

DEPARTMENT OF THE NAVY

U. S. NAVAL STATION  
FPO AA 34051-3001

RR-00132  
804-1-22-92

code  
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Ms. Flor del Valle, Director  
Soil Contamination Area  
Environmental Quality Board  
P.O. Box 11488  
Santurce, Puerto Rico 00910

Dear Ms. del Valle:

As requested during our meeting of January 22, 1992, the following information and documents to evaluate the operation of our sanitary landfill is hereby provided:

- Tab A. Copy of Permit Application Submitted September 26, 1979
- Tab B. Excerpt from IAS
- Tab C. Excerpt from Confirmation Study Including Test Results
- Tab D. Technical Review Committee Meeting (TRC) Minutes
- Tab E. EQB Letter of Compliance Dated June 28, 1989

It is expected that the above information satisfies your concerns and the letter of authorization for the continued operation of the landfill is provided. Complete copies of the reports will be provided by separate correspondence to include all the sites identified under our Installation Restoration Program.

Should you have any questions, please call me at your convenience at 865-4429/4488.

Sincerely,

A handwritten signature in black ink, appearing to read "Jose R. Negron".

JOSE R. NEGRON, P.E.  
Director, Environmental  
Engineering Division  
Public Works Department  
By direction of the  
Commanding Officer

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TAB A

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26 SEP 1979

Environmental Quality Board  
P. O. Box 11488  
Santurce, Puerto Rico 00910

Gentlemen:

In compliance with the Environmental Quality Board regulation for the Control of Solid and Hazardous Waste, enclosed for approval is a completed application for the operation of an existing sanitary landfill located at the U. S. Naval Station, Roosevelt Roads, P. R.

If additional information is necessary, do not hesitate to notify this Command, or to contact Mr. Felix Mestey, Environmental Engineer, at phone number 863-2000, extension 4016 or 4156.

Sincerely yours,

N. D. FALK  
CDR, CEC, USN  
PUBLIC WORKS OFFICER  
By direction of the  
Commanding Officer

Enclosure

Blind Copy to:  
LANTNAVFACENGCOM (Code 114)  
Code 186

183 *fr*

APPLICATION FOR THE APPROVAL TO ESTABLISH SOLID WASTE  
PROCESSING AND/OR FINAL DISPOSAL FACILITIES

INFORMATION REQUESTED

Date of Application: 12 of september of 1979  
Day Month Year

Purpose of Application (Check appropriate entry)

- Construction of new facility
- Operation of new facility
- Continue operation of existing facility

Name of Project: Station Sanitary Landfill

Location: U. S. Naval Station, Roosevelt Roads, P. R.

Owner or Administrator: Commanding Officer, U. S. Naval Station  
Roosevelt Roads, PR

Postal Address: Ceiba, Puerto Rico 00635 (Tel: 863-2000, Ext. 4307, 4242)

Total Number of Employees in Project:

Type of Business  Private  Governmental

Itinerary of Operation: 8 Hours Daily 5 Days per week 12 Months

Frequency of Operation: CONTINUOUS

Estimated production of Solid Waste (Pounds or tons): 60 ton/day

Indicate if facility existed or was legally under construction before  
16 September 1973  Yes  No

CERTIFICATION: I certify that in accordance with my best knowledge and belief, the information provided herein is true, complete, and exact and I therefore request approval by the Board to conduct the activities described in this application.

Signature of Operating Official \_\_\_\_\_

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APPLICATION FOR THE APPROVAL TO ESTABLISH SOLID WASTE  
PROCESSING AND/OR FINAL DISPOSAL FACILITIES  
(Continued)

ADDITIONAL DATA:

- EXHIBIT I: Site location on the U.S.G.S. Punta Puerca Quadrangle.
- EXHIBIT II: Land use and zoning within one-fourth mile of the sanitary landfill site.
- EXHIBIT III: NAVSTA Roosevelt Roads Sanitary Landfill-Operation Plan.

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NAVSTA ROOSEVELT ROADS SANITARY LANDFILL OPERATION PLAN

1. Itinerary of Operation:

From 7:00 a.m. to 3:30 p.m., Monday thru Friday, 12 months per year.  
When required, operation on Saturdays will be permitted.  
No solid waste dumping will be allowed after 2:45 p.m.

2. Personnel:

Two equipment operators at the site. One will be in charge of the daily operational records specified at Section 6 of this Plan. Supervision and operational requirements will be provided by the Transportation Division, Public Works Department, NAVSTA Roosevelt Roads,

3. Equipment:

<u>No.</u>	<u>TYPE</u>	<u>ACCESSORIES</u>
1	Tractor crawler	Dozer Blade
1	Tractor, rubber-tired	Front-end loader
1	Tractor crawler (Emergency replacement)	Front-end loader (4 in 1 Bucket)
1	First Aid Kit	
2	ABC Dry Chemical Fire Extinguishers	

The sanitary landfill will be provided with an office (temporary type) located at the entrance, and will be provided with electrical and telephone facilities. Also, a small and portable shed, skid-mounted, will be provided near the work area for personnel protection against adverse weather conditions. The sanitary landfill personnel will use the existing rest-rooms facilities at Industrial Area Sewage Treatment Plant.

4. Operation Procedure:

The method of operation is a combination of the Area, and Trench method, known as the Ramp method. At the work area, <sup>soil will be</sup> ~~cover material is~~ excavated from a location in front of the working cell and use as cover material. The work area is that portion of the sanitary landfill where the solid wastes are dumped, spread, compacted, and covered at the end of the day.

a. Designation of Specific Disposal Areas:

The sanitary landfill will have separate areas for different types of wastes. Residential, commercial, industrial, and institutional wastes will be deposited in a properly marked work area. These wastes will consist mainly of papers, cans, bottles, plastic, and glass containers, food wastes, etc., which are not considered toxic, hazardous, or pathological wastes. Bulky waste will not be incorporated

with degradable wastes. They will be crushed as much as possible, pushed into the bottom of the cell and covered at the end of the day to eliminate possible refuge for rats.

Death<sup>d</sup> animals will be disposed of at a specific area, placed in a pit, covered with lime and with 2 ft. of compacted soil. The designated area<sup>will be provided by the small</sup> birds, can be incorporated in the landfill if received in small numbers.

