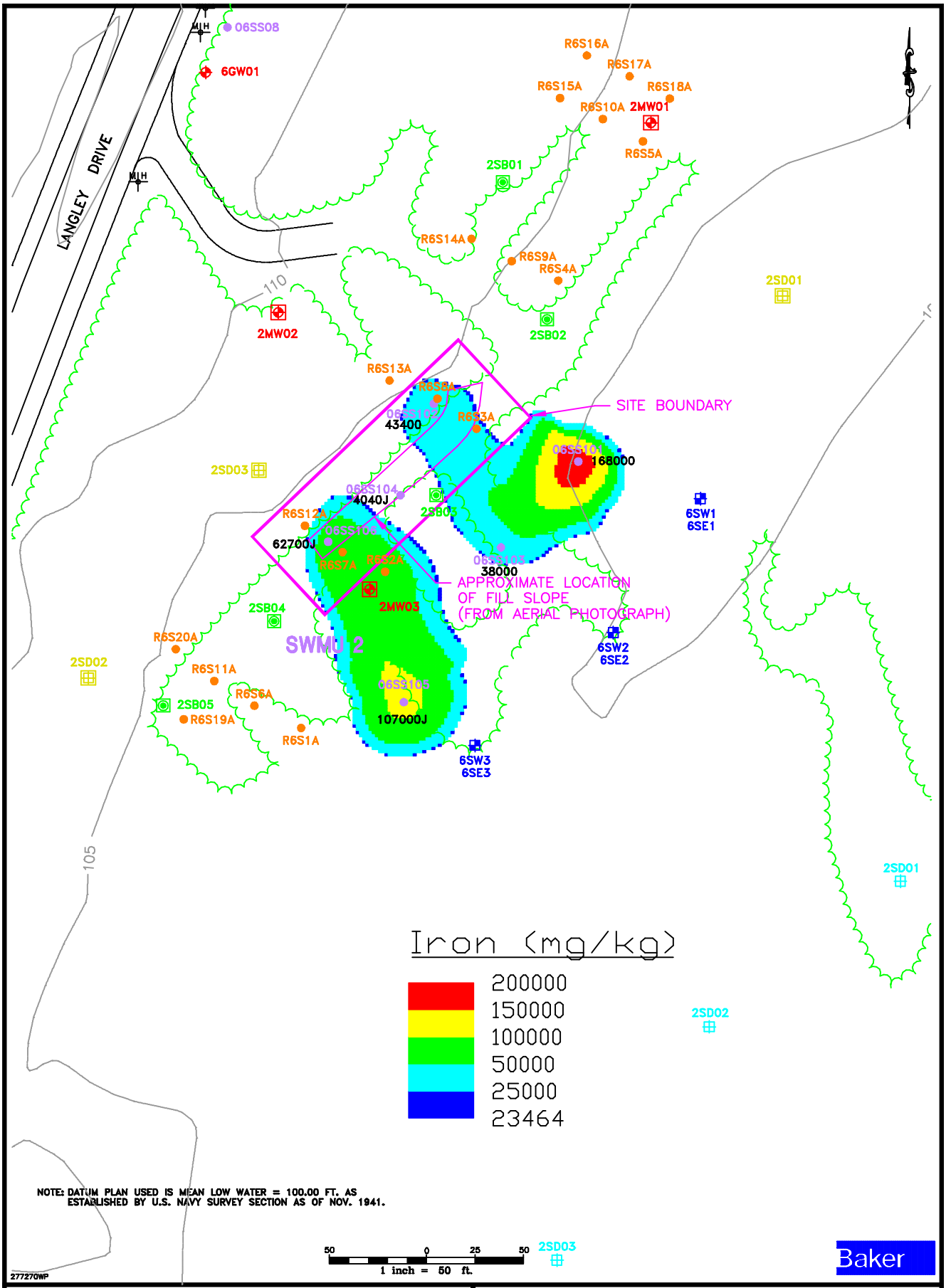
NOTE: DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY U.S. NAVY SURVEY SECTION AS OF NOV. 1941.

LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-33
COPPER IN SURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

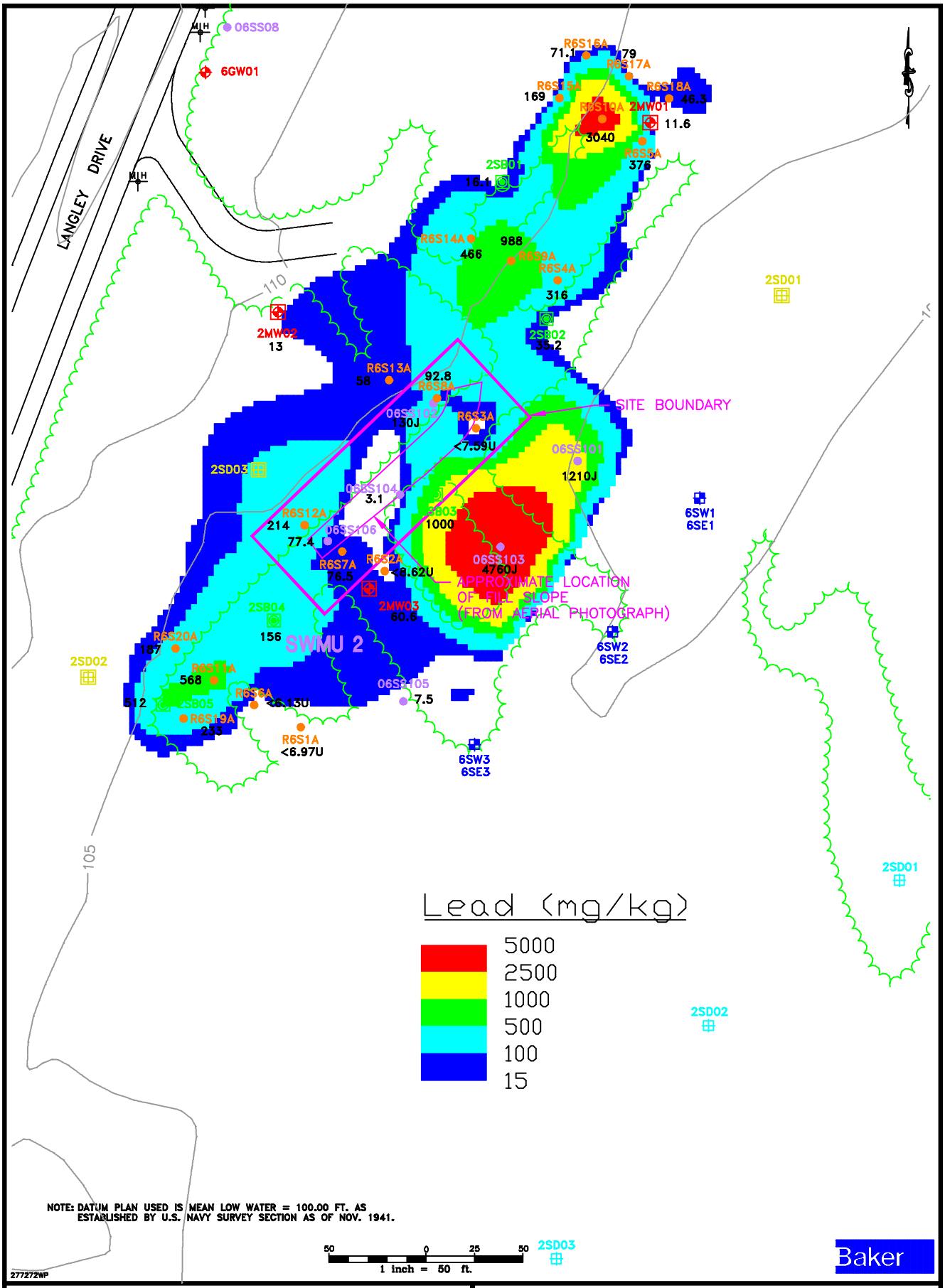


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-34
IRON IN SURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

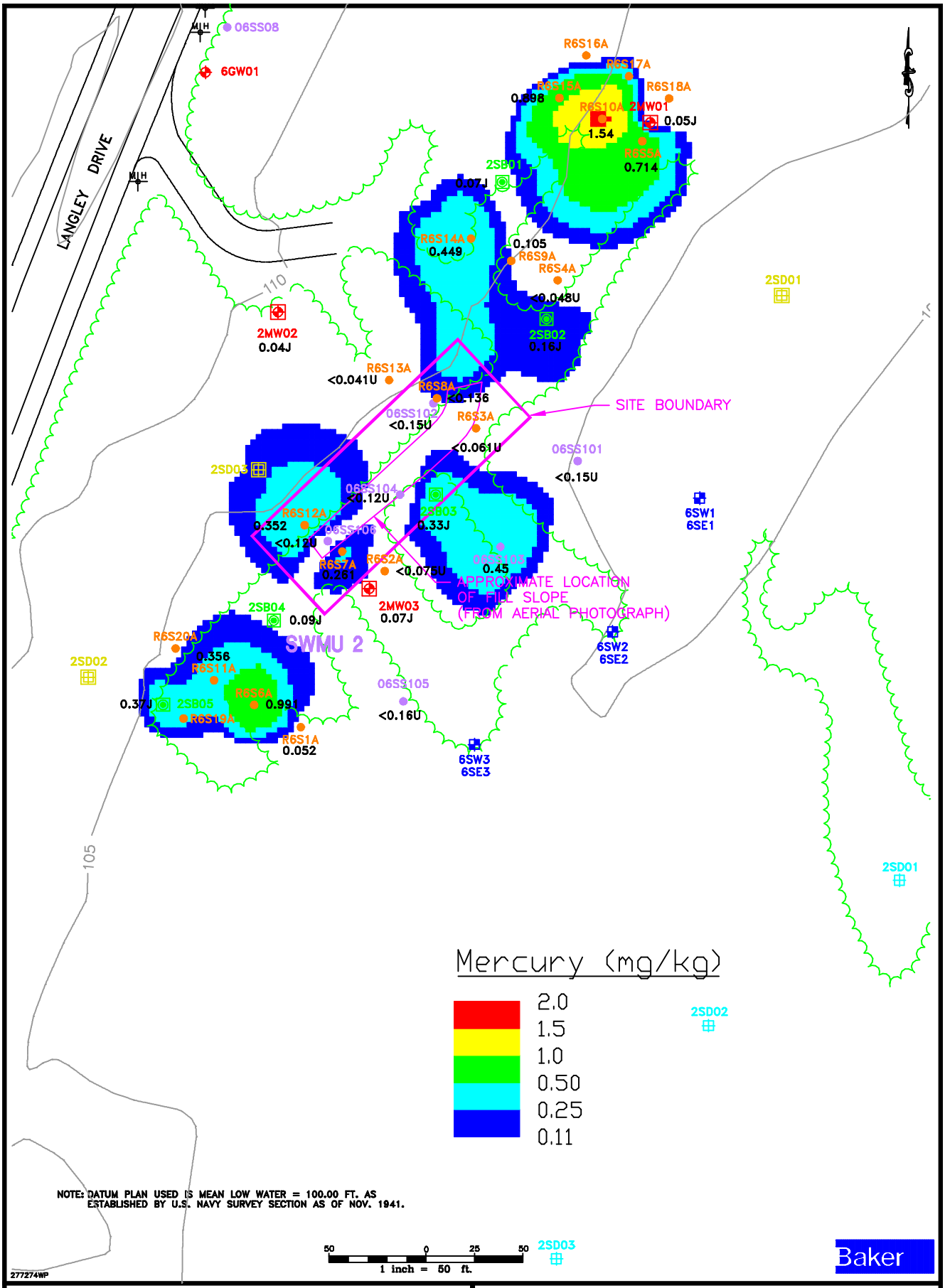


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-35
LEAD IN SURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

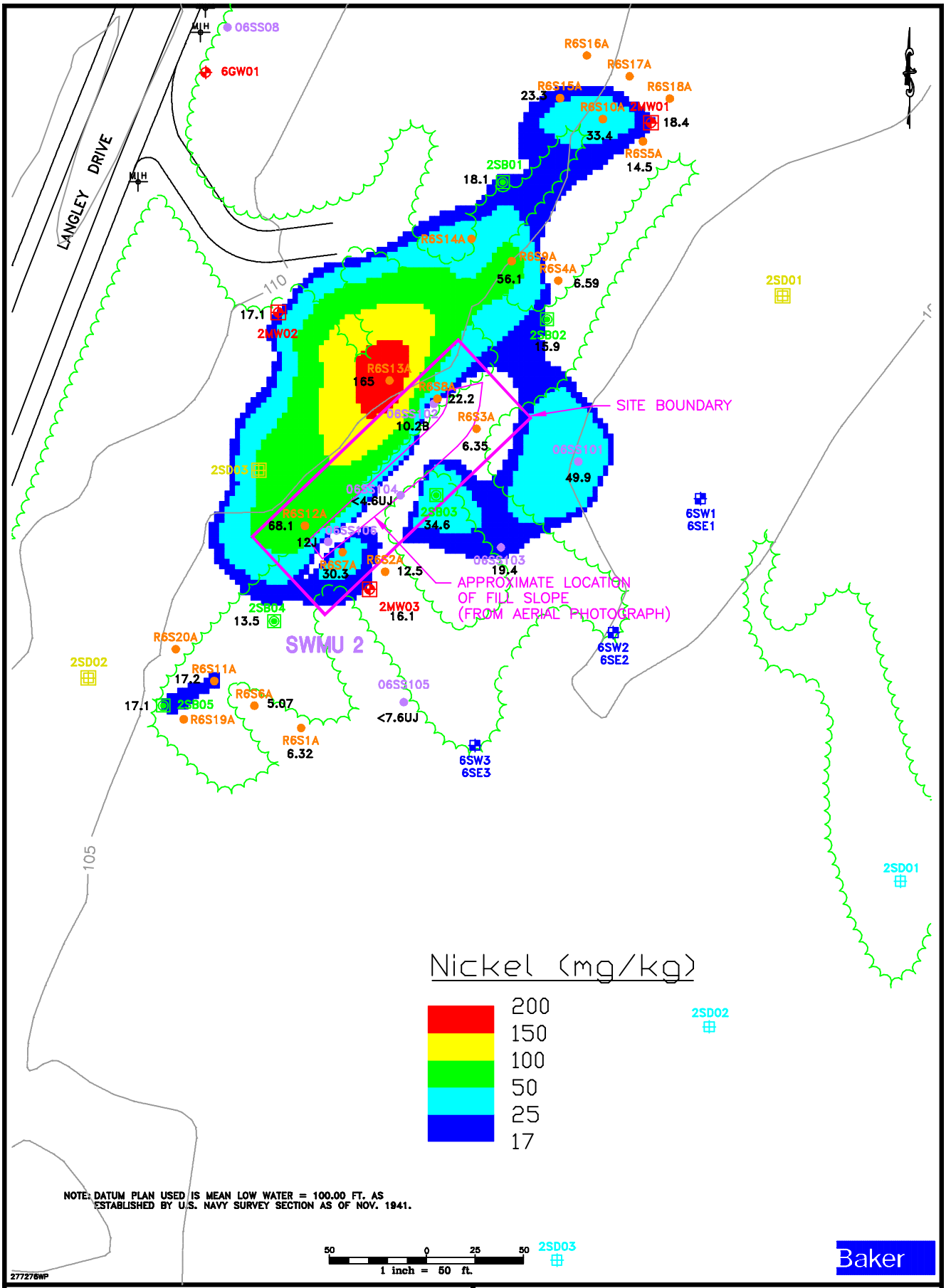


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-36
MERCURY IN SURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

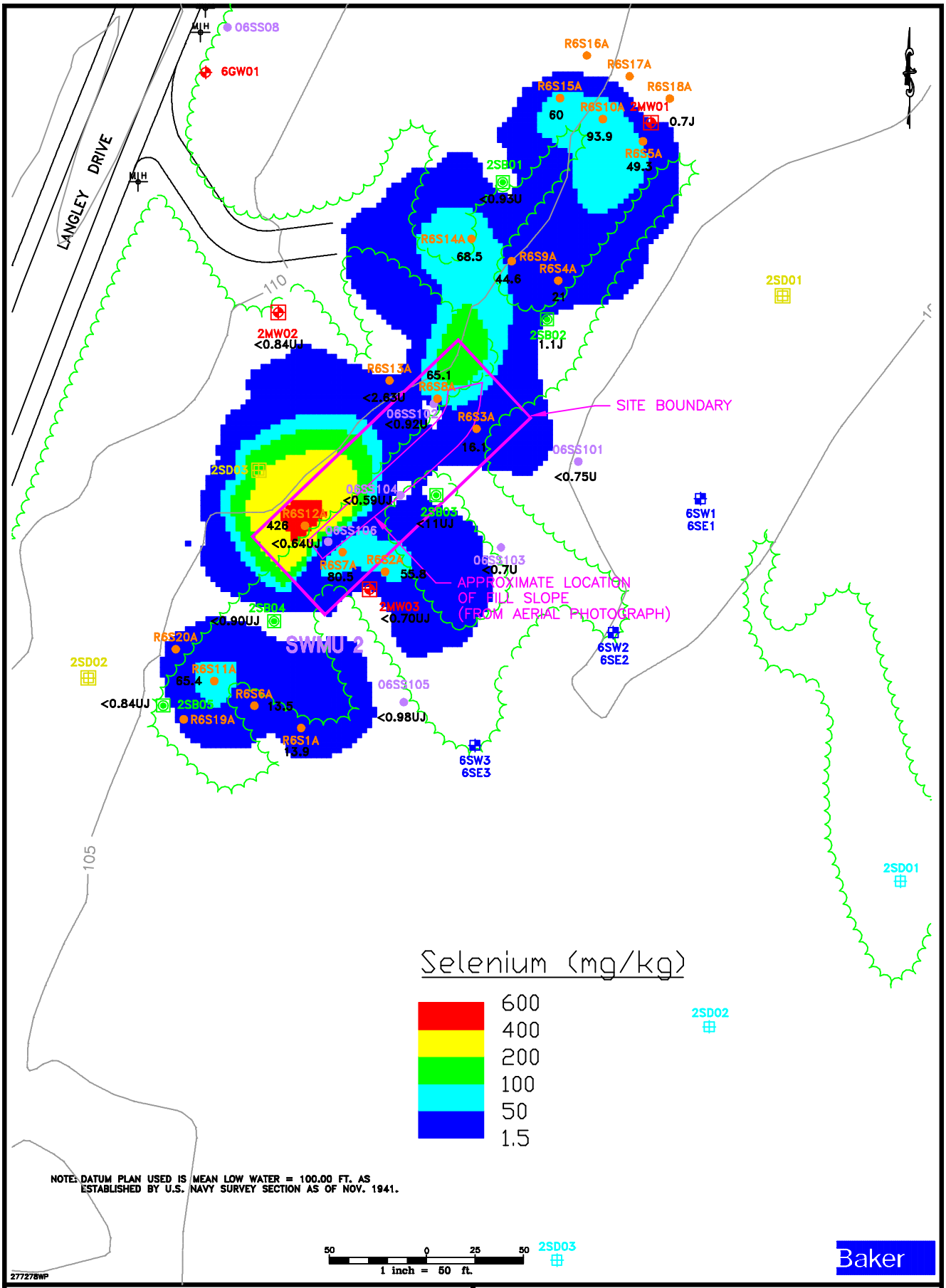


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-37
NICKEL IN SURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

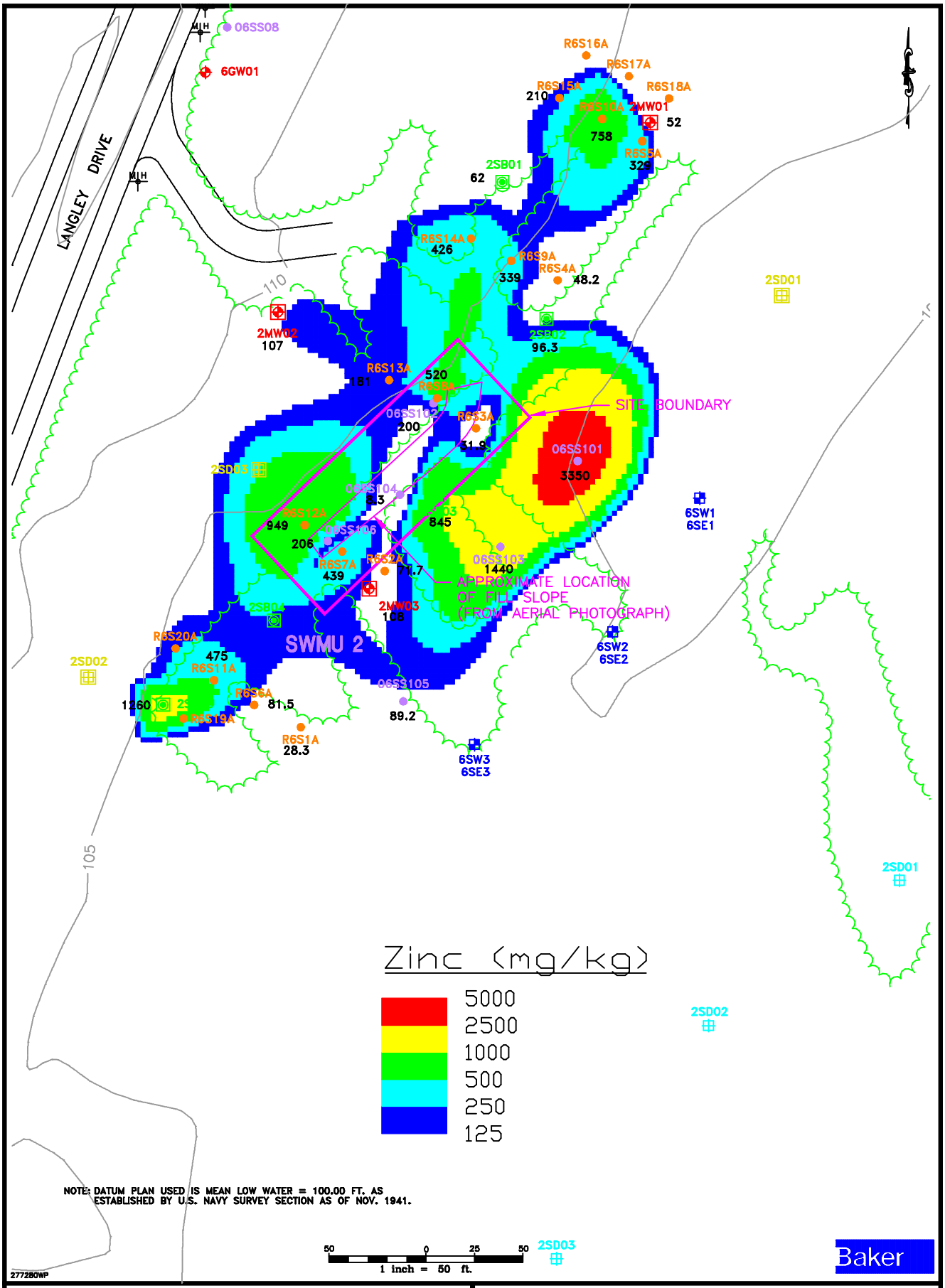


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-38
SELENIUM IN SURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

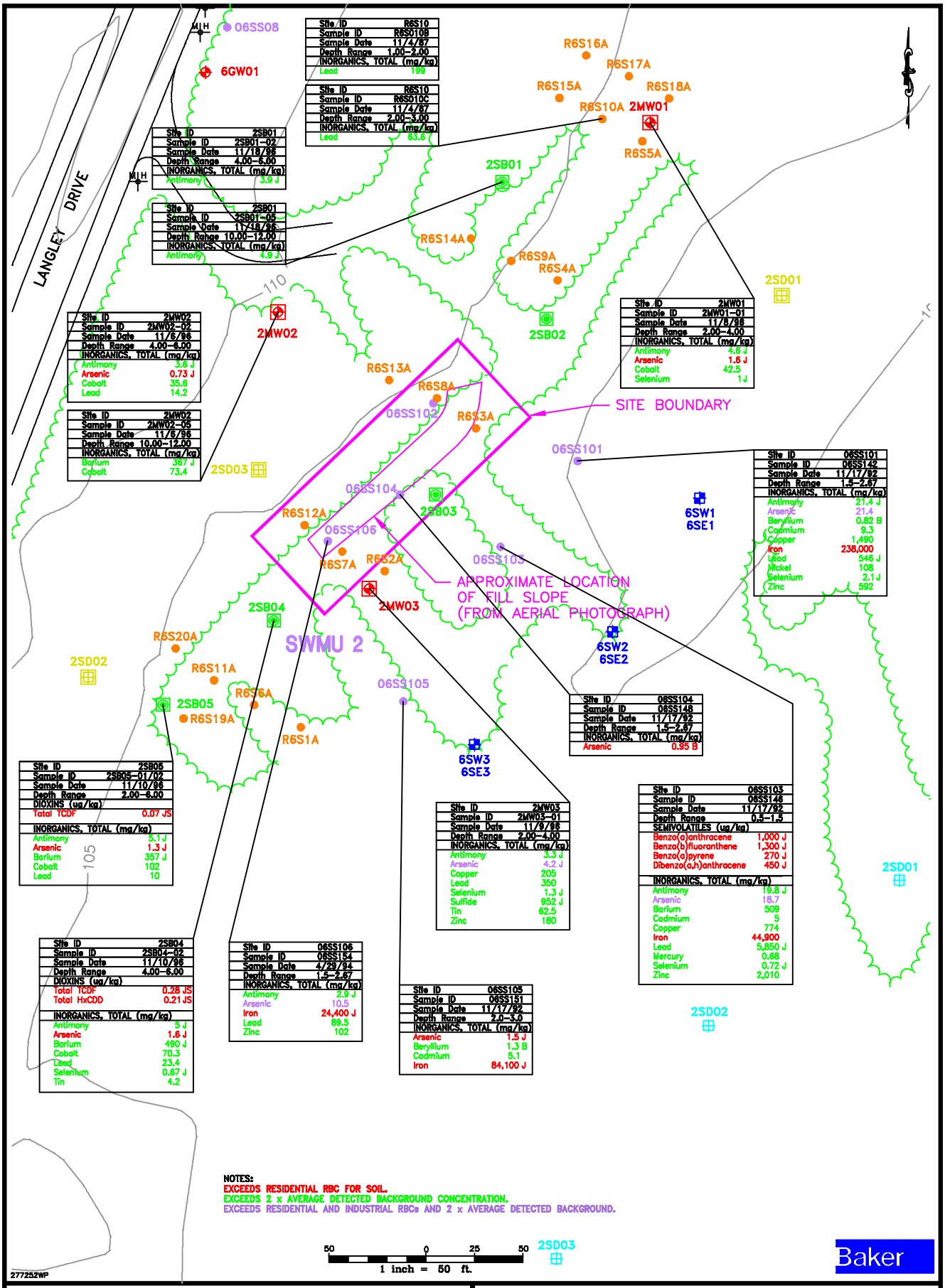


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-39
ZINC IN SURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



Site ID	R6S10
Sample ID	R6S010B
Sample Date	11/4/87
Depth Range	1.00–2.00
INORGANICS, TOTAL (mg/kg)	
Lead	199

Site ID	R6S10
Sample ID	R6S010C
Sample Date	11/4/87
Depth Range	2.00–3.00
INORGANICS, TOTAL (mg/kg)	
Lead	63.6

Site ID	2SB01
Sample ID	2SB01–02
Sample Date	11/18/96
Depth Range	4.00–6.00
INORGANICS, TOTAL (mg/kg)	
Antimony	3.9 J

Site ID	2SB01
Sample ID	2SB01–05
Sample Date	11/18/96
Depth Range	10.00–12.00
INORGANICS, TOTAL (mg/kg)	
Antimony	4.9 J

Site ID	2MW01
Sample ID	2MW01–01
Sample Date	11/8/96
Depth Range	2.00–4.00
INORGANICS, TOTAL (mg/kg)	
Antimony	4.8 J
Arsenic	1.6 J
Cobalt	42.5
Selenium	1 J

Site ID	2MW02
Sample ID	2MW02–02
Sample Date	11/6/96
Depth Range	4.00–6.00
INORGANICS, TOTAL (mg/kg)	
Antimony	3.6 J
Arsenic	0.73 J
Cobalt	35.6
Lead	14.2

Site ID	2MW02
Sample ID	2MW02–05
Sample Date	11/6/96
Depth Range	10.00–12.00
INORGANICS, TOTAL (mg/kg)	
Barium	367 J
Cobalt	73.4

Site ID	06SS101
Sample ID	06SS142
Sample Date	11/17/92
Depth Range	1.5–2.67
INORGANICS, TOTAL (mg/kg)	
Antimony	21.4 J
Arsenic	21.4
Beryllium	0.82 B
Cadmium	9.3
Copper	1,490
Iron	238,000
Lead	546 J
Nickel	108
Selenium	2.1 J
Zinc	592

Site ID	06SS104
Sample ID	06SS148
Sample Date	11/17/92
Depth Range	1.5–2.67
INORGANICS, TOTAL (mg/kg)	
Arsenic	0.95 B

Site ID	06SS103
Sample ID	06SS146
Sample Date	11/17/92
Depth Range	0.5–1.5
SEMIVOLATILES (ug/kg)	
Benzo(a)anthracene	1,000 J
Benzo(b)fluoranthene	1,300 J
Benzo(a)pyrene	270 J
Dibenzo(a,h)anthracene	450 J
INORGANICS, TOTAL (mg/kg)	
Antimony	19.8 J
Arsenic	18.7
Barium	509
Cadmium	5
Copper	774
Iron	44,900
Lead	5,850 J
Mercury	0.68
Selenium	0.72 J
Zinc	2,010

Site ID	2MW03
Sample ID	2MW03–01
Sample Date	11/9/96
Depth Range	2.00–4.00
INORGANICS, TOTAL (mg/kg)	
Antimony	3.3 J
Arsenic	4.2 J
Copper	205
Lead	350
Selenium	1.3 J
Sulfide	952 J
Tin	62.5
Zinc	180

Site ID	2SB05
Sample ID	2SB05–01/02
Sample Date	11/10/96
Depth Range	2.00–6.00
DIOXINS (ug/kg)	
Total TCDF	0.07 JS
INORGANICS, TOTAL (mg/kg)	
Antimony	5.1 J
Arsenic	1.3 J
Barium	357 J
Cobalt	102
Lead	10

Site ID	2SB04
Sample ID	2SB04–02
Sample Date	11/10/96
Depth Range	4.00–6.00
DIOXINS (ug/kg)	
Total TCDF	0.28 JS
Total HxCDD	0.21 JS
INORGANICS, TOTAL (mg/kg)	
Antimony	5 J
Arsenic	1.6 J
Barium	490 J
Cobalt	70.3
Lead	23.4
Selenium	0.67 J
Tin	4.2

Site ID	06SS106
Sample ID	06SS154
Sample Date	4/29/94
Depth Range	1.5–2.67
INORGANICS, TOTAL (mg/kg)	
Antimony	2.9 J
Arsenic	10.5
Iron	24,400 J
Lead	89.5
Zinc	102

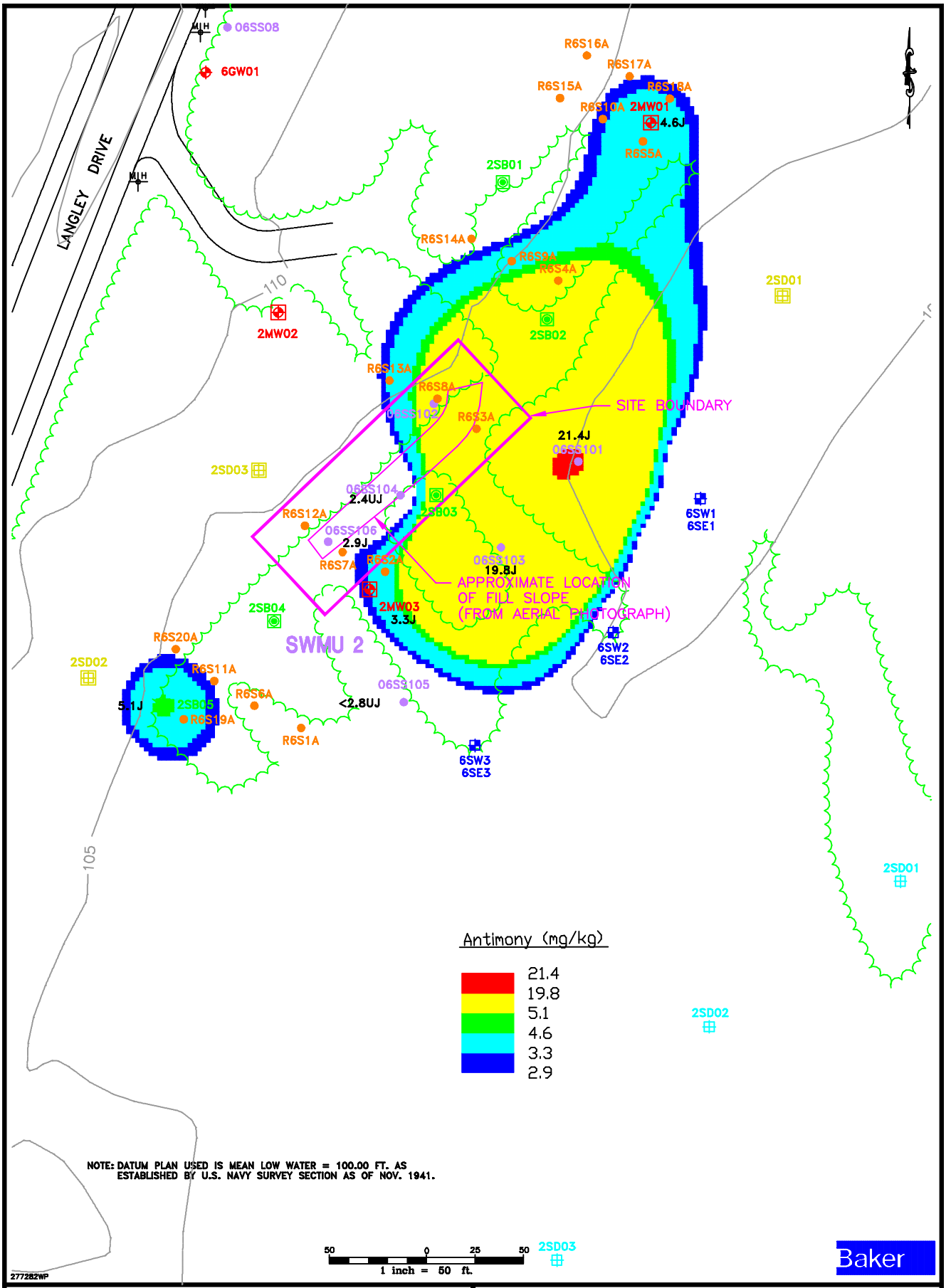
Site ID	06SS105
Sample ID	06SS151
Sample Date	11/17/92
Depth Range	2.0–3.0
INORGANICS, TOTAL (mg/kg)	
Arsenic	1.5 J
Beryllium	1.3 B
Cadmium	5.1
Iron	84,100 J

LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5–40
SUBSURFACE SOIL DETECTIONS ABOVE
SCREENING CRITERIA
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

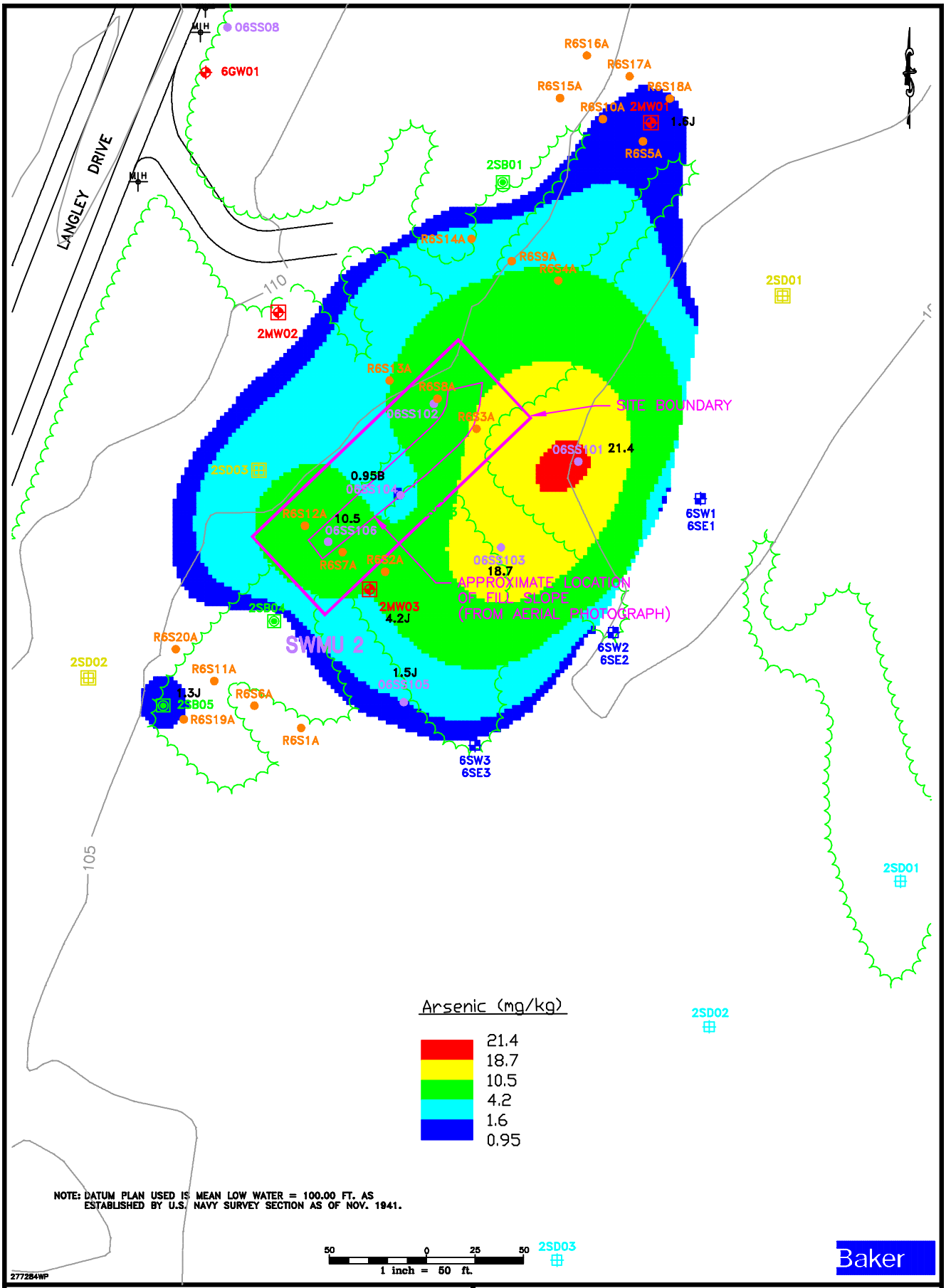


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-41
ANTIMONY IN SUBSURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

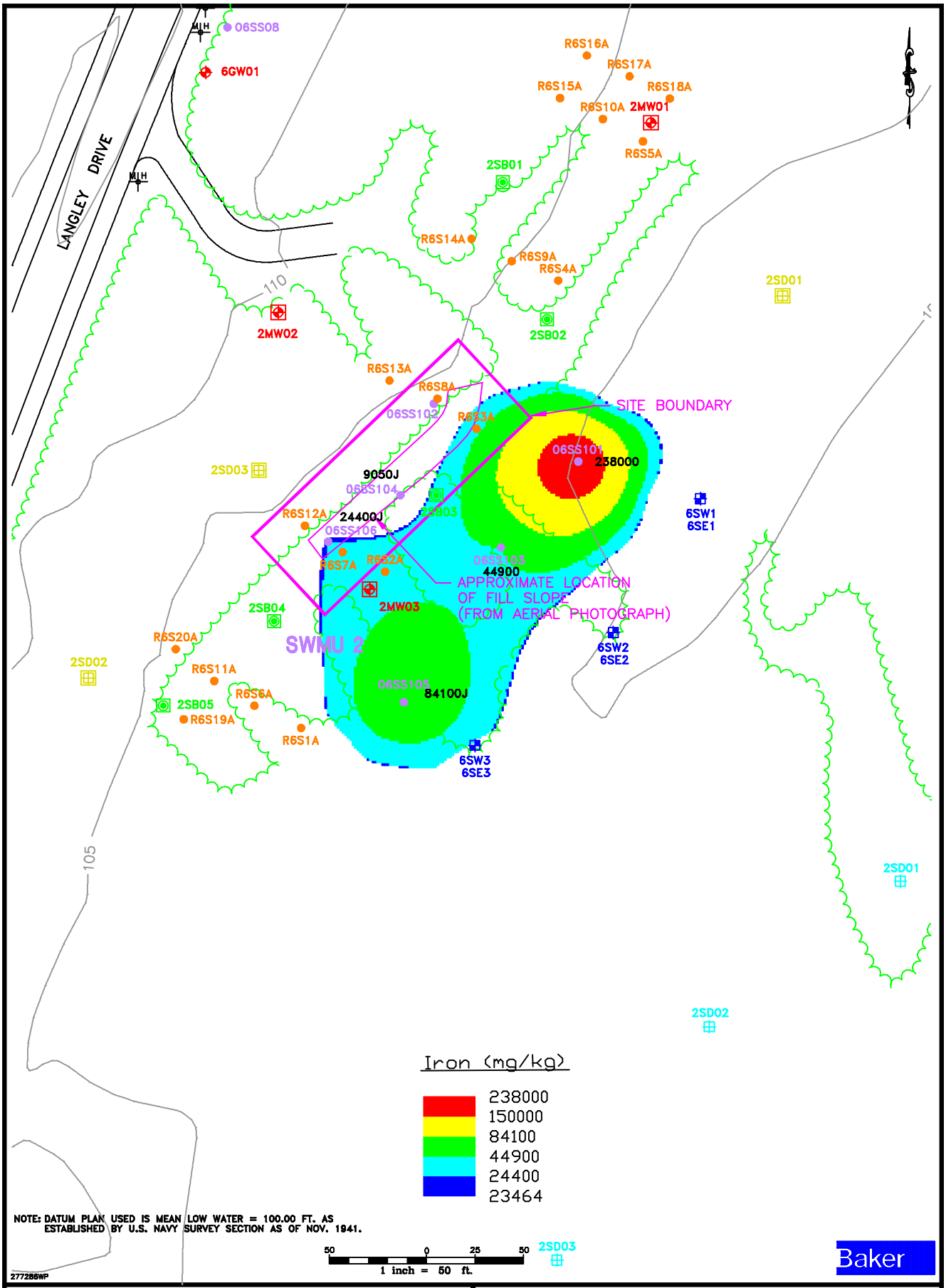


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-42
ARSENIC IN SUBSURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

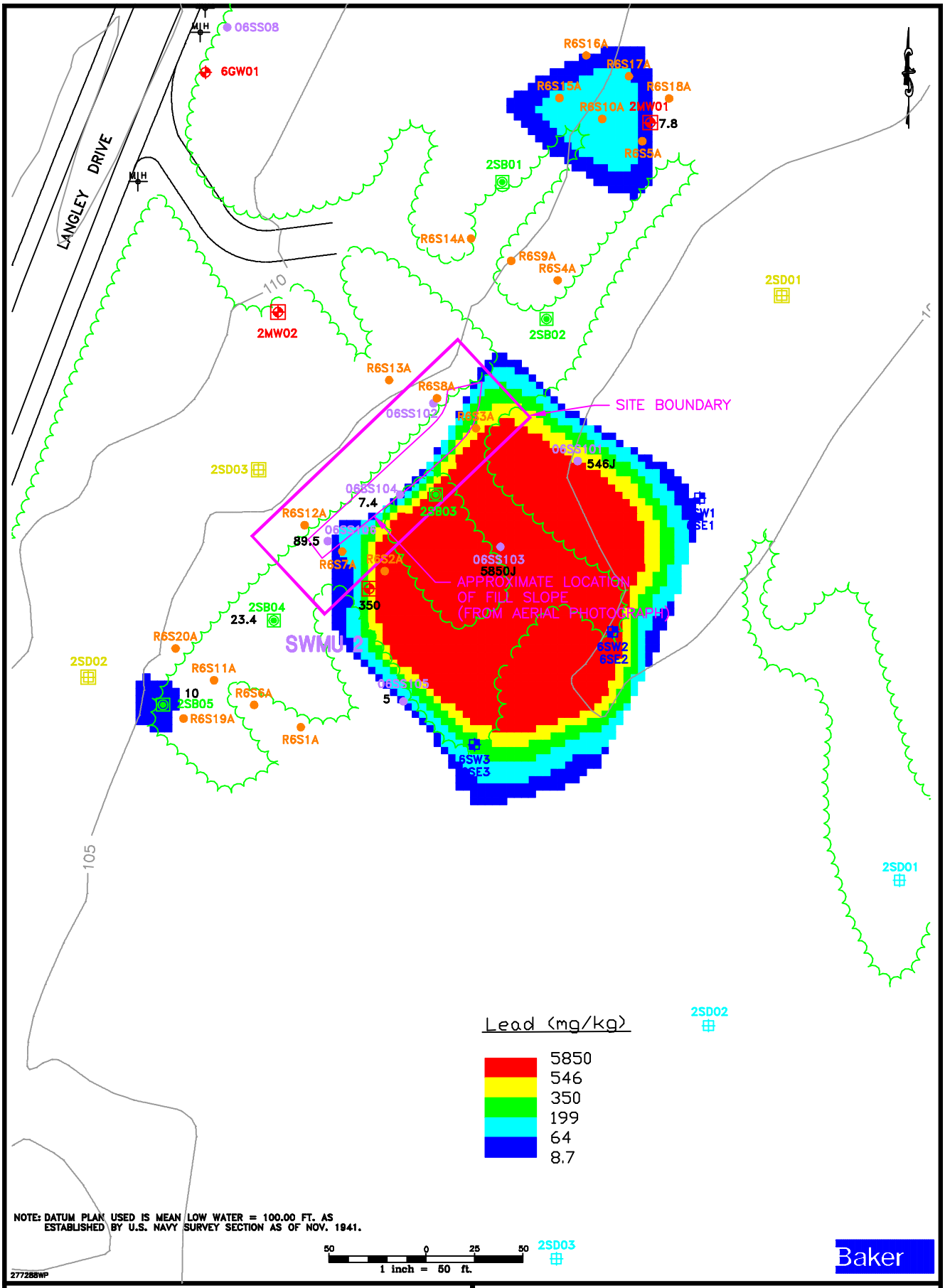


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-43
IRON IN SUBSURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

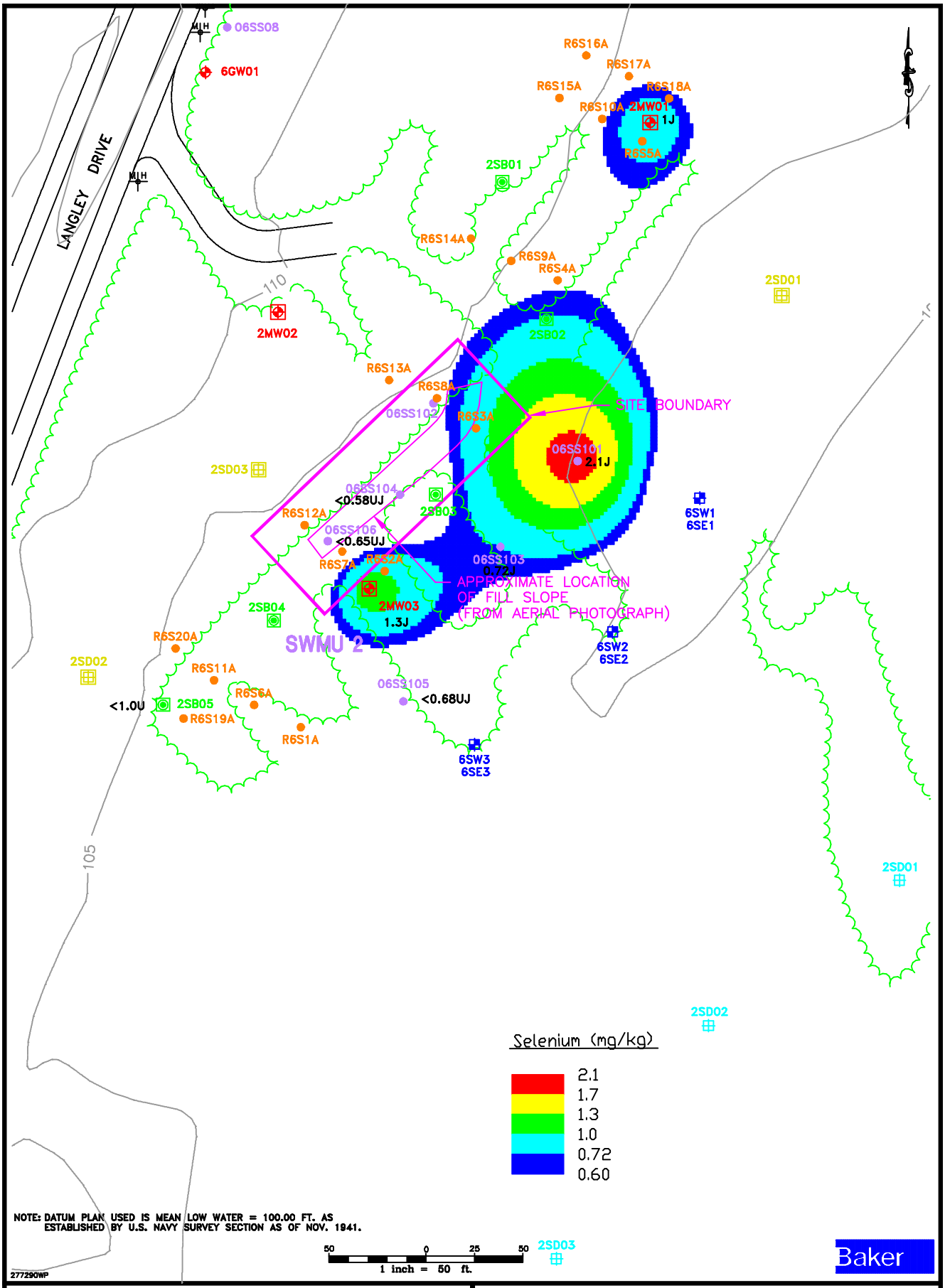


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-44
LEAD IN SUBSURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

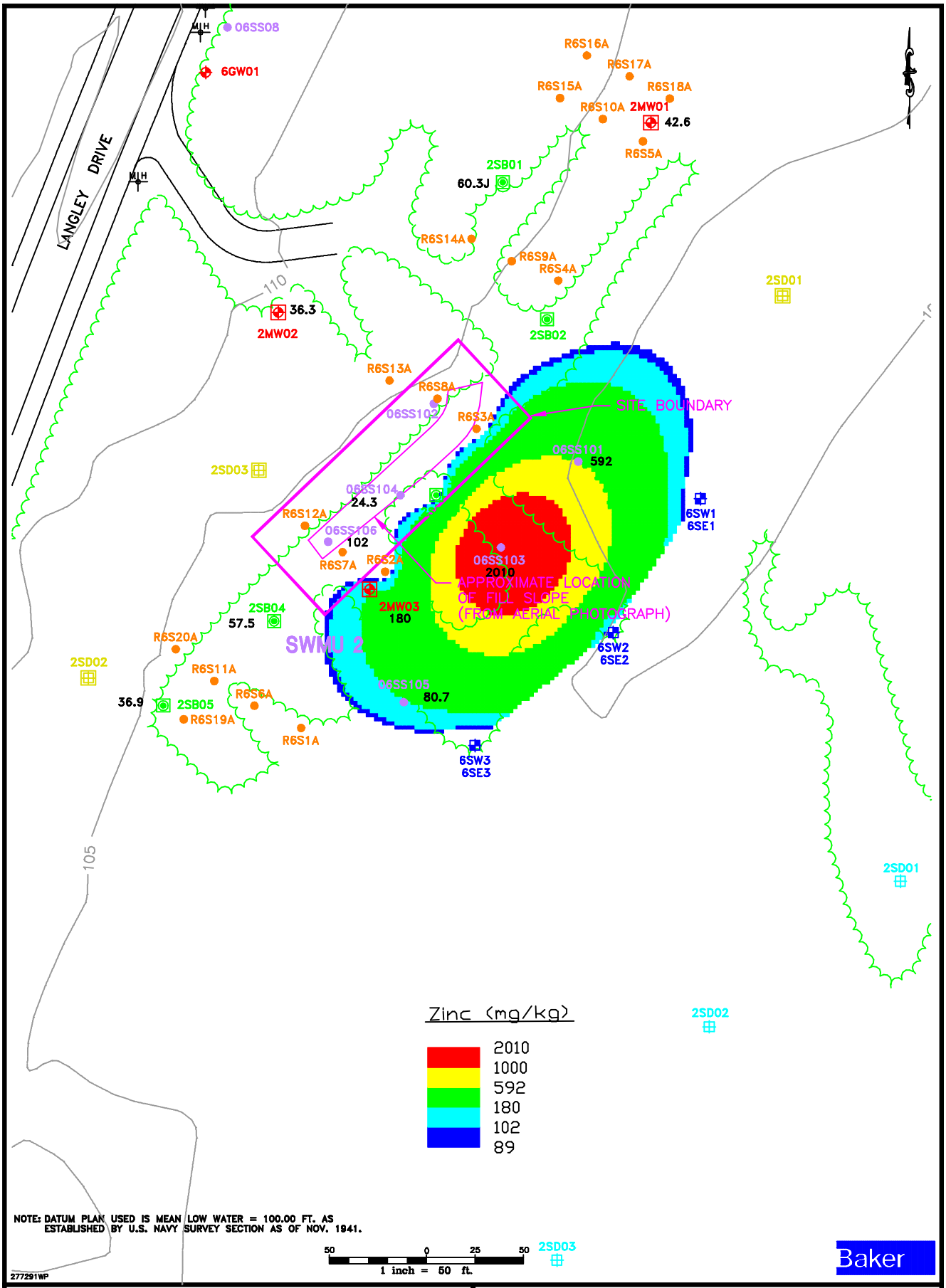


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-45
SELENIUM IN SUBSURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

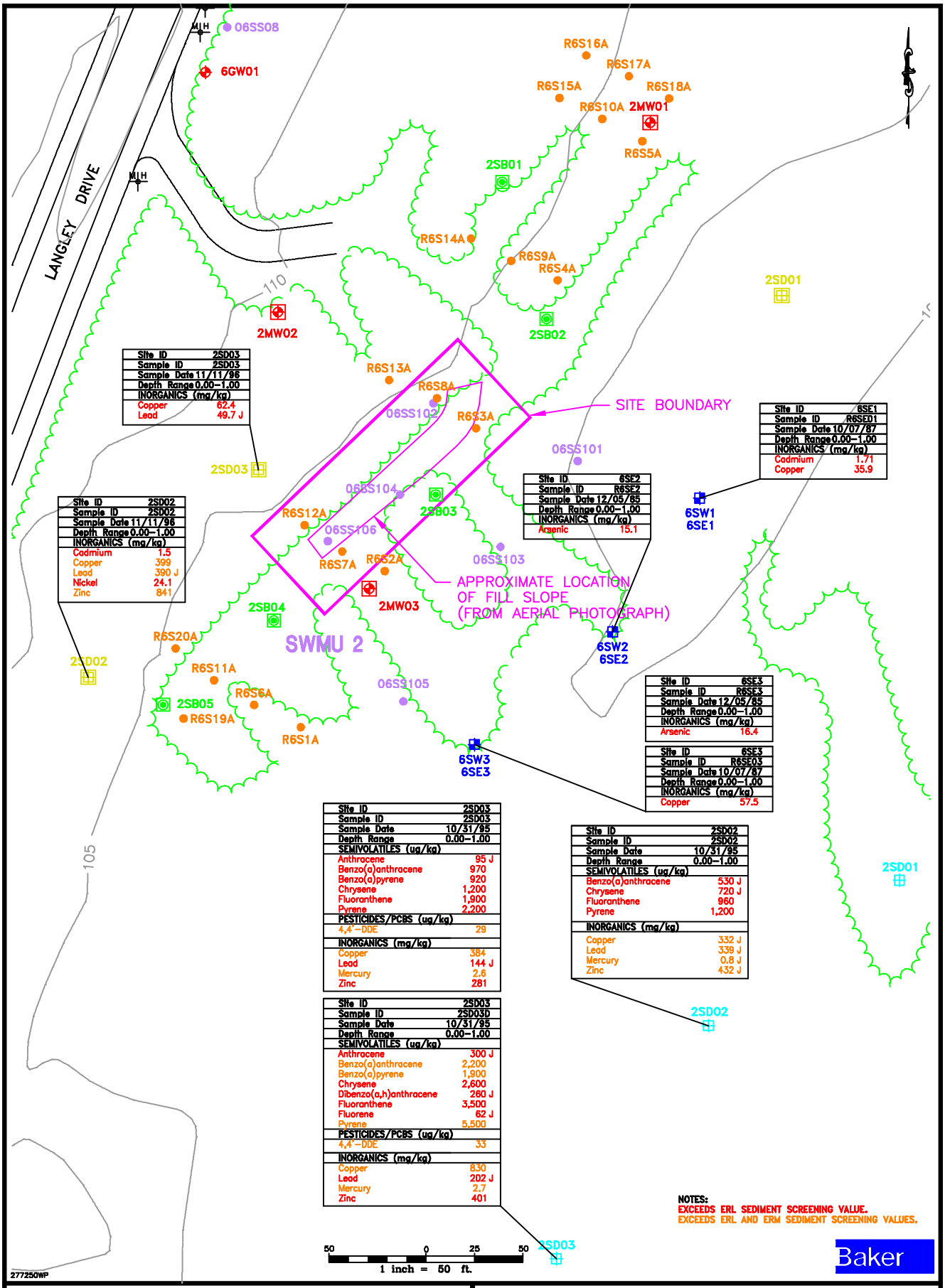


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-46
ZINC IN SUBSURFACE SOIL
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



Site ID	2SD03
Sample ID	2SD03
Sample Date	11/11/96
Depth Range	0.00–1.00
INORGANICS (mg/kg)	
Copper	62.4
Lead	49.7 J

Site ID	2SD02
Sample ID	2SD02
Sample Date	11/11/96
Depth Range	0.00–1.00
INORGANICS (mg/kg)	
Cadmium	1.5
Copper	399
Lead	390 J
Nickel	24.1
Zinc	841

Site ID	6SE2
Sample ID	R6SE2
Sample Date	12/05/85
Depth Range	0.00–1.00
INORGANICS (mg/kg)	
Arsenic	15.1

Site ID	6SE1
Sample ID	R6SE01
Sample Date	10/07/87
Depth Range	0.00–1.00
INORGANICS (mg/kg)	
Cadmium	1.71
Copper	35.9

Site ID	6SE3
Sample ID	R6SE3
Sample Date	12/05/85
Depth Range	0.00–1.00
INORGANICS (mg/kg)	
Arsenic	16.4

Site ID	6SE3
Sample ID	R6SE03
Sample Date	10/07/87
Depth Range	0.00–1.00
INORGANICS (mg/kg)	
Copper	57.5

Site ID	2SD03
Sample ID	2SD03
Sample Date	10/31/95
Depth Range	0.00–1.00
SEMIVOLATILES (ug/kg)	
Anthracene	95 J
Benzo(a)anthracene	970
Benzo(a)pyrene	920
Chrysene	1,200
Fluoranthene	1,900
Pyrene	2,200
PESTICIDES/PCBS (ug/kg)	
4,4'-DDE	29
INORGANICS (mg/kg)	
Copper	384
Lead	144 J
Mercury	2.6
Zinc	281

Site ID	2SD02
Sample ID	2SD02
Sample Date	10/31/95
Depth Range	0.00–1.00
SEMIVOLATILES (ug/kg)	
Benzo(a)anthracene	530 J
Chrysene	720 J
Fluoranthene	960
Pyrene	1,200
INORGANICS (mg/kg)	
Copper	332 J
Lead	339 J
Mercury	0.8 J
Zinc	432 J

Site ID	2SD03
Sample ID	2SD03D
Sample Date	10/31/95
Depth Range	0.00–1.00
SEMIVOLATILES (ug/kg)	
Anthracene	300 J
Benzo(a)anthracene	2,200
Benzo(a)pyrene	1,900
Chrysene	2,600
Dibenzo(a,h)anthracene	260 J
Fluoranthene	3,500
Fluorene	62 J
Pyrene	5,500
PESTICIDES/PCBS (ug/kg)	
4,4'-DDE	33
INORGANICS (mg/kg)	
Copper	830
Lead	202 J
Mercury	2.7
Zinc	401

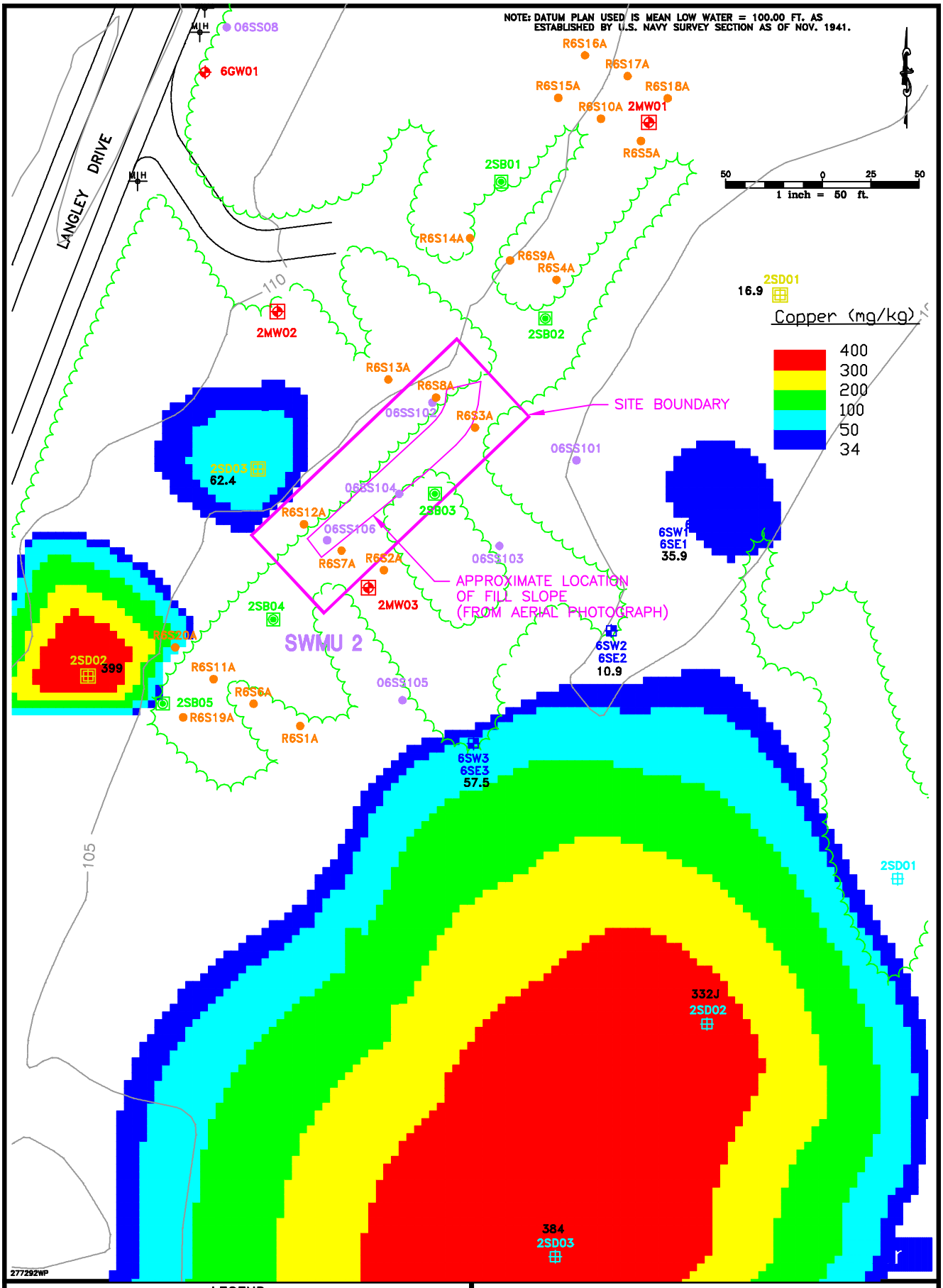
NOTES:
EXCEEDS ERL SEDIMENT SCREENING VALUE.
EXCEEDS ERL AND ERM SEDIMENT SCREENING VALUES.

LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5–47
SEDIMENT DETECTIONS
ABOVE SCREENING CRITERIA
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

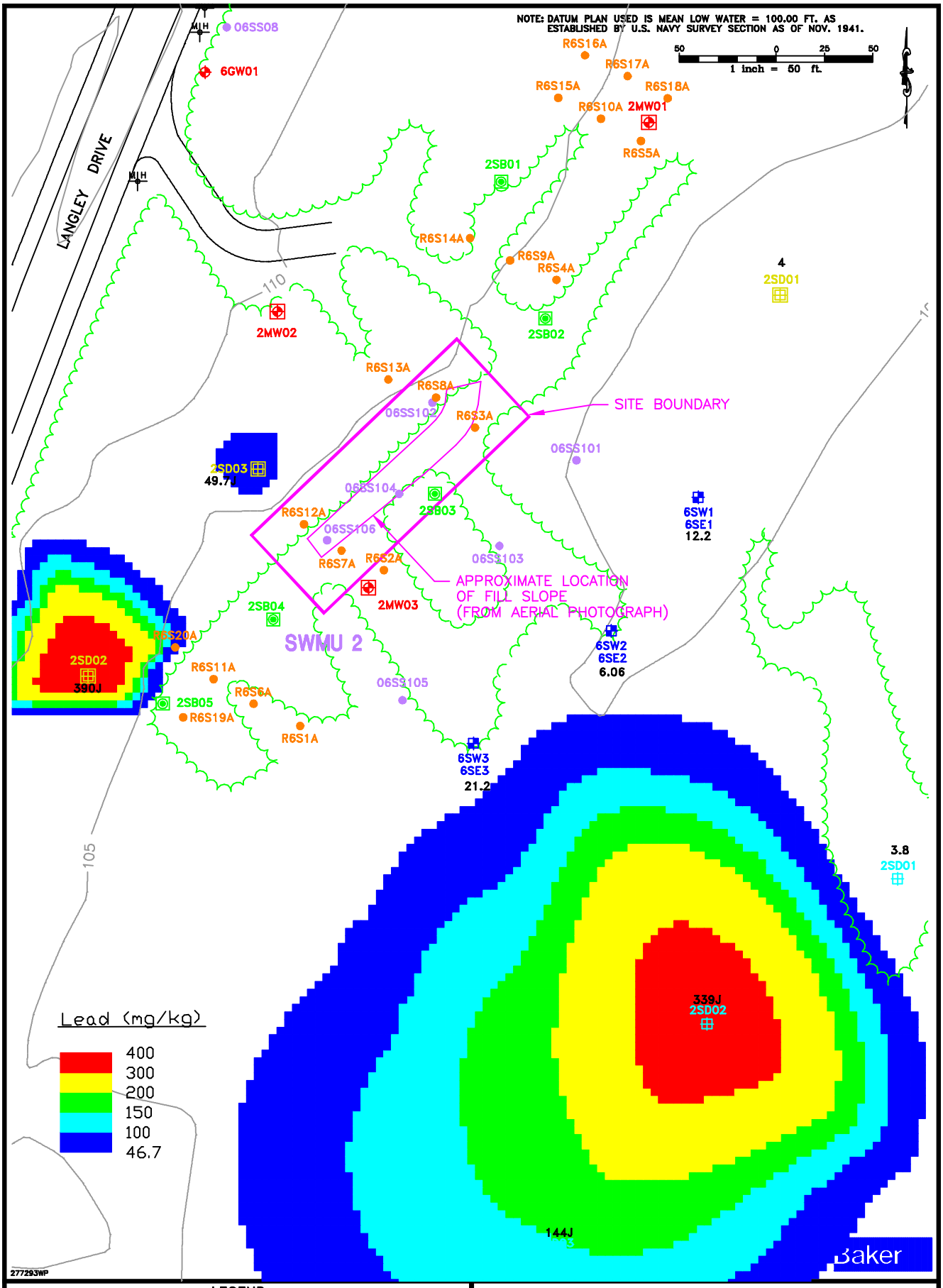


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-48
COPPER IN SEDIMENT
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

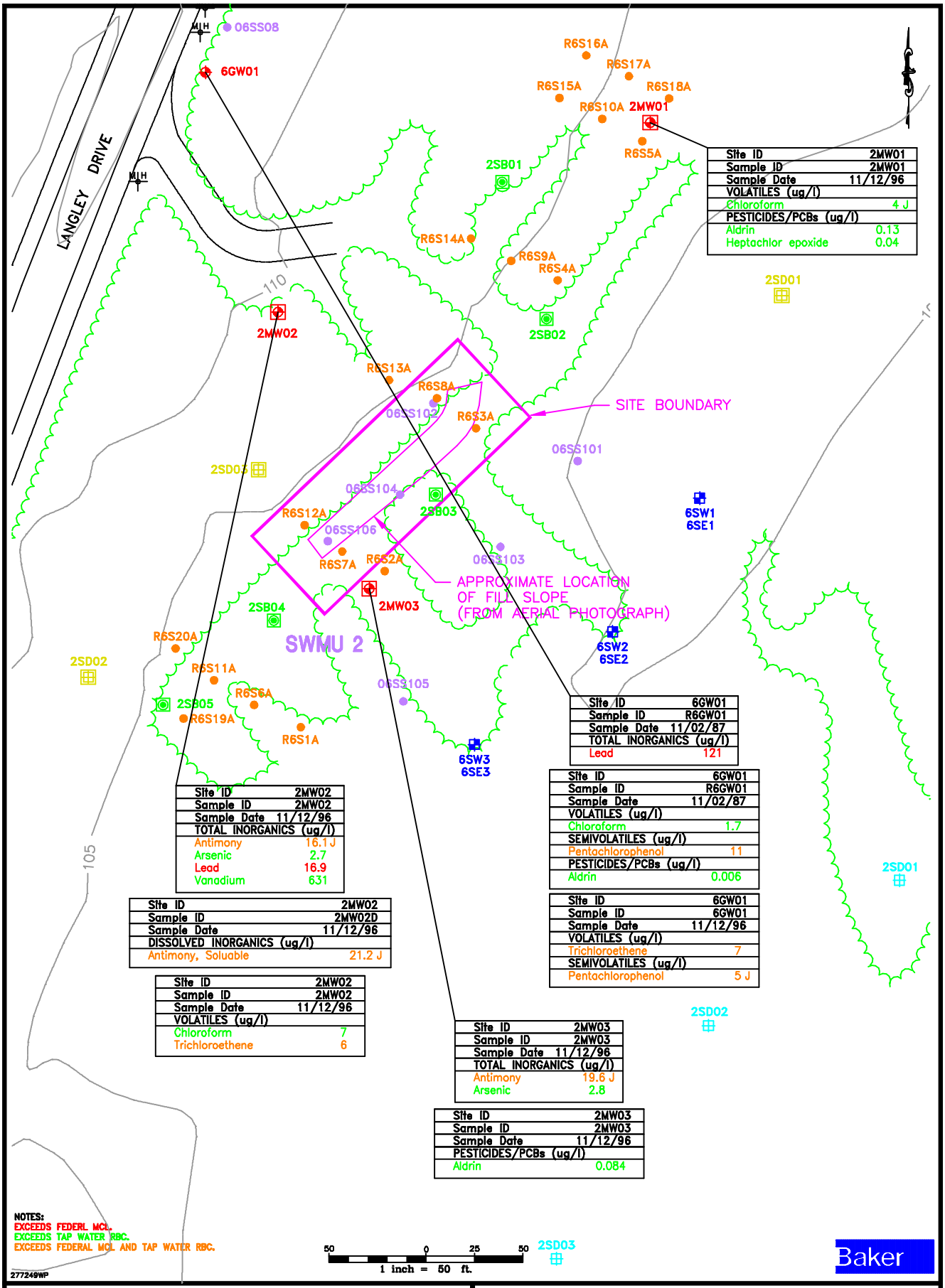


LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-49
LEAD IN SEDIMENT
ISOPLETH MAP
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



Site ID	2MW01
Sample ID	2MW01
Sample Date	11/12/96
VOLATILES (ug/l)	
Chloroform	4 J
PESTICIDES/PCBs (ug/l)	
Aldrin	0.13
Heptachlor epoxide	0.04

Site ID	6GW01
Sample ID	R6GW01
Sample Date	11/02/87
TOTAL INORGANICS (ug/l)	
Lead	121

Site ID	6GW01
Sample ID	R6GW01
Sample Date	11/02/87
VOLATILES (ug/l)	
Chloroform	1.7
SEMIVOLATILES (ug/l)	
Pentachlorophenol	11
PESTICIDES/PCBs (ug/l)	
Aldrin	0.006

Site ID	6GW01
Sample ID	6GW01
Sample Date	11/12/96
VOLATILES (ug/l)	
Trichloroethene	7
SEMIVOLATILES (ug/l)	
Pentachlorophenol	5 J

Site ID	2MW02
Sample ID	2MW02
Sample Date	11/12/96
TOTAL INORGANICS (ug/l)	
Antimony	16.1 J
Arsenic	2.7
Lead	16.9
Vanadium	631

Site ID	2MW02
Sample ID	2MW02D
Sample Date	11/12/96
DISSOLVED INORGANICS (ug/l)	
Antimony, Soluable	21.2 J

Site ID	2MW02
Sample ID	2MW02
Sample Date	11/12/96
VOLATILES (ug/l)	
Chloroform	7
Trichloroethene	6

Site ID	2MW03
Sample ID	2MW03
Sample Date	11/12/96
TOTAL INORGANICS (ug/l)	
Antimony	19.6 J
Arsenic	2.8

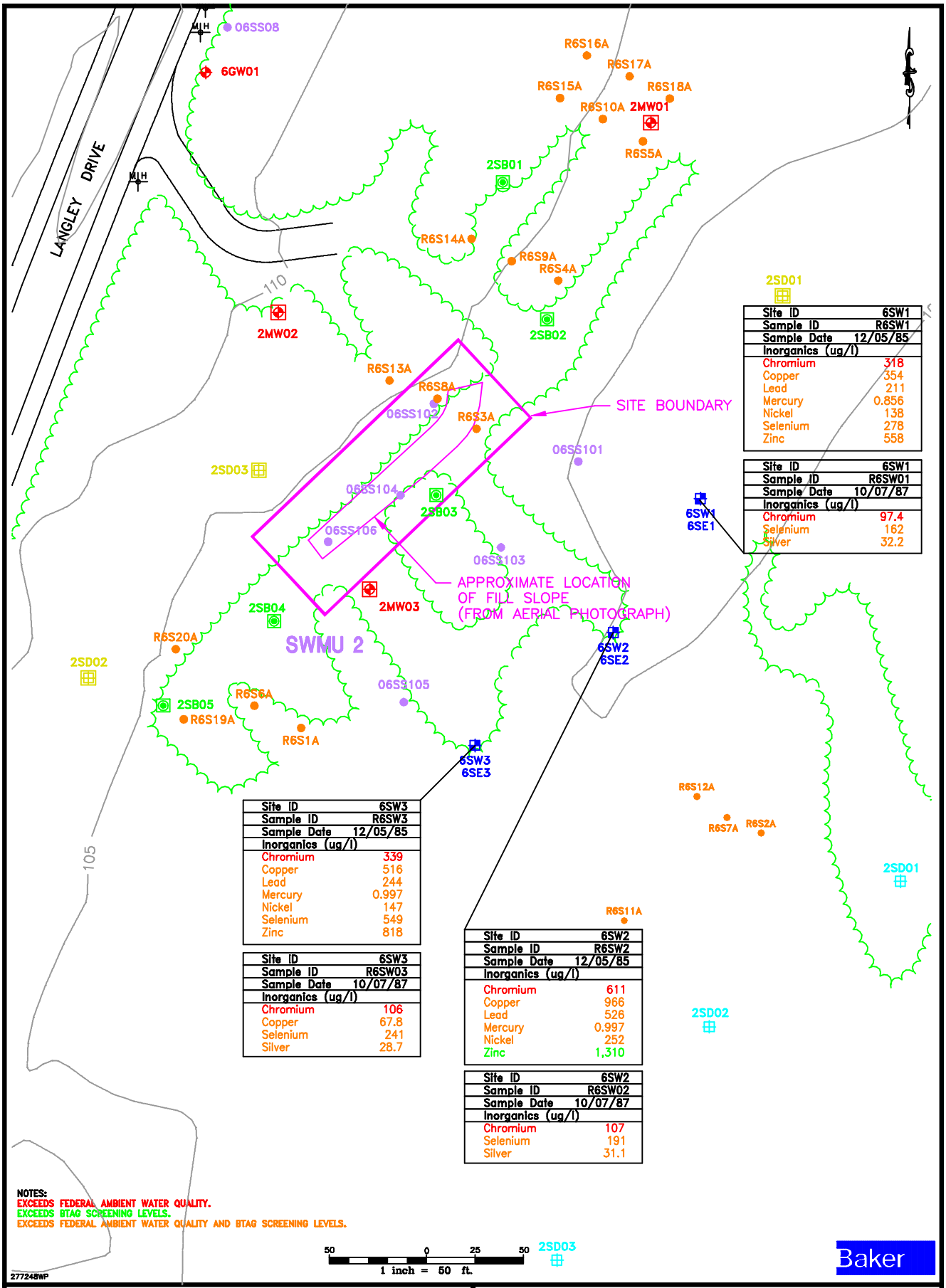
Site ID	2MW03
Sample ID	2MW03
Sample Date	11/12/96
PESTICIDES/PCBs (ug/l)	
Aldrin	0.084

LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-50
GROUNDWATER DETECTIONS
ABOVE SCREENING CRITERIA
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



Site ID	6SW1
Sample ID	R6SW1
Sample Date	12/05/85
Inorganics (ug/l)	
Chromium	318
Copper	354
Lead	211
Mercury	0.856
Nickel	138
Selenium	278
Zinc	558

Site ID	6SW1
Sample ID	R6SW01
Sample Date	10/07/87
Inorganics (ug/l)	
Chromium	97.4
Selenium	162
Silver	32.2

Site ID	6SW3
Sample ID	R6SW3
Sample Date	12/05/85
Inorganics (ug/l)	
Chromium	339
Copper	516
Lead	244
Mercury	0.997
Nickel	147
Selenium	549
Zinc	818

Site ID	6SW3
Sample ID	R6SW03
Sample Date	10/07/87
Inorganics (ug/l)	
Chromium	106
Copper	67.8
Selenium	241
Silver	28.7

Site ID	6SW2
Sample ID	R6SW2
Sample Date	12/05/85
Inorganics (ug/l)	
Chromium	611
Copper	966
Lead	526
Mercury	0.997
Nickel	252
Zinc	1,310

Site ID	6SW2
Sample ID	R6SW02
Sample Date	10/07/87
Inorganics (ug/l)	
Chromium	107
Selenium	191
Silver	31.1

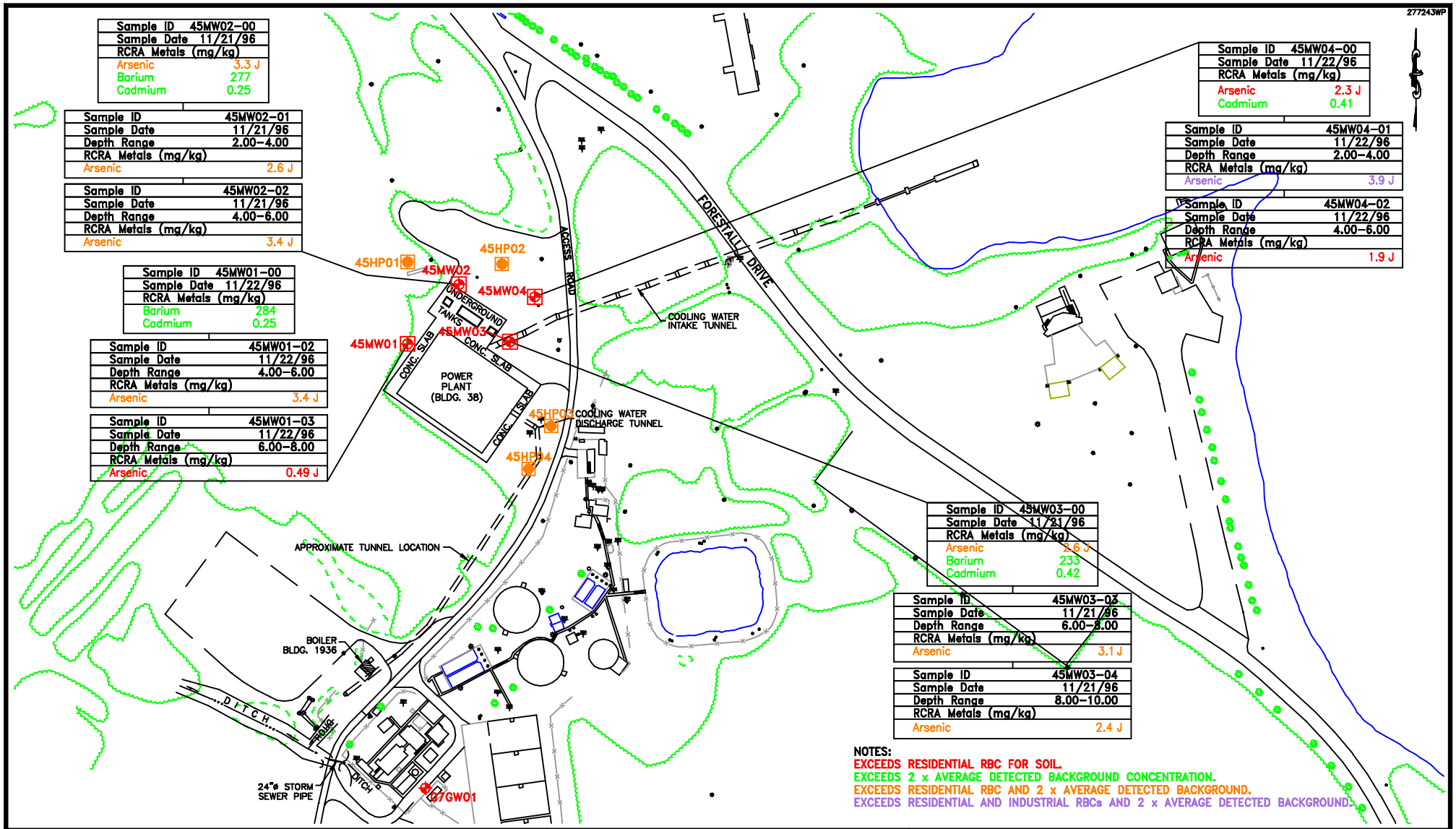
NOTES:
EXCEEDS FEDERAL AMBIENT WATER QUALITY.
EXCEEDS BTAG SCREENING LEVELS.
EXCEEDS FEDERAL AMBIENT WATER QUALITY AND BTAG SCREENING LEVELS.

LEGEND

- MONITORING WELL LOCATION (1996 RFI)
- SOIL BORING LOCATION (1996 RFI)
- SEDIMENT SAMPLE LOCATION (1996 RFI)
- 6GW01 – EXISTING MONITORING WELL LOCATION (CONFIRMATION STUDY)
- SURFACE WATER/SEDIMENT SAMPLE LOCATION (CONFIRMATION STUDY)
- SOIL SAMPLE LOCATION (APPROXIMATE) (SUPPLEMENTAL INVESTIGATION)
- SOIL SAMPLE LOCATION (APPROXIMATE) (CONFIRMATION STUDY)
- SEDIMENT SAMPLE LOCATION (RELATIVE RISK RANKING)
- 110 – SURFACE ELEVATION CONTOUR

FIGURE 5-51
SURFACE WATER DETECTIONS
ABOVE SCREENING CRITERIA
SWMU 2

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



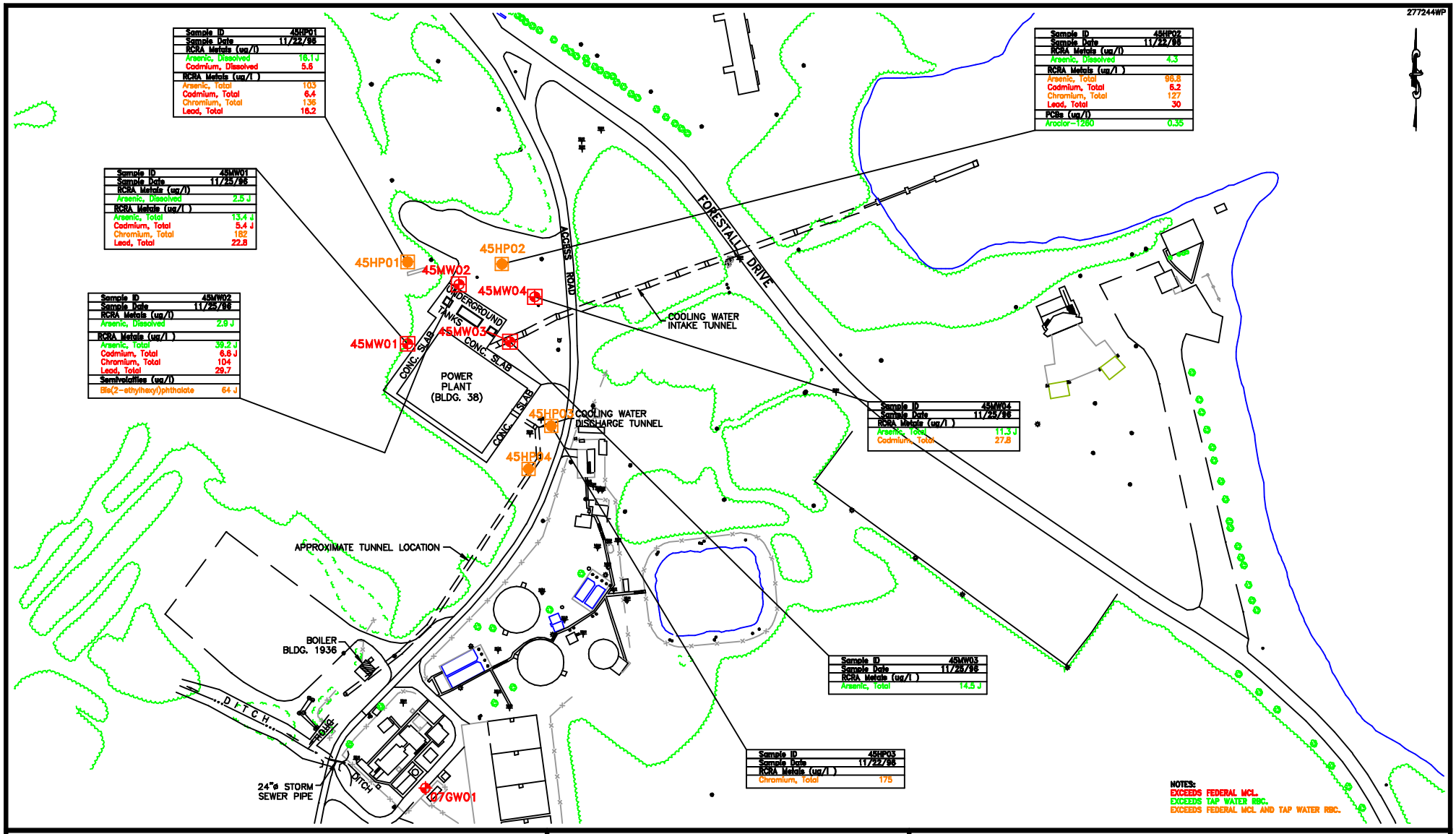
LEGEND

- EXISTING GROUNDWATER SAMPLE LOCATION
- MONITORING WELL LOCATION (1996 RFI)
- HYDROPUNCH LOCATION (1996 RFI)
- 110 SURFACE ELEVATION CONTOUR

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-52
SURFACE AND SUBSURFACE SOIL DETECTIONS
ABOVE SCREENING CRITERIA
SWMU 45 - 1996 RFI
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

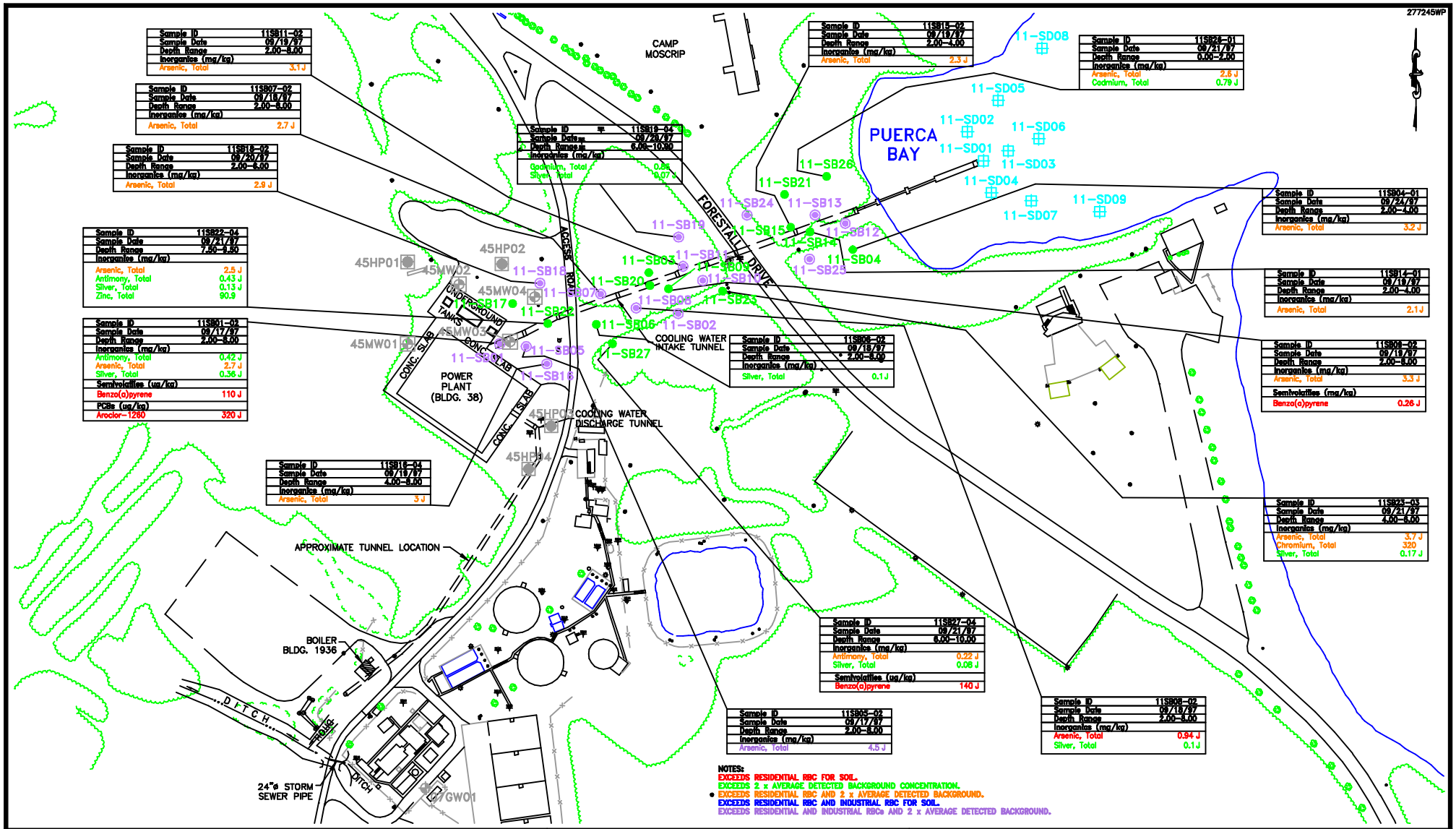
- EXISTING GROUNDWATER SAMPLE LOCATION
- MONITORING WELL LOCATION (1996 RFI)
- HYDROPUNCH LOCATION (1996 RFI)
- 110 SURFACE ELEVATION CONTOUR

150 0 75 150

1 inch = 150 ft.

Baker

FIGURE 5-53
GROUNDWATER DETECTIONS
ABOVE SCREENING CRITERIA
SWMU 45 – 1996 RFI
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

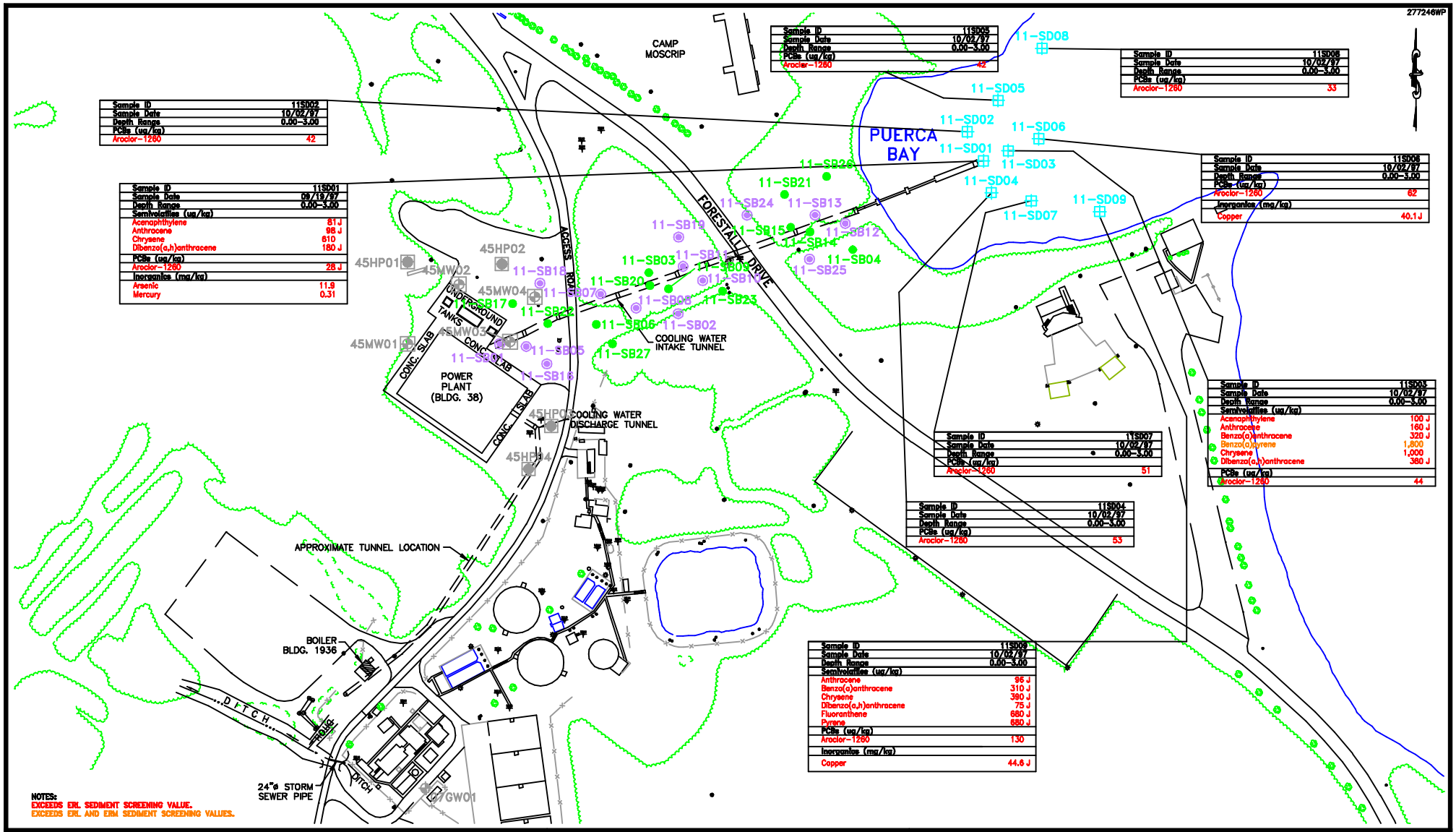
- DIRECT PUSH SOIL SAMPLE LOCATION (1997 RFI)
- SEDIMENT SAMPLE LOCATION (1997 RFI)
- DIRECT PUSH SOIL AND GROUNDWATER SAMPLE LOCATION (1997 RFI)

150 0 75 150

1 inch = 150 ft.

