

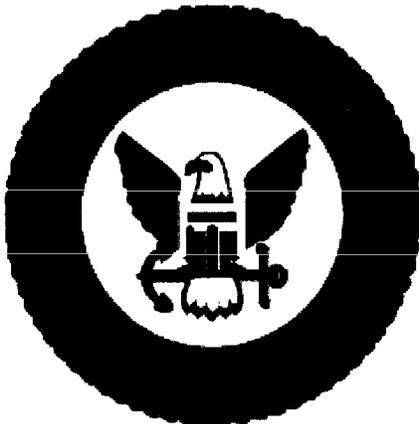
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COMPLETION REPORT PROCESS CLOSURE FOR SOLID WASTE MANAGEMENT UNIT 37  
(SWMU 37) DYE TEST CROSS CONNECT RESOLUTION IN BUILDINGS 3, 9 AND 68 CNC  
CHARLESTON SC  
11/6/1998  
CHARLESTON ENVIRONMENTAL DETACHMENT



## **COMPLETION REPORT**

**PROCESS CLOSURE FOR SWMU 37 DYE TEST  
CROSS-CONNECT RESOLUTION IN BUILDINGS  
3, 9, and 68  
NAVAL BASE CHARLESTON  
CHARLESTON, SC**



Prepared for:

**DEPARTMENT OF THE NAVY  
SOUTHERN DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
CHARLESTON SC**



Prepared by:

**Supervisor of Shipbuilding, Conversion and Repair,  
USN, (SUPSHIP) Portsmouth Va.,  
Environmental Detachment Charleston, S.C.  
1899 North Hobson Ave.  
North Charleston, SC 29405-2106**

November 6, 1998



**DEPARTMENT OF THE NAVY**  
SUPERVISOR OF SHIPBUILDING, CONVERSION AND REPAIR, USN  
PORTSMOUTH, VIRGINIA, ENVIRONMENTAL DETACHMENT CHARLESTON  
1899 NORTH HOBSON AVENUE, BUILDING 30  
NORTH CHARLESTON, SOUTH CAROLINA 29405-2106

IN REPLY REFER TO:

Ser 936  
5 Nov 1998

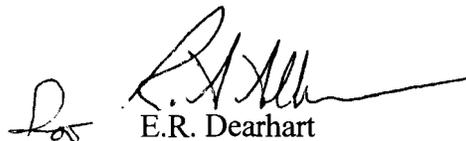
MEMORANDUM

From: Director, Supervisor of Shipbuilding, Conversion and Repair, USN, Portsmouth, VA, Environmental Detachment (DET), Charleston, SC  
To: Commanding Officer, Southern Division Naval Facilities Engineering Command (Code 18B, Attn. Hayes Patterson)

Subj: PROCESS CLOSURE COMPLETION REPORT FOR SWMU-37 DYE TEST CROSS-CONNECT RESOLUTION IN BUILDINGS 3, 9, and 68, PROJECT NUMBER C98017

Encl: Process Closure Completion Report for Resolution of Cross-connects in Buildings 3, 9, and 68, Naval Base Charleston, Charleston SC

1. The Environmental Detachment (DET), Charleston has finished all actions required to eliminate subject cross-connects and is issuing this report as complete
2. Inquires concerning this report can be addressed to Chris Militzer @ 743-6777 ext. 225 or Jed Heames @ 743-6777 ext. 123.