*Signs*

Signs will be provided to direct traffic to and from the specific disposal areas.

b. Unloading Procedure:

Normally, during dry weather condition, trucks will be unloaded in front of the working cell. During wet weather condition, trucks can be unloaded from the top of the working cell. When the latter is being accomplished, bumper logs should be placed along the edge of the trench to keep trucks from backing into the trench. The width of the working cell will be kept as narrow as possible to facilitate operation of trucks and equipment.

c. Compaction Procedure:

~~Spread the unloaded refuse~~, starting at the bottom of the cell and driving forward to the top of the cell, Using the dozer the refuse will be spread evenly in 20° to 30° slopes and in layers of less than two feet thick; then compacted by making three to five dozer passes over it. Cell height should be approximately eight feet.

d. Procedure for Covering Refuse:

After compaction, refuse will be covered with a minimum of 6 inches of compacted soil. This shall be accomplished at the close of each working day in a way that both the surface and the sides of the cell will be completely covered.

Waste building material (concrete or other bulky refuse) that may provide space for rat borrows, can not be used for the final surface daily cover material, but buried promptly within the fill.

e. Completing the Sanitary Landfill:

When completed, the sanitary landfill will be protected from erosion and provided with adequate drainage. This will be accomplished by providing 1/100 surface slopes. The final landfill surface will be at least 2 ft. thick when compacted and will be grass seeded. Grassed waterways will be provided where runoff is concentrated.  
*ditches*

f. Bad Weather Operation:

Maintain access roads and roads leading to the working face from becoming quagmire during rainy weather. Gravel, crushed rock or stockpiled demolition and construction rubble will be spread over the road areas periodically to keep the collection trucks rolling during bad weather.

If water impoundment occurs in front of the working cell, consideration should be given to the provision of drainage by means of temporary ditches.

g. Fire Control Procedure:

Burning of waste is strictly prohibited. If by accident or carelessness a small fire occurs, it should be extinguished by smothering with earth. The landfill equipment will be provided with a fire extinguisher large enough to take care of small fires. The equipment should never be placed in contact with the fire, under any circumstance. If a fire is beyond the landfill personnel control, the Station Fire Division MUST be notified immediately.

h. Maintenance Procedure:

Access roads will be periodically graded and repaired. Follow procedure explained hereinbefore for the U. S. Naval Station Roosevelt Roads, Public Works Department, Pest Control Division, will perform periodic inspections in order to proceed with the necessary flies and rodent control. For dust control, sprinkle the area with water as required.

*as well as operations when required. The...*

i. Salvaging and scavenging:

Scavenging is strictly prohibited. Scavengers can interfere with approaching packer trucks or the landfill tractor, endangering their lives.

Salvage of all usable materials at the source of solid waste generation, is encouraged. Salvaging should never be practiced at the working area.

5. Additional Information:

a. Population and Area Served

The sanitary landfill will receive solid wastes generated by approximately 11,500 people consisting of military personnel with dependents, civilians employees, daily visitors, and temporary construction workers. The area served consist of the Naval Station lands at Ceiba (8844 acres), and Naval Ammunition Facilities, Atlantic Fleet Weapons Training Facilities, and Camp Garcia at Vieques Island in (25,233 acres)

b. Type and Quantity of Solid Wastes:

The sanitary landfill receives about 54 to 60 tons of solid waste daily. The types of waste are classified as follows:

1. Residential, Commercial, and Industrial wastes: Papers, cans, bottles, plastic and glass containers, cardboard and wooden boxes, food wastes, lumber, and metal.
2. Bulky Wastes: <sup>of</sup> Car bodies, large appliances, tree stumps, demolition and construction debris.
3. Institutional Wastes: Solid wastes from hospitals, lodges, schools, etc. Photological wastes will be disposed at the Naval Hospital photological incinerator.
4. Dead Animals: Birds, cats, dogs, and other small animals.  
c Cows and horses.
5. Treatment Plant domestic type digested sludges.

Note:  
Specific amounts for each type of waste is not available. Toxic and hazardous wastes will not be received unless previous authorization is obtained from the Commonwealth of Puerto Rico, Environmental Quality Board (EQB), and the U. S. Environmental Protection Agency. The disposal of such wastes shall be in accordance with guide lines, methods, and procedures, approved by the previously mentioned agencies.

Access to the sanitary landfill at non operating hours will be controlled by providing a secured entrance gate.

6. Administration:

The U. S. Naval Station Roosevelt Roads sanitary landfill will be administered by the Transportation Division of the Station Public Works Department.

The Transportation Division will assign a supervisor to be responsible for the sanitary landfill operation in compliance with the Operation Plan, and the EQB Regulations for the control of solid and hazardous wastes.

Daily operational records shall be kept <sup>K</sup> indicating at least the following requirements:

- a. Number of collection truck received including its solid wastes capacities (tons or pounds).
- b. Equipment used for final disposition of wastes.
- c. Any disruption of authorized operating methods.

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- d. Unusual happenings such as accidents, fires, floods, landslides, equipment breakdown, and service interruptions.
- e. When properly authorized, amounts of toxic or hazardous wastes indicating the source.
- f. Sanitary landfill lot utilized
- g. Quantity of material or landfill used. an annual report of this data should be prepared and kept on file to be sent to the EQB upon request.

If the authorized operating method of the sanitary landfill is disrupted in such a manner as to prevent operation in compliance with the EQB regulations, the Operating Official shall immediately notify the EQB, Solid Wastes Division, of such disruption including its estimated duration.

Table 3-11. NAVSTA Roosevelt Roads Confirmation Study, Soil Sampling Results, Site 7, Station Landfill

Chemical Toxicity Parameters

Constituent	Round 1 Concentrations			Toxicity Data	AIC mg/kg/dny	Designated Levels in a Solid (ug/g)	Threshold Limit Concentration (ug/g)	Element Concentration Ranges In Soils (ug/g)
	R7S1H	R7S2H	R7S3H					
Oil & Grease (ug/g, dry)	198	80	127	NR	NR	NR	NR	NR

NR - Not Reported.  
 AIC - Chronic Acceptable Intake values for noncarcinogenic effects.  
 Designated Levels in a Solid - Designated levels in a solid to protect ground water at an average site in California.  
 Threshold Limit Concentrations - Hazardous Waste Total Threshold Limit Concentrations. Disposal of wastes exceeding these values is restricted in California.