Baker

FIGURE 5-54
SUBSURFACE SOIL DETECTIONS
ABOVE SCREENING CRITERIA
SWMU 45 – 1997 RFI
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



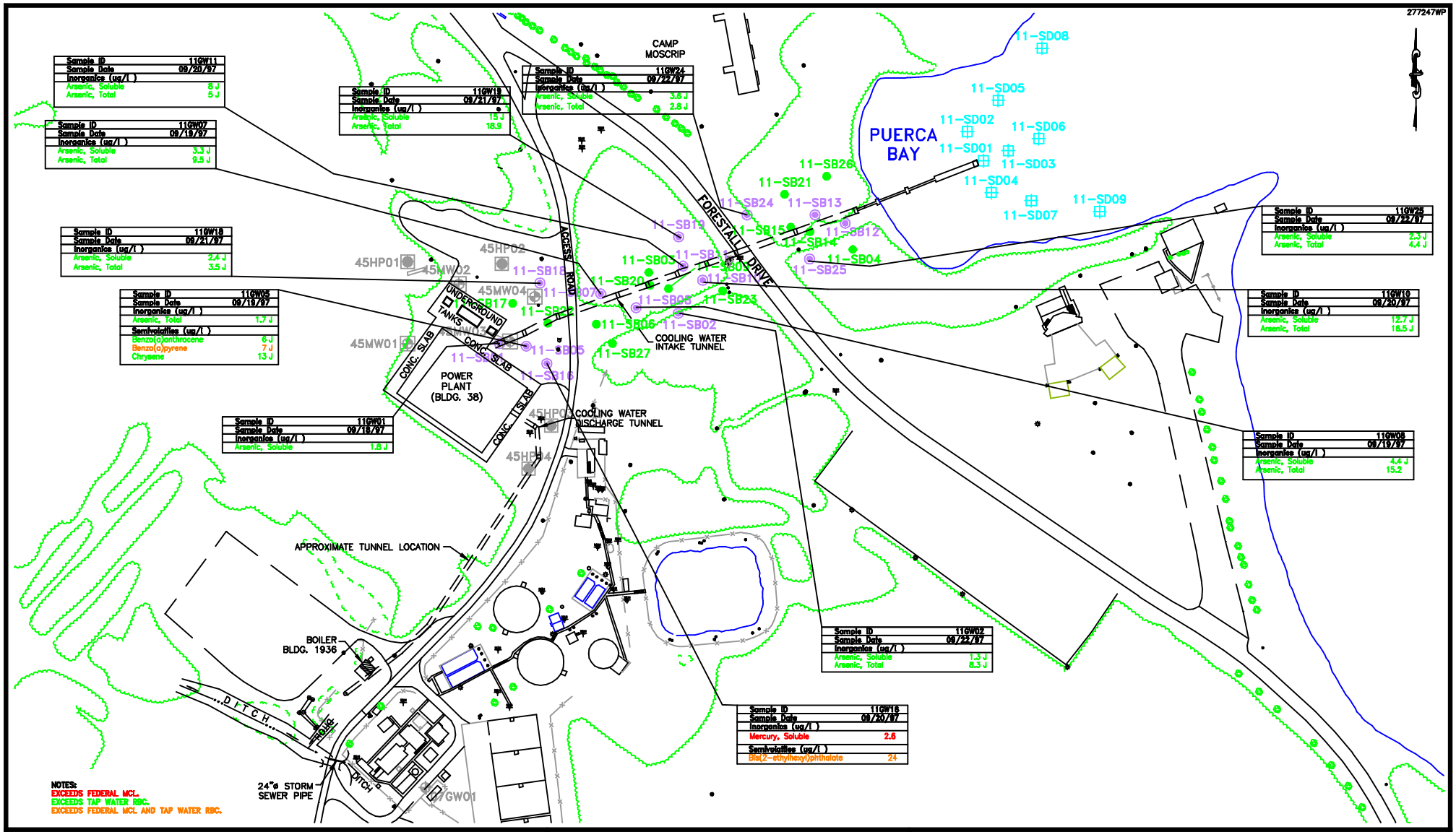
LEGEND

- ● – DIRECT PUSH SOIL SAMPLE LOCATION (1997 RFI)
- ⊞ – SEDIMENT SAMPLE LOCATION (1997 RFI)
- ◉ – DIRECT PUSH SOIL AND GROUNDWATER SAMPLE LOCATION (1997 RFI)

150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-55
SEDIMENT DETECTIONS
ABOVE SCREENING CRITERIA
SWMU 45 – 1997 RFI
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



LEGEND

- DIRECT PUSH SOIL SAMPLE LOCATION (1997 RFI)
- SEDIMENT SAMPLE LOCATION (1997 RFI)
- DIRECT PUSH SOIL AND GROUNDWATER SAMPLE LOCATION (1997 RFI)

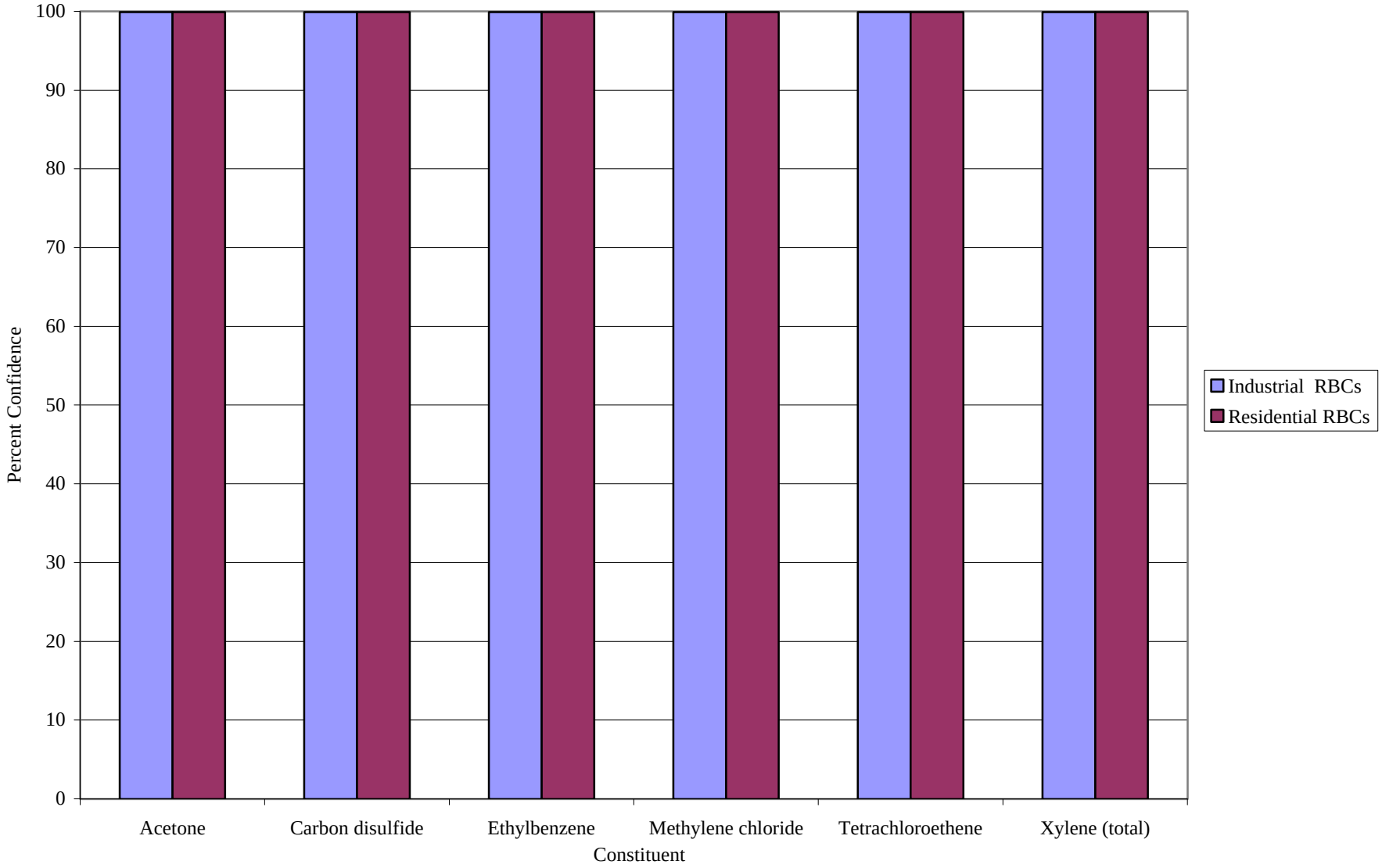
150 0 75 150
1 inch = 150 ft.

Baker

FIGURE 5-56
GROUNDWATER DETECTIONS
ABOVE SCREENING CRITERIA
SWMU 45 – 1997 RFI
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

FIGURE 5-57

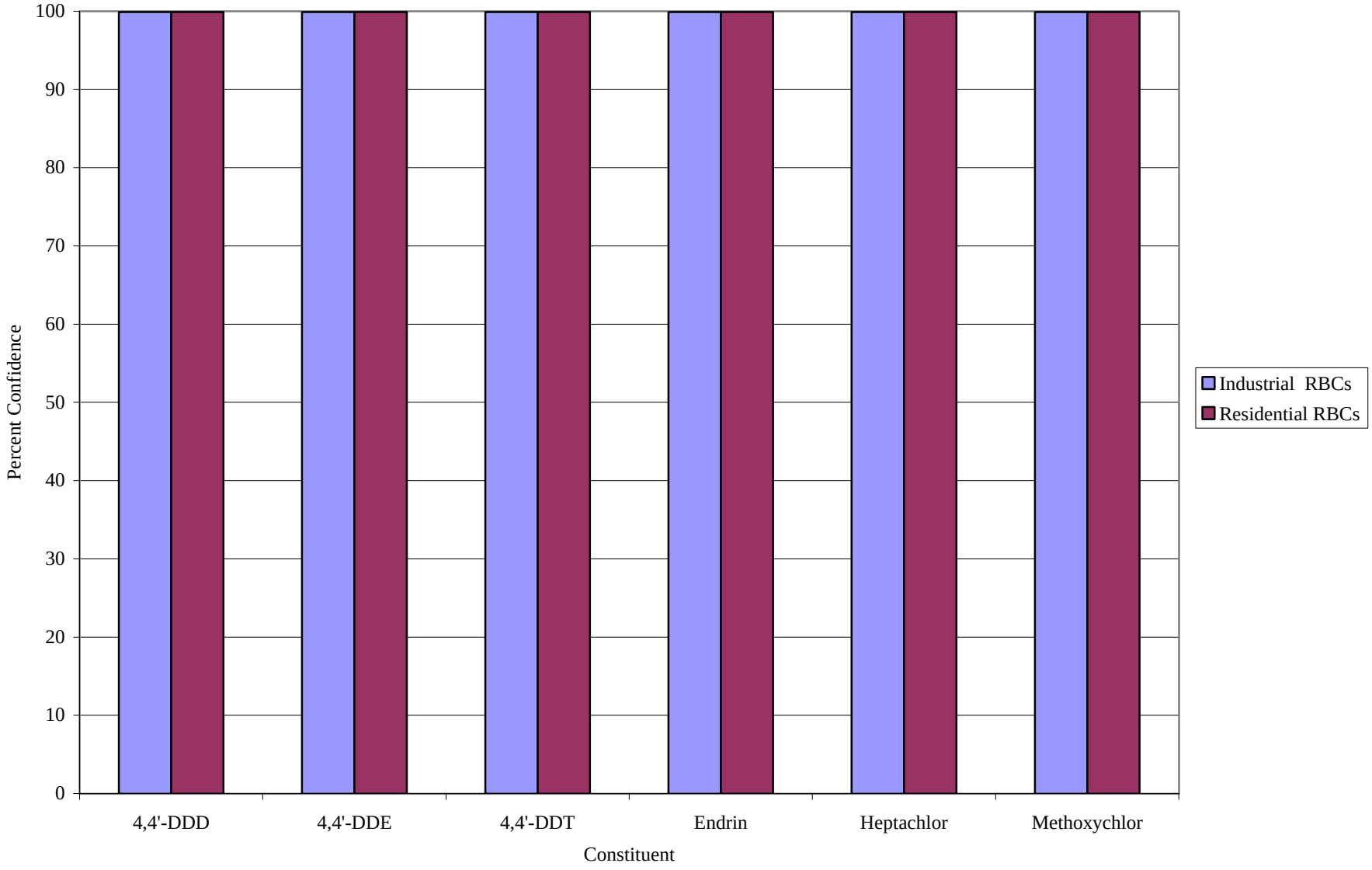
PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
VOLATILE ORGANICS IN SURFACE SOIL
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO



* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-58

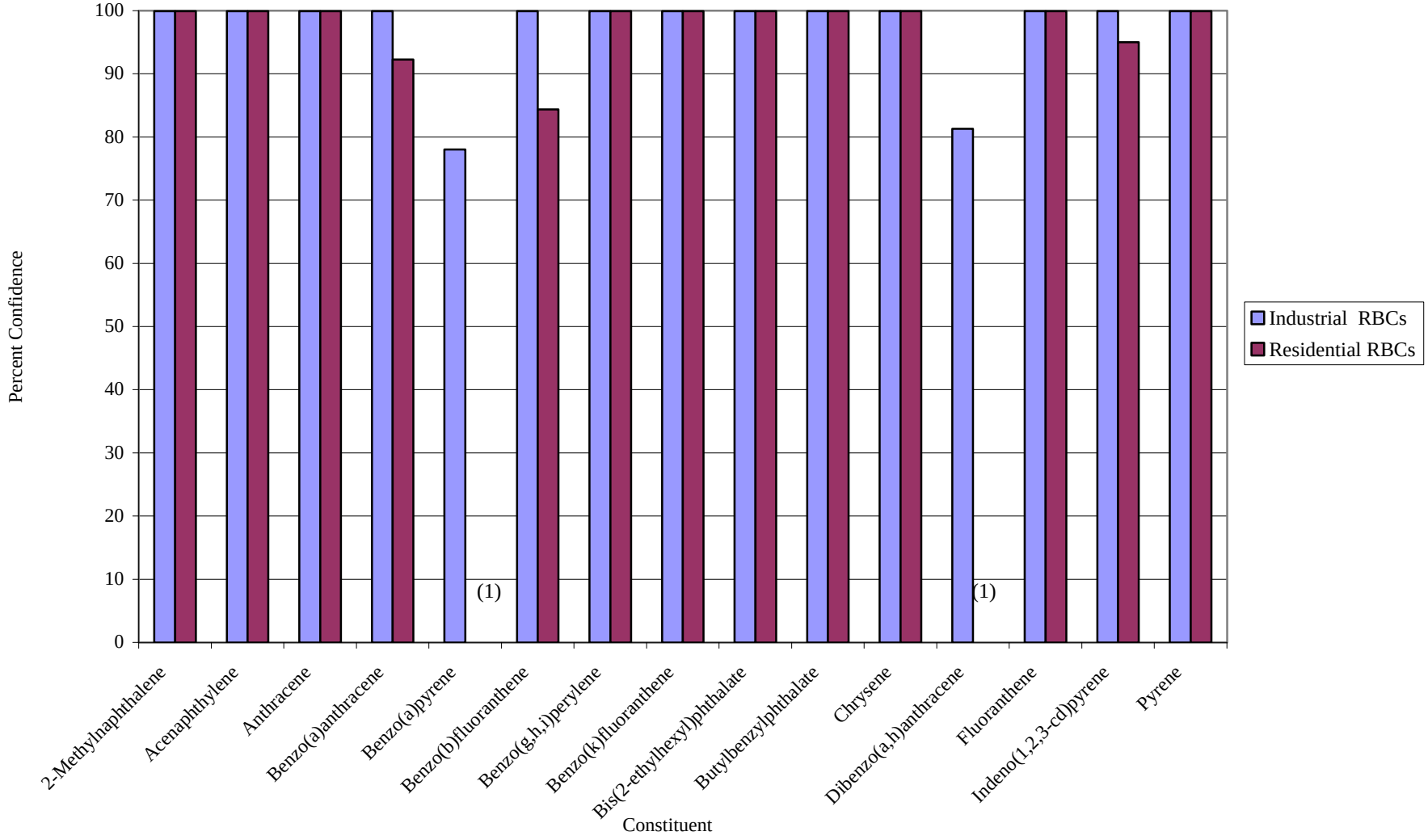
PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
PESTICIDES IN SURFACE SOIL
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO



* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-59

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
SEMIVOLATILE ORGANICS IN SURFACE SOIL
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

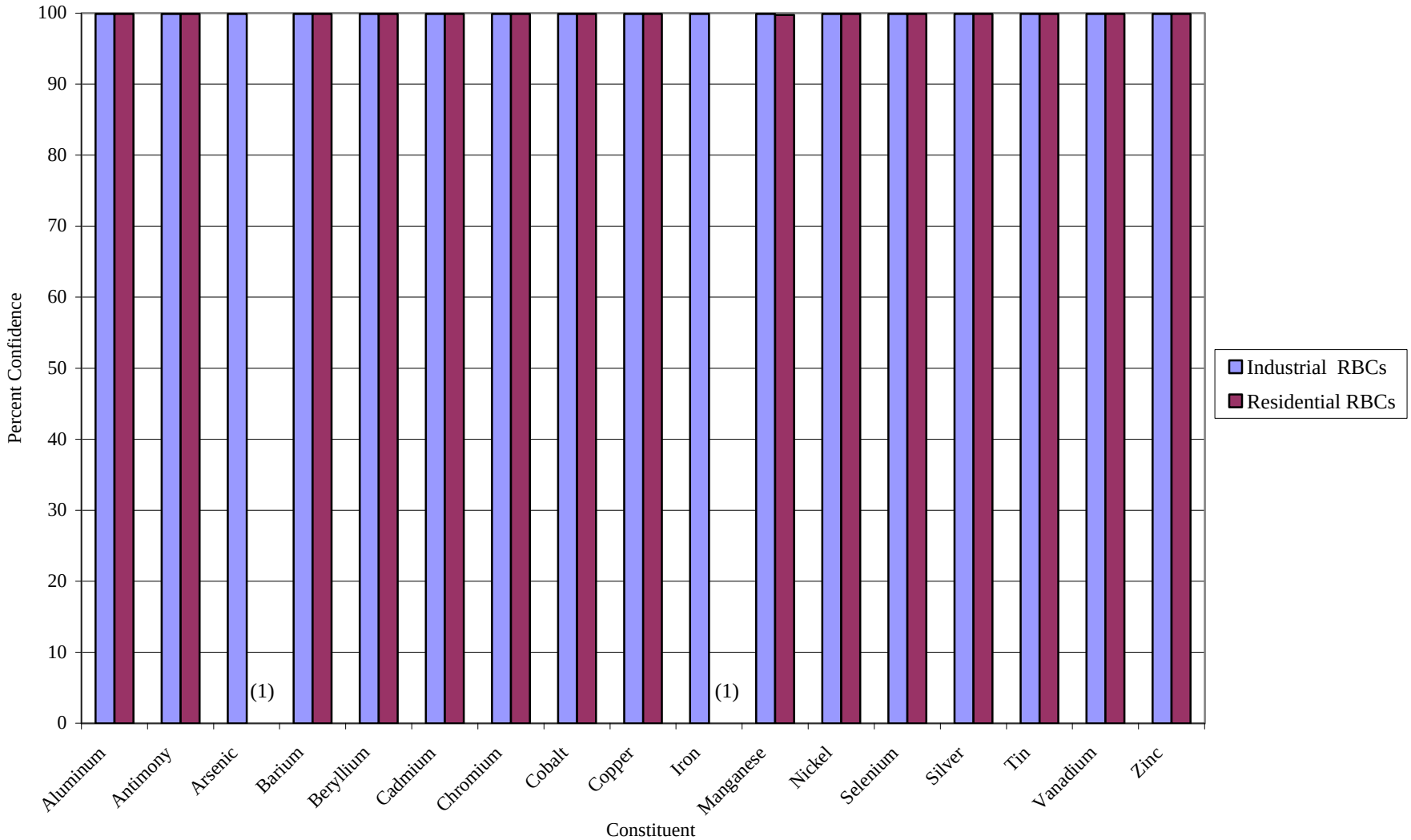


(1) Detection Level Exceeded the Residential RBC

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-60

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
INORGANICS IN SURFACE SOIL
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

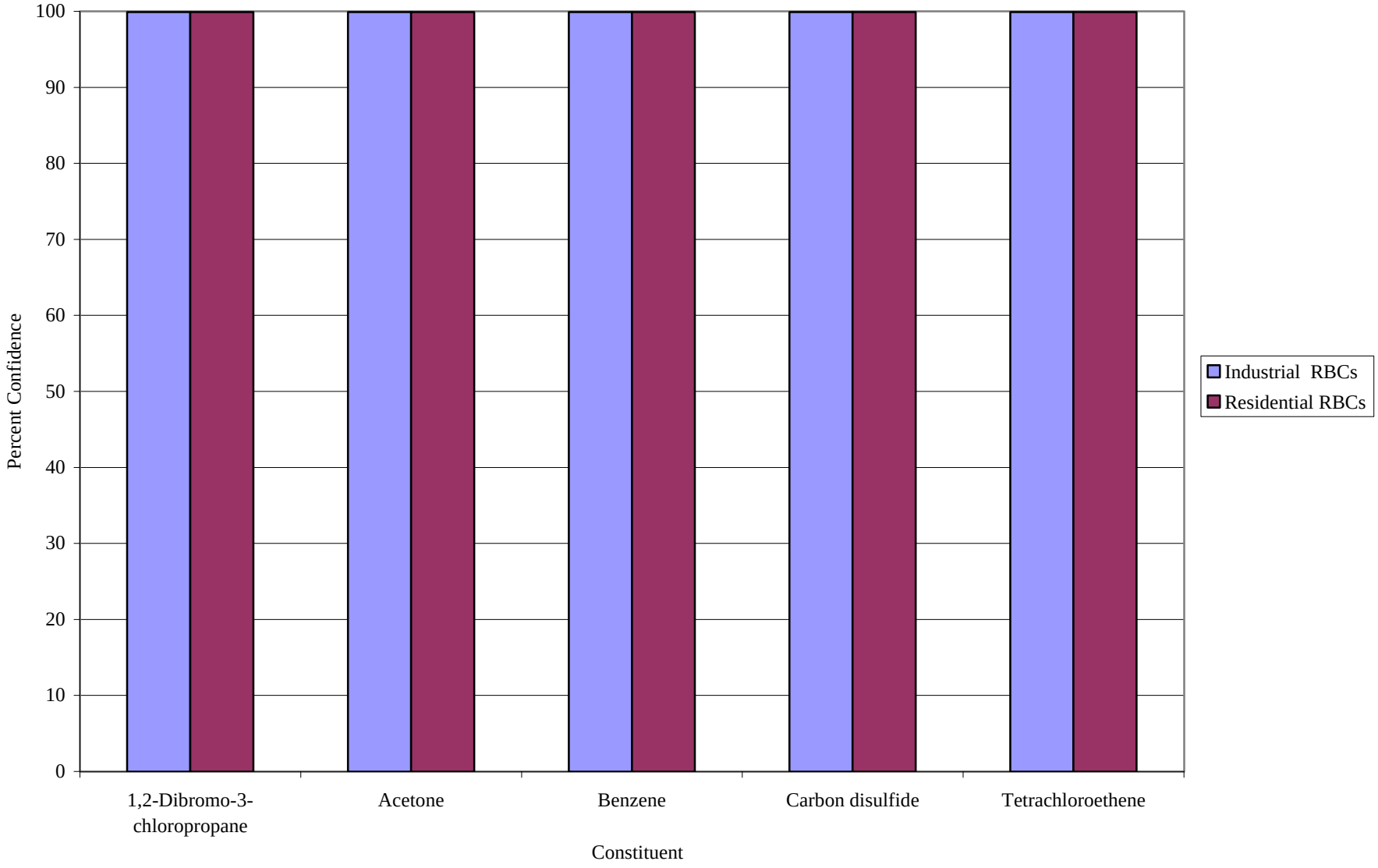


(1) Detection Level Exceeded the Residential RBC

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-61

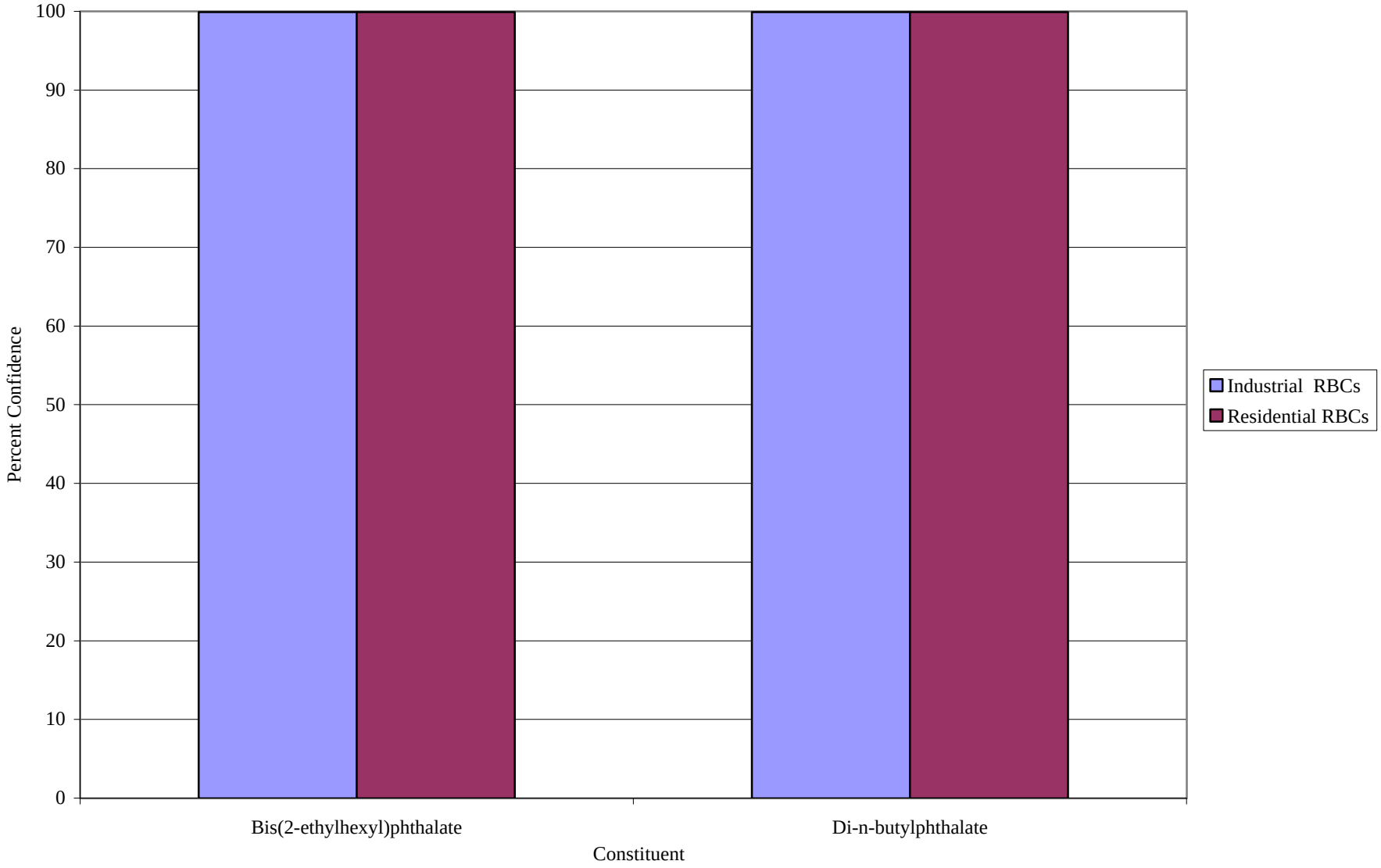
PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
VOLATILE ORGANICS IN SUBSURFACE SOIL
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO



* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-62

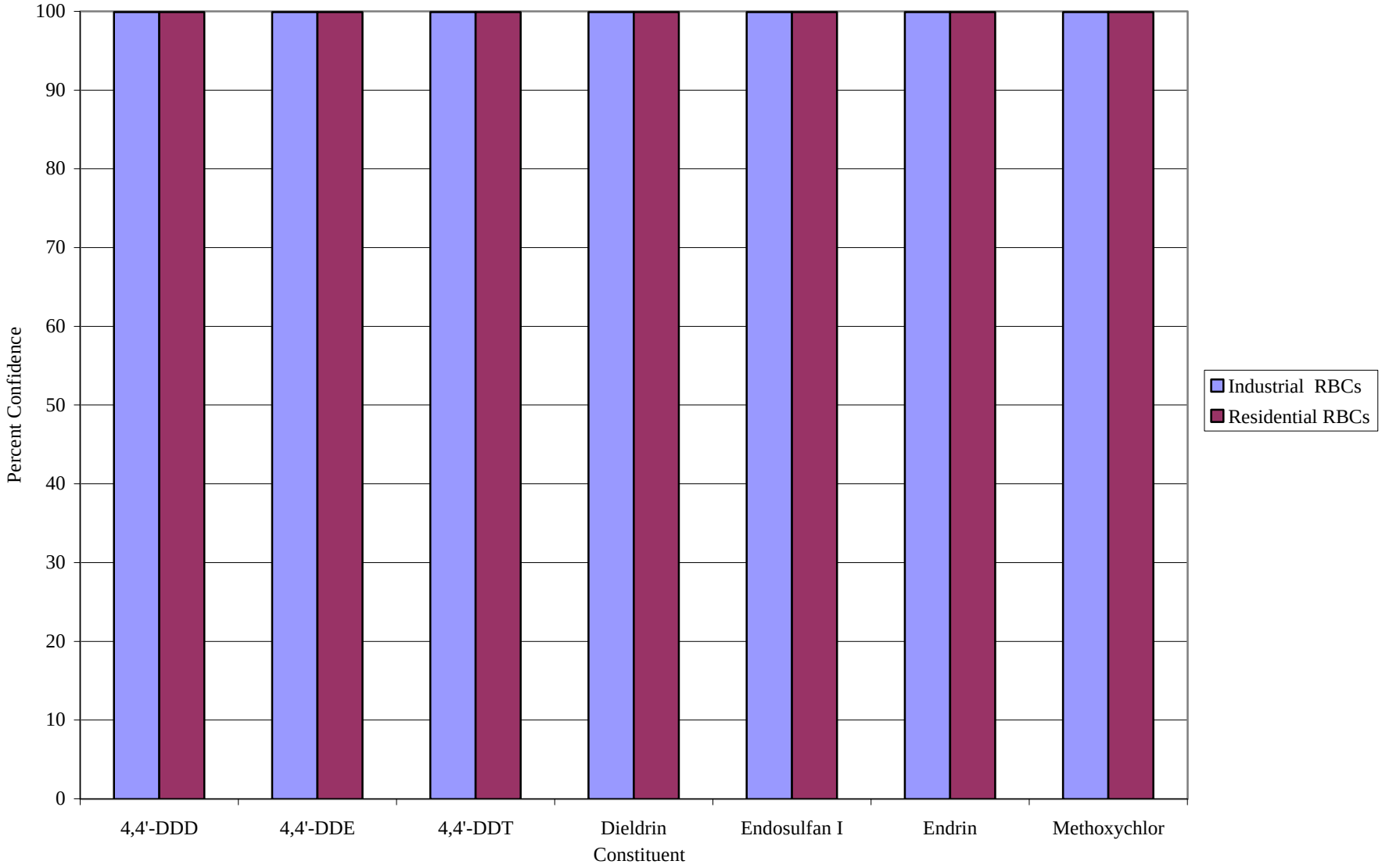
PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
SEMIVOLATILE ORGANICS IN SUBSURFACE SOIL
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO



* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-63

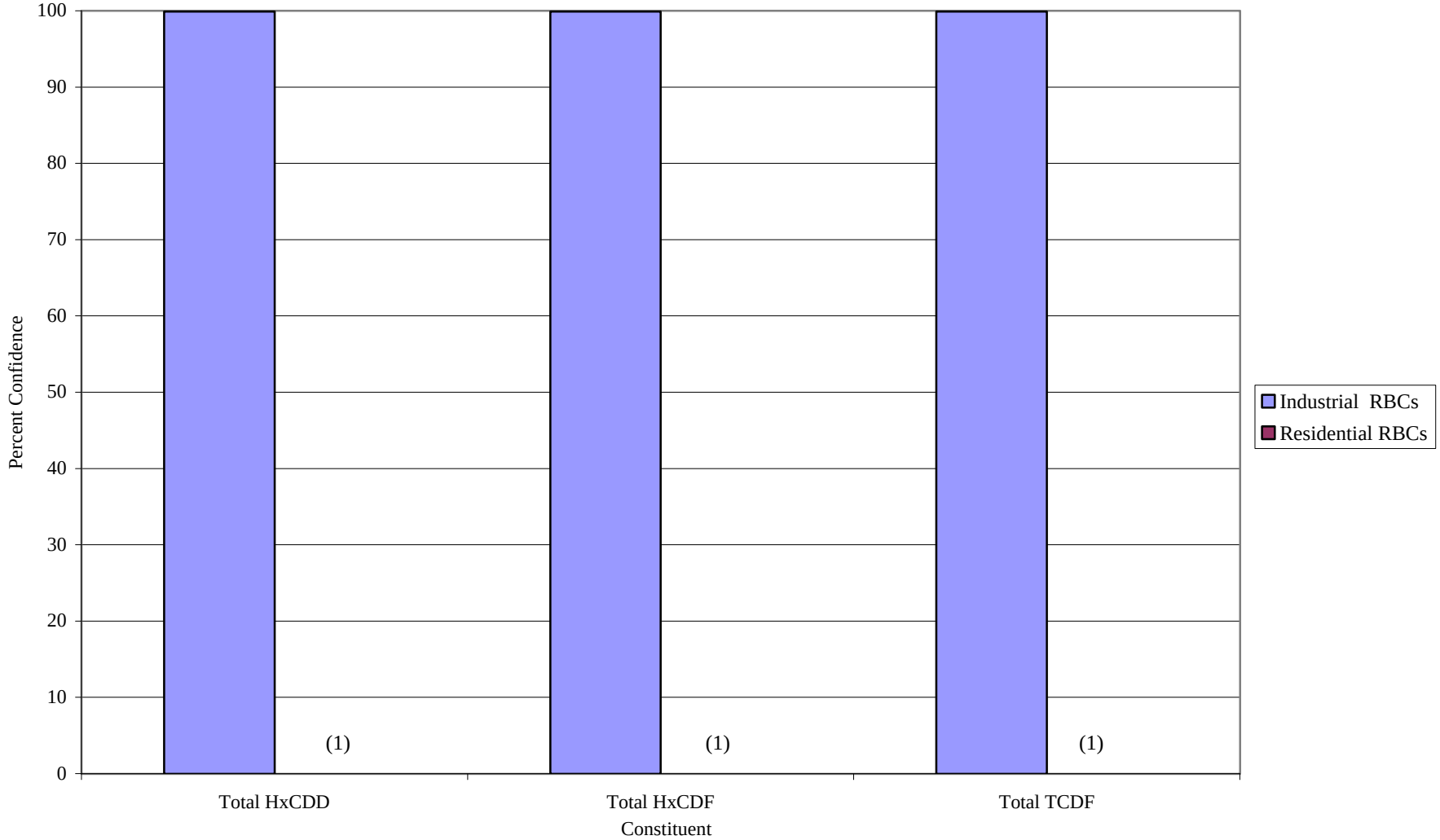
PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
PESTICIDES IN SUBSURFACE SOIL
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO



* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-64

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
DIOXINS IN SUBSURFACE SOIL
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