  
E.R. Dearhart

Copy to:  
Ensafe, Inc. (Todd Haverkost)

# COMPETION REPORT

## PROCESS CLOSURE FOR SWMU-37 DYE TEST CROSS-CONNECT RESOLUTION IN BUILDINGS 3, 9 and 68

Naval Base Charleston  
Charleston, South Carolina

Engineering Branch Head:

J.D. Chapman AR1116

Date:

11/6/98

Interim Measures Team Leader:

J. M. [Signature]

Date:

11-6-98

Prepared By:

Chris [Signature]

Date:

11-5-98

SURVEY PERFORMED BY:  
ENVIRONMENTAL DETACHMENT CHARLESTON  
199500 THE HOBSON AVENUE  
CORPUS CHRISTI CHARLESTON SC 29405



## **COMPLETION REPORT**

**PROCESS CLOSURE FOR SWMU 37 DYE TEST  
CROSS-CONNECT RESOLUTION IN BUILDINGS  
3, 9, and 68  
NAVAL BASE CHARLESTON  
CHARLESTON, SC**



Prepared for:

**DEPARTMENT OF THE NAVY  
SOUTHERN DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
CHARLESTON SC**



Prepared by:

**Supervisor of Shipbuilding, Conversion and Repair,  
USN, (SUPSHIP) Portsmouth Va.,  
Environmental Detachment Charleston, S.C.  
1899 North Hobson Ave.  
North Charleston, SC 29405-2106**

November 5, 1998

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## ACRONYM LIST

AOC	Area of Concern
BEQ	Benzo(a)pyrene Equivalents
CNCRA	Charleston Naval Complex Redevelopment Authority
CMS	Corrective Measure Study
COPC	Constituents of Potential Concern
DERP	Defense Environmental Restoration Program
DON	Department of the Navy
DQO	Data Quality Objective
EOX	Extractable Organic Halides
EPA	U.S. Environmental Protection Agency
IM	Interim Measure
IR	Installation Restoration
RBC	Risk Based Concentration
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
SARA	Superfund Amendments and Restoration Act
SCDHEC	South Carolina Department of Health and Environmental Control
SOUTHDIV	Southern Division Naval Facilities Engineering Command
SPORTENVDETCHASN	Supervisor of Shipbuilding, Conversion and Repair, Portsmouth VA, Environmental Detachment Charleston
SWMU	Solid Waste Management Unit

## 1. INTRODUCTION

**1.1 INSTALLATION RESTORATION PROGRAM.** The purpose of the Department of the Navy (DON) Installation Restoration (IR) Program is to identify, assess, characterize, and cleanup or control contamination from past hazardous waste disposal operations and hazardous material spills at Navy and Marine Corps activities. The Defense Environment Restorations Program (DERP) is codified in the Superfund Amendments and Reauthorization Act (SARA) Section 211 (10 USC 2701). The IR Program is a component of the DERP.

**1.1.1 Naval Base Charleston IR Program.** At Naval Base Charleston, a Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) was prepared which divided the Naval Base into zones and identified Solid Waste Management Units (SWMU) and Areas of Concern (AOC) within each zone. The RFA evaluated each SWMU and AOC and determined which sites required further investigation. Based on the RFA, a RCRA Facility Investigation (RFI) work plan has been or is being prepared for each zone containing SWMUs and AOCs requiring further investigation. On completion of the RFI for each zone, a RFI report will be prepared for that zone. The RFI reports will identify SWMUs and AOCs containing hazardous wastes requiring remediation. Eventually, Corrective Measures Studies (CMS) will be prepared to determine the best means of remediating the site.

**1.2 SOLID WASTE MANAGEMENT UNIT 37.** SWMU 37 specifies dye injection testing for cross-connects in sanitary sewer lines associated with industrial sources listed in Appendix C of Zone L RFI Work Plan. A cross-connect is the improper connection of the sanitary sewer, including gravity pipe lines, manholes and latrines to the storm sewer system. Appendix C, industrial sources, lists current and former facilities where the potential of a release of hazardous materials to the environment exists. The focus of the investigation was to identify cross-connects with the sanitary sewer system downstream of the listed industrial sources which result in improper discharges of wastes to the

surface water bodies such as the Cooper River. Eighteen facilities were dye injection tested. Cross-connects discovered are listed in the table below.

TABLE 1 SWMU-37 DYE TEST CROSS-CONNECT LOCATIONS

Building Number	Building Name	Outfall of Cross-connect	Location of Cross-connects
1119	FORMER LOCATION GALVANIZING SHOP, 1941	27	Two restroom facilities
3	INSIDE MACHINE SHOP, 1906	23	Two floor drains in south west corner shop room
68	FORMER BATTERY ACID BUILDING, 1942	41	All floor drains (28 total)
69	STOREHOUSE, 1980	38	Two floor drains and eye wash drain near and in Mechanical room
13	QA OFFICE AND LABORTORY, 1906	30	All laboratory sinks on first and second floors including the annex, 20 total and two floor drains in annex
177	ELECTRIC AND ELECTRONICS SHOP, 1955	30	Two floor drains and two sump drains in west annex
9	TEMPORARY SERVICE SHOP AND FOUNDRY, 1906	30	Large restroom facility in north wing , all cooling system drains, 10 total in south wing foundry, sump drain and two shop sinks

**1.3 BUILDING 3, 9, and 68 CROSS-CONNECT RESOLUTION.** Southern Division Naval Facilities Engineering Command (SOUTHDIV) provided funding and direction to the Supervisor of Shipbuilding, Conversion and Repair, Portsmouth VA, Environmental Detachment Charleston (SPORTENVDETCASN) to perform a process closure to eliminate certain individual cross-connects. This process closure provides resolution to all cross-connects in Buildings 3, 68 and all in Building 9 except for the restroom facility in the north wing. The restroom facility along with the other cross-connects in buildings listed above that are not corrected in this report will be addressed by SOUTHDIV at a later date.

## 2. PROCESS CLOSURE EXECUTION

### 2.1 CROSS-CONNECT RESOLUTION.

**2.1.1 Eliminate Cross-Connects in Machine Shop Building 3.** Two cross-connected floor drains existed in a small tool room in the southwest corner of Building 3. Each floor drain was plugged and filled with concrete to prevent its further use.

**2.1.2 Eliminate Cross-Connects in Foundry Building 9.** In the foundry wing and mid section area, two sumps with pipe outlets to the storm system were filled with rock and covered with concrete. Six funnel drains along north wall were cut flush at the floor and the remaining floor drain pipes plugged and filled with concrete. An eye wash station drain pipe was disconnected at the storm drain tee and a threaded cap was installed and brazed. In the mid-section bay area, piping at the floor from a shop sink was broken and the floor drain pipe plugged and filled with concrete.

**2.1.3 Eliminate Cross-Connects in Battery Acid Building 68.** Approximately 600' of cast iron floor drain piping in the crawl space under the Battery Acid Charging Room was cut, removed and recycled. Lead poured socket pipe joints with asbestos gaskets were cut off from the drain pipe and disposed as hazardous waste. See Appendix A, page A-3 for an example of the joints. Approximately 240' of PVC piping under the eastside loading dock was removed and disposed as construction debris. Twenty-inch piping under the tank room was plugged and twenty-inch piping underground between the building and accumulation tank was removed and recycled. Twenty floor drains, six funnel drains and two sump drains were filled with concrete to prevent their use. Six lead funnel drain pipes were cut out and disposed of as recyclable material.

### 2.2 WASTE MANAGEMENT

Eight drums of lead and asbestos cast iron pipe joints with a total weight of 4335 lbs. were disposed of as hazardous waste at a Class C landfill. See Appendix B for the

shipping manifest. The total volume of asbestos gaskets disposed was 2.2 cubic feet. All cast iron and steel piping as well as lead funnel drains were recycled.

### **3. PROCEDURE CLOSURE COMPLETION**

All Cross-connects in the Battery Acid Building 68 were successfully eliminated. See Appendix A, page A-4 and A-5, for examples of work completed. In the machine shop Building 3 and foundry Building 9, the designated cross-connects were successfully eliminated. See Appendix A, page A- 6 and A-7 for examples of work accomplished.

**APPENDIX A**

**PHOTOGRAPHS**

**Building 68 Cross-connects**

Typical floor drains



Typical Lead Piped Funnel drain



Acid Tank 000060



Pipe joint with exposed asbestos and lead soldier joint



## Building 68 Cross-connect Resolutions

### Concrete filled drains



Removed lead funnel drain pipe



Excavated drain pipe to tank



## Building 9 Cross-connect Resolution

Pre-concrete pour of foundry floor sump with gravel bed added



Drain pipe cut and filled with concrete



## Building 3 Cross-connect Resolution

Concrete filled drains



# **APPENDIX B**

## **SHIPPING MANIFEST**

**UNIFORM HAZARDOUS WASTE MANIFEST**

1 Generator's US EPA ID No **SC0170022560** Manifest Document No. **13341** 2 Page 1 of 1 Information in the shaded areas is not required by Federal law.

3 Generator's Name and Mailing Address **Charleston Naval Complex 1690 Turnbull, STE NH-51 N. Charleston SC 29405** A. State Manifest Document Number **SC 13341**

4 Generator's Phone **(843-748-0085 EXT. 33)** B. State Generator's ID **RICK NIELSON**

5 Transporter 1 Company Name **Robbie D. Wood, Inc.** 6. US EPA ID Number **LA T D O 6 7 1 3 8 8 9 1** C. State Transporter's ID **205-744-8440**

7 Transporter 2 Company Name  8. US EPA ID Number  D. Transporter's Phone

9 Designated Facility Name and Site Address **Chemical Conservation Corp. 10100 Rocket Blvd. Orlando, FL 32824** 10. US EPA ID Number **FL D 9 8 0 5 5 9 7 2 8** E. State Transporter's ID

F. Transporter's Phone  G. State Facility's ID

H. Facility's Phone **800-345-6393**

11 US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	12. Containers		13 Total Quantity	14. Unit Wt/Vol	1. Waste No.
	No.	Type			
<b>X</b> <b>RQ, Hazardous Waste Solid, n.o.s. (Lead/Asbestos) B, NA3077, PG III (D008)</b>	<b>008</b>	<b>DM</b>	<b>04335</b>	<b>P</b>	<b>D008</b>
<b>a</b>					
<b>b</b>					
<b>c</b>					
<b>d</b>					

J. Additional Descriptions for Materials Listed Above

**a APP# DR# 9965 ERG# 171 B-55 9404**

**b APP# ERG#**

**c APP# ERG#**

**d APP# ERG#**

K. Handling Codes for Wastes Listed Above

**a S01**

**b**

**c**

**d**

15. Special Handling Instructions and Additional Information

Mail signed **ORIGINALS** to Generator, Mail **COPIES** of signed-off Manifest, Invoice and C.O.D. to CSI Environmental, Inc. 5778 W 74th St, Indianapolis, IN 46278.

**CSI 24 Hour Emergency (843) 686-7058** **D.O. 11/6/98**

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. **And the laws of the State of South Carolina.**

If I am a large quantity generator I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good-faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name **RICHARD G. NIELSON** Signature **Richard G. Nielson** Month Day Year **11/01/1998**

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name **Daniel W. Stevens** Signature **Daniel W. Stevens** Month Day Year **11/01/1998**

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name  Signature  Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name **Jamice Joseph** Signature **Jamice Joseph** Month Day Year **11/10/1998**

**ORIGINAL-RETURN TO GENERATOR**

10/10/2000

Action Items -

Monitoring wells - ECD end of October

Signage - On agenda

Facility 123 - Pending

RFA information for 6 sites and recommend where we stand.

\*

→ 30 days to submit

→ Get w/ Tom

\*

Point of Contact letter

\*

Get - closure of OWS and waste oil tank @ Summit 161.  
by the 20th

FOST example. End of the month.

\*

Provide some estimates on volume of soil that ~~may~~ we expect  
in utility excavations etc.

~~Sub~~ CLOSE OUT ISSUES

- RFI Completion

STATUS → DONE

- OWS

- Inorganic in GW

- Zone L

- Zone J

- Land Use Controls

- Have they been established

- Do they need to be established.

Railroads (504)

10/11/00

Stacey French - DOD Coordinator

### Zone J Scooping

- Package sent out a few weeks ago, clarified the combination of 6 scenarios to 3.
- Scenario 1a off us to waste, 1b is Contaminated Soil.
- Zone E 177, 2' x 4' basin w/ waste (stormwater basin)

### Screening Values

- Surface Soil

Organics Residential RBC

Inorganics: Pkg → 3 not criteria → Residential RBC

- Subsurface Soil: Surface - SSL

- Substrate Soil: Inorganics → Soil Residential RBC

- Stream Bed

Organics MCL → Typical RBC

Inorganics Pkg → MCL → typical

□ Some disagreement in screening values, need to get H. L. + Env. info together

Susan Byrne / Sites that have been NFA'd in permit may require re-opening.

See Para 2.2 of Scoping package

- If there is a net in the waterbody and sampling along a culvert indicates a source may be present. M. W. wants to

Keep the NFA sites as a possible ~~open~~ source if the data supports it

Process [Screen 3 needs to be expanded to deal with invertebrate analysis w/ NFA sites

Step 1 - initial analysis

Step 2 - invertebrate analysis



/ Bldg 225 / AOC 607 Update

Evening / Meeting with Bldg 225 occupants

- Day Care
- Elder Care
- 20-25 women w/ children

- occupied since 1997

- agreed to relocate, suitable, comparable.

Cost for relocation? Who bears this cost

Bob Schwartz - (has unit, Sr. [?])  
Wanted air samples -

Dean / Intention was to do air sampling for the RF1

Miner / Soil Gas + A. Sampling should be done immediately (within 60 days)

Modeling unit [?]

Coordinate w/ Bob Schwartz

Gang / Still continuing w/ 6 phase heating  
Will

Brief the Grants.

Need a good risk communicator. (Susanne Zook) Lil' Mood.

NEHCL  
Dean to call on Friday  
will know by next week

Sampling Plan w/in next two weeks.

Soil Gas really only provides info on transport pathway.

Public Relations w/in two weeks

10/12/00

### Inorganics in Groundwater -

Don/Suggs looking at general trends  
Normal conditions.

H<sub>2</sub>, TDS, suspended particulate, turbidity data (or sample volume)

### 2 phase approach

- Basin wide
- Specific site basis.

General agreement that evaluation of the data should be done on a basin wide scale and an argument can be made based on frequency of data, validation, [3] etc. This will be done to address the monitoring system + conclusions.

\* Target date - end of year. Need to provide that w/ all work done to date

### Schedule of activities

- IM GW report / in progress / end by October
- SWM 43 / ? to discuss internally
- Todd / Soil point may be below
- No sediment sample.

### AOC 699 discussion

- State is ~~not~~ going to require sampling of and sediment in certain basins.

\* Write a letter that delineates who is doing what  
? Ecological Risk Assessment  
Memo to go into the process - in name.

Bore L Investigation  
for SWM 43, AOC 699  
Strongy, Sauer.

FOSET

Draft comments from State by 13 Oct 20

Keith/Pursuing

\* Deed date for EDC Ph I

How is remedy incorporated at site.

---

Engineers working from area drawings

75% Expect all of the data by end of the week.  
Should have maps + data by mid next week.

SI A need.

---

Chicora Talk Farm —

---

FDA participation

Bldg 225

- Robert Ryan will be signing document to approve sub lease to Chas County by Johnson/Ediger - shows no current risk, Navy will need to disapprove

Address in such a way that the process.

Look @ IM and where this removed, specifics, etc.

Look @ Hobson drains etc.

No label plates, Cor. sig. plates.

\*

Provide info regarding the above.

State of permit mods

- State regs,

- Public comment period is 60 days

- of 2 mod., Navy holds Public hearing.

- DHEC will not issue NFA until public comment is finished.

- Δ in way LUCMP will be implemented. A policy memo will state that a LUCMP will be developed.

Parking lot.

Current field activities

- LBP

- Water levels

- Zone K off-site

- AOC 633 Steve Burdick, ... (896-4120)

Solid waste

\*

IMWP. Confirmation Sampling  
Have Todd Dale, present to PT.

PITS

Louise, Brian,

Mansur, Susan, Mike

F&F acq. send email to Mike, Susan P, Kevin.

Louise Palmer -

Brian Crawford -

Lpalmar@ch2m.com

704-329-0073 (296)

843-746-8882

bcrawfor@jajms.com

Agenda for next time

— Inorganics in Gen

— Bldg 177 info (T-j)

— Bldg 225 (update) (T-j et al)

— Talk about sequencing

—

Nov 13, 14, 15

Nov 19, 20, 21 TIE Workshop?  
DOE, F&E Facility

Tom revisited sites where these factors are not an issue  
How do we address these issues in a succinct way  
Not in C-1

Summ 43/Bldg 1628 Printing Office

- where available
- Haz waste stored inside.

\* Submit letter of OWS for official reference.  
"OWS Inventory"

Inorganics in C-1

- Ni, Cu
- Reg limits (Mg, Pb, Ni, Cu)
- Act > Reg limits

That isn't was found and reported in a report by metal lab? Yes.

M. Lin / Not completely available w/ grid samples used (for what?)

Rainwood - Agreed that only portion of AOC SD4 where X-ray operations took place need to be addressed.

Stam Sewer -

\* Get Hill react e-files if they don't have it already.

Wastewater is discharged to sewer line  
Photo processing effluent.

\* Verify where sample was taken

O/S sample junk. may be able to do

\*

Zone F (east of Hobson)

Agreed to characterize site in relation to industrial sites.

SWMU 39

Cms Toxicology Studies 10/5/00 - Schedule  
10/13/00 - Reality

Aoc 700 Im/Cms WP<sup>NFA</sup> 10/4/00 - Schedule  
10/19/00 - Reality

SWMU 9 Cms WP 10/20/00 -

SWMU 42 IM 11/17/00 -

MIP. Phase 2 WP + Phase 1 report will be revised  
Zone H RTC (Susan Byrd comments in two weeks)

Fuel farm @ Vassar + H&W.

Bldg 177

Chude Stotts - Elected, Sluag.