Source: ESE, 1988

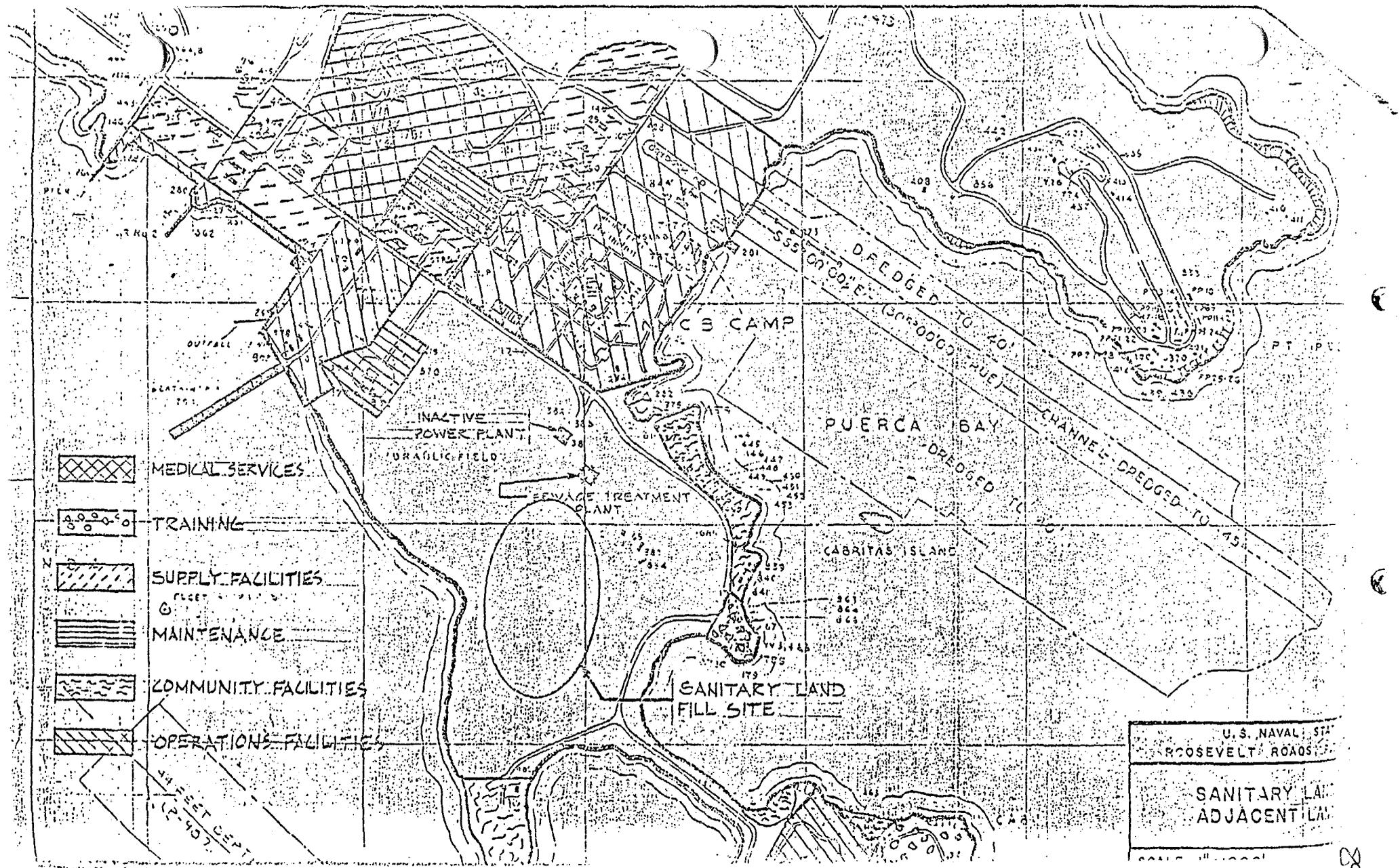
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Table 3-12. NAVSTA Roosevelt Roads Confirmation Study, Rounds One and Two Ground Water Sampling Results, Site 7, Station Landfill