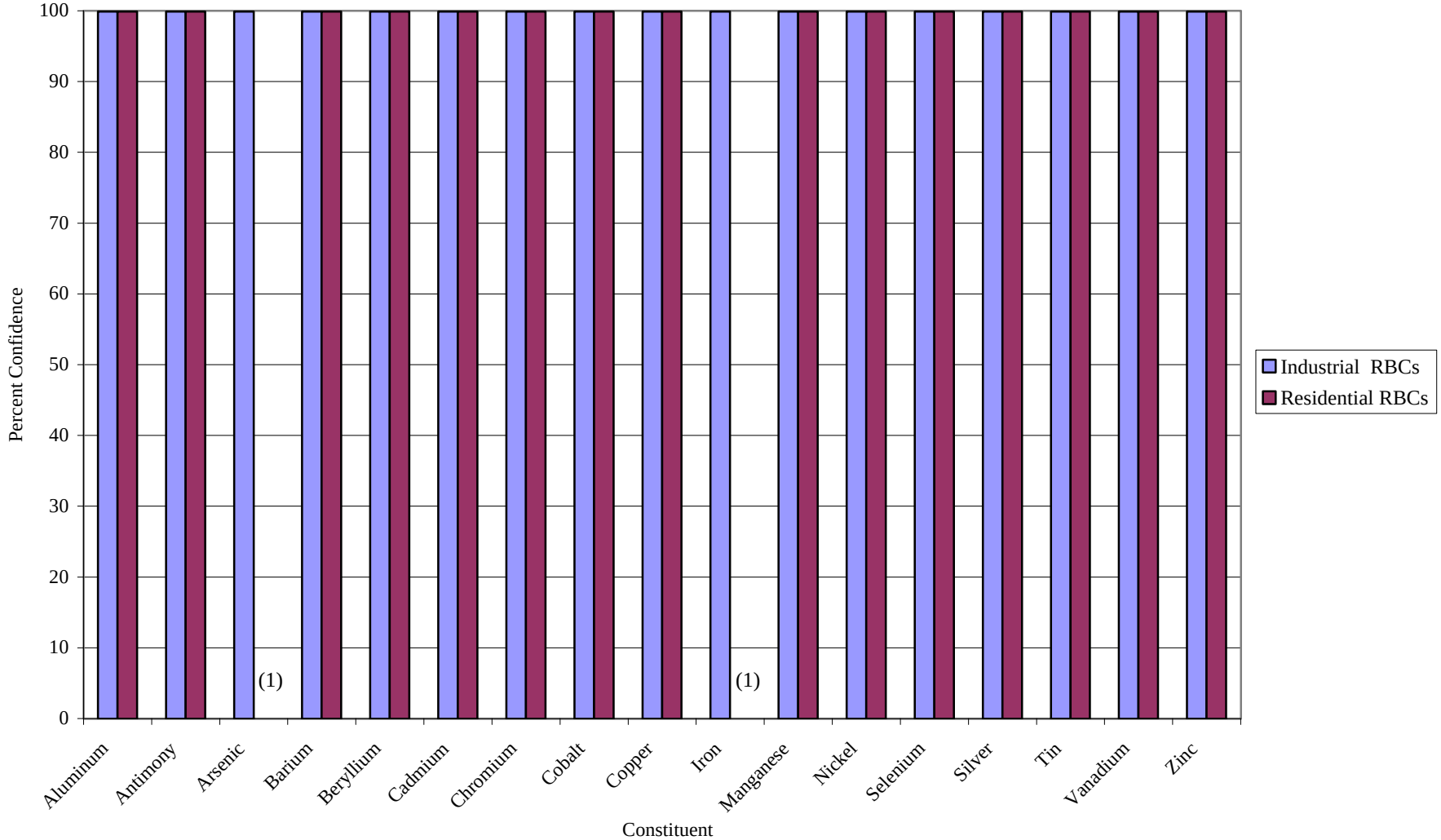


(1) Detection Level Exceeded the Residential RBC

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-65

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
INORGANICS IN SUBSURFACE SOIL
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

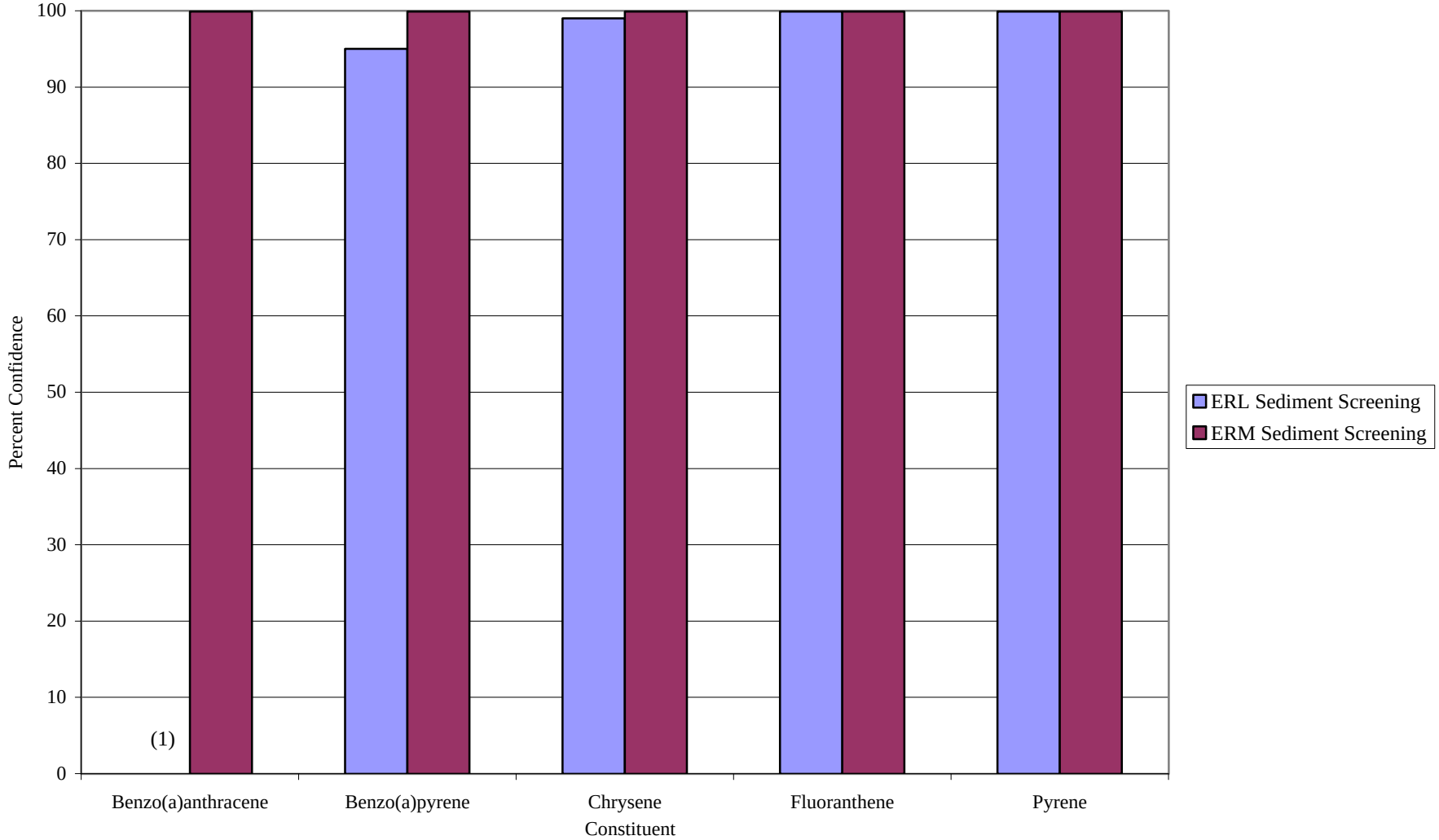


(1) Detection Level Exceeds the Residential RBC

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-66

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
SEMIVOLATILE ORGANICS IN SEDIMENT
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

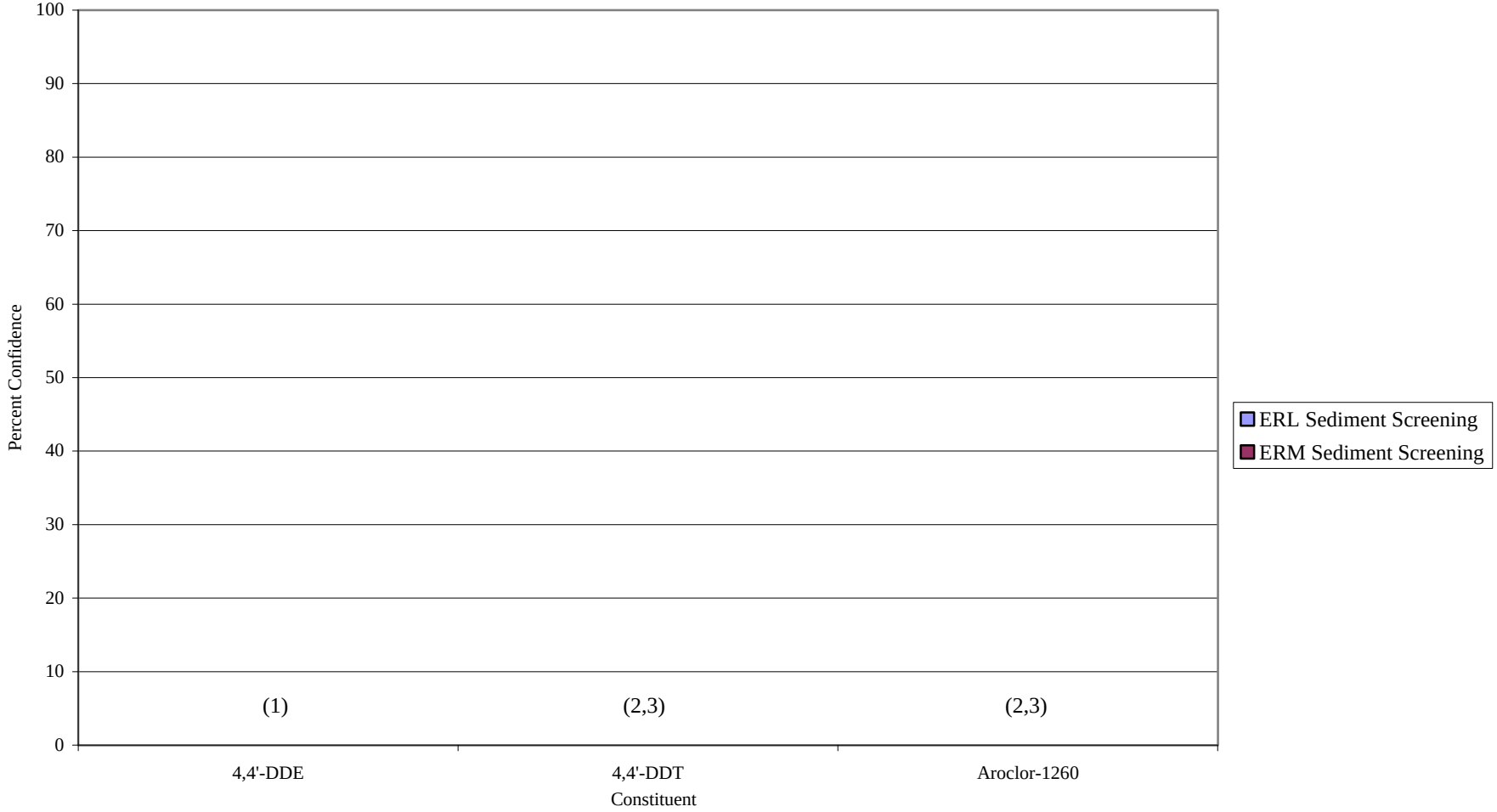


(1) Detection Level Exceeded the ERL Sediment Screening Value

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-67

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
PESTICIDES/PCBs IN SEDIMENT
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO



(1) Detection Level Exceeded the ERL and ERM Sediment Screening Values

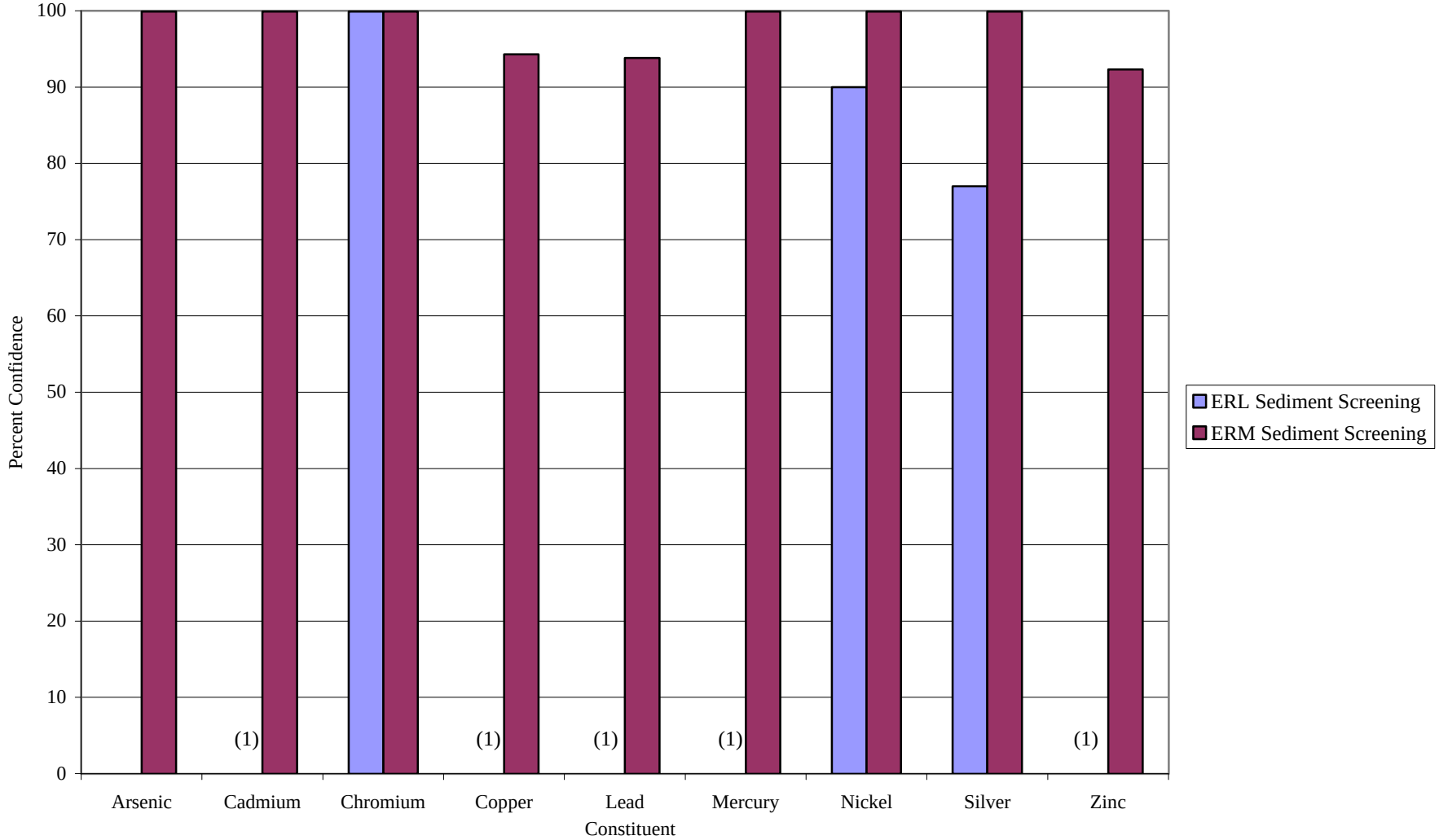
(2) No ERL Sediment Screening Value Established for this Constituent

(3) Detection Level Exceeded the ERM Sediment Screening Value

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-68

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
SEMIVOLATILE ORGANICS IN SEDIMENT
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

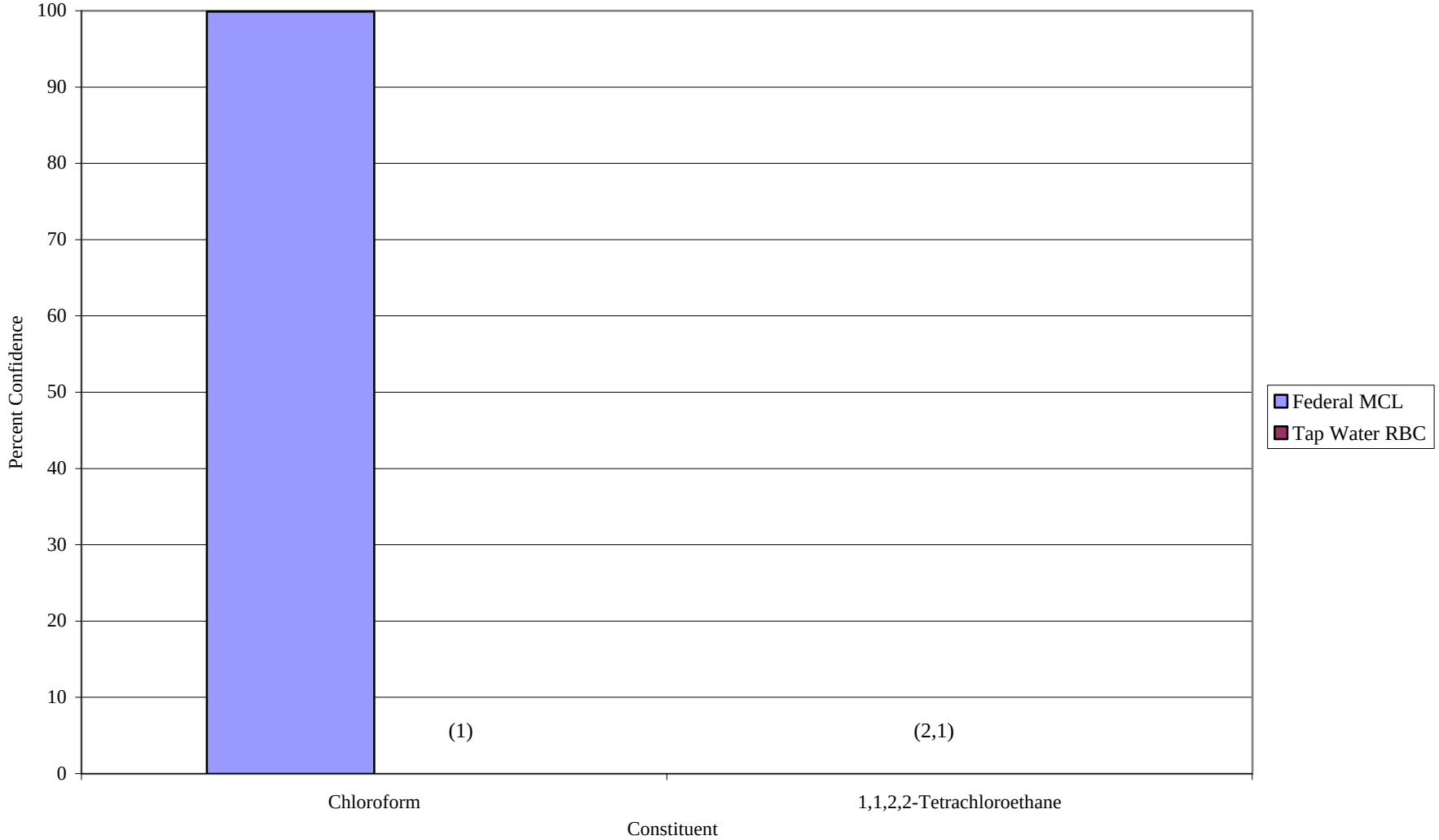


(1) Detection Level Exceeded the ERL Sediment Screening Value

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-69

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
VOLATILE ORGANICS IN GROUNDWATER
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

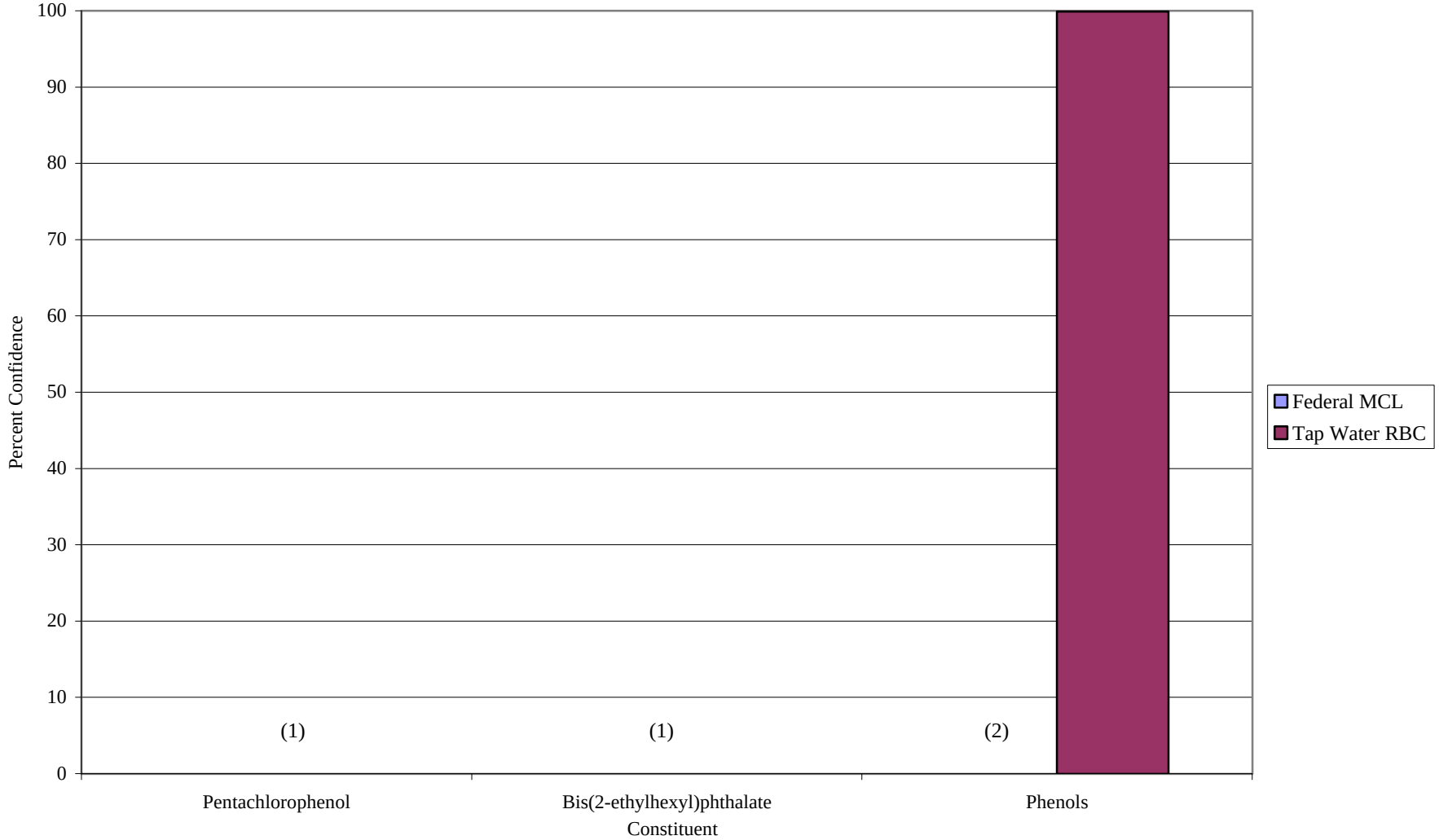


(1) Detection Level Exceeded the Tap Water RBC
(2) No Federal MCL Established for this Constituent

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-70

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
SEMIVOLATILE ORGANICS IN GROUNDWATER
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

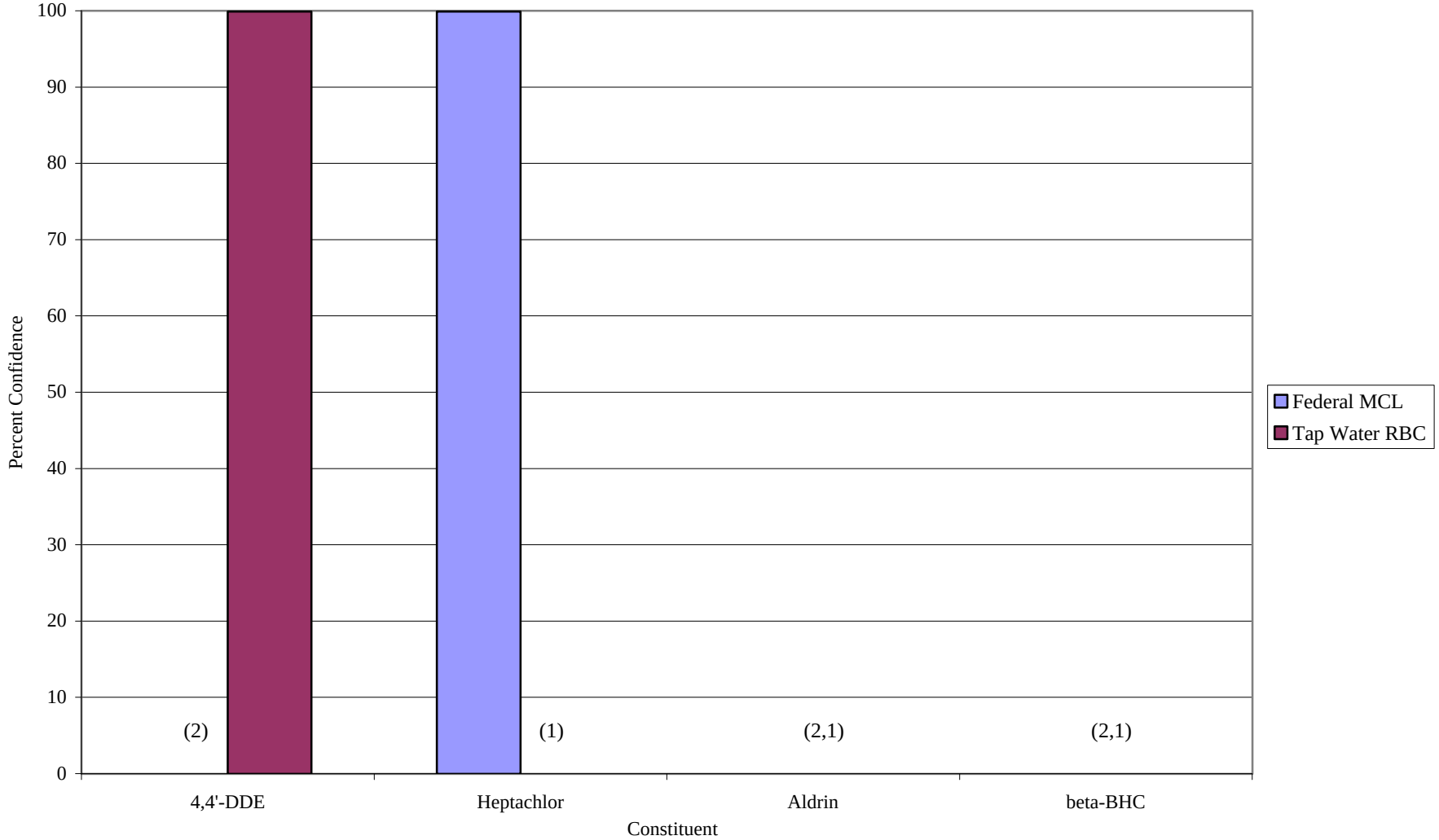


(1) Detection Level Exceeded the Federal MCL and Tap Water RBC
(2) No Federal MCL Established for this Constituent

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-71

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
PESTICIDES IN GROUNDWATER
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

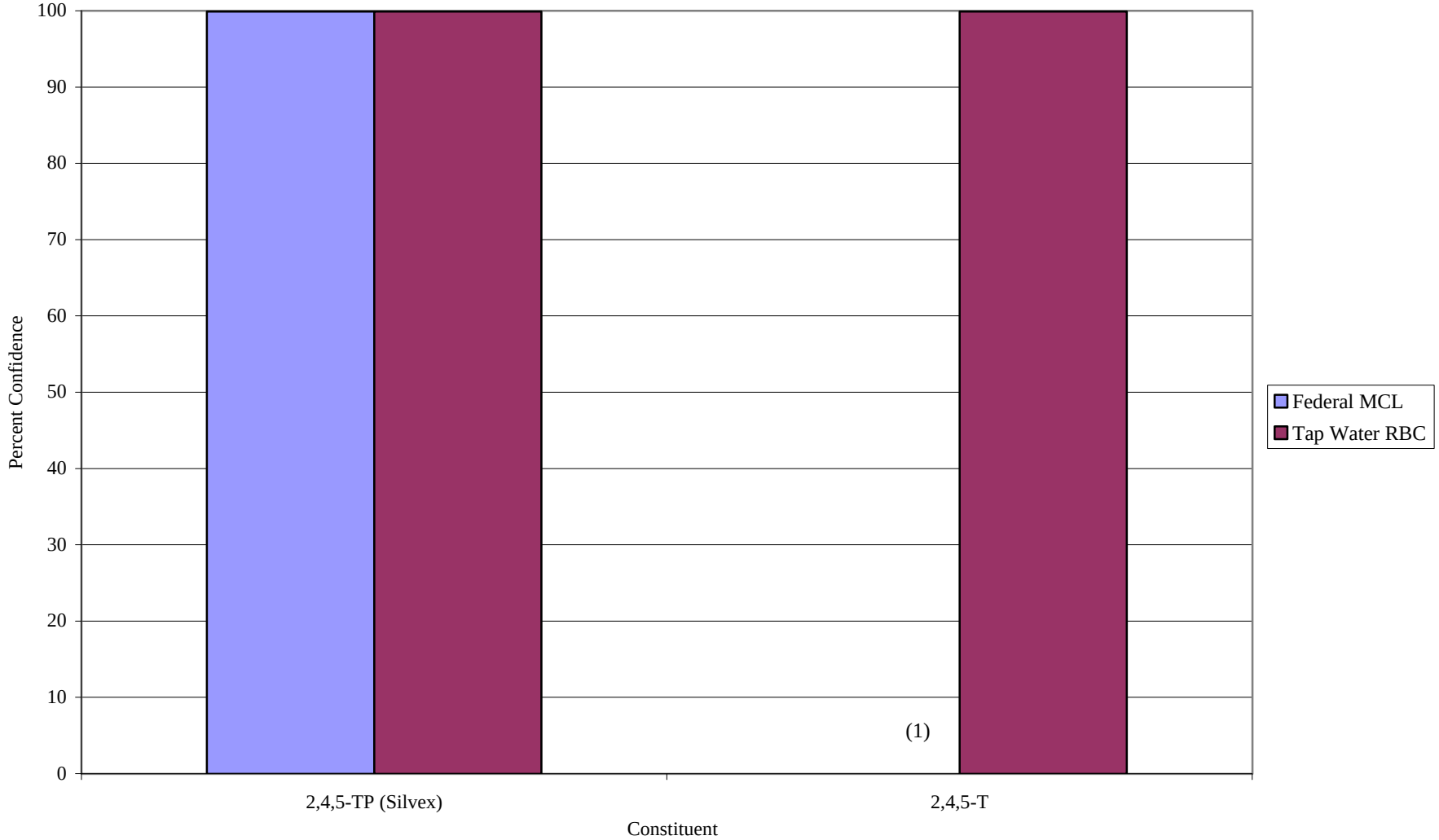


(1) Detection Level Exceeded the Tap Water RBC
(2) No Federal MCL Established for this Constituent

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-72

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
CHLORINATED HERBICIDES IN GROUNDWATER
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

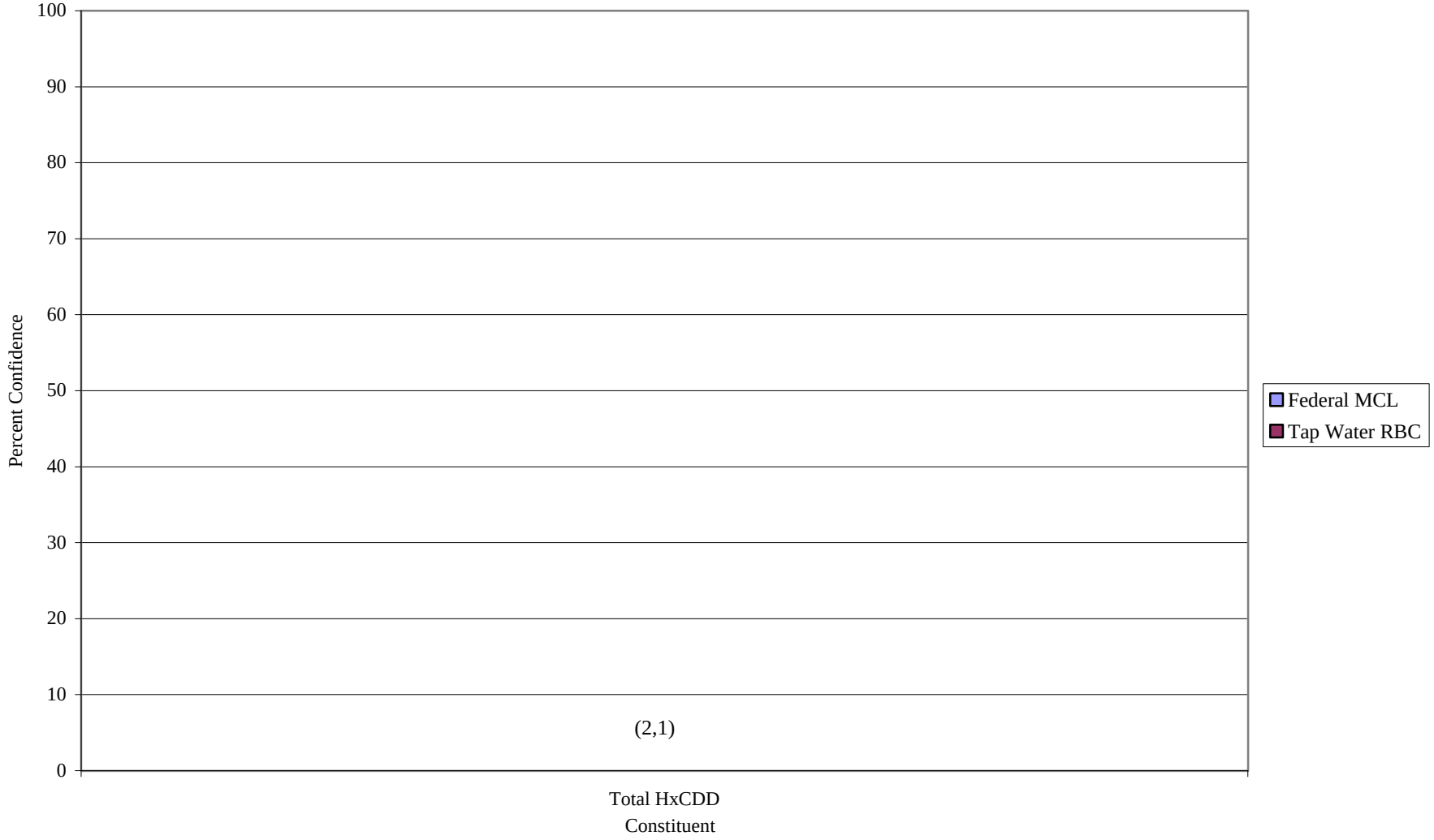


(1) No Federal MCL Established for this Constituent

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-73

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
DIOXINS IN GROUNDWATER
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

