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REGARDING SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL  
CONTROL APPROVAL OF FINAL ASSESSMENT REPORT DATED 01 OCTOBER 1999  
(ZONE G SITE 18) (BRISTOL TO MAGWOOD) CNC CHARLESTON SC  
11/19/1999  
SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL



19 November 1999

2600 Bull Street  
Columbia, SC 29201-1708

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North Charleston, SC 29419-9010

William M. Hull, Jr., MD  
Vice Chairman

Attention: Mr. Gabriel Magwood

Roger Leaks, Jr.  
Secretary

Re: Final Assessment Report dated 1 October 1999  
Zone G/Site 18-Fuel Distribution System (Site Identification # 01188)  
Charleston Naval Complex/Charleston Naval Base  
Charleston, SC  
Charleston County

Mark B. Kent

Cyndi C. Mosteller

Brian K. Smith

Rodney L. Grandy

Dear Mr. Magwood:

The author has completed technical review of the referenced document. As submitted, the report provides a narrative describing previous assessment activities and analytical results from additional sampling conducted to determine the environmental fate of suspected contamination at the subject property. The analytical results provided indicate that reportable concentrations of BTEX and PAH compounds were not detected above established method detection limits in soil and groundwater samples obtained at the subject site. Based on the analytical results presented and description of site specific geology/hydrogeology, potential releases, if any, from previous activities at the subject site do not appear to present a significant threat to human health and/or the environment at the present time. In this regard, the employed assessment activities and sampling results appear to indicate that no additional endeavors for remedial actions and/or contaminant characterization is warranted for the FDS Site 18 area at this time.

With consideration to the above comments, the Department has reviewed the referenced environmental data. Based on the information and analytical data submitted, the Department recognizes that the Department of the Navy and Charleston Naval Complex has adequately addressed the known environmental contamination identified on the property to date in accordance with the approved scope of work. Please note, this statement pertains only to the portion of the site addressed in the referenced report and does not apply to other areas of the site and/or any other potential regulatory violations. Further, the Department retains the right to request further investigation if deemed necessary.



ENSAFE INC.

ENVIRONMENTAL AND MANAGEMENT CONSULTANTS

Li 10.17.99  
LO 11.19.99

201 North Palafox Street, Suite 200 • Pensacola, FL 32501 • Telephone 850-434-2230 • Facsimile 850-434-2288 • www.ensafe.com

NFA - appears O.K. ✓

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OCT 6 1999

October 1, 1999

Water Monitoring, Assessment &  
Protection Division

Mr. Paul Bristol  
South Carolina Department of Health and Environmental Control  
Groundwater Quality Section  
Bureau of Water  
2600 Bull Street  
Columbia, SC 29201

**RE: Fuel Distribution System, Area 18, Charleston Naval Complex,  
South Carolina (SCDHEC No. 01188)**

Dear Mr. Bristol:

EnSafe is please to submit, on behalf of the U.S. Navy, Southern Division Naval Facilities Engineering Command, two copies of the Letter Report for SCDHEC petroleum site number 01188. This submittal incorporates the results of follow-on investigative activities performed in response to SCDHEC comments concerning Area 18.

Should you have any questions or concerns regarding this submittal, please contact me.

Sincerely,

ENSAFE INC.

Craig R. Smith

Attachment

cc: T. Haverkost, EnSafe - Charleston  
0144 File

## **Area 18**

(SCDHEC No. 01188)