Constituent	Round 1 Concentrations																Round 2 Concentrations																Chemical Toxicity Parameters											
	Round 1 Concentrations																Round 2 Concentrations																Toxicity Data	AIC mg/kg/day	RCRA MCL (ug/L)	MCL (ug/L)	AWQC (ug/L)	PRDOH MCL (ug/L)						
GROUND WATER																																												
Sample Number:	R7GWH1 R7GWH2 R7GWH3 R7GWH4 R7GWH5 R7GWH6 R7GWH7 R7GWH8 R7GWH9 R7GWH10 R7GWH11 R7GWH12 R7GWH13 R7GWH14 R7GWH15 R7GWH16 R7GWH17 R7GWH18																																											
Chlorobenzene (ug/L)	89																180																Oral LD50 (rat) = 5000 mg/kg						0.0270	NR	NR	NR	NR	
Bis(2-ethylhexyl)phthalate (ug/L)	6	6	1	3	5	2	3	8	--	1.5	--	--	1.7	--	5.3	--	--																	Oral TDLo (man) = 143 mg/kg						0.0200	NR	NR	NR	NR
Butyl benzyl phthalate (ug/L)	17	--	2	5	--	3	1	0.7	--	--	--	--	--	--	--	--	--																	Oral LD50 (rat) = 2330 mg/kg						NR	NR	NR	NR	NR
Di-n-butylphthalate (ug/L)	2	0.9	--	0.7	--	--	--	1	--	--	--	--	--	--	--	--	--																	Oral TDLo (hmn) = 140 mg/kg						NR	NR	NR	NR	NR
1,3-Dichlorobenzene (ug/L)	--	--	--	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--																	NR						NR	NR	NR	400	NR
1,2-Dichlorobenzene (ug/L)	--	--	--	--	--	--	--	0.9	--	--	--	--	--	--	--	--	--																	Oral LD50 (rat) = 500 mg/kg						NR	NR	NR	400	NR
1,4-Dichlorobenzene (ug/L)	--	--	--	1.0	--	--	--	9	--	--	--	7.3	--	--	--	--	--																	Oral LD50 (rat) = 500 mg/kg						NR	NR	NR	400	NR
1,1-Dichloroethane (ug/L)	--	--	--	2.3	--	--	--	--	--	--	--	--	--	--	--	--	--																	Oral LD50 (rat) = 725 mg/kg						NR	NR	NR	NR	NR
Trans-1,2-Dichloroethene (ug/L)	--	--	--	1.5	--	--	--	--	--	--	--	--	--	--	--	--	--																	NR						NR	NR	NR	NR	NR
Di-n-octylphthalate (ug/L)	1	--	--	--	--	--	--	0.8	--	--	--	--	--	--	--	--	--																	Oral LD50 (mus) = 6513 mg/kg						NR	NR	NR	NR	NR
Antimony (ug/L)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1510	--	--																	Oral LD50 (rat) = 7 ug/kg						0.000400	NR	NR	146	NR
Arsenic (ug/L)	73.6	58.6	121	87.0	84.9	93.9	46.1	120	9.6	--	2.2	20.9	--	10.9	7.8	7.7																	Oral TDLo (man) = 7857 mg/kg/55-l						NR	50	50	0.0022	50	
Beryllium (ug/L)	3.12	--	--	--	--	11.3	4.16	6.65	--	--	--	--	--	2.7	17.7	--																	INH. TCLo (hmn) = 300 mg/M3						0.000500	NR	NR	0.0068	NR	
Chromium (+6) (ug/L)	--	--	--	46.0	--	--	--	--	--	--	--	--	--	--	--	--	--																	NR						0.00500	50	50	50	50
Chromium (Total) (ug/L)	15.9	6.89	30.8	8.72	15.9	22.3	11.3	57.7	3.6	5.3	6.1	15.5	--	153	440	23.5																	NR						0.00500	50	50	50	50	
Copper (ug/L)	42.9	5.18	73.5	4.56	23.2	135	33.0	42.8	6.3	33.6	14.9	14.8	47.0	47.7	1820	167																	Oral TDLo (hmn) = 120 ug/kg						0.0370	NR	(s) 1,000 (+, FCC) 12	NR		
Lead (ug/L)	--	--	--	--	424	--	--	--	--	--	--	--	--	--	--	--																	Oral TDLo (hmn) = 450 mg/kg/6Y						0.00140	50	50	50	50	
Nickel (ug/L)	11.5	--	14.3	10.2	10.0	13.5	12.2	18.7	--	--	--	--	13.5	54.8	225	--																	Intr. TDLo (rat) = 12 mg/kg						0.0100	NR	NR	13.4	NR	
Selenium (ug/L)	--	--	--	--	--	88.9	--	--	32.0	12.4	--	15.6	26.4	34.4	--	--																	Oral LD50 (rat) = 6700 mg/kg						0.00300	10	10	10	10	
Silver (ug/L)	--	--	--	--	--	--	--	--	39.0	12.6	--	40.2	39.7	--	369	--																	Intr. TDLo (rat) = 2400 mg/kg						0.00300	50	50	50	50	
Thallium (ug/L)	187	187	1780	31.2	31.5	60.6	4.57	10.9	17.6	--	--	23.9	77.1	89.0	--	58.5																	Oral LD50 (man) = 5714 ug/kg						0.000400	NR	NR	13	NR	
Zinc (ug/L)	95.6	53.2	50.0	62.7	225	103	64.0	52.2	62.8	--	5.0	5.4	--	89.7	3510	41.5																	INH. TCLo (hmn) = 124 mg/M3/50M						0.210	NR	(s) 5,000 (+, FCC) 110	NR		
Phenols (ug/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	48	100	27	30	54	36	160	16																	NR						NR	NR	NR	NR	NR	

- = Not Detected.  
 NA = Not Analyzed.  
 NR = Not Reported.  
 mn = Human  
 ms = Mouse  
 hmn = Human  
 AIC = Chronic Acceptable Intake values for noncarcinogenic effects.  
 RCRA MCL = RCRA Maximum Concentration Limits.  
 MCL = Maximum Contaminant Levels of National Primary Drinking Water Standards; (s) = National Secondary Drinking Water Standards.  
 AWQC = Ambient Water Quality Criteria is associated with 10-6 cancer risks; (fCC) Fresh Chronic Criteria; (+) Hardness Dependent - 100 mg/L used.  
 PRDOH MCL = Puerto Rico Department of Health Maximum Contaminant Levels for drinking water.

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U.S. NAVAL STATION  
 ROOSEVELT ROADS  
 SANITARY LAND  
 ADJACENT LAND

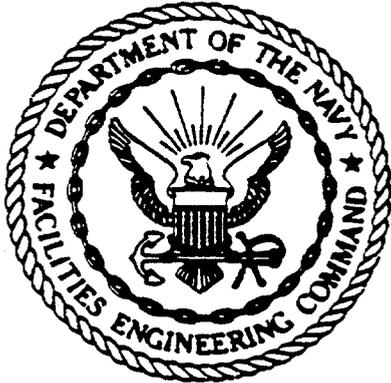
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**TAB B**

RR-00132  
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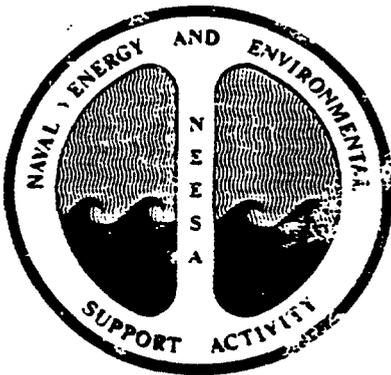
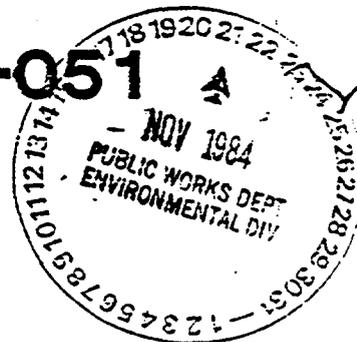
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September 1984

# INITIAL ASSESSMENT STUDY OF NAVAL STATION ROOSEVELT ROADS, PUERTO RICO

NEESA 13-051



NAVAL ENERGY AND ENVIRONMENTAL  
SUPPORT ACTIVITY

Port Huachuca, California 93043

## "RETURN TO CENTRAL FILES"

RELEASE OF THIS DOCUMENT REQUIRES PRIOR  
NOTIFICATION OF THE CHIEF OFFICIAL OF THE  
STUDIED ACTIVITY

2.3.6 Site 7, Station Landfill. This site has been used as the station landfill since the early 1960s, when the Army Cremator disposal area (Site 5) was abandoned (see Figure 2-1). The landfill reportedly has received at least 270,000 tons of waste including paint waste, solvents, polychlorinated biphenyls (PCBs), OTTO Fuel II, Agentine, pesticides, transformers, asbestos, waste oil, dead animals, and other wastes. Prior to 1978, disposal was not regulated. The site encompasses 85 acres, most of which were used for waste disposal prior to 1978.

A number of drums and other containers are piled in the brush around the site. No reliable information exists regarding the amount of material that might be hazardous that was disposed of at this location. At least 200 gallons of PCB dielectric fluids were disposed of here, as well as several 55-gallon drums filled with fluids drained from transformers that could be contaminated with PCB. The IAS team estimates that as much as 2,700 tons of hazardous material could be present at the older portions of the site (see page 8-9).

Contamination from this site could migrate by surface and subsurface flow. The soils of the site are hydraulic fill, which generally consists of sand and mud. The water table in this area is very near the surface, everywhere less than 10 feet, and in places at depths of two feet or less. Ground water flow has not been measured in the area, but can be assumed to be in all directions toward the surrounding bodies of water, e.g., the Ensenada Honda and Puerca Bay.

Ensenada Honda provides habitat for the West Indian manatee and several species of sea turtles designated as endangered species. In addition, the entire Naval

Station, with the exception of built-up areas, has been officially designated as critical habitat for the yellow-shouldered blackbird. Contamination from the old sections of the station landfill could affect the food chain through bioaccumulation of contaminants contained in the small fishes and other marine life upon which these endangered species feed; base personnel and the local population also fish in these areas.

Site 7 is recommended for a Confirmation Study.

3.2.6 Site 7, Station Landfill. See Figure 3-4.

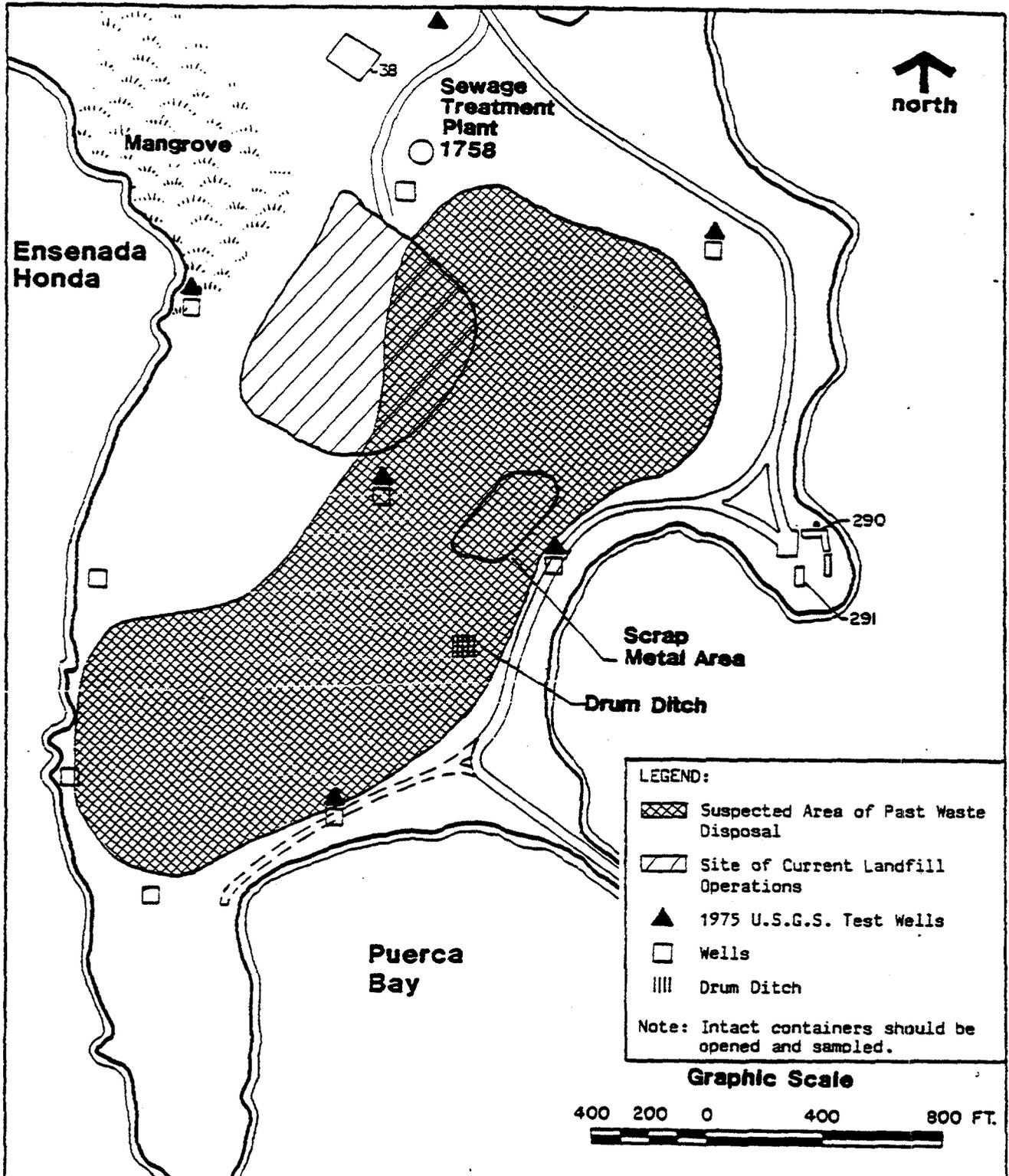
Type of Sample:	Ground water, "drum ditch" grab samples, and container contents, as appropriate.
Ground Water Monitoring Wells:	Eight new wells and up to six existing wells, if they can be developed.
Frequency:	Quarterly, for one year.
Testing Parameters:	Ground water: Pesticides, PCBs, pH, and specific conductance; purgeable organics and copper, chromium, lead, and zinc (see Table 3-2).
	Containers: See Section 3.2.4.

3-12

Drum Ditch: Oil and grease, TOC, TOX (see Table 3-2).

Remarks: If ground water screening identifies any contamination, additional samples and analyses will be required. The monitoring wells that were previously installed by the U.S. Geological Survey at the landfill and the sampling conducted were intended solely for drinking water analysis and may not have adequately defined the nature and extent of contamination by hazardous material. The sampling was only conducted on a one-time basis. It is probable that all of the U.S. Geological Survey monitoring wells have since been destroyed by landfill operations. Those still intact should be developed, if possible, and sampled. The ground water monitoring wells suggested above will detect contaminant migration from the drum ditch.