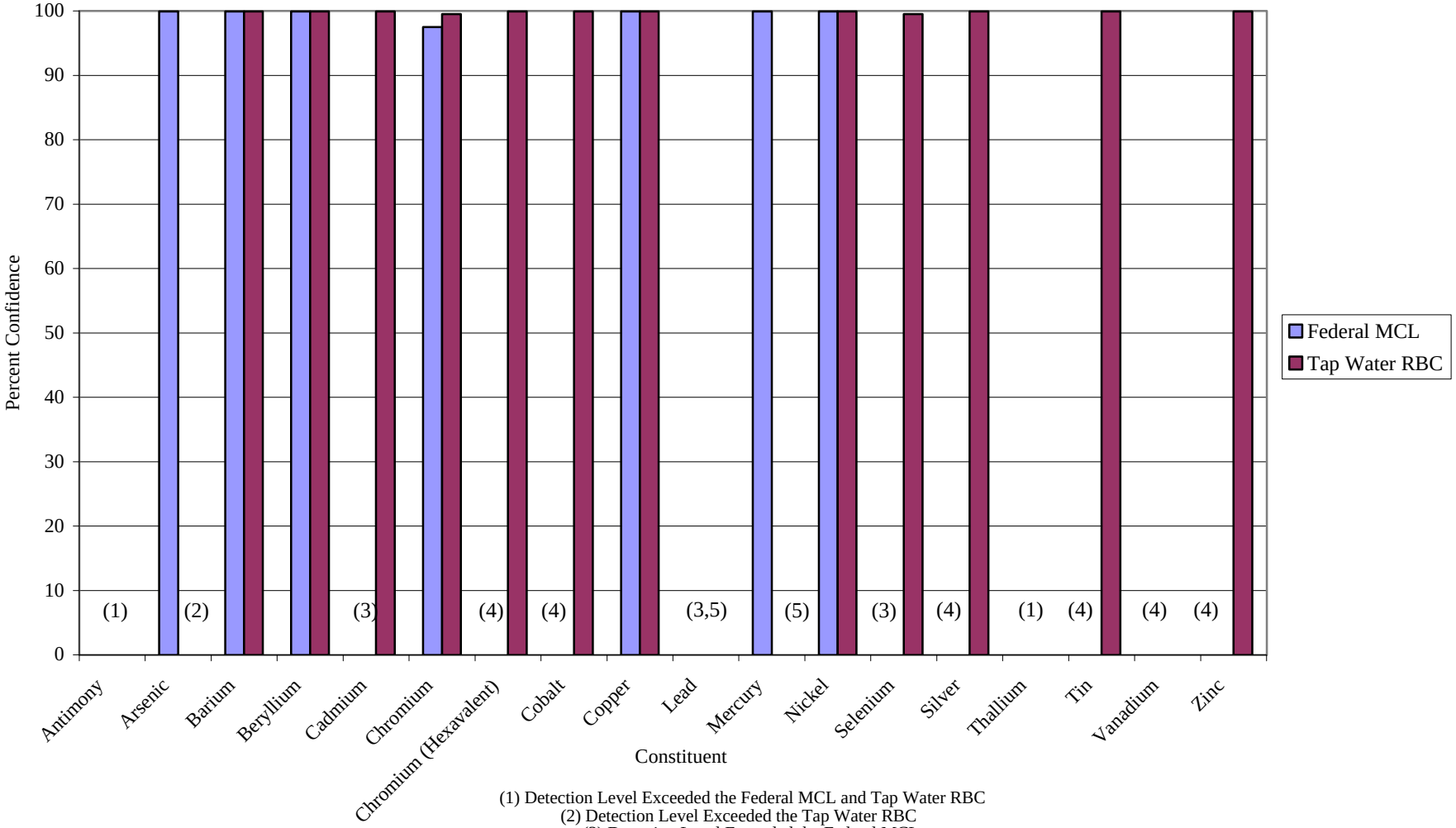


(1) Detection Level Exceeded the Tap Water RBC
(2) No Federal MCL Established for this Constituent

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-74

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
TOTAL INORGANICS IN GROUNDWATER
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

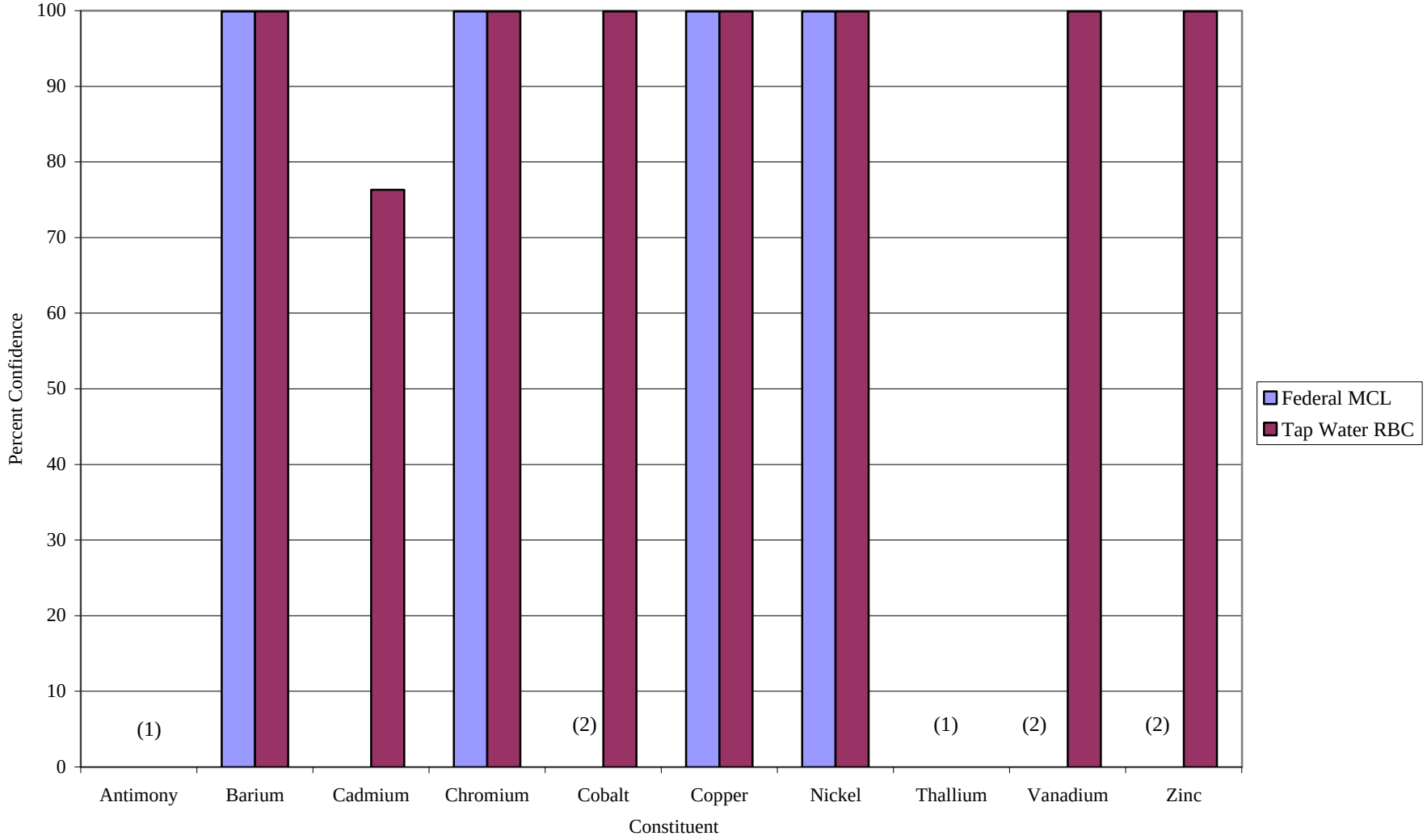


(1) Detection Level Exceeded the Federal MCL and Tap Water RBC
(2) Detection Level Exceeded the Tap Water RBC
(3) Detection Level Exceeded the Federal MCL
(4) No Federal MCL Established for this Constituent
(5) No Tap Water RBC Established for this Constituent

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-75

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
DISSOLVED INORGANICS IN GROUNDWATER
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

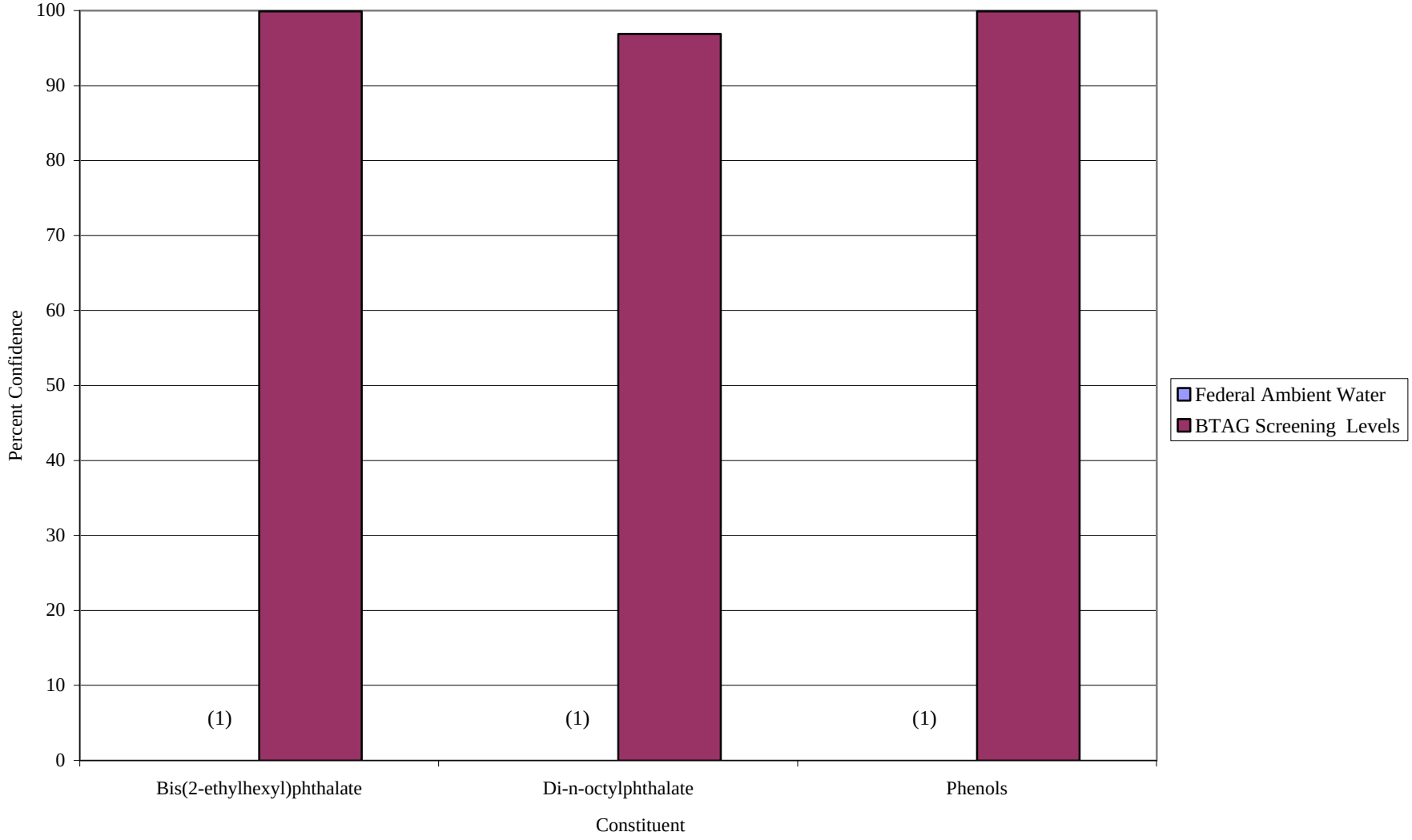


(1) Detection Level Exceeded the Federal MCL and Tap Water RBC
(2) No Federal MCL Established for this Constituent

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-76

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
SEMIVOLATILE ORGANICS IN SURFACE WATER
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

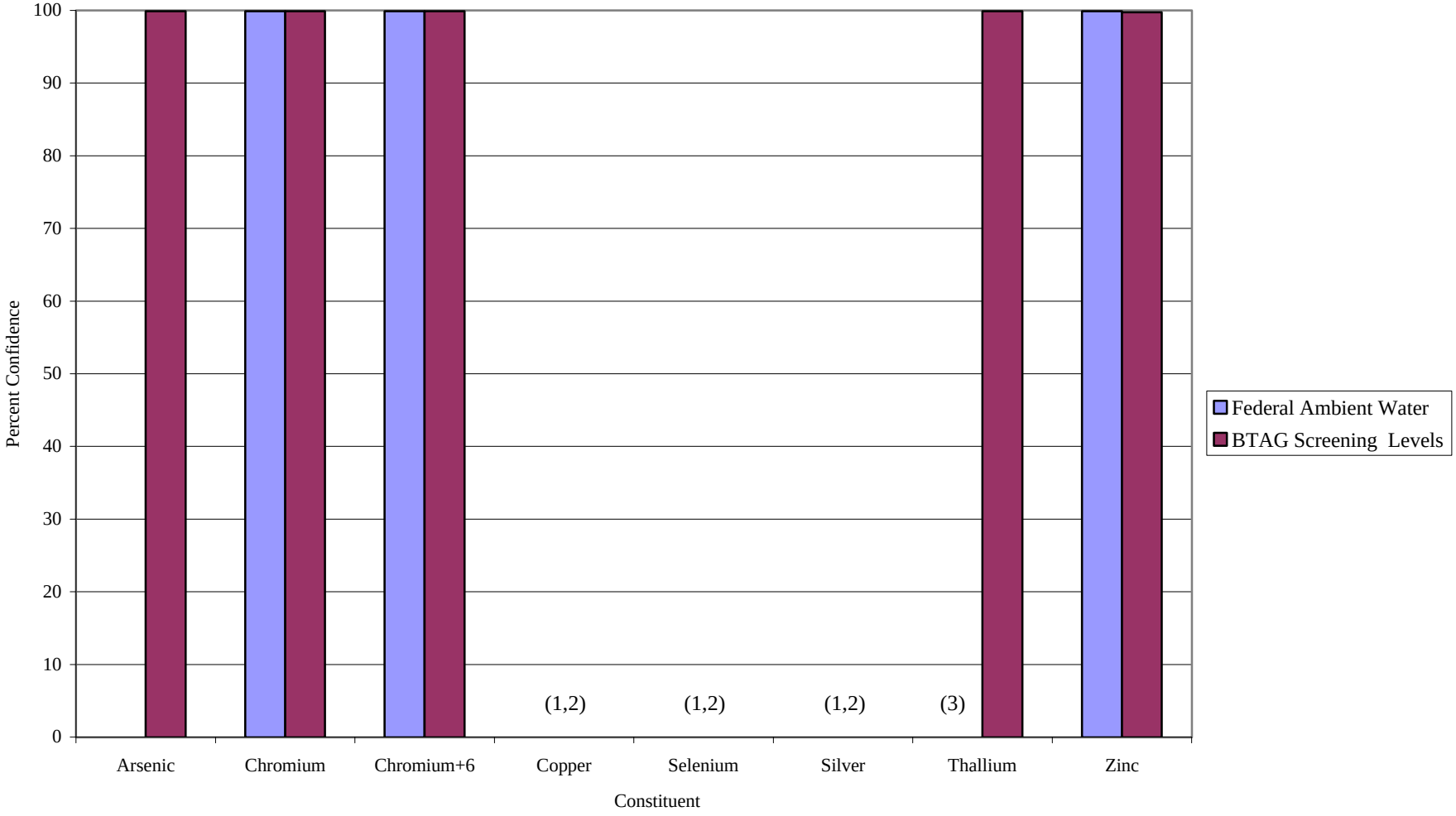


(1) No Federal Ambient Water Quality Criteria Established for this Constituent

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-77

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
INORGANICS IN SURFACE WATER
SMWU 01 (ARMY CREMATOR DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO



(1) Detection Level Exceeded the Federal Ambient Water Quality Criteria

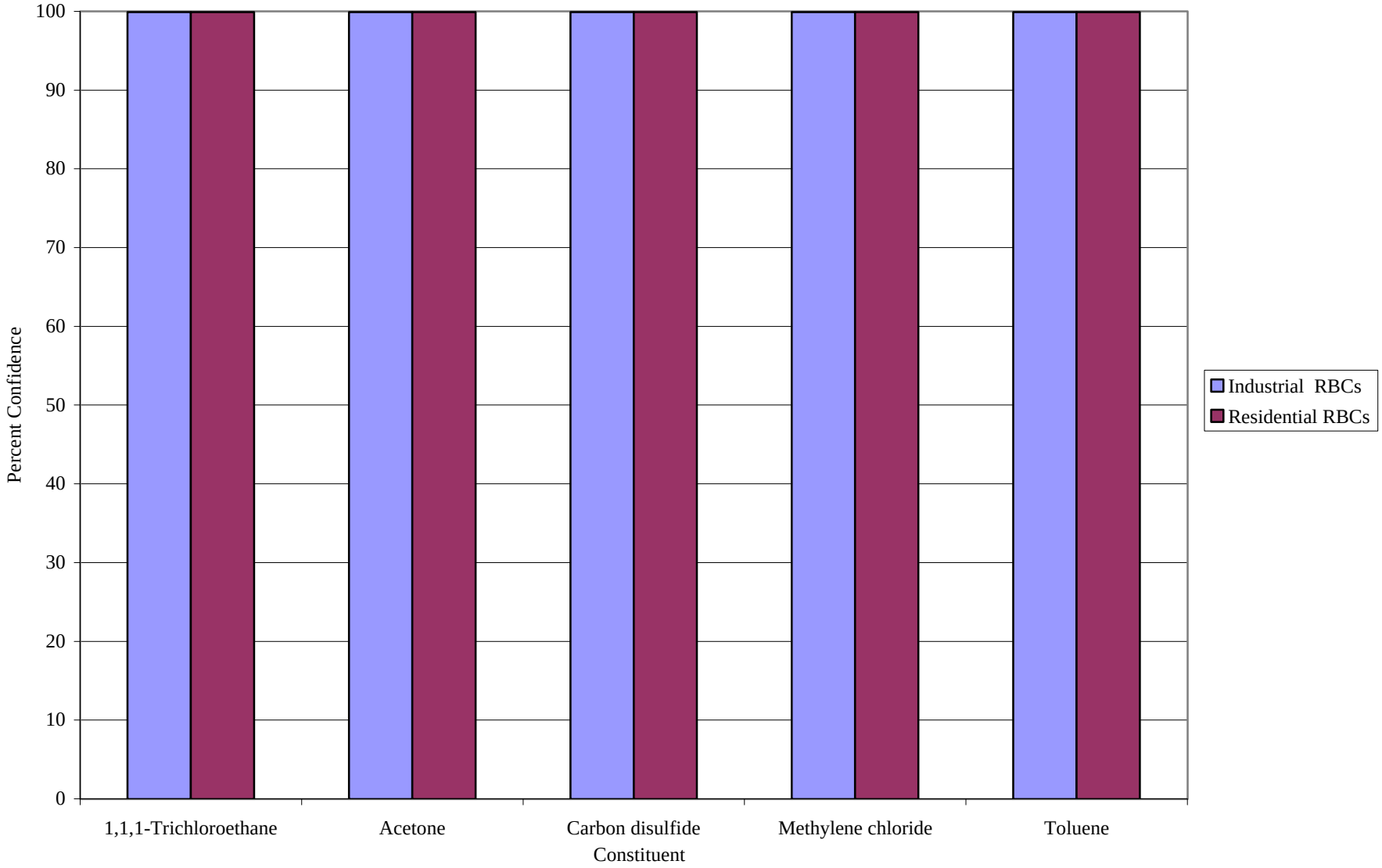
(2) Detection Level Exceeded the BTAG Screening Levels

(3) No Federal Ambient Water Quality Criteria Established for this Constituent

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-78

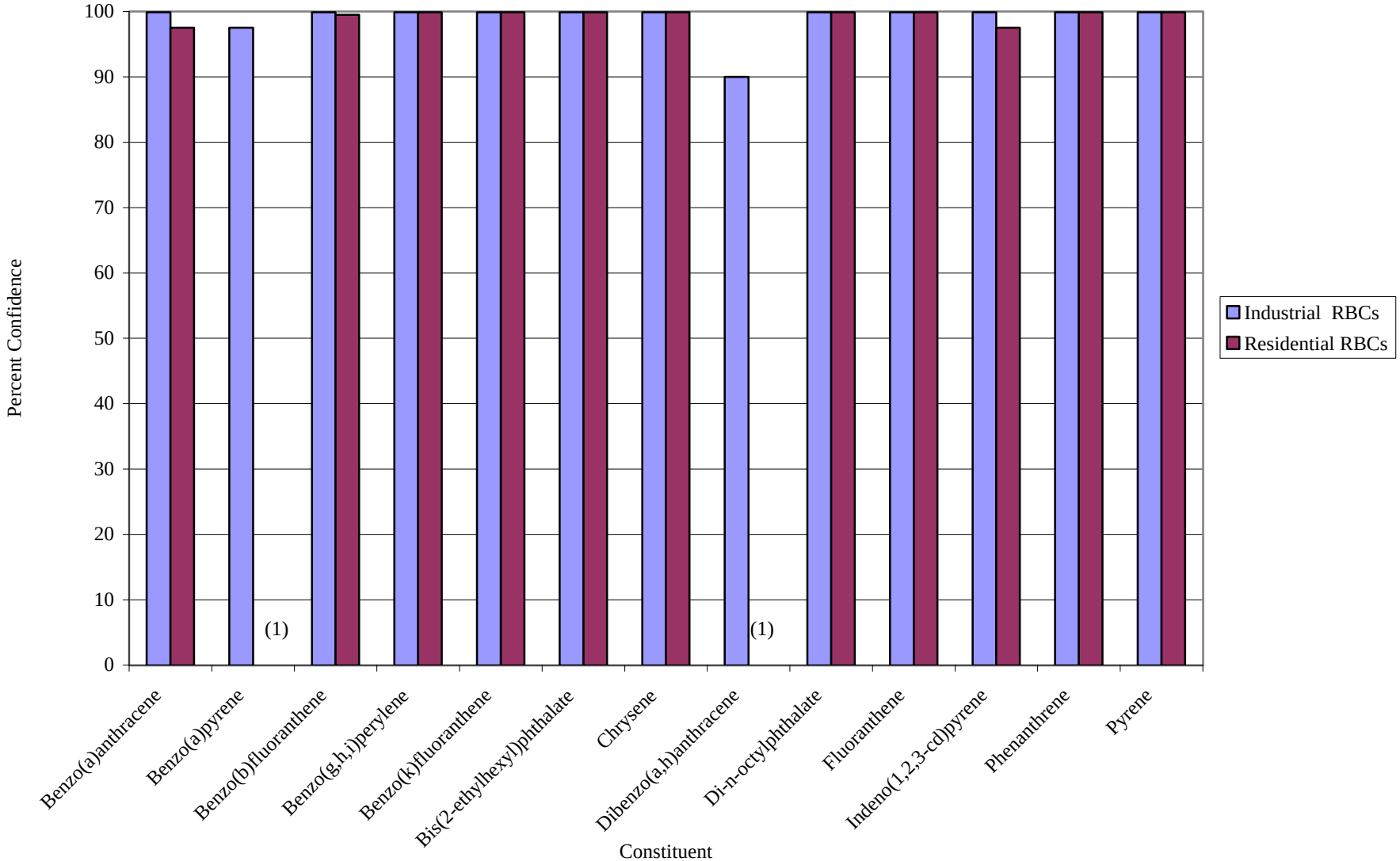
PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
VOLATILE ORGANICS IN SURFACE SOIL
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO



* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-79

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
SEMIVOLATILE ORGANICS IN SURFACE SOIL
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

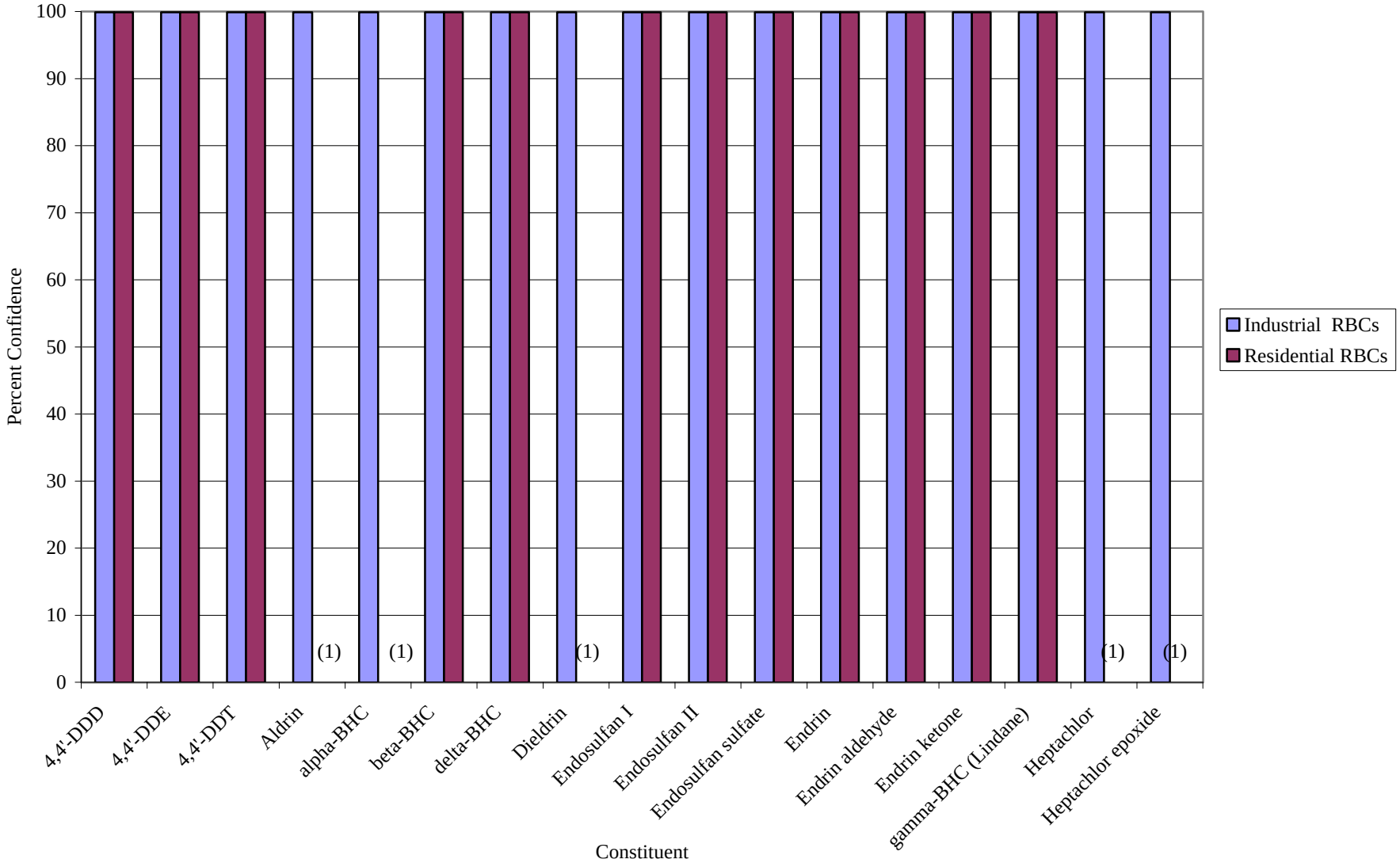


(1) Detection Level Exceeded the Residential RBC

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-80

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
PESTICIDES IN SURFACE SOIL
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

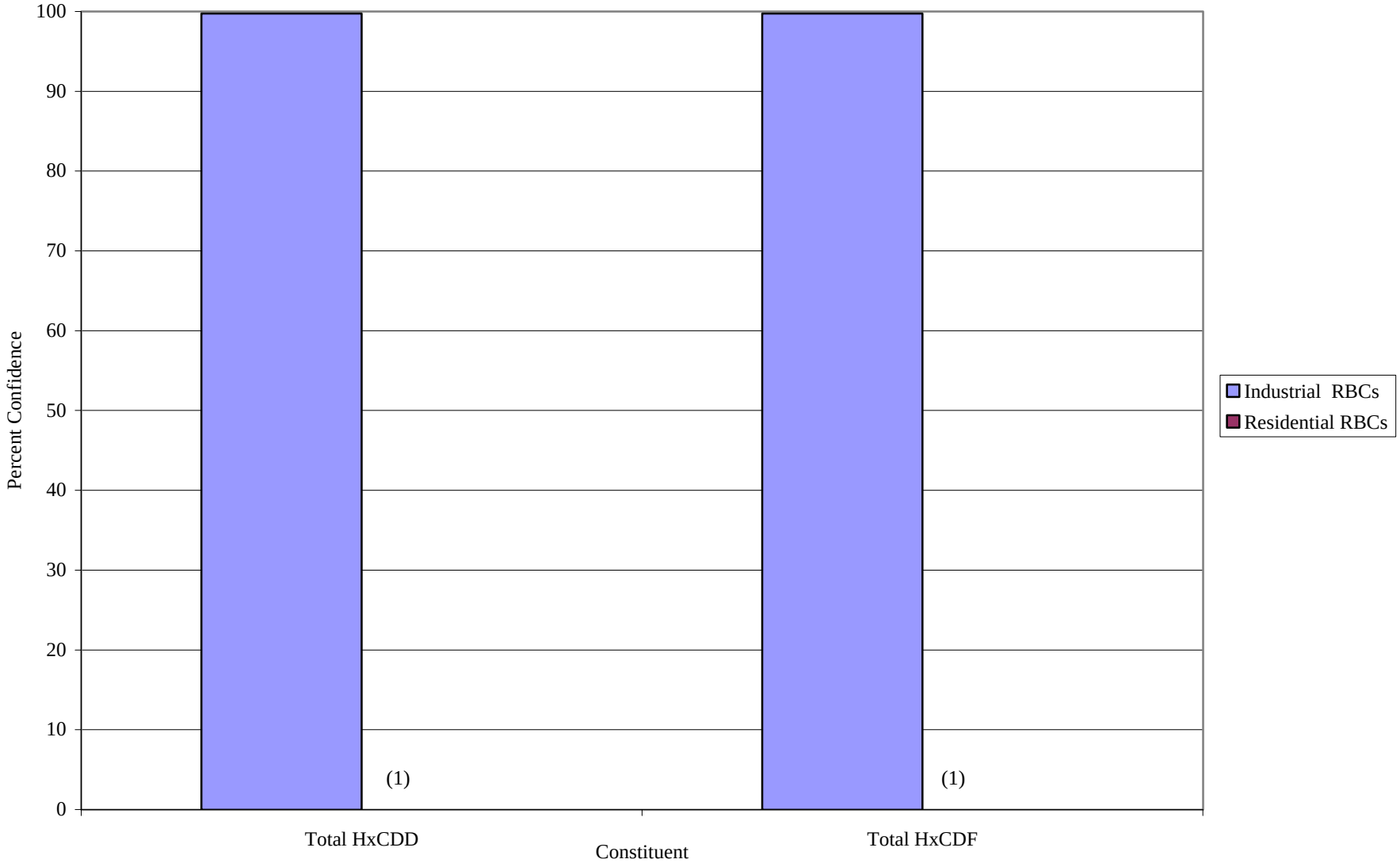


(1) Detection Level Exceeded the Residential RBC

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-81

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
DIOXINS IN SURFACE SOIL
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

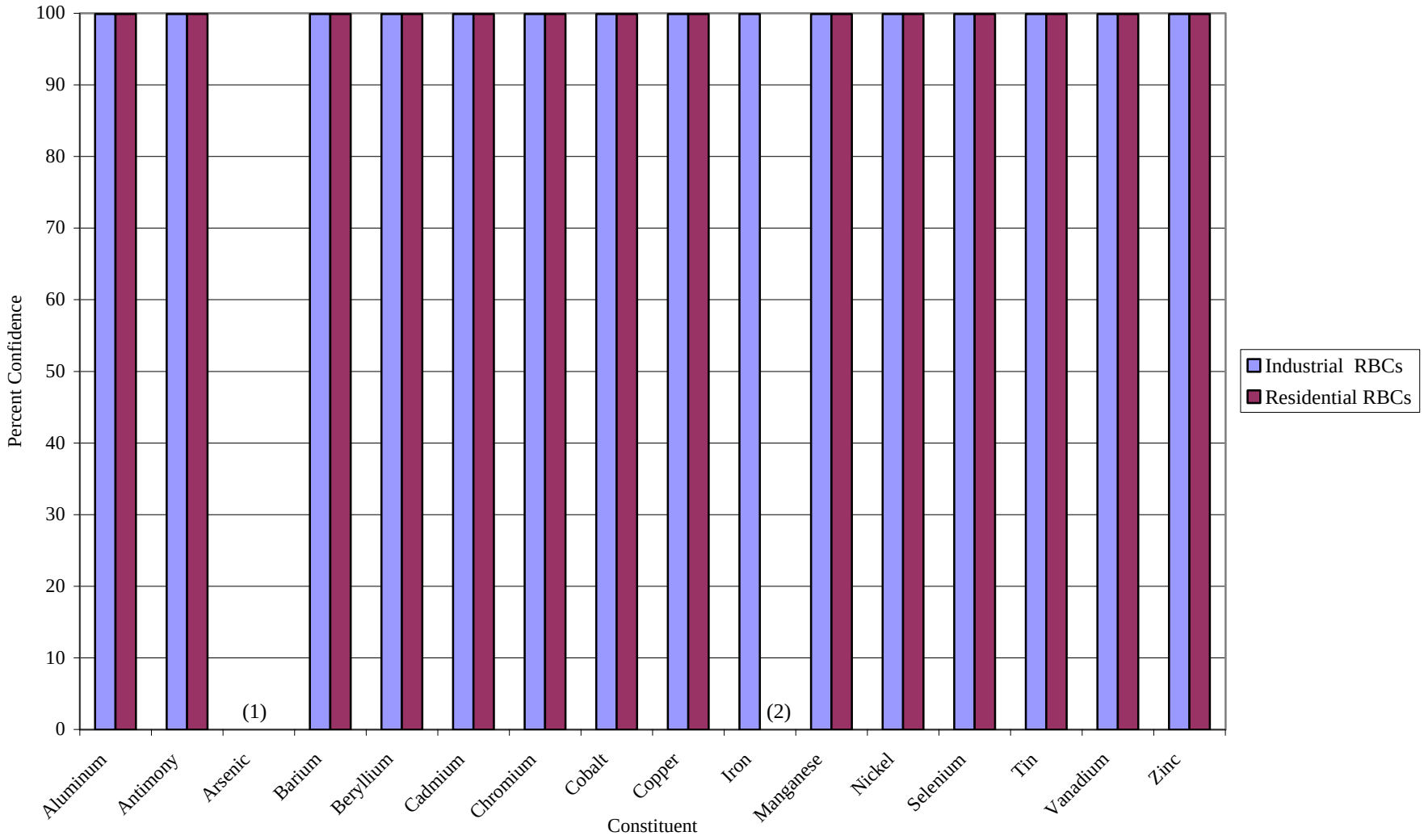


(1) Detection Level Exceeded the Residential RBC

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-82

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
INORGANICS IN SURFACE SOIL
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

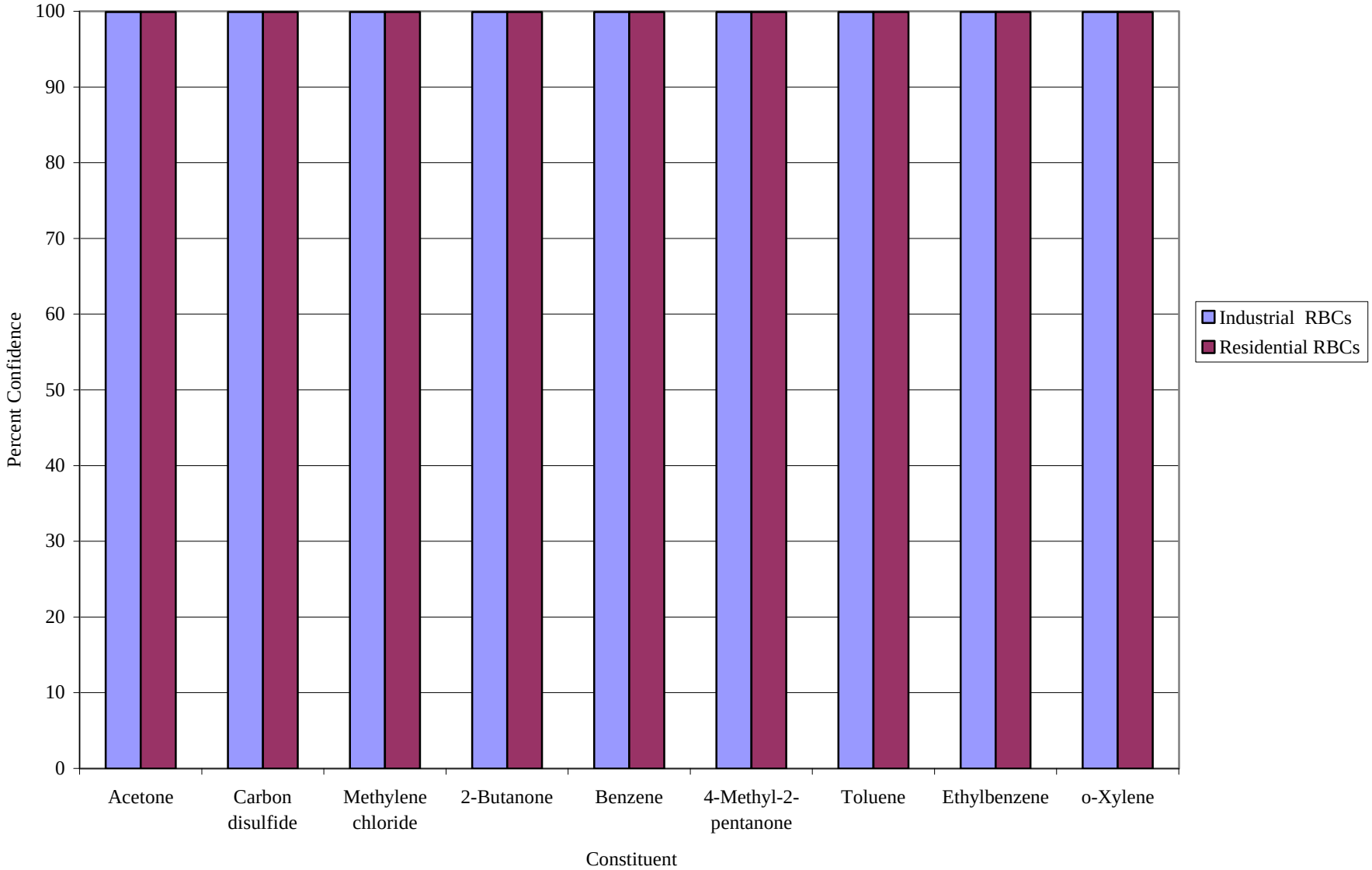


(1) Detection Level Exceeded the Residential and Industrial RBC
(2) Detection Level Exceeds the Residential RBC

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-83

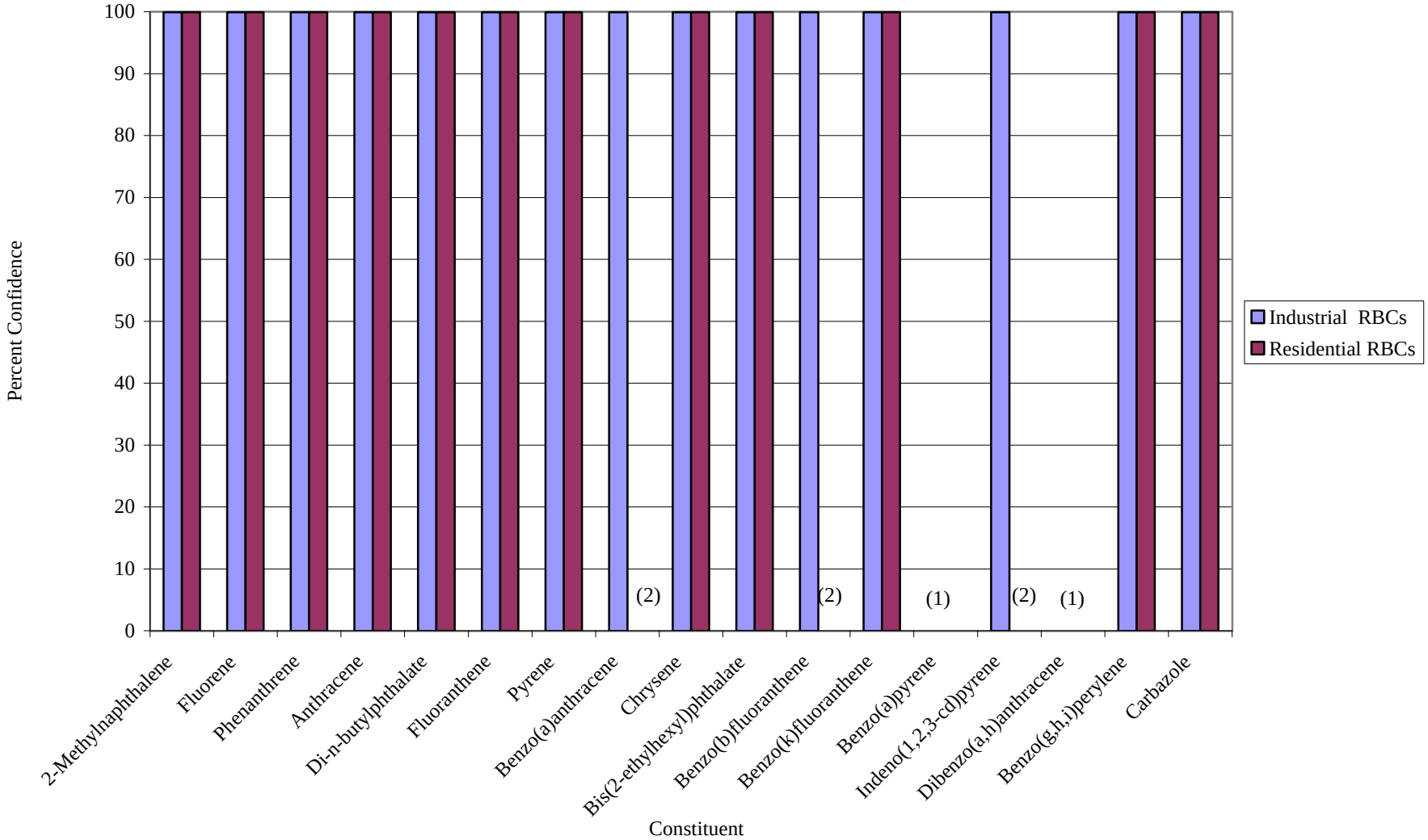
PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
VOLATILE ORGANICS IN SUBSURFACE SOIL
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO



* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-84

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
SEMIVOLATILE ORGANICS IN SUBSURFACE SOIL
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

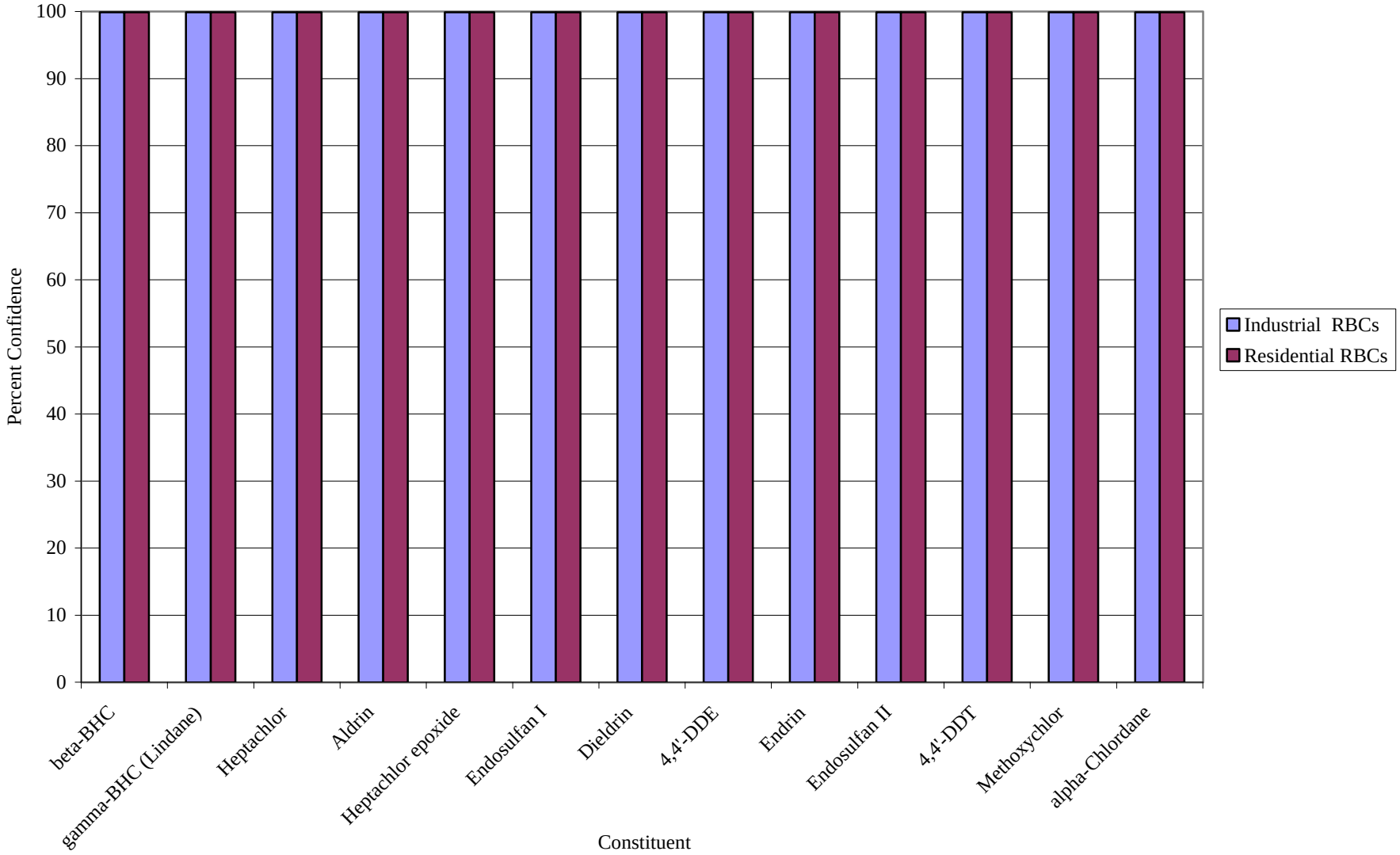


(1) Detection Level Exceeded the Residential and Industrial RBC
(2) Detection Level Exceeded the Residential RBC

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-85

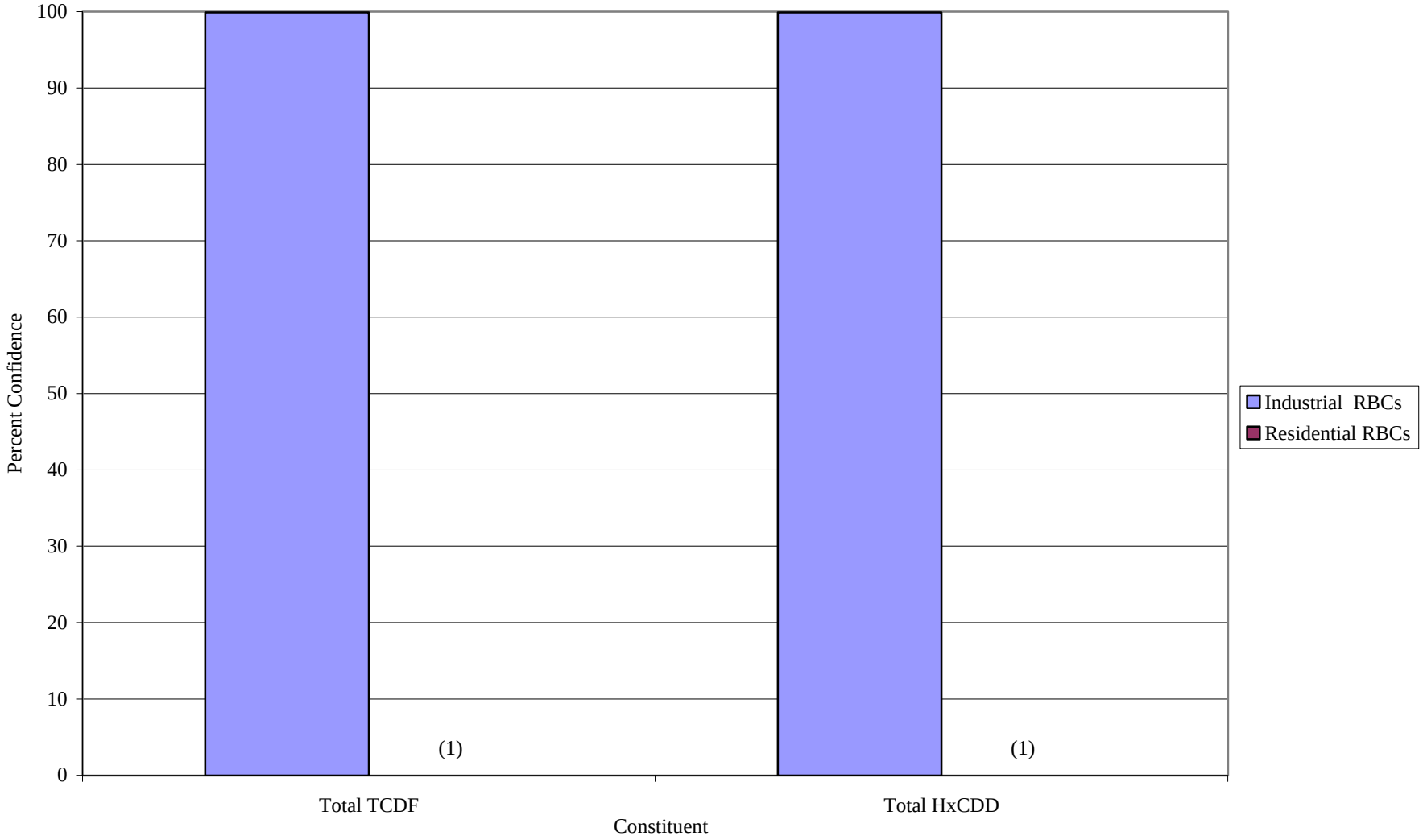
PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
PESTICIDES IN SUBSURFACE SOIL
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO



* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-86

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
DIOXINS IN SUBSURFACE SOIL
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

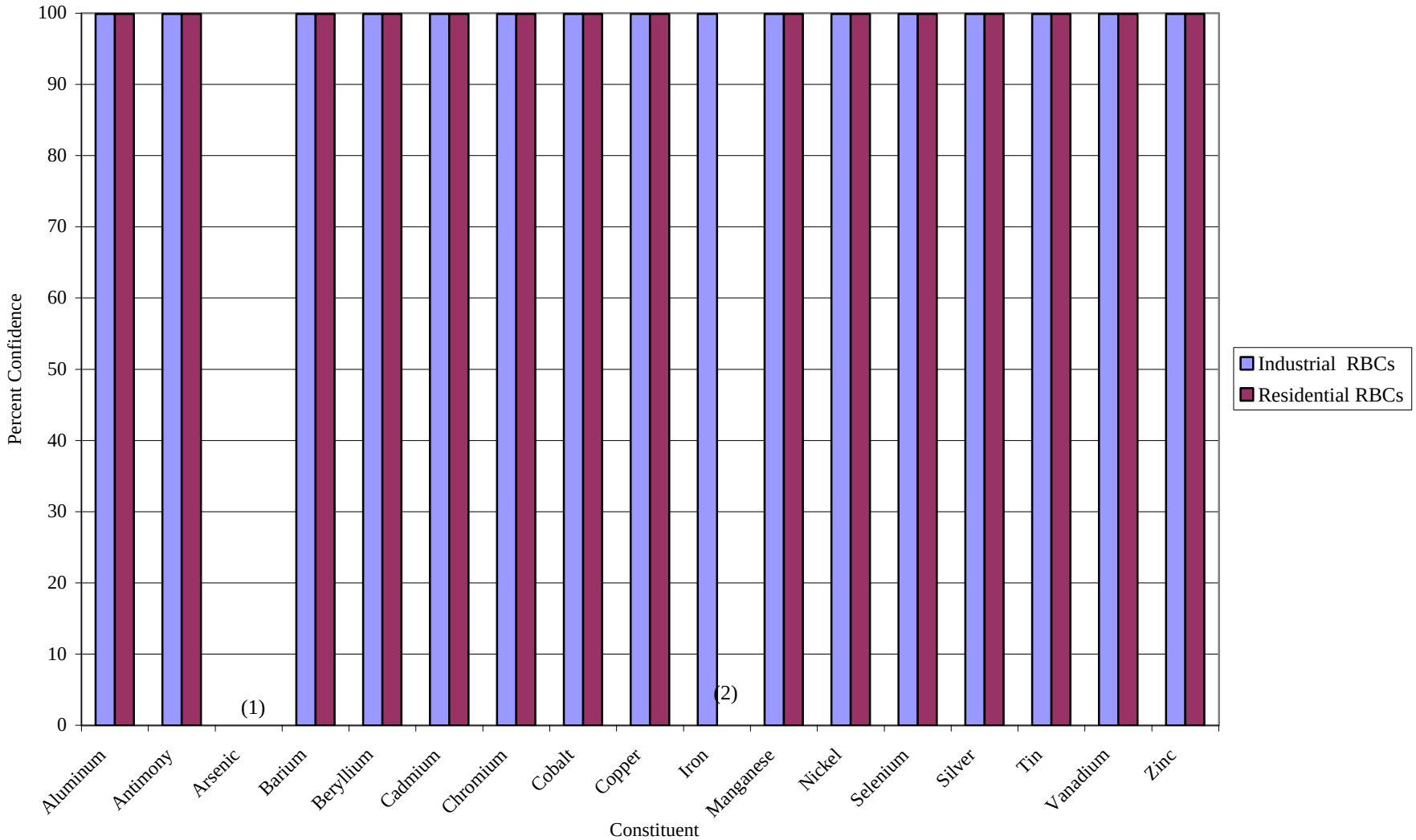


(1) Detection Level Exceeded the Residential RBC

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-87

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
INORGANICS IN SUBSURFACE SOIL
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

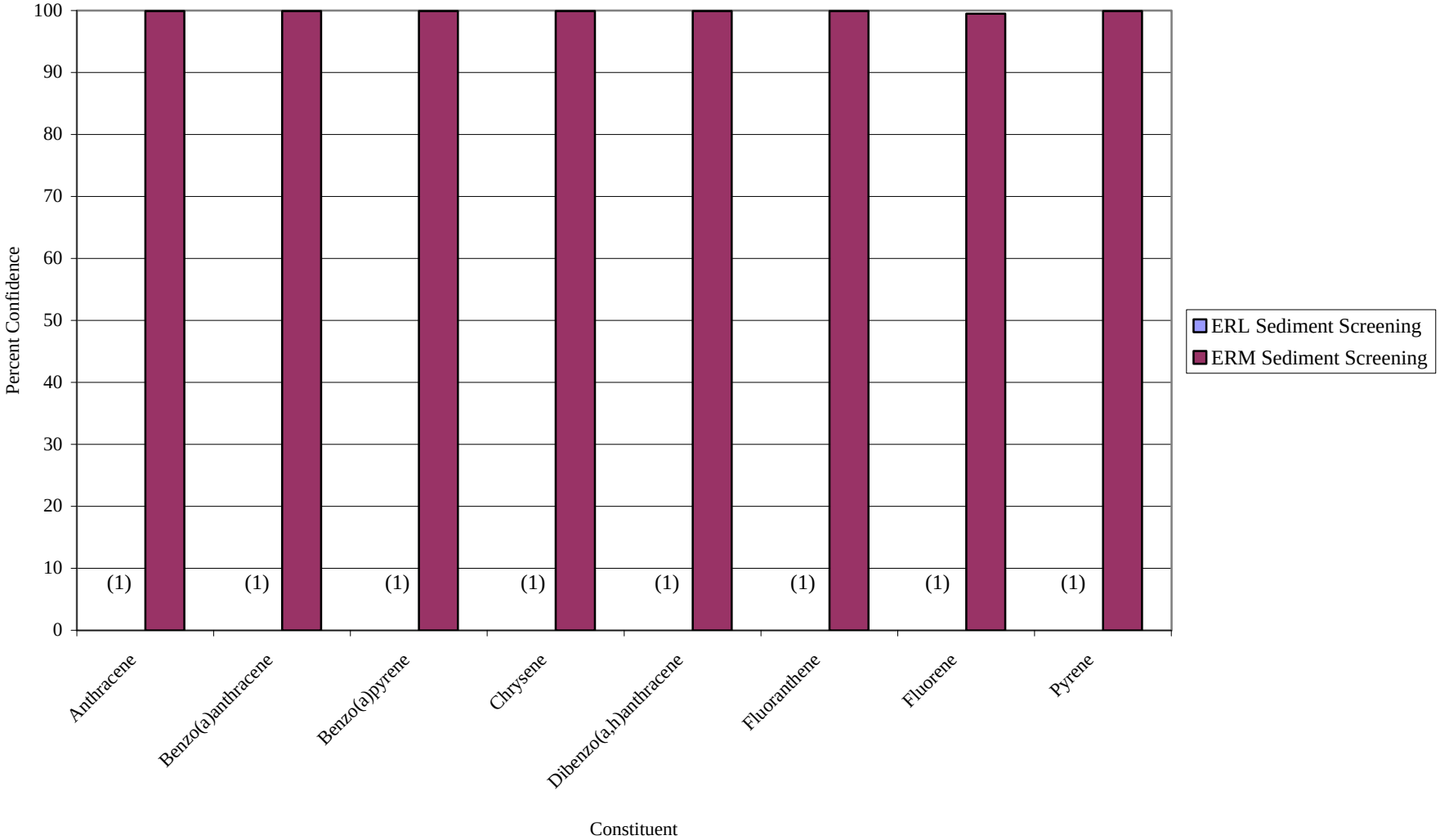


(1) Detection Level Exceeded the Residential and Industrial RBC
(2) Detection Level Exceeds the Residential RBC

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-88

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
SEMIVOLATILE ORGANICS IN SEDIMENT
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

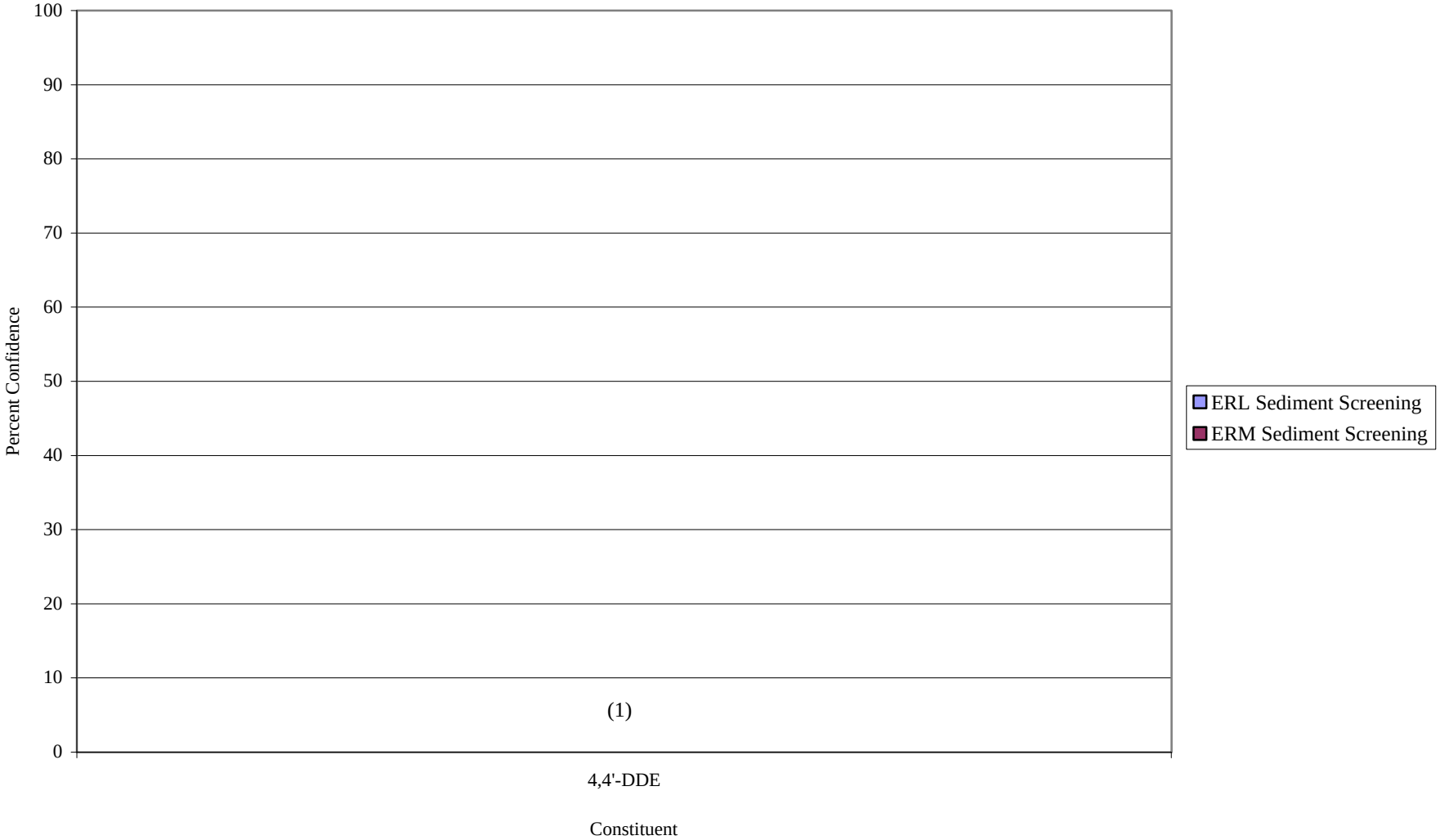


(1) Detection Level Exceeded the ERL sediment Screeing Values

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-89

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
PESTICIDES IN SEDIMENT
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

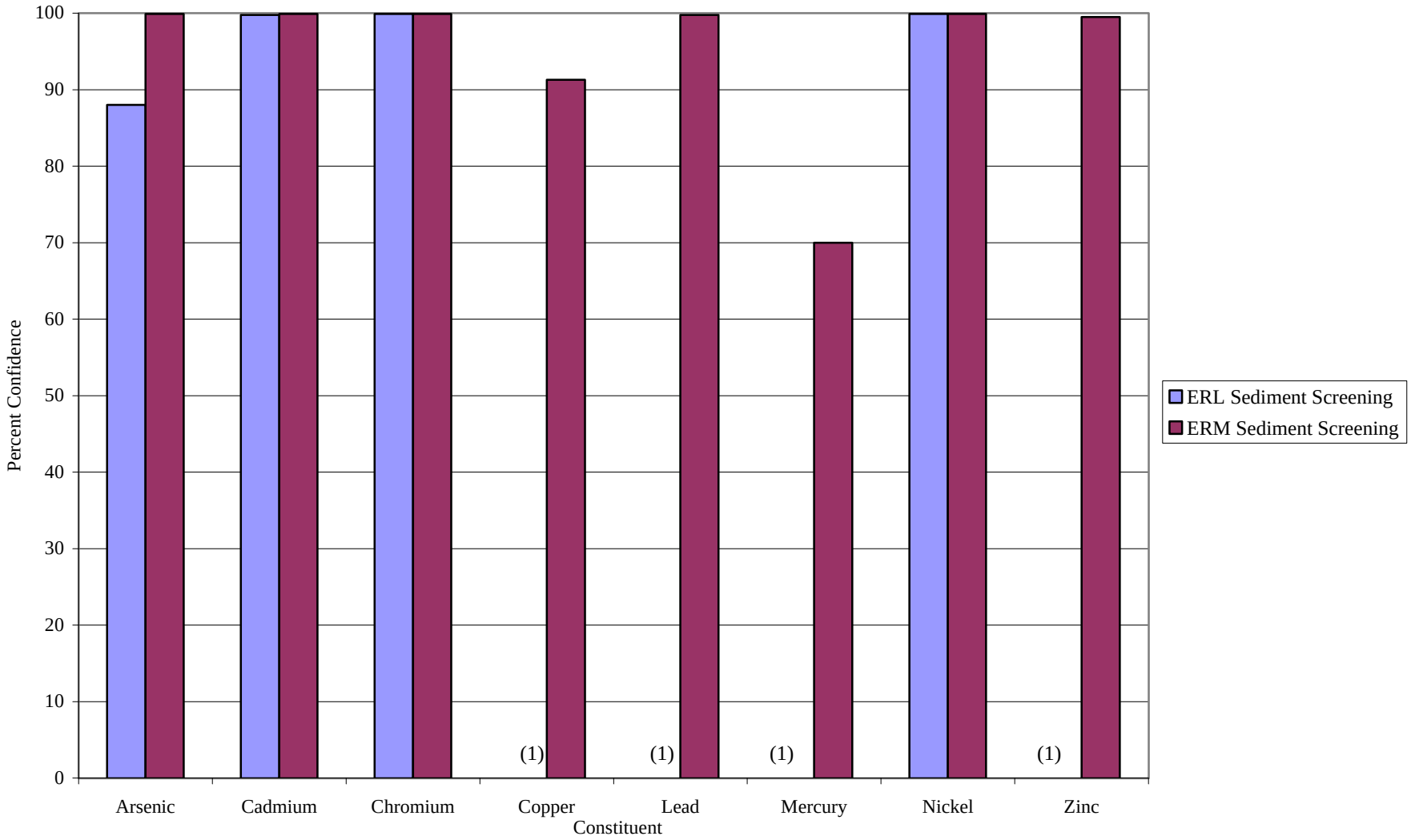


(1) Detection Level Exceeded the ERL and ERM Sediment Screeing Values

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-90

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
INORGANICS IN SEDIMENT
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