### **Background**

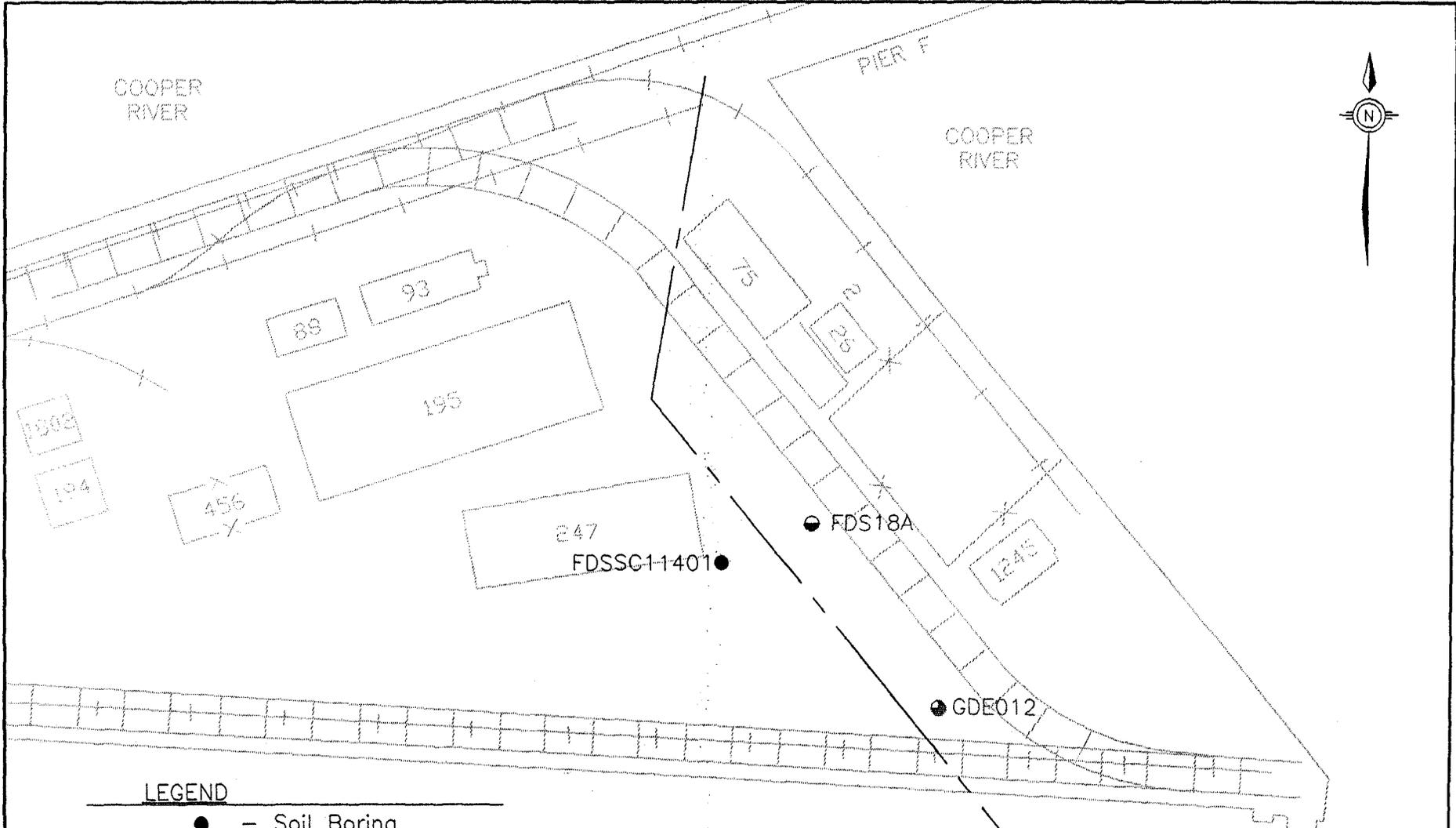
Area 18 of the Fuel Distribution System (FDS) is associated with Phase I soil sample FDSSC11401, which exhibited total petroleum hydrocarbons-diesel range organics of 366 milligrams per kilogram (mg/kg), which prompted Phase II soil and groundwater sampling within Area 18. Phase II soil sampling revealed that no risk-based screening levels (RBSLs) were exceeded. Phase II also included installation and sampling of monitoring well FDS18A. Groundwater analytical results identified no exceedances of RBSL chemicals of concern. The only constituent of interest at Area 18 was pentachlorophenol (PCP), which was detected above its USEPA tap water risk-based concentration (RBC) at FDS18A during the second sampling event only (*Contamination Assessment Report* [CAR], EnSafe 1998). Figure 1 shows the sample locations at Area 18.

### **Follow-on Activities**

Because no petroleum chemicals of concern were exceeded at monitoring well FDS18A or in the soil sample FDSSC11401, the CAR recommended no further action for soil and groundwater at Area 18. The South Carolina Department of Health and Environmental Control recommended resampling of FDS18A for semi-volatile organic compounds (SVOCs) including PCP. This sampling effort was completed in March 1999.

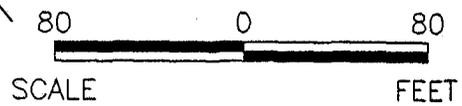
### **Results**

Monitoring well FDS18A was resampled in March 1999 for SVOCs and PCP. No organic compounds were detected in this sample. Attachment A contains the analytical results from the post-CAR sampling.



**LEGEND**

- - Soil Boring
- - Shallow Monitoring Well
- ⊙ - Grid Based Shallow Monitoring Well
- x-x-x-x- - Fence
- |-|-|-|- - Railroad
- - - - - Fuel Line



FUEL DISTRIBUTION SYSTEM  
LETTER REPORT  
CHARLESTON NAVAL COMPLEX  
CHARLESTON, S.C.

