WORK PLAN FOR THE CLEANING OF CHICORA TANK FARM CNC CHARLESTON SC

12/29/1997

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DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
P.O. BOX 190010
2155 EAGLE DRIVE
NORTH CHARLESTON, S.C. 29419-9010

Rick Richter
Trident

5090
Code 1849
29 Dec 1997

Mr. Paul Bristol
South Carolina Department of Health
And Environmental Control
Ground-Water Protection Division
2600 Bull Street
Columbia, SC 29201

WORK PLAN FOR THE CLEANING OF CHICORA TANK FARM

Dear Mr. Bristol:

Attached is the work plan for the cleaning of the Chicora Tank Farm, Charleston Naval Base, Charleston, SC. The cleaning will be performed by the Civil Engineering Technical Services Center of the Air National Guard. This branch of the Air National Guard has nine years experience cleaning tanks. The actual cleaning of the tanks is scheduled to start on January 6, 1998. Due to time restrictions and the Holiday Season, work preparation for the cleaning started on December 15, 1997.

If you have any questions please contact me at (803) 820-7307.

Sincerely,

GABRIEL L. MAGWOOD
Petroleum/UST Branch

E-mail to Trident District
1.14.98

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SOUTH CAROLINA

WORK PLAN
FOR THE CLEANING OF
FIVE (5) 50,000-BARREL CONCRETE TANKS

At the

CHICORA TANK FARM
NAVAL BASE CHARLESTON

CHARLESTON, SOUTH CAROLINA

PREPARED BY:

GABRIEL L. MAGWOOD
Engineer In Charge

24 DECEMBER 1997

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SECTION 1: PROJECT OVERVIEW

1.1 Objective

The objective of this project is to accomplish the cleaning of 5 50,000-barrel concrete cut-and-cover tanks and their associated pump rooms at the Chicora Tank Farm.

1.2 Facility Description

The Chicora Tank Farm is located in North Charleston, South Carolina, approximately 1/2 mile west of the former Charleston Naval Base. The facility occupies an area of 23.64 acres and is bounded by Carner Avenue on the west, Chicora Avenue on the east, a marshland to the north, and Clement Ferry Road to the south. The Norman C. Toole Military Magnet Middle School abuts the property on the northwest. The Fuel Farm appears to be rolling pasture land and consists of five 50,000-barrel concrete cut-and cover tanks (Tanks 3906-K, L, M, N and P) and one 27,000-barrel concrete cut-and cover tank (Tank 3906-O). The tanks are approximately four feet below grade. Tank diameters are approximately 138'-6" for the 50,000-barrel tank and 102'-6" diameter for the 27,000-barrel tank. The clear height inside the tanks is approximately 20 feet. Pump pits are connected adjacent to the tanks with approximate inside dimensions of 24 feet wide by 24 feet long by 25 feet high.

1.3 Responsible Parties

1.3.1 This work will be accomplished by the Civil Engineering Technical Services Center of the Air National Guard, Minot, North Dakota with support from the Charleston Detachment.

1.3.2 Southern Division will perform the oversight and tank screening for the cleaning of the tanks.

SECTION 2: APPLICABLE DOCUMENTS

2.1 The following document will be used in performing this work. The latest editions of documents shall be used when applicable.

2.1.1 SCDHEC Underground Storage Tank Control Regulations, R.61-92

2.1.2 SCDHEC UST Assessment Guidelines for Permanent Closure, Change-In-Owner and Change-In-Service, June 1995

2.1.3 National Fire Protection Association Flammable and Combustible Liquids Codes, NFPA 30, Appendix B, Abandonment or Removal of Underground Tanks

2.1.4 American Petroleum Institute (API) Recommended Practice 1604, Second Edition, December 1987, Removal and Disposal of Used Underground Petroleum Storage Tanks

2.1.5 American Petroleum Institute (API) Recommended Practice 2015, 1991 Safe Entry and Cleaning of Petroleum Storage Tanks

2.1.6 Safety and Health Requirements Manual, US Army Corps of Engineers EM 385-1-1, latest edition.

2.1.7 Naval Facilities Engineering Command Guide Specification, SOUTHDIV, Section 01450, Quality Control

2.1.8 Code of Federal Regulations (CFR) 40 CFR 280, Owners and Operators of Underground Storage Tanks

2.1.9 Code of Federal Regulations (CFR) 29 CFR 1910, Occupational Safety and Health Standards

2.1.10 Code of Regulations (CFR) 29 CFR 1926.21 Safety Training and Education

2.1.11 OPNAVINST 5100.23D Navy Occupational Safety and Health Program Manual

2.1.12 Comprehensive Safety and Health Plan, Charleston Naval Base Complex

2.1.13 Quality Control Plan for UST Removal, Charleston Naval Base Complex

SECTION 3: SCOPE OF WORK

3.1 General Project Overview

3.1.1 The work included in the cleaning of the five 50,000-barrel concrete cut-and-cover tank consists of isolating the tanks from the pipelines, accessing tank manways, purging the tanks, confined space entry, removing product, cleaning tank walls, ceiling and floors and disposing of waste water used in cleaning.