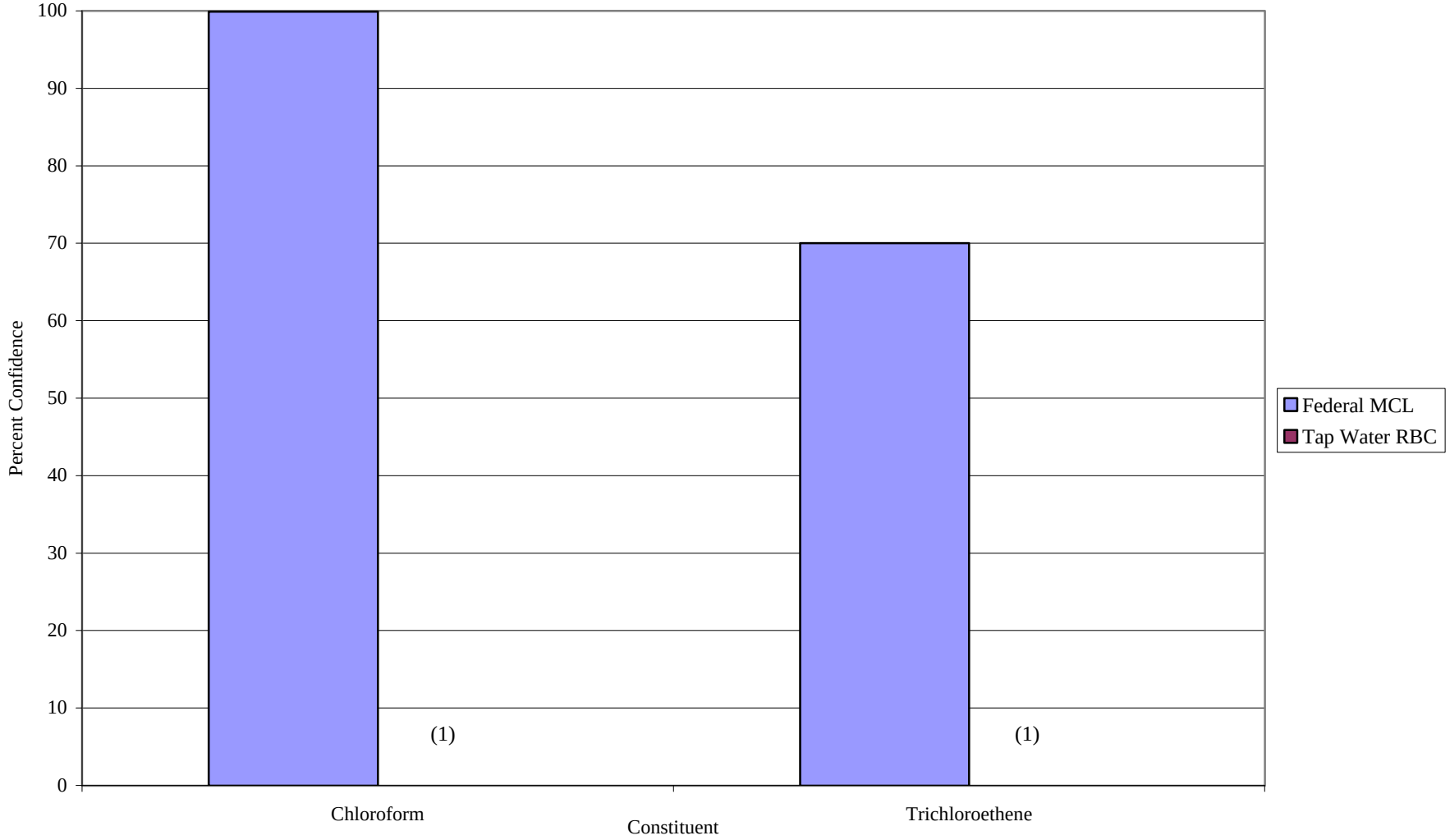


(1) Detection Level Exceeded the ERL Sediment Screening Criteria

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-91

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
VOLATILE ORGANICS IN GROUNDWATER
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

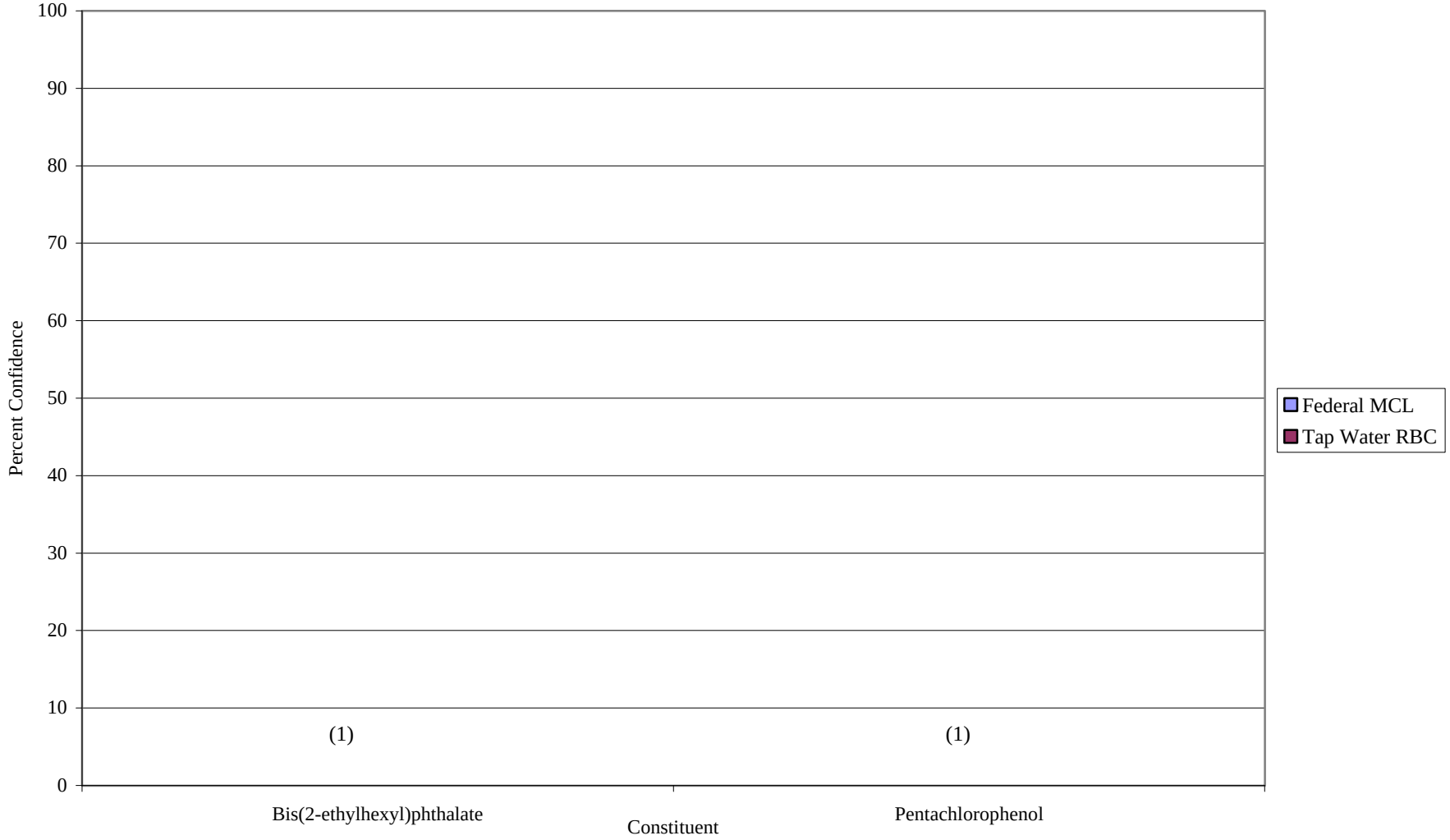


(1) Detection Level Exceeded the Tap Water RBC

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-92

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
SEMIVOLATILE ORGANICS IN GROUNDWATER
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

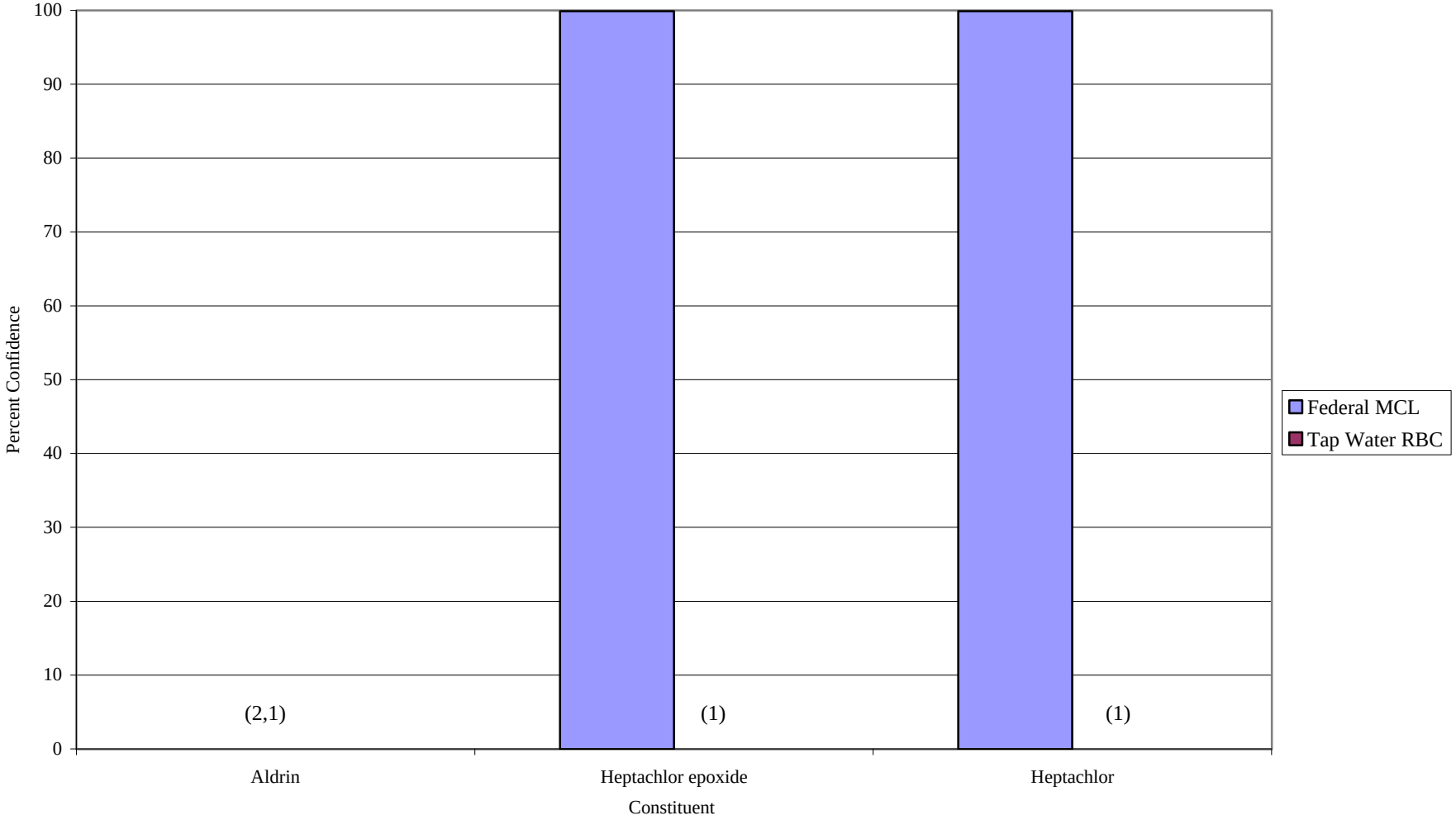


(1) Detection Level Exceeded the Federal MCL and Tap Water RBC

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-93

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
PESTICIDES IN GROUNDWATER
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO



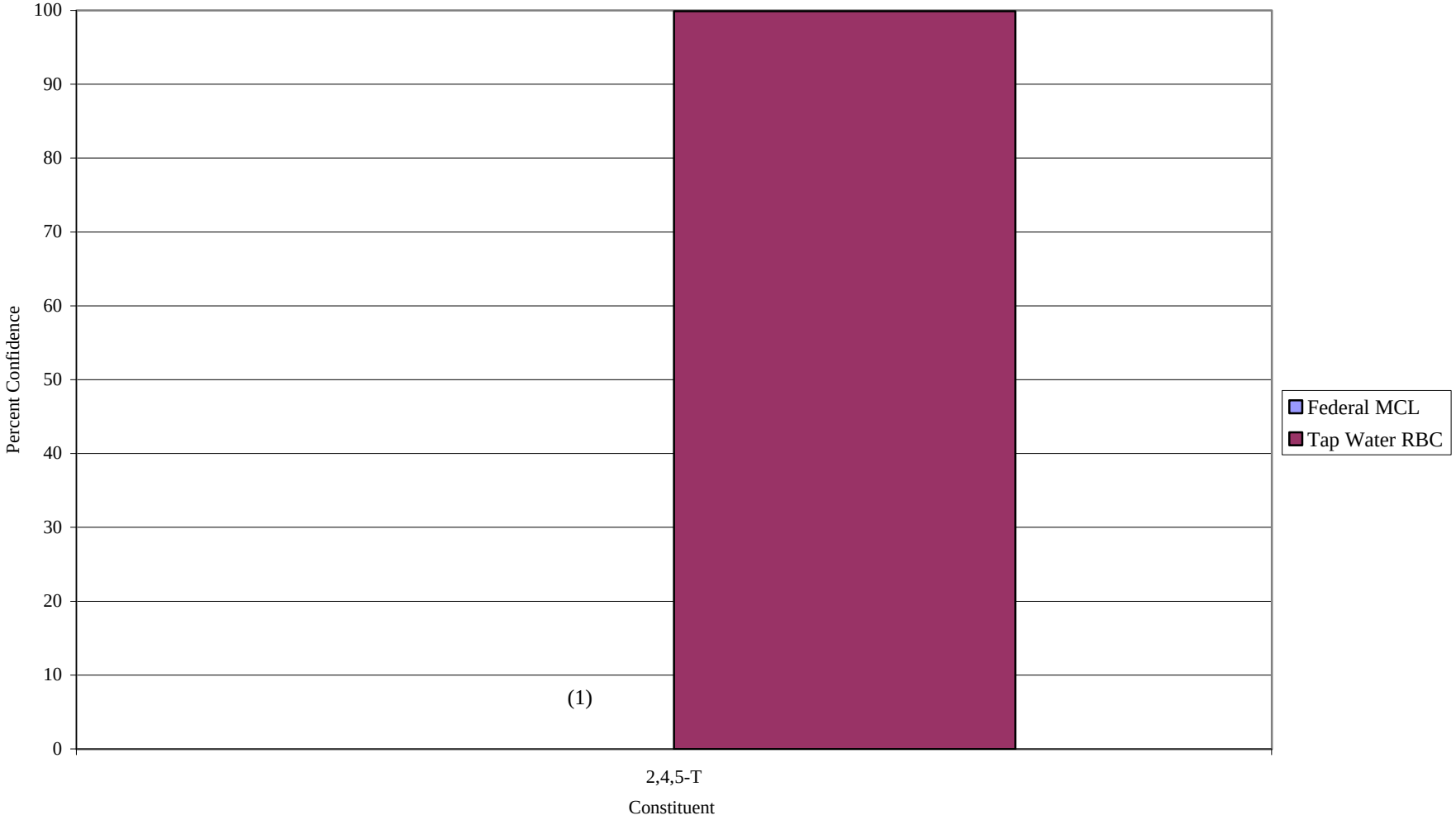
(1) Detection Level Exceeded the Tap Water RBC

(2) No Federal MCL Established for this Constituent

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-94

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
CHLORINATED HERBICIDES IN GROUNDWATER
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

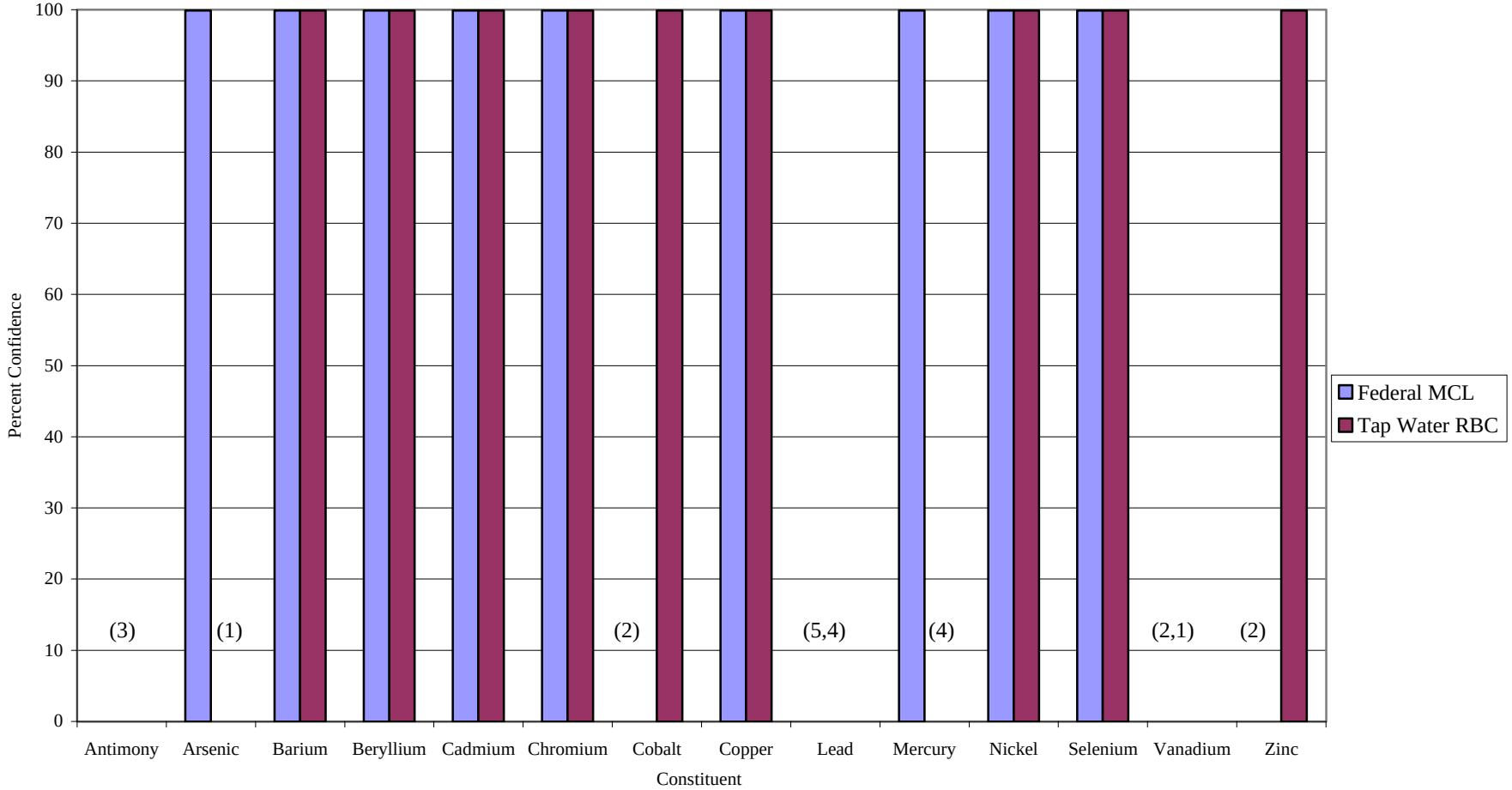


(1) No Federal MCL Established for this Constituent

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-95

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
TOTAL INORGANICS IN GROUNDWATER
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO



(1) Detection Level Exceeded the Tap Water RBC

(2) No Federal MCL Established for this Constituent

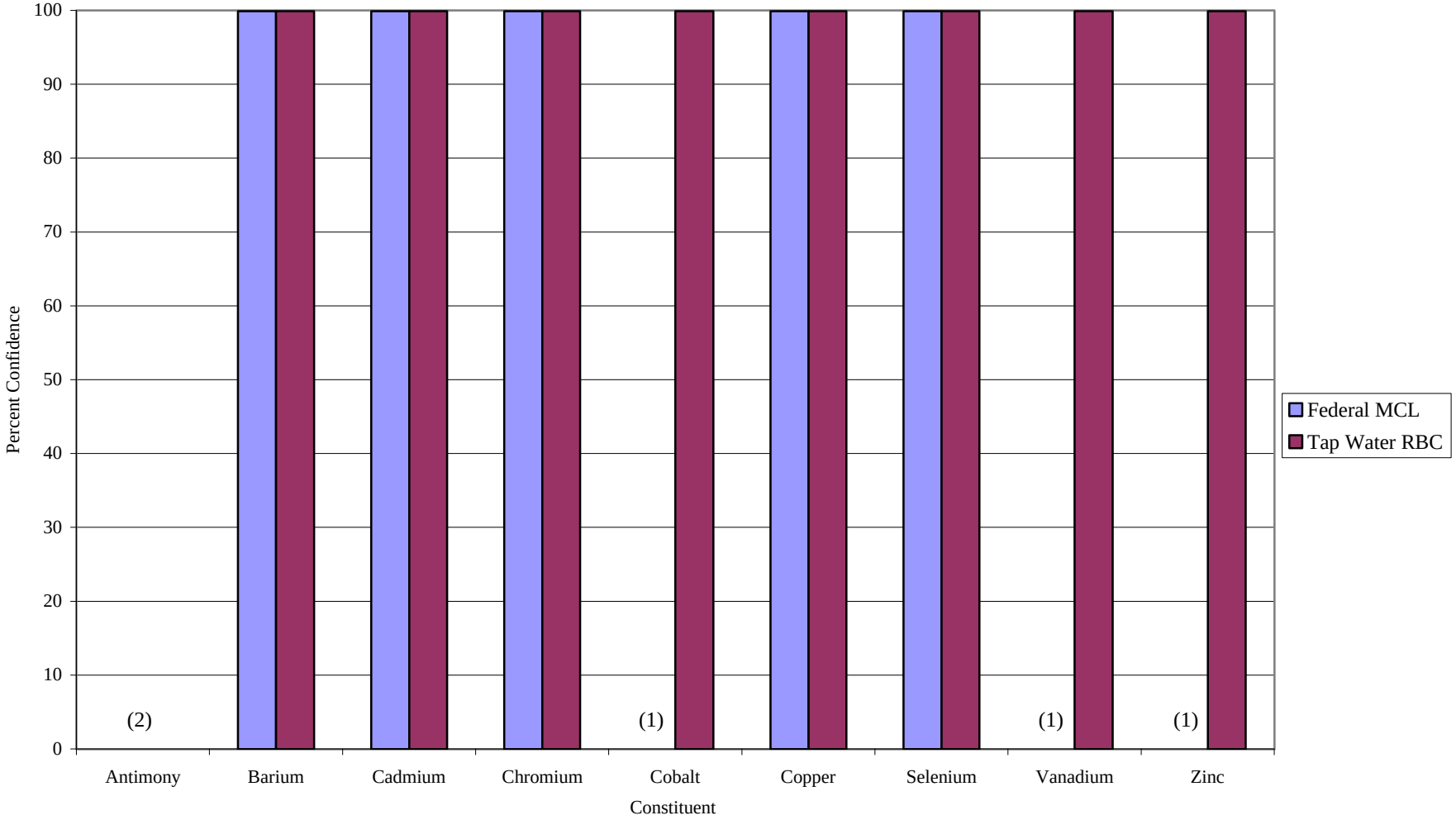
(3) Detection Level Exceeded the Federal MCL and Tap Water RBC

(4) No Tap Water RBC Established for this Constituent
(5) Detection Level Exceeded the Federal MCL

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-96

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
DISSOLVED INORGANICS IN GROUNDWATER
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO



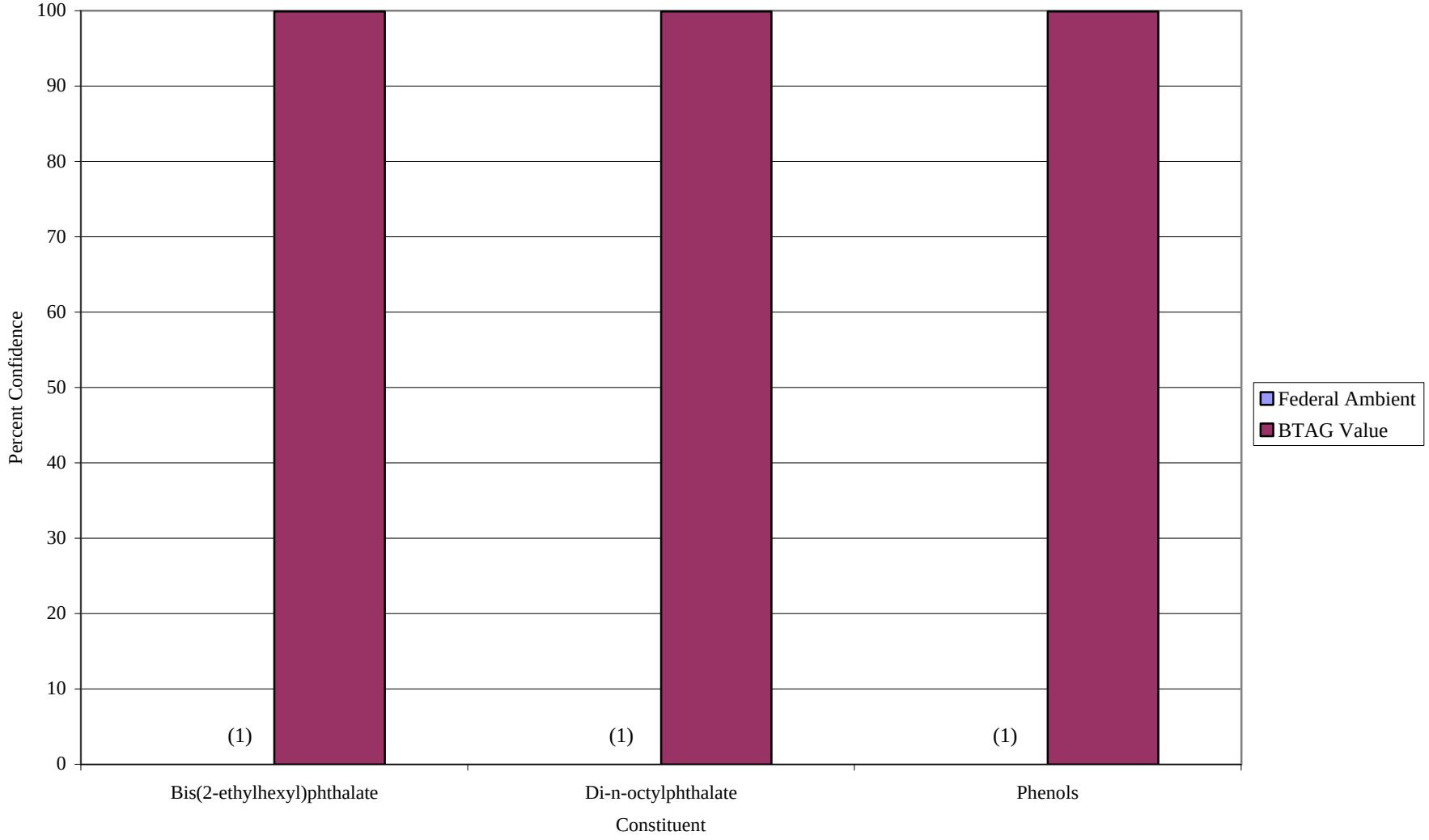
(1) No Federal MCL Established for this Constituent

(2) Detection Level Exceeded the Federal MCL and Tap Water RBC

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-97

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
SEMIVOLATILE ORGANICS IN SURFACE WATER
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

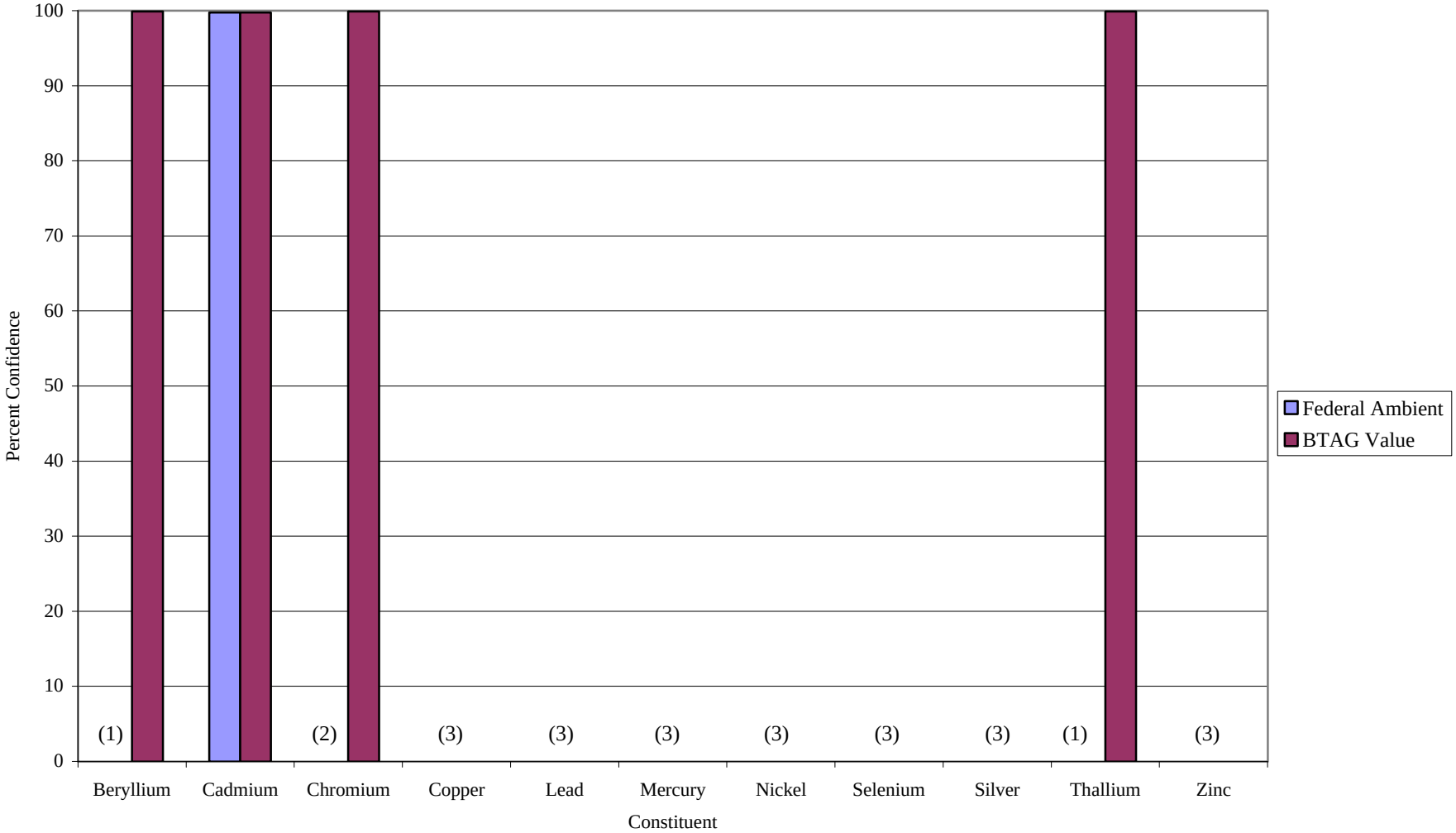


(1) No Federal Ambient Water Qualtiy Criteria Established for this Constituent

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042

FIGURE 5-98

PERCENT CONFIDENCE SITE MEETS SCREENING CRITERIA*
INORGANICS IN SURFACE WATER
SMWU 02 (LANGLEY DRIVE DISPOSAL SITE)
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO



(1) No Federal Ambient Water Quality Criteria Established for this Constituent
(2) Detection Level Exceeded the Federal Ambient Water Quality Criteria
(3) Detection Level Exceeded the Federal Ambient Water Quality Criteria and BTAG Screening Values

* Reference: Methods for Evaluating the Attainment of Cleanup Standards, EPA 230/02-89-042