The piles of material inaccessible to the IAS team from the ground should be examined for intact containers, which should be opened and sampled only by skilled, experienced personnel. Samples analysis parameters will be decided based on the recommendations of the team leader. See Table 3-3.



**INITIAL ASSESSMENT STUDY  
NAVAL STATION  
ROOSEVELT ROADS, PUERTO RICO**

FIGURE 3-4  
SITE 7, STATION LANDFILL

8.7 SITE 7, STATION LANDFILL. This site has been used as the activity landfill since the early 1960s, when the Army Cremator disposal site (Site 5) was abandoned. The disposal of hazardous material at this site was halted in 1978. A map of the area is shown on Figure 3-5. The landfill site encompasses 85 acres of land, most of which has been used for waste disposal (see Figure 8-5). Prior to 1970 the Public Works Transportation Division was responsible for the collection of refuse and operation of the landfill. From 1970 through the present a private contractor has been contracted for refuse collection. From 1980 to the present a private contractor has operated the landfill.

Disposal methods used at the site consisted of excavating a trench to the water table, filling the trench in with waste materials, spreading and compacting this material with a bulldozer, and then covering the area with soil. Estimates of quantities of waste disposed of in the past range from 40 to 60 tons per day. Materials known to have been disposed of at the site include residential wastes, foreign cooked garbage, scrap metal, cables, paint waste, solvents, PCBs, OTTO Fuel II, Agentine, pesticides, lubricating oil, dead animals, digested sludge, construction debris, and possibly Super Tropical Bleach (STB), a decontaminating agent.

From the early 1960s through the mid-1970s, the Weapons Support Detachment of AFWTF disposed of contaminated OTTO Fuel II and Agentine at the landfill at the maximum rate of 10 55-gallon drums per month. The Power Distribution Shop disposed of 55-gallon drums of Askarel, a PCB fluid, which had been drained from transformers, as well as a one-time (1968) disposal of approximately 40 five-gallon cans of Askarel. The five-gallon cans of Askarel, which had been stored in Building 31, were never opened, and were in a rusted condition at the time of disposal. Old pole-mounted transformers, possibly containing 30 to 75 gallons of contaminated PCB oils each, were disposed of at a rate of eight per year for approximately 12 years.

There are several disposal areas within the landfill. The "scrap metal area" was originally designed as a storage area for scrap metal recycling. It covers an acre, and in addition to hundreds of car bodies and other scrap metal objects, contains solvents, lubricants, and aqueous film-forming foam (AFFF) containers which have leaked to the soil. South of the metals area in the landfill, a ditch containing approximately 10 leaking 55-gallon drums of what appears to be an oily substance has been recently discovered. The ditch was dug to the water level, and the oil is mixed with the ground water. Just to the north of the drum ditch is an area that has been used for asbestos disposal. The area is approximately 10 yards in diameter, as estimated from the presence of stressed vegetation. This area lies next to a main access road and is marked with only one faded sign. The asbestos disposal area is not segregated from the rest of the landfill, nor is direct human contact precluded. The cover over the area is disturbed, and totally lacking in vegetation.

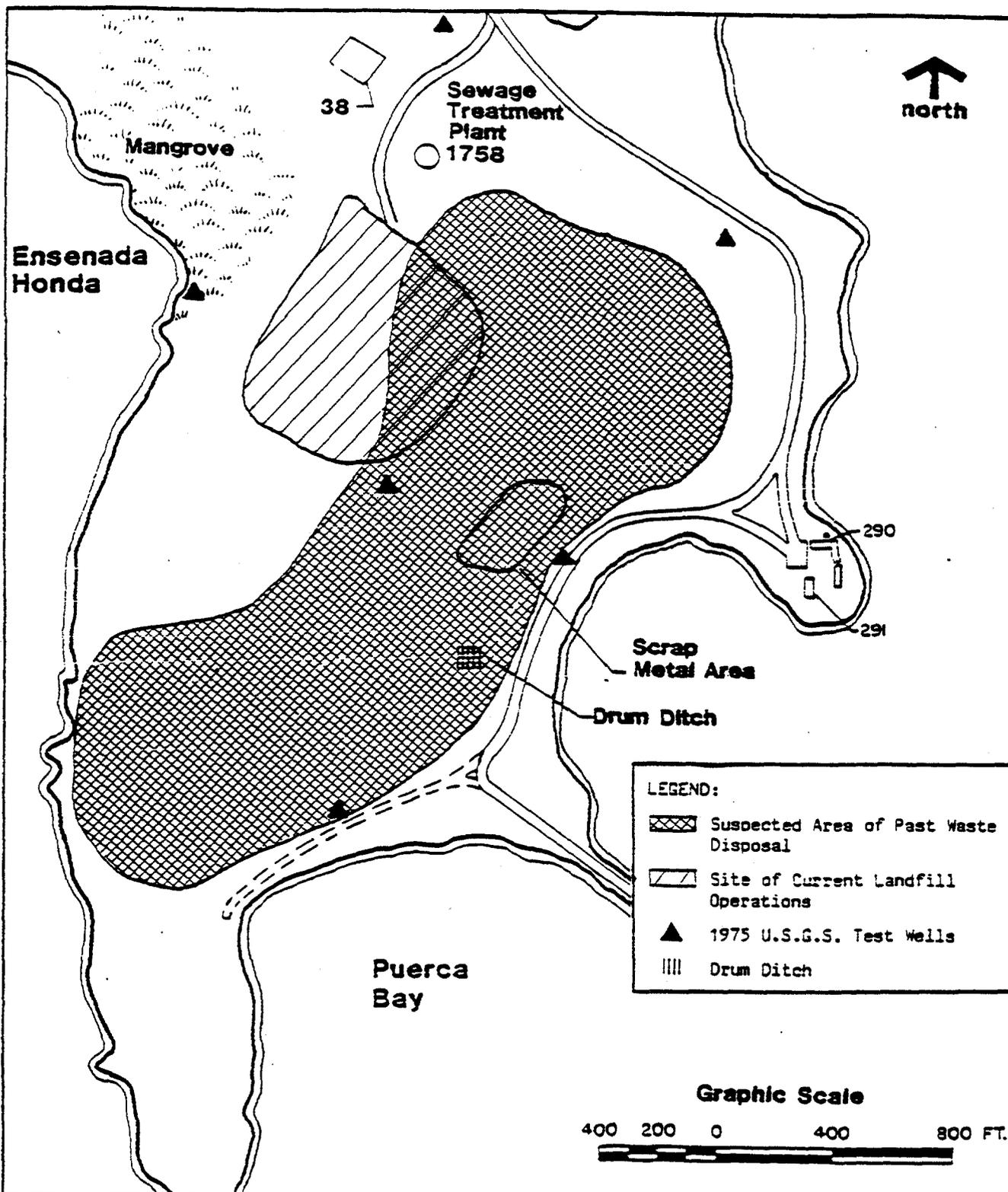
To the south of the drum ditch, and generally lying between the active portion of the landfill and Ensenda Honda, are a number of disposal areas overgrown with vegetation which are undetectable from the ground. These areas appear to contain primarily metal items that have been placed on the ground, rather than

buried. These materials vary from isolated metal items to piles of drums, approximately five yards in diameter and six to eight feet in height. There are an estimated 50 intact 55-gallon drums. Based on material found in drums elsewhere on the base, it is probable that the drums contain hazardous material.

One area of the landfill, south of the scrap metal area and east of the drum ditch, has been used for sand borrowing. This has uncovered old garbage, and has resulted in the water table appearing at the land surface. Inert ordnance items have been found in this area.

Areas of stressed vegetation are apparent throughout the landfill. In some areas it is probable that the vegetation is stressed due to the nature of the fill originally used to create the landfill; other areas are probably stressed due to the nature of the materials disposed of there.

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**LEGEND:**

- Suspected Area of Past Waste Disposal
- Site of Current Landfill Operations
- 1975 U.S.G.S. Test Wells
- Drum Ditch

 **INITIAL ASSESSMENT STUDY  
NAVAL STATION  
ROOSEVELT ROADS, PUERTO RICO**

**FIGURE 8-5  
SITE 7, STATION LANDFILL**

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TAB C

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EVALUATION OF DATA FROM FIRST AND SECOND ROUNDS OF  
VERIFICATION SAMPLE COLLECTION AND ANALYSIS

CONFIRMATION STUDY TO DETERMINE POSSIBLE  
DISPERSION AND MIGRATION OF SPECIFIC CHEMICALS--  
U.S. NAVAL STATION ROOSEVELT ROADS, PUERTO RICO,  
AND U.S. NAVAL AMMUNITION FACILITY, VIEQUES

Contract No. N62470-85B-7972

Prepared for:

Atlantic Division, Naval Facilities  
Engineering Command, Norfolk, Virginia  
23511-6287

Prepared by:

Environmental Science and Engineering, Inc.  
Sacramento, California

April, 1988

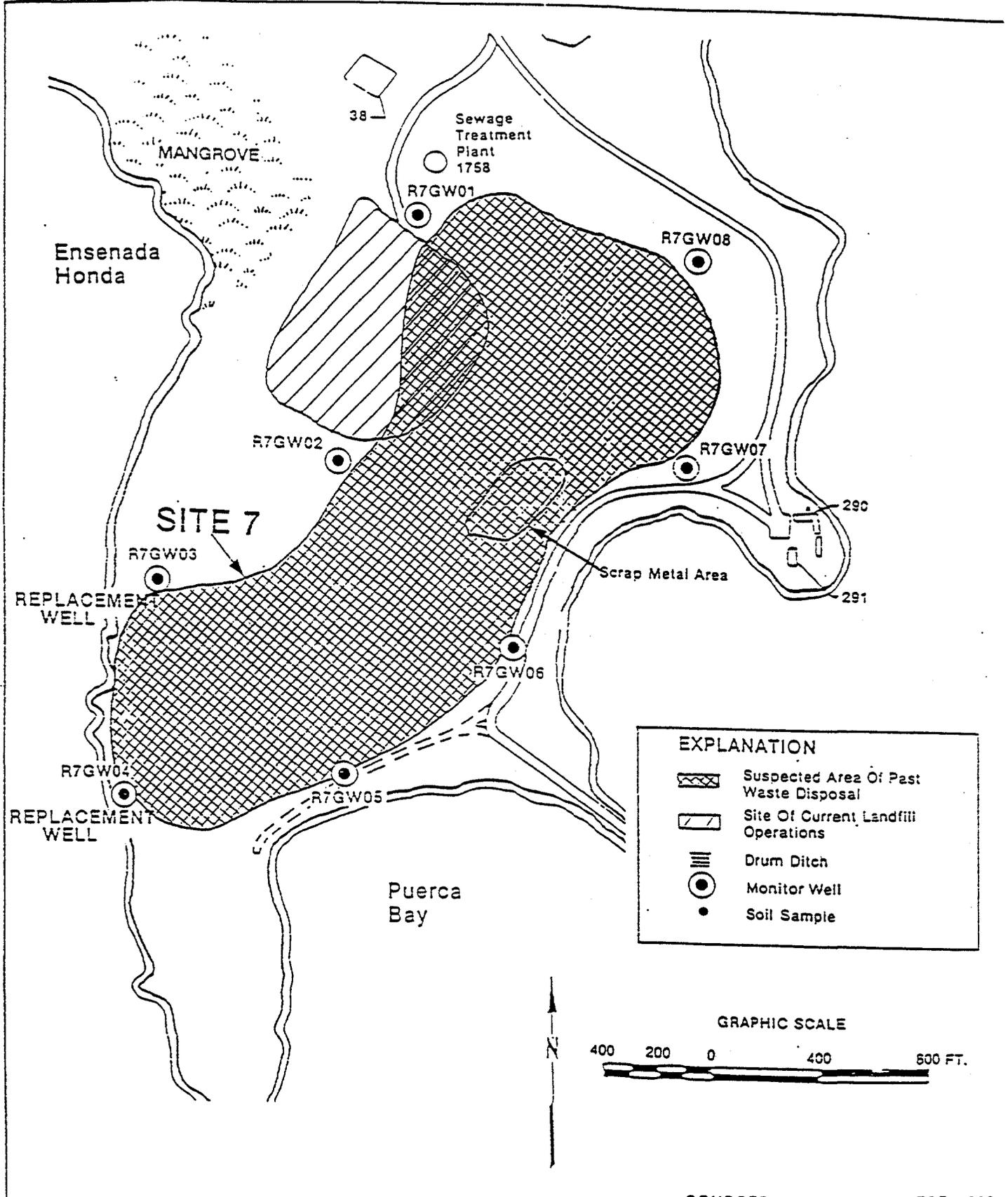
### 3.6 STATION LANDFILL, SITE 7

In the Round 1 investigation of Site 7, eight ground water monitor wells were installed, and samples of ground water were collected from each well and analyzed. In addition, three composite soil samples were collected from the Drum Ditch, a separate disposal area within Site 7. Figure 3-8 shows the location of the monitor wells and the soil sampling locations.