3.1.2 The cleaning will be visually inspected by Southern Division to ensure the tank is free of loose rust, dirt, scale, loose materials, fuel oil, grease, sludge and other deleterious materials.

3.2 Tank Isolation

The tanks shall be isolated from the pipelines by shutting and verifying closure of all supply, return and drain lines for each tank.

3.3 Work Preparation

3.3.1 There are three manways associated with each tank. One manway has a removable hatch above the entrance and is readily available. The other two manways are on top of the tank approximately 6 feet below land surface.

3.3.2 The two manways below land surface shall be uncovered using a backhoe and the manway covers removed. The soil around the manway will be sloped, therefore shoring will not be needed. These manways shall be used to ventilate the tanks during the cleaning operation.

3.3.3 An Organic Vapor Analyzer (OVA), visual inspection and smell shall monitor the soil removed to expose the manways. If contaminated, soil will be disposed of in accordance with the Soil Corrective Action Plan for the Charleston Naval Complex.

3.3.4 Underground utilities will be located prior to any excavation.

3.3.5 Electrical service shall be disconnected from the transformer buildings to the tanks.

3.4 Product Removal

3.4.1 Vacuum trucks will be used to remove products from the tanks. Trucks will be bonded to the tank or grounded to prevent electrostatic ignition hazards. The vacuum truck will be located upwind from the tank and outside the path of probable vapor travel. The vacuum truck exhaust gases will be discharged downwind of the truck and drum area.

3.4.2 The product in Tanks K, L, M, N and P have been previously sampled and are not hazardous. The product will be transported to Tank "O", a 27,000-barrel used oil tank on site, which will be cleaned in conjunction with the pigging and cleaning of the transfer and drain lines. The pigging and cleaning of the transfer and drain lines along with the cleaning of Tank "O" will be accomplished later as a separate action.

3.4.3 Sludge removed from the tanks, that is unable to be mixed with product and transported to Tank "O", will be contained in 55-gallon drums, sampled and dispose of in accordance with regulation.

3.4.4 Cleaning rags and personal protective equipment (PPE) used during the cleaning operation will be placed in 55-gallon drums and disposed of as solid waste.

3.5 Tank Purging

3.5.1 An explosion proof blower and explosion proof air eductor will be used to ventilate the tank during cleaning. The equipment will be set up to circulate the air to all parts of the tank.

3.8.2.1 Organic Vapor Analyzer readings will be taken at three different levels within the tank and pump room at various locations. The reading will be taken at the bottom, approximately 10 feet above the floor, and near the top of the tank.

3.8.2.2 Tank cleaning procedure will be repeated until the criteria of paragraph 3.8.1 are achieved.

SECTION 4: ADDRESSES

4.1 Commanding Officer
ATTN: Code 1849
Southern Division Naval Facilities Engineering Command
2155 Eagle Drive, PO Box 190010
North Charleston, SC 29419-9010

POC: Gabriel L. Magwood
(803) 820-7307

4.2 Commanding Officer
ATTN: Code 0733WJC
Southern Division Naval Facilities Engineering Command
2155 Eagle Drive, PO Box 190010
North Charleston, SC 29419-9010

POC: Wayne Cotton
(803) 820-7375

#13350

LP 10.17.96
Lo 10.17.96

ENTERPRISE
ENGINEERING, INC.

MEETING MINUTES **August 12, 1996**

MEETING DATE:	August 8, 1996	
PROJECT:	Chicora Tank Farm Demolition	
PROJECT NO:	95-1878	
LOCATION:	SCDHEC Offices, Columbia, SC	
ATTENDANCE:	Ricky Young	EEI
	Alan Wironen	EEI
	Paul M Bergstrand	SCDHEC
	Paul L Bristol	SCDHEC
	James R. Hess	SCDHEC
	Johnny Tapia P.	SCDHEC
	Ann Ragan	SCDHEC
	Jeri Johnson	Chas Naval Complex Redevelopment Authority
	John J. Schnabel	SCDHEC
	Harold Seabrook	SCDHEC
	Art Braswell	SCDHEC-SW
	Daryle Fontenot	SOUTHDIV
	Tony Hunt	SOUTHDIV
	Gabriel L. Magwood	SOUTHDIV
	Wayne Cotton	SOUTHDIV
PURPOSE OF MEETING:	To discuss demolition options and establish a Unified position.	