FIGURE 1  
AREA 18  
SAMPLE LOCATIONS

**Conclusions and Recommendations**

Because no soil or groundwater RBSLs were exceeded at Area 18 and PCP was not detected in the follow-on groundwater sample, no further action is recommended for soil and groundwater at Area 18.

*Area 18, Fuel Distribution System  
Charleston Naval Complex  
October 1999*

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**Attachment A  
Analytical Data**

CHARLESTON CTO-0144 FUEL DISTRIBUTION  
POST CAR GROUNDWATER SAMPLING  
AREA 18

SVOA+PCP		SAMPLE ID ----->	FDS-G-W18A-03				
		ORIGINAL ID ----->	FDSGW18A03				
		LAB SAMPLE ID ---->	37648.05				
		ID FROM REPORT -->	FDSGW18A03				
		SAMPLE DATE ----->	03/05/99				
		DATE EXTRACTED -->	03/08/99				
		DATE ANALYZED ---->	03/15/99				
		MATRIX ----->	Water				
		UNITS ----->	UG/L				
CAS #	Parameter	37648	VAL				
91-20-3	Naphthalene	10.	U				
56-55-3	Benzo(a)anthracene	10.	U				
218-01-9	Chrysene	10.	U				
205-99-2	Benzo(b)fluoranthene	10.	U				
207-08-9	Benzo(k)fluoranthene	10.	U				
87-86-5	Pentachlorophenol	25.	U				

# 01188

AREA 18

**Attachment A  
Analytical Data**

CHARLESTON CTO-0144 FUEL DISTRIBUTION  
POST-CAR GROUNDWATER SAMPLING  
AREA 18

PCP

SVOA+PCP

SAMPLE ID -----> FDS-G-W18A-03  
ORIGINAL ID -----> FDSGW18A03  
LAB SAMPLE ID ----> 37648.05  
ID FROM REPORT ---> FDSGW18A03  
SAMPLE DATE -----> 03/05/99  
DATE EXTRACTED ---> 03/08/99  
DATE ANALYZED ----> 03/15/99  
MATRIX -----> Water  
UNITS -----> UG/L

CAS # Pa

CAS # Parameter 37648 VAL

08-96-8	Ac	91-20-3	Naphthalene	10.	U
06-20-2	2,	56-55-3	Benzo(a)anthracene	10.	U
09-09-2	3-	218-01-9	Chrysene	10.	U
03-32-9	Ac	205-99-2	Benzo(b)fluoranthene	10.	U
01-14-2	2,	207-08-9	Benzo(k)fluoranthene	10.	U
01-28-5	2,	87-86-5	Pentachlorophenol	25.	U
00-02-7	4-	108-95-2	Phenol	10.	U
02-64-9	Di	111-44-4	bis(2-Chloroethyl)ether	10.	U
04-66-2	Di	95-57-8	2-Chlorophenol	10.	U
05-72-3	4-	541-73-1	1,3-Dichlorobenzene	10.	U
06-73-7	Fl	106-46-7	1,4-Dichlorobenzene	10.	U
00-01-6	4-	100-51-6	Benzyl alcohol	10.	U
04-52-1	2-	95-50-1	1,2-Dichlorobenzene	10.	U
06-30-6	N-	95-48-7	2-Methylphenol (o-Cresol)	10.	U
01-55-3	4-	108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U
03-74-1	He	106-44-5	4-Methylphenol (p-Cresol)	10.	U
05-01-8	Ph	621-64-7	N-Nitroso-di-n-propylamine	10.	U
00-12-7	An	67-72-1	Hexachloroethane	10.	U
04-74-2	Di	98-95-3	Nitrobenzene	10.	U
06-44-0	Fl	78-59-1	Isophorone	10.	U
09-00-0	Py	88-75-5	2-Nitrophenol	10.	U
06-68-7	Bu	105-67-9	2,4-Dimethylphenol	10.	U
08-94-1	3,	65-85-0	Benzoic acid	25.	U
08-81-7	bi	111-91-1	bis(2-Chloroethoxy)methane	10.	U
08-84-0	Di	120-83-2	2,4-Dichlorophenol	10.	U
08-32-8	Be	120-82-1	1,2,4-Trichlorobenzene	10.	U
08-39-5	In	106-47-8	4-Chloroaniline	10.	U
08-70-3	Di	87-68-3	Hexachlorobutadiene	10.	U
08-24-2	Be	59-50-7	4-Chloro-3-methylphenol	10.	U
		91-57-6	2-Methylnaphthalene	10.	U
		77-47-4	Hexachlorocyclopentadiene	10.	U
		88-06-2	2,4,6-Trichlorophenol	10.	U
		95-95-4	2,4,5-Trichlorophenol	25.	U
		91-58-7	2-Chloronaphthalene	10.	U
		88-74-4	2-Nitroaniline	25.	U
		131-11-3	Dimethyl phthalate	10.	U