Table 3-11 presents the soil sampling results. As shown, only low levels of oil and grease were detected in the Drum Ditch.

In the Round 2 investigation, the eight monitor wells were resampled. Table 3-12 presents the ground water sampling results for the Round 1 and 2 investigations. As shown in Table 3-12, low levels of organic compounds, as well as metals concentrations exceeding drinking water criteria, were present in the ground water samples collected during both rounds of sampling. Metals levels were highest in the samples from the two wells nearest the scrap metal area, R7GW06 and R7GW07 (see Figure 3-8). Round 2 metals levels found in R7GW07 were markedly higher than Round 1 levels.

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EXPLANATION	
	Suspected Area Of Past Waste Disposal
	Site Of Current Landfill Operations
	Drum Ditch
	Monitor Well
	Soil Sample

SOURCES: NEESA, 1984b; ESE, 1985.

Figure 3-8  
ROUNDS 1 AND 2 SOIL AND GROUND  
WATER SAMPLING LOCATIONS AT SITE 7,  
STATION LANDFILL



CONFIRMATION STUDY  
U.S. NAVAL COMPLEX  
PUERTO RICO

4.6 STATION LANDFILL, SITE 7

Soil sampling within the Drum Ditch disposal site within Site 7 indicated that none of the contaminants of concern were detected at significant levels. Only low levels of oil and grease were detected. Therefore, no additional investigation of the Drum Ditch is recommended.

Only very low and sporadic concentrations of organic compounds were detected in the ground water samples collected at Site 7. When compared to the background ground water quality data presented in Table 4-1, the metals concentrations for the Site 7 ground water samples are generally representative of background conditions. Some elevated levels of some metals were detected but only on a sporadic basis suggesting that a significant source of metals contamination does not exist at Site 7. Therefore, no additional ground water investigation is recommended for Site 7.

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TAB D

## SITE SUMMARY

### ISSUE

- o NAVSTA Roosevelt Roads, Puerto Rico: Station Landfill (Site 7)

### SUMMARY

- o Soil and groundwater samples were taken from this site. The soil samples showed low levels of oil and grease. Some contaminants in the groundwater exceed drinking water criteria.

### BACKGROUND

- o Since the early 1960s this site has been operated as the base landfill. The landfill site encompasses 85 acres, most of which has been used for waste disposal.
- o Materials known to have been disposed of in the landfill include residential waste, scrap metal, cable, paint wastes, solvents, PCBs, OTTO fuel II, Agentine, pesticides, lubricating oil, dead animals, digested sludge, construction debris, and possibly Super Tropical Bleach (STB), a decontaminating agent.
- o IR information has been provided to the U.S. EPA and the Commonwealth of Puerto Rico. A Remedial Investigation is underway.

### DISCUSSION

- o In each Round 1 and 2 investigations, 8 monitor wells were sampled. The groundwater samples were analyzed for chromium (+6) and priority pollutants. Low levels of organic compounds as well as metal concentrations exceeding drinking water criteria were present in the groundwater samples collected during both rounds. Metal levels were highest in the samples from two wells nearest the scrap

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metal area. Shown below are exceedances of maximum contaminant levels of constituents of concern.

<u>Parameter</u>	<u>Round 1 Concentrations</u>	<u>Round 2 Concentrations</u>	<u>Comparison Value</u>
Chlorobenzene (ug/L)	89	18	.0270 AIC**
Bis (2-eth'hex') phthlate (ug/L)	8	5.3	.0200 AIC**
Butyl benz'phthlate (ug/L)	17	--	NR
Di-n-butylphthalate (ug/L)	2	--	NR
Arsenic (ug/L)	120	20.9	50 ug/L AWQC*
Chromium (Total) (ug/L)	57.7	440	50 ug/L SWQC*
Copper (ug/L)	135	1,820	12 ug/L AWQC*
Nickel (ug/L)	18.7	225	13.4 ug/L AWQC*
Selenium (ug/L)	88.9	34.4	10 ug/L AWQC*
Silver (ug/L)	--	369	50 ug/L AWQC*
Thallium (ug/L)	1,780	89	13 ug/L AWQC*
Zinc (ug/L)	225	3,510	110 ug/L AWQC*
Phenols (ug/L)	NA	160	NR

-- - Not detected

NA - Not analyzed

NR - Not reported

\*\*AIC - Chronic acceptable intake

\*AWQC - Ambient water quality criteria

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- o Three composite soil samples were collected from the Drum Ditch, a separate disposal area within the site. Only low levels of oil and grease were detected in the Drum Ditch.
  
- o Future Plan--No additional investigation of the Drum Ditch is recommended. At site 7, elevated levels of some metals were detected but only on a sporadic basis suggesting that a significant source of metals contamination does not exist. No additional groundwater investigation is recommended for Site 7. A risk assessment will be performed at this site.

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**TAB E**

RR-00132  
804 - 1-22-92



June 28, 1989

Mr. Félix Mestey  
Director Env. Engineering Division  
US NAVSTA Roosevelt Roads  
Box 3021  
FPO Miami 34051

Dear Mr. Mestey:

Reference is made to the inspection performed on June 2, 1989 to NAVSTA Roosevelt Roads, by Mrs. Priscilla M. Bestard, for our Land Pollution Control Area.

During the inspection it was found that the Naval Station is in compliance with the minimum requirements of the Regulation for the Control of Hazardous and Non - Hazardous Solid Wastes, amended version.

This compliance letter is related only and exclusively with the above mentioned inspection and does not precludes from further enforcement actions.

We appreciate your cooperation.

Cordially,

*Felix L. Del Valle Lopez*  
Felix L. Del Valle Lopez  
Director  
Land Pollution Control  
Area

PMB/sec