1. Meeting started with Ms. Ragan providing opening remarks and stating the objective of the meeting was to explore the demolition in place option and develop a unified position satisfactory to all parties involved.

   Introductory remarks were followed by introduction of the attendees.

2. Ms. Ragan then summarized the alternatives as follows:

   1. Fill in place
   2. Demo in place
   3. Demo with rubble removal

   Option 1 is unacceptable to the Redevelopment Authority.
   Option 4 is cost-prohibitive to the Navy.

3. Enterprise Engineering provided a summary of their project scope, options considered and the costs associated with each option. The EEI options include:

   Option 1: Clean and inert tanks and piping, abandon tanks in place with sand fill.

   * Option 2: Clean and inert tanks and piping, demolish tank roofs, fill remainder of tank with sand.
   positek - no sampling by DHEC required -

   Option 3: Clean and inert tanks and piping, demolish tank roofs and upper portion of walls and columns, dispose of concrete debris on-site, fill tanks with excavated soil.

   Option 4: Clean and inert tanks and piping, completely remove on-site tanks, piping and structures, dispose of debris off-site.

   Each option also includes the draining and grouting of the fuel pipelines between the Chicora Fuel Farm and the base.

   Option 4 is cost prohibitive to the Navy, yet is the desired alternative for the Redevelopment Authority. Option 2 is undesirable due to cost (Navy) and since it does not restore the site to a useable condition (Redevelopment Authority). DHEC also expressed some concerns for these and the other options. Their concerns were discussed at some length later in the meeting.

   The remainder of the meeting concentrated on the discussion of EEI's options 1 and 3.

4. Significant discussion items include:

   - Tank demolition will include prior steam or detergent cleaning of the concrete to remove surface contamination.

   - Sand is an acceptable material to use in the tanks as an inert fill

   - Partial demolition of the tank may include the disposal of steam cleaned construction debris within the tank, provided the Government requests a waiver of present regulations.

   - DFSC will not provide additional funds for the demolition of structures outside their area of responsibility (i.e. Boiler plant, transformer buildings, drainage structures, etc.).

   - DHEC prefers that an "impervious" cap be placed over the tank if the partial demolition option is pursued.

   - The Redevelopment Authority wants a site that is as flat as possible for use as ball fields.

   - Abandonment of utilities and tank debris on-site will be designed to provide sufficient soil coverage. Two feet of cover was suggested.

   - EEI believes some monetary savings can be realized through re-evaluating the project scope and materials.

- DHEC will require site monitoring if a partial demolition with disposal on-site is pursued.

- Borings along the pipeline header within the fuel farms will be necessary to confirm no leakage, particularly at the valves.

- Low contamination levels within the concrete, impermeable debris cap and inward hydraulic gradient will result in little or no appreciable contamination from the concrete.

5. Those in attendance set the following goals:

   - Southern Division will contract with EEI to review the project estimates and scopes for both Alternatives 1 and 3.

   - A follow-up meeting was tentatively scheduled for September 30, 1996 to discuss the results of the estimate re-evaluation, and development from the meeting with the local residents.

We believe that the minutes of this meeting accurately reflect the statements made, and that they represent the entire extent of all discussions. Those in attendance are encouraged to submit corrections for revisions to these minutes if found necessary. If no requests are made within 15 days of the date of issue of these minutes, they will be considered accepted as written.

Submitted by:

ENTERPRISE ENGINEERING, INC.

Alan M. Wironen, P.E.
Project Manager

AMW/smk/FU15

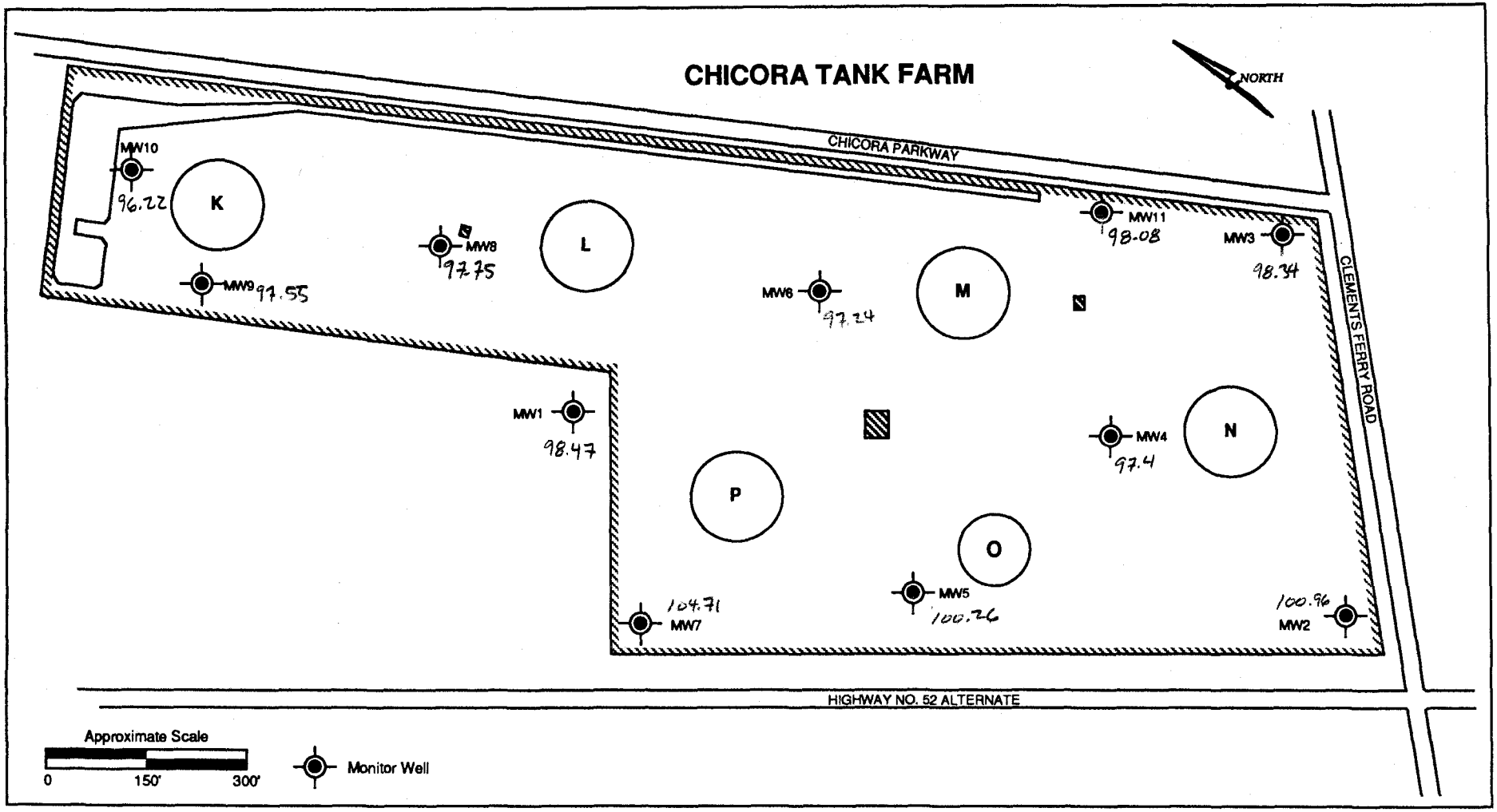
DISTRIBUTION: All Attendees

South Carolina Department of Health and Environmental Control
Bureau of Solid and Hazardous Waste Management

MEETING REGISTER

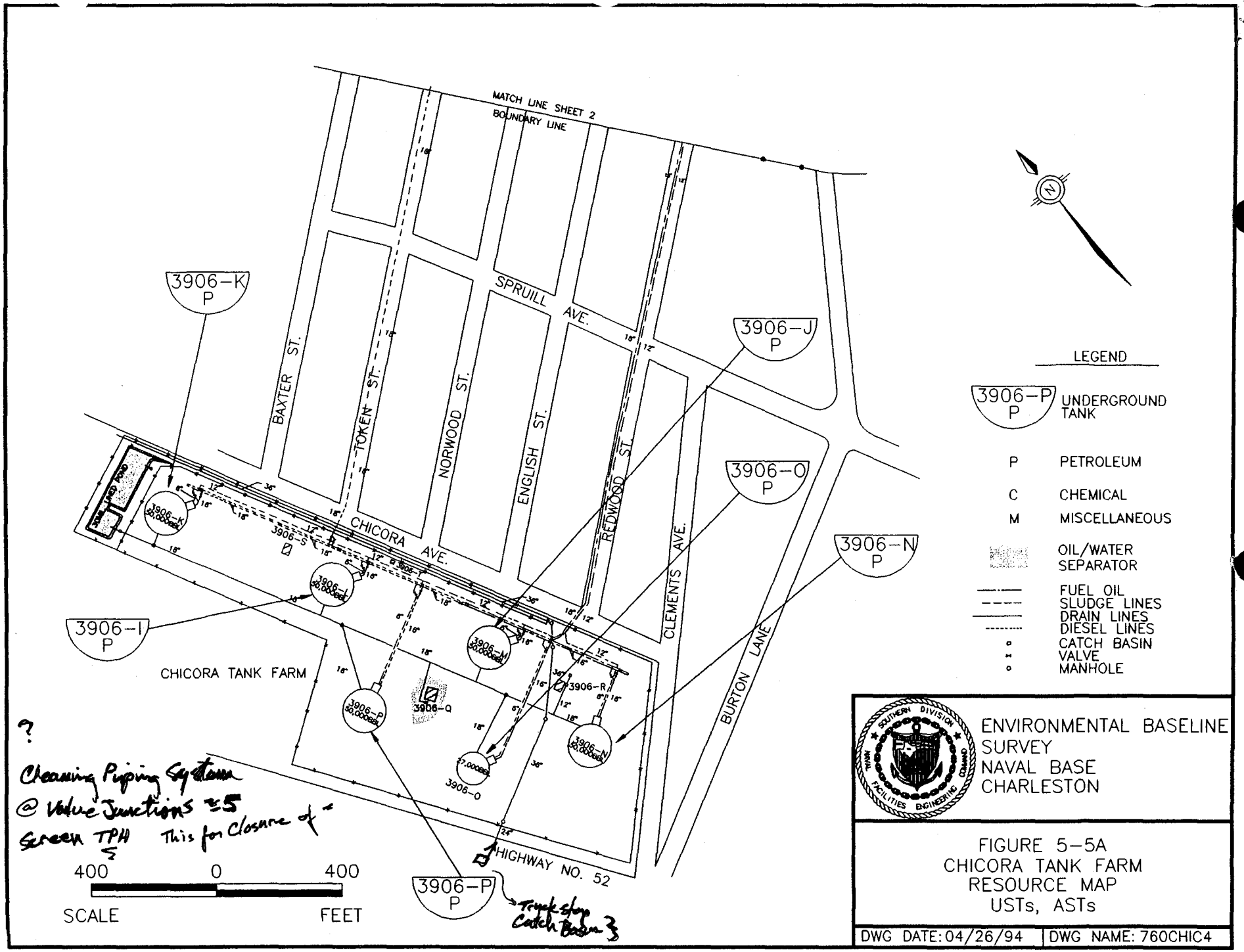
Chicora Tank Farm
August 8
~~June 27~~, 1996

	Attendants (please print)	Affiliation	Phone Number
1.	Ricky Young	Enterprise Engineering	(207) 846-3900
2.	Al Wirorem	" "	"
3.	Paul M. Bergstrand	BSHWM	896-4016
4.	Paul C. Bristol	BDWP-A&D	734-5328
5.	James R. Hess	BDWP-A&D	734-5329
6.	Johnny Tapia P.	BSHWM-Permitting	(803) 896-4179
7.	Ann Ragan	DHEC	803-734-4721
8.	JERI JOHNSON	Chas Naval Complx Redev. Auth	747-0010
9.	John J. Schmidt	DHEC	803-896-4216
10.	Harold Seabrook	SCDHEC	803-896-4120
11.	Art Braswell	SCDHEC-SW	803-896-4202
12.	Daryle Fontenot	Southern Division	743-9985 x15 803 820-5607
13.	Tony Hunt	Southern Division	803-820-5525
14.	Gabriel L. Magwood	Southern Division	803-820-7307
15.	Wayne Cotton	Southern Division	803-820-7325



ND4/819-300/F2-1

Figure 2-1. Soil boring/monitoring well location map.



ENVIRONMENTAL BASELINE SURVEY
NAVAL BASE CHARLESTON

FIGURE 5-5A
CHICORA TANK FARM
RESOURCE MAP
USTs, ASTs

DWG DATE: 04/26/94 | DWG NAME: 760CHIC4