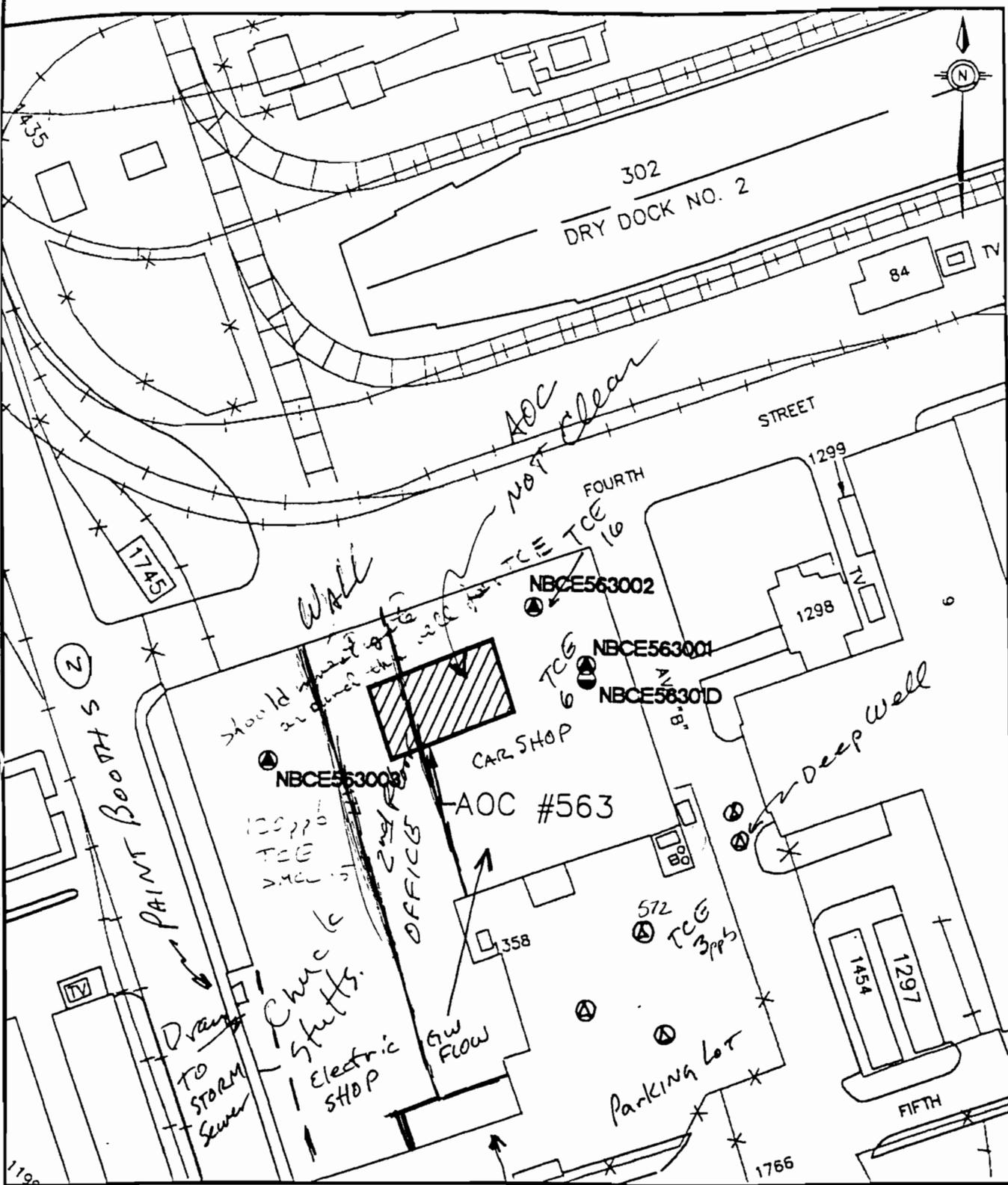
Started w/ Cosy + Arc Extension.

Looked @ Bldg 25, fuel paint spray booth + orator.

177 has similar vent. + orator.

Photos

- Saw where both paint spray,  
2nd booth open, vents, hung in corner. Waste is discharged thru drain.  
Drain goes to storm sewer. Chude Stotts said they were only recently utilized but they could not see.
- So far no clear source of chlorinated solvents
- 563003 cap broken, plastic lid being used
- Wash rack, grate over the floor,



**LEGEND**

- SOIL BORINGS
- ⊙ - CORE SAMPLES
- - DEEP MONITORING WELLS
- ⊕ - SHALLOW MONITORING WELLS
- ▲ - SEDIMENT SAMPLES
- ⊖ - THICKNESS SAMPLES
- ⊗ - WIPE SAMPLES
- ⊙ - SURFACE WATER SAMPLES

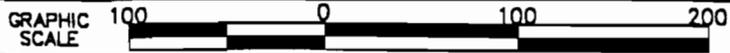
*WASH RACK?  
Waste?*



ZONE E  
RFI REPORT  
NAVAL BASE CHARLESTON  
CHARLESTON, S.C.

FIGURE 10.31.2  
MONITORING WELL LOCATIONS  
AOC #563  
LOCOMOTIVE HOUSE  
FORMER BUILDING 37

*Electrical SHOP*



DWG DATE: 09/02/97 DWG NAME: 10-31-2

563 - TCE ⊕ All 4 Quarters. >MCL