CHARLESTON CTO-0144 FUEL DISTRIBUTION  
POST-CAR GROUNDWATER SAMPLING  
AREA 18

CAS #	Parameter	37648	VAL				
SVOA+PCP		SAMPLE ID -----> FDS-G-W18A-03 ORIGINAL ID -----> FDSGW18A03 LAB SAMPLE ID ----> 37648.05 ID FROM REPORT ---> FDSGW18A03 SAMPLE DATE -----> 03/05/99 DATE EXTRACTED ---> 03/08/99 DATE ANALYZED ---> 03/15/99 MATRIX -----> Water UNITS -----> UG/L					
208-96-8	Acenaphthylene	10.	U				
606-20-2	2,6-Dinitrotoluene	10.	U				
99-09-2	3-Nitroaniline	25.	U				
83-32-9	Acenaphthene	10.	U				
121-14-2	2,4-Dinitrotoluene	10.	U				
51-28-5	2,4-Dinitrophenol	25.	U				
100-02-7	4-Nitrophenol	25.	U				
132-64-9	Dibenzofuran	10.	U				
84-66-2	Diethylphthalate	10.	U				
7005-72-3	4-Chlorophenylphenylether	10.	U				
86-73-7	Fluorene	10.	U				
100-01-6	4-Nitroaniline	25.	U				
534-52-1	2-Methyl-4,6-Dinitrophenol	25.	U				
86-30-6	N-Nitrosodiphenylamine	10.	U				
101-55-3	4-Bromophenyl-phenylether	10.	U				
118-74-1	Hexachlorobenzene	10.	U				
85-01-8	Phenanthrene	10.	U				
120-12-7	Anthracene	10.	U				
84-74-2	Di-n-butylphthalate	10.	U				
206-44-0	Fluoranthene	10.	U				
129-00-0	Pyrene	10.	U				
85-68-7	Butylbenzylphthalate	10.	U				
91-94-1	3,3'-Dichlorobenzidine	20.	U				
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10.	U				
117-84-0	Di-n-octyl phthalate	10.	U				
50-32-8	Benzo(a)pyrene	10.	U				
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U				
53-70-3	Dibenz(a,h)anthracene	10.	U				
191-24-2	Benzo(g,h,i)perylene	10.	U				



16 November 1998

2600 Bull Street  
Columbia, SC 29201-1708

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Rodney L. Grandy

Department of the Navy  
Southern Division NFEC  
P.O. Box 190010  
North Charleston, SC 29419-9010  
Attention: Mr. Gabriel Magwood

Re: Environmental Assessment Report dated 10 September 1998  
Zone G/Area 18 (Site Identification # 01188)  
Fuel Distribution System  
Charleston Naval Complex/Charleston Naval Base  
Charleston, SC  
Charleston County

Dear Mr. Magwood:

The author has completed technical review of the referenced document. As submitted, the report provides a narrative describing environmental assessment activities and analytical results of soil and groundwater sampling conducted to determine if releases have occurred as a result of operation of the referenced piping system. The results presented indicate reportable concentrations of PAH (polynuclear aromatic hydrocarbon) compounds were detected in groundwater and soil grab samples obtained at the referenced site. The reported concentrations do not exceed levels proposed in the SCAP (Soil Corrective Action Plan, amended July 1997). However, the compound pentachlorophenol was detected in groundwater at a level above the proposed RBC (risk-based concentration).

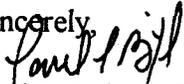
With consideration to the above comments, the results presented by the assessment report appear to indicate that additional endeavors for remedial action and/or contaminant characterization are warranted at the referenced site. In this regard, the author does not concur with conclusions and recommendations as presented in the referenced report. It appears appropriate to resample site monitoring wells to verify the detection and concentration of the identified compound (pentachlorophenol).

Please submit a schedule for completion of the above activity to my attention by 2 January 1999.

Charleston Naval Complex/Charleston Naval Base  
16 November 1998  
page 2

Should you have any questions please contact me at (803) 734-5328.

Sincerely,



Paul L. Bristol, Hydrogeologist  
Groundwater Quality Section  
Bureau of Water

cc: Trident District EQC