

PLW
Darryl DA
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T-6284/6
~~T-6283/3~~

6280
MAIN
MAR 10 1988

Mr. Preston Howard
Division of Environmental Management
NC Department of Natural Resources
and Community Development
Wilmington Regional Office
7225 Wrightsville Avenue
Wilmington, NC 28403-3696

Re: Effluent Toxicity
Hadnot Point WWTP - NC0063029
Camp Geiger WWTP - NC0062995
Tarawa Terrace WWTP - NC0063002
Camp Johnson WWTP - NC0063011

Dear Mr. Howard:

In an effort to reduce toxicity of the effluents at the subject facilities, the residual chlorine was lowered to 1.8 ppm and then to 0.5 ppm at the Hadnot Point, Camp Geiger, and Camp Johnson wastewater treatment facilities. The initial results of the lower chlorine residuals proved detrimental to other permit effluent requirements, and violations have consequently occurred. The Camp Johnson plant exceeded the BOD limit for the months of January and February, and the Hadnot Point plant exceeded the fecal coliform limit for February. Currently, the Camp Geiger plant is exceeding the ammonia discharge limit established by the recently issued permit. Also, the effluents at these facilities appear to be in noncompliance with the nontoxicity requirement. To reduce further violations the residual chlorine is being raised to 2.0 ppm at the Hadnot Point, Camp Geiger, and Camp Johnson plants, and the residual chlorine at the remaining plants will remain at 1.8 ppm.

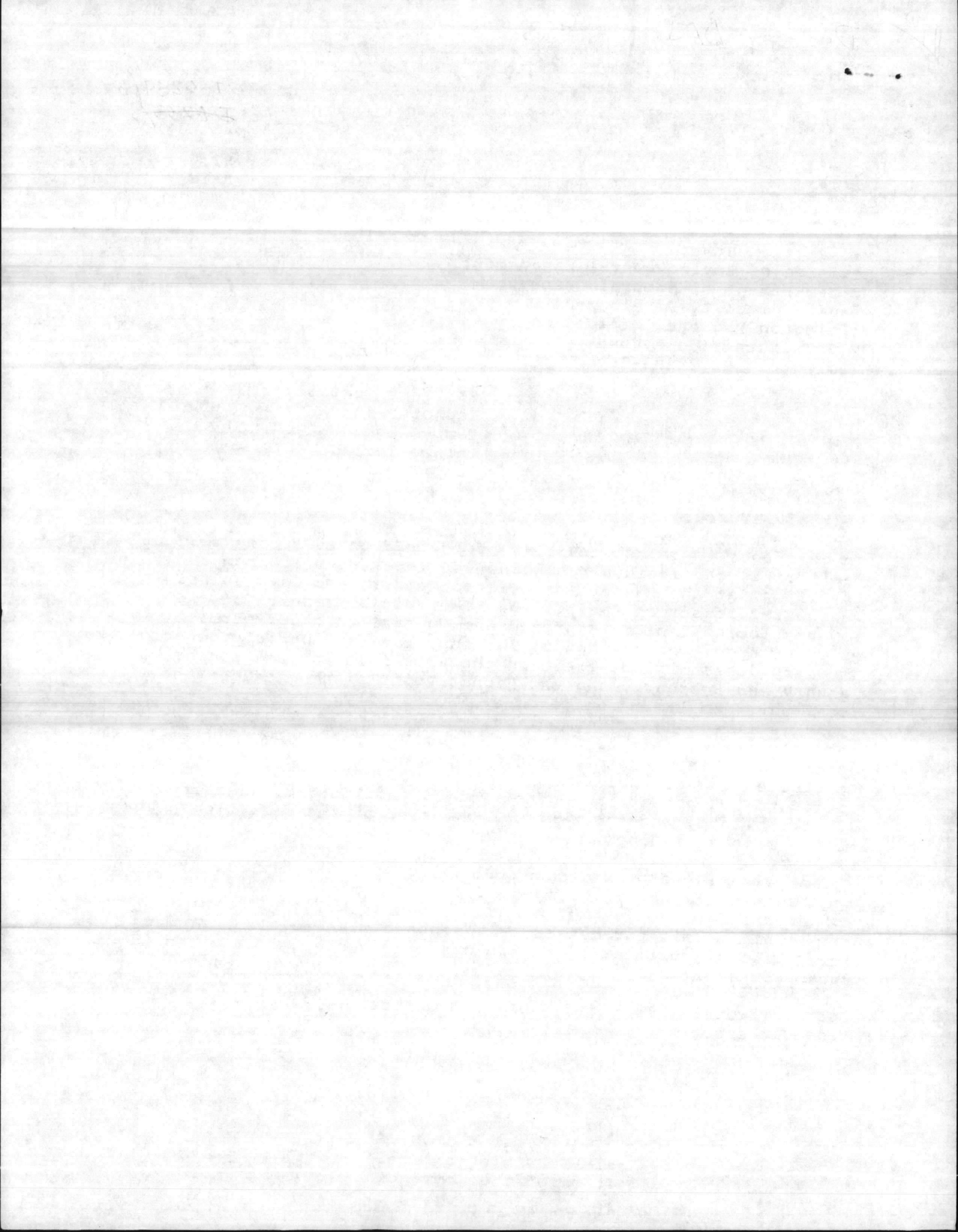
The elimination of toxic substances from the plant effluents requires additional investigation, experimentation, and testing to determine effective means and methods to bring effluents within all permit parameters. A proposed plan to eliminate toxicity will be forthcoming in the next few weeks and implemented upon your approval.

For additional information, please contact Mr. Carl Baker, Utilities Director, at (919) 451-5024.

Sincerely,

B. W. ELSTON
Deputy Assistant Chief of Staff, Facilities
By direction of the Commanding General

Writer / Typist C. Baker x5161 / R. Davis
Date Typed 2/18/88



21 Jan 88
PNAV 5216/144A (Rev. 8-81)
N 0107-LF-052-2320

FILE

DEPARTMENT OF THE NAVY
Memorandum

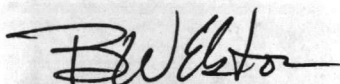
6280/2
FAC

DATE: JAN 21 1988
FROM: Assistant Chief of Staff, Facilities, Marine Corps Base, Camp Lejeune
TO: Director, Natural Resources and Environmental Affairs Division

SUBJECT: NPDES COMPLIANCE BIOASSAY INSPECTION REPORTS

Encl: (1) Div of Env Mgmt ltr dtd 22 Dec 87

1. Forwarded for preparation of a toxicity reduction plan and other action as required in the enclosure. Request you advise this office of action taken/planned to bring the discharges into compliance.


B. W. ELSTON
Acting

Copy to:
BMO



Elizabeth Bety

State of North Carolina
Department of Natural Resources and Community Development
Wilmington Regional Office

James G. Martin, Governor

S. Thomas Rhodes, Secretary

DIVISION OF ENVIRONMENTAL MANAGEMENT

December 22, 1987

Commanding General
United States Marine Corps
Camp Lejeune Marine Corps Base
Jacksonville, North Carolina 28542

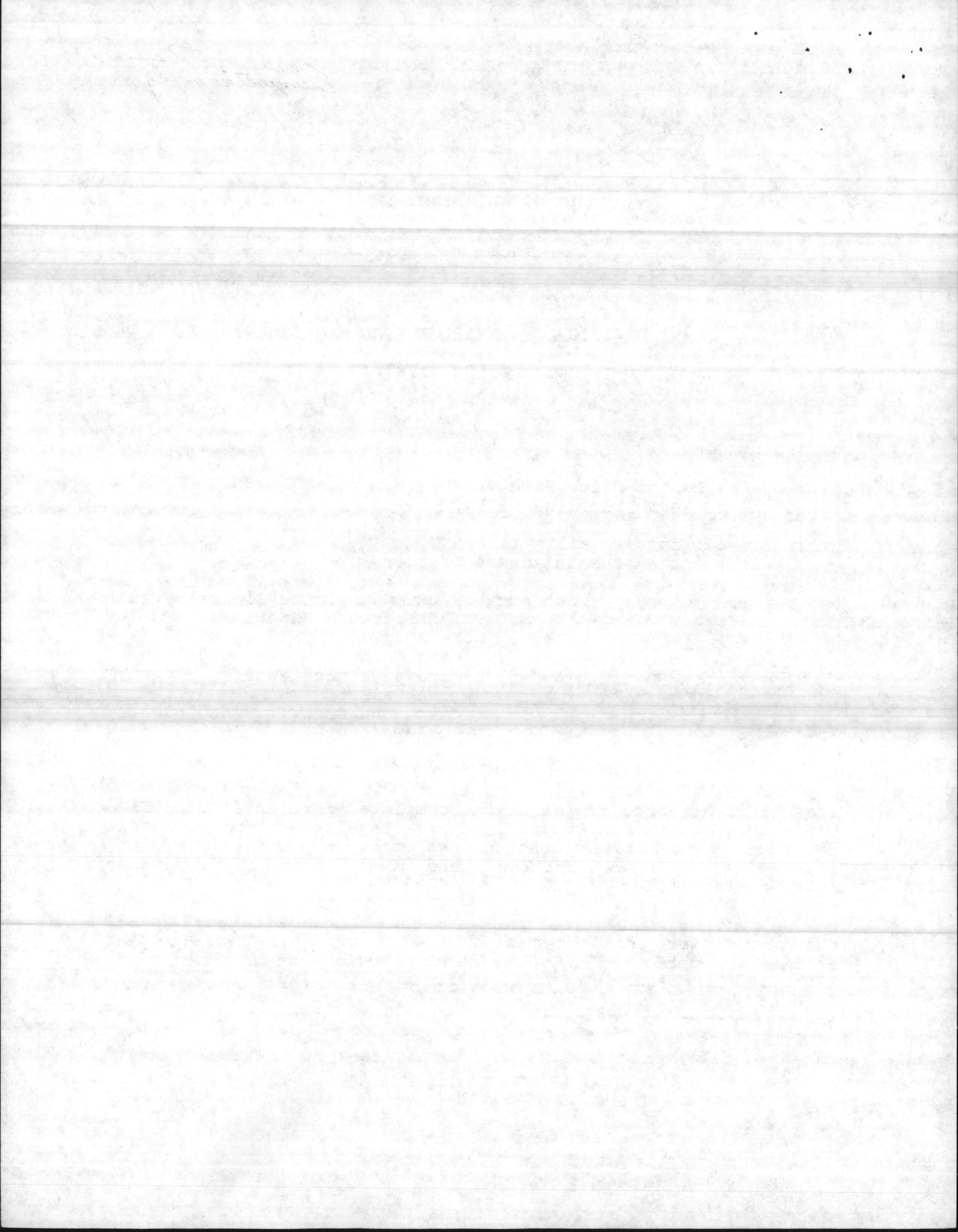
Attn: Mr. Clifford Powell
Assistant Base Maintenance Officer

Subject: NPDES Compliance Bioassay
Inspection Reports
Hadnot Point WWTP - NC0063029
Camp Geiger WWTP - NC0062995
Tarawa Terrace WWTP
NC0063002
Camp Johnson WWTP - NC0063011
Onslow County

Dear Sir:

Please find attached copies of the completed form entitled "NPDES Compliance Inspection Report". The attached reports summarize the findings of bioassay inspections conducted at Hadnot Point, Camp Geiger, Tarawa Terrace, and Camp Johnson wastewater treatment facilities on December 8, 1987.

On the date of inspection grab samples of the effluent at all four plants were collected at the effluent weir location and testing was performed by the Aquatic Toxicology Laboratory on 12/9/87. The results of the toxicity tests indicate that the effluent from each of the four plants caused 100% mortality to the test organisms (fathead minnows) used in the 24-hour test. By these test results it can be predicted that the effluent causes acutely toxic impacts within the zone of initial dilution



Page Two
Clifford Powell
December 22, 1987

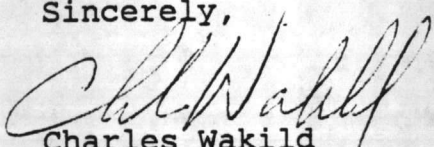
(close proximity of each outfall pipe). Residual chlorine was measured from each effluent sample as follows:

Tarawa Terrace	2.71 mg/l
Camp Johnson	4.64 mg/l
Hadnot Point	1.17 mg/l
Camp Geiger	1.85 mg/l

Excessive dosages of chlorine is a known toxicant to aquatic organisms. Information on file suggests that solutions containing 82-130 ppb of total residual chlorine is an acute LC50 value for fathead minnows. It is anticipated that the amount of residual chlorine in each of the samples contributed greatly to the toxicity if not the primary source of toxicity.

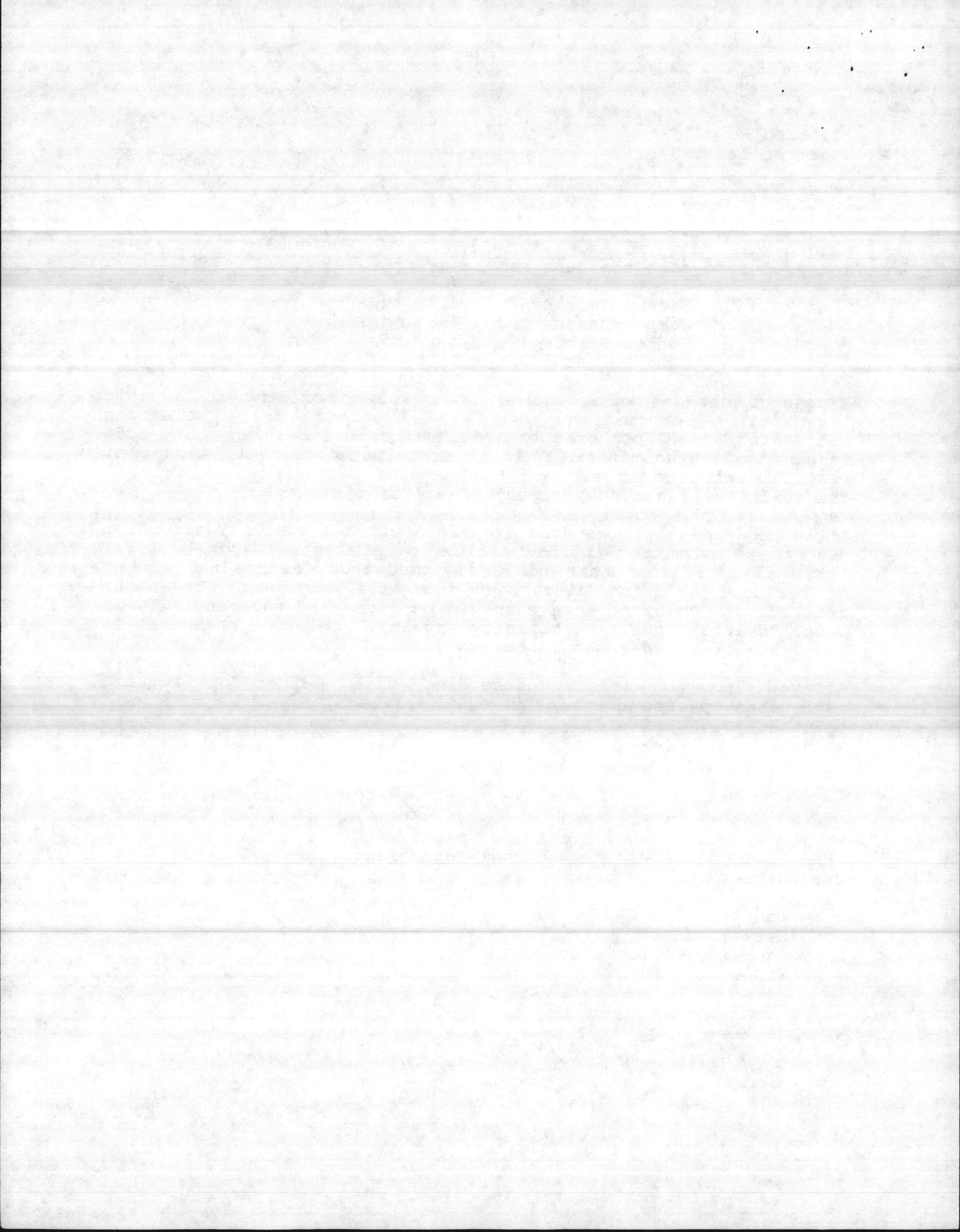
It is required that the Base prepare a written toxicity reduction plan to be submitted to this office no later than March 1, 1988. It is also required that the Base immediately reduce the amount of residual chlorine discharged from all wastewater treatment facilities. Chlorine dosage should be decreased substantially in order to attain positive toxicity results. Chlorine residuals in the range of .2 mg/l should be achieved.

If you have questions concerning this matter or require assistance, please contact Mr. Mike Williams, Mr. Preston Howard or me at (919) 256-4161.

Sincerely,

Charles Wakild
Regional Supervisor

CW:MFW:kc

cc: Dan Ahern, EPA
Steve Tedder
Facility Performance Unit
WiRO, CF



Division of Environmental Management

December 11, 1987

To: Preston Howard
Through: Ken Eagleson, *KWB*
From: Larry Ausley, *LA*
Subject: Results of Toxicity Tests of Tarawa Terrace (NC0063002), Camp Johnson (NC0063011), Camp Geiger (NC0062995), and Hadnot Point (NC0063029), Onslow County.

Acute PASS/FAIL 24 hr. aquatic toxicity tests were performed on samples of the above referenced discharges on December 9, 1987 using juvenile fathead minnows as the test organism. These samples were collected as grabs by Mike Williams on December 8, 1987. The acute Pass/Fail test (See attached method) is a newly adopted methodology that will be used for facilities with very low calculated instream waste concentrations (i.e. <0.1%), as was assumed in all of these instances due to their receiving streams being listed as "Tidal". This test is performed at a single 90% concentration with four replicates, controlled by four replicates, and is designed to test whether a discharge with eventually large dilution is predicted to cause environmental impact (e.g. fish kills) in an initial dilution zone.

All four of the samples tested caused complete mortality of the test organisms within 24 hours, with stress obvious within an hour of introduction. The total residual chlorine concentrations measured in the initial samples, as listed below with mortality, probably contributed greatly to the observed toxicity. Based on these results, it is predicted that all of these dischargers will have an acutely toxic impact on receiving stream populations inside of a zone of initial dilution.

	<u>Mortality(%)</u>	<u>Total Residual Chlorine(mg/l)</u>
Tarawa Terrace(001)	100	2.71
Camp Johnson(001)	100	4.64
Camp Geiger(001)	100	1.85
Hadnot Point(001)	100	1.17

If further information on these tests is required, please contact me at 733-2136.

~~CONFIDENTIAL~~

NPDES Compliance Inspection Report

Section A: National Data System Coding

Transaction Code: N NPDES NC0063011
Date: 87/12/08 Inspection Type: B Inspector: S
Facility Type: 2 Facility Evaluation Rating: 4
BI: D QA: N

Section B: Facility Data

Name and Location of Facility Inspected:

Montford Point - Camp Johnson

Entry Time: 10:00 am Exit Time/Date: 10:30-12/8/87

Permit Effective Date: 2/1/87 Permit Expiration Date: 1/31/92

Name(s), Title(s) of On-Site Representative(s):

Mack Davis, ORC

Phone Number: 451-5988

Name, Title and Address of Responsible Official:

Carl Baker, Utilities Director

Phone Number: 451-5024 Contacted: Yes

Section C: Areas Evaluated During Inspection

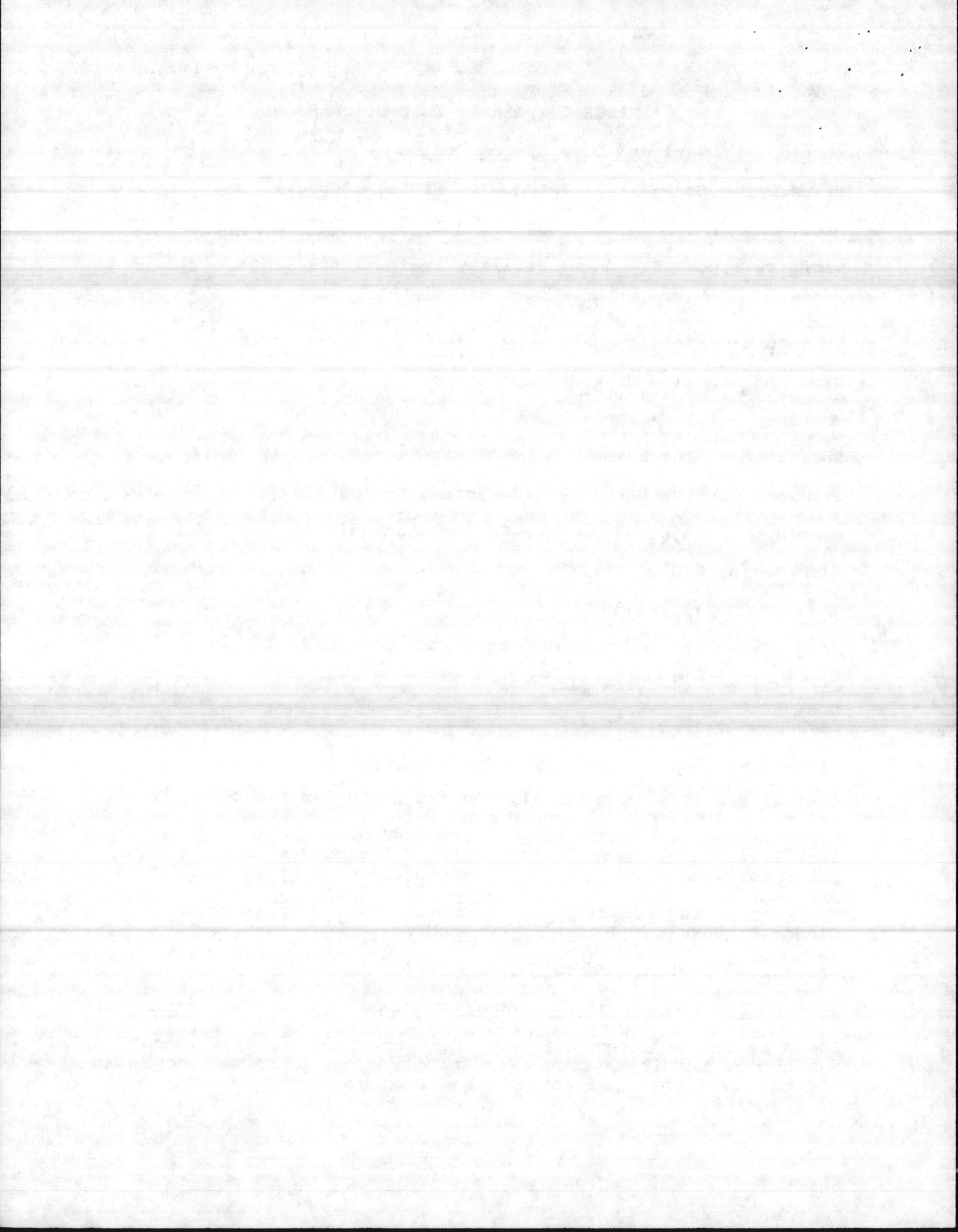
(S=Satisfactory, M=Marginal, U=Unsatisfactory, N=Not Evaluated)

Permit: S	Records/Reports: S
Facility Site Review: N	Flow Measurement: S
Laboratory: N	Effluent/Receiving Waters: M*
Pretreatment: N	Compliance Schedules: N
Self-Monitoring Program: S	Operations & Maintenance: S
Sludge Disposal: S	Other:

Compliance Status: Noncompliance

Section D: Summary of Findings/Comments

1. A review of recent monthly self monitoring reports submitted by the permittee show the facility to be in compliance with the effluent limitations contained in the NPDES discharge permit.



Page Two
Camp Johnson

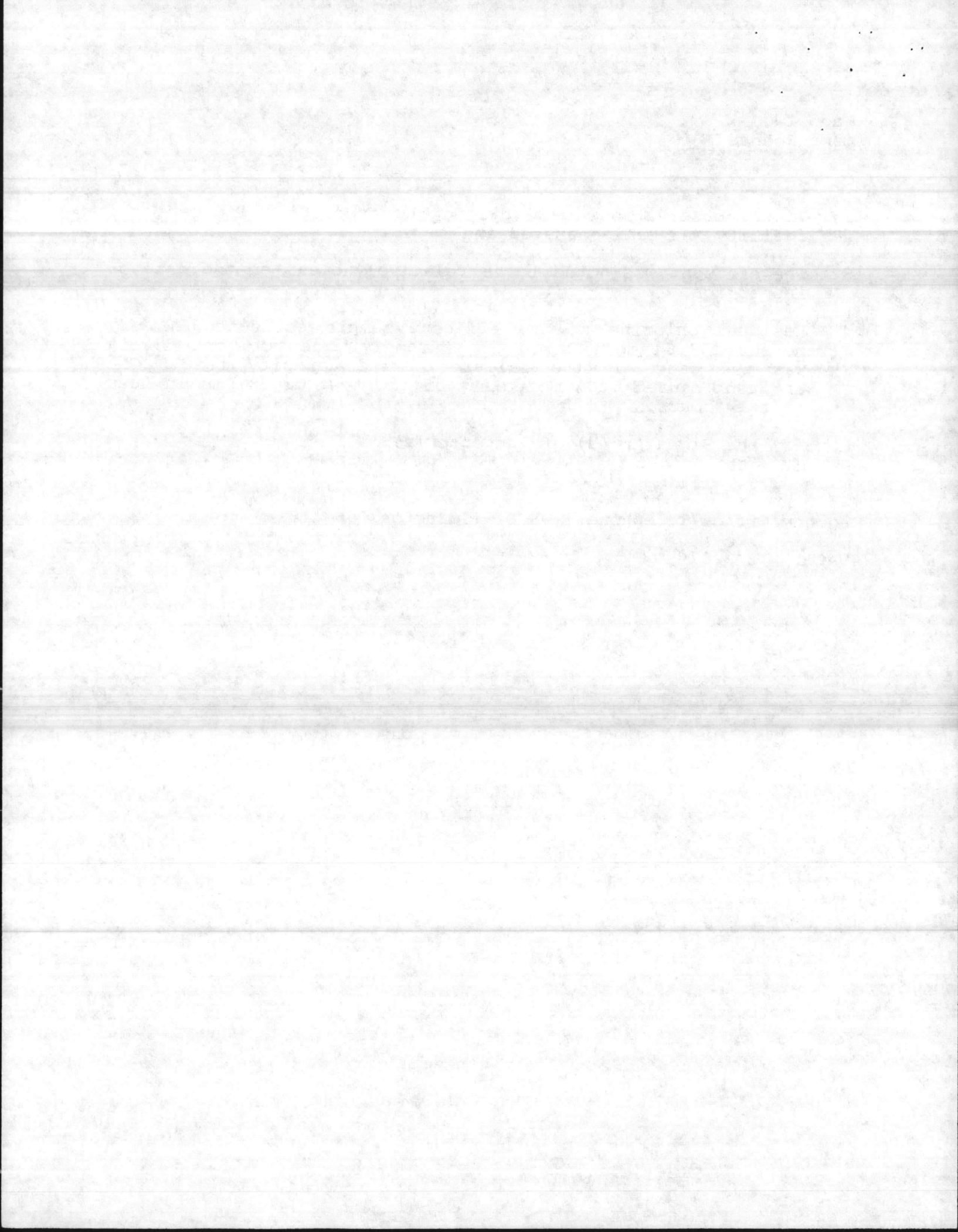
2. Visual observations made during the inspection indicate the facility was well operated and maintained.
3. The effluent was noted to be relatively clear on the date of inspection.
- 4.* Residual chlorine of the effluent sample collected 12/8/87 measured 4.64 mg/l which is extremely excessive and likely was the cause of the failure of the toxicity test. The effluent caused 100% mortality of the test organisms in less than 24 hours.

Name(s) and Signature(s) of Inspector(s):

Michael F. Williams *MFW*

Agency/Office/Telephone: NRCD/Wilmington/256-4161

Date: 12/8/87



NPDES Compliance Inspection Report

Section A: National Data System Coding

Transaction Code: N NPDES NC0063029
Date: 87/12/08 Inspection Type: B Inspector: S
Facility Type: 2 Facility Evaluation Rating: 4
BI: D QA: N

Section B: Facility Data

Name and Location of Facility Inspected:

Hadnot Point

Entry Time: 11:35 am Exit Time/Date: 12:10-12/8/87

Permit Effective Date: 2/1/87 Permit Expiration Date: 1/31/92

Name(s), Title(s) of On-Site Representative(s):

Mack Davis, ORC

Phone Number: 451-5988

Name, Title and Address of Responsible Official:

Carl Baker, Utilities Director

Phone Number: 451-5024 Contacted: Yes

Section C: Areas Evaluated During Inspection

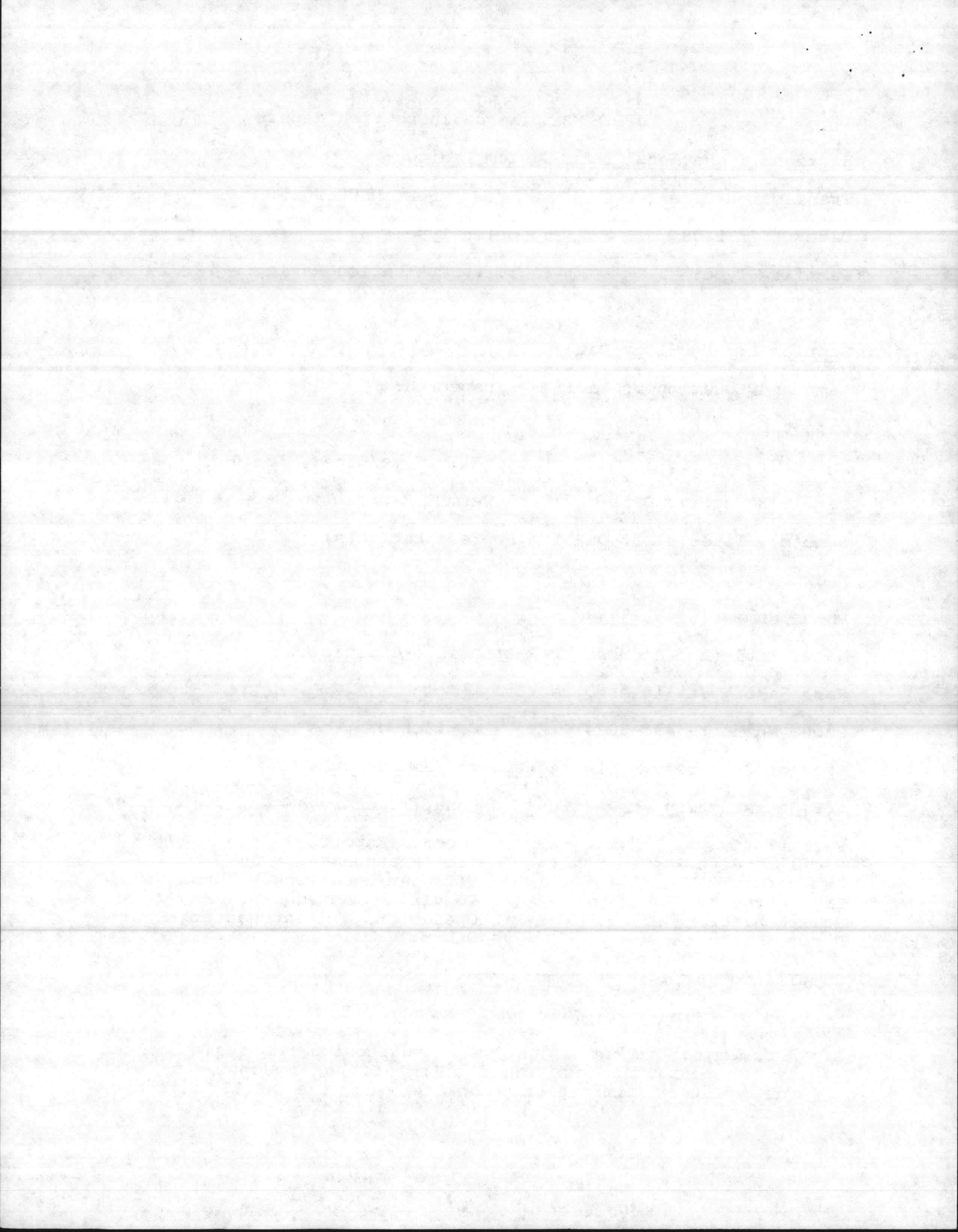
(S=Satisfactory, M=Marginal, U=Unsatisfactory, N=Not Evaluated)

Permit: S	Records/Reports: S
Facility Site Review: N	Flow Measurement: S
Laboratory: N	Effluent/Receiving Waters: M*
Pretreatment: N	Compliance Schedules: N
Self-Monitoring Program: S	Operations & Maintenance: S
Sludge Disposal: S	Other:

Compliance Status: Noncompliance

Section D: Summary of Findings/Comments

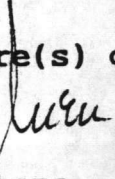
1. A review of recent monthly self monitoring reports submitted by the permittee show the facility to be in compliance with the effluent limitations contained in the NPDES discharge permit.



Page Two
Hadnot Point

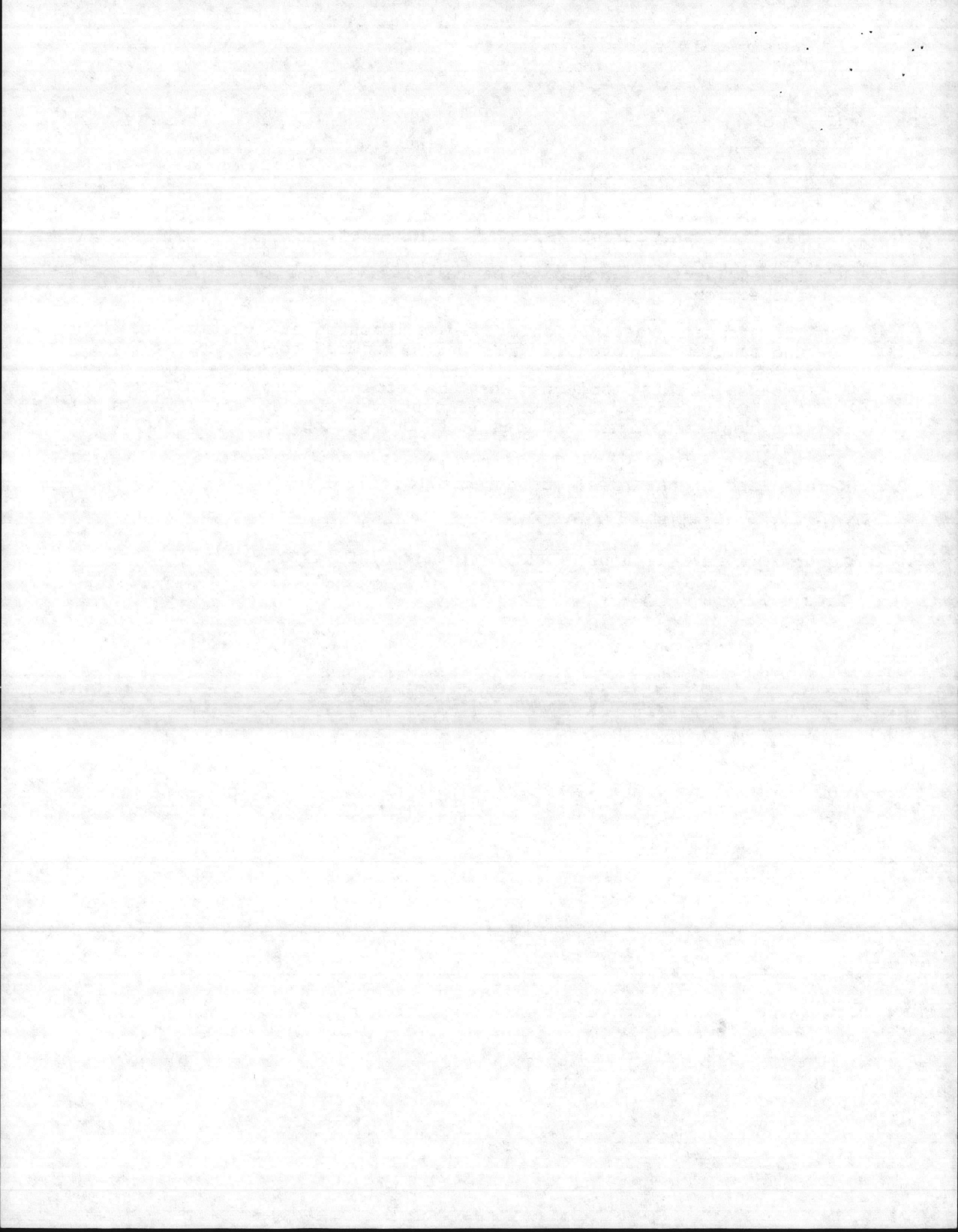
2. Visual observations made during the inspection indicate the facility was well operated and maintained.
3. The effluent was noted to be relatively clear on the date of inspection.
- 4.* The effluent residual chlorine was measured at 1.17 mg/l from the sample collected 12/8/87 and considered to be excessive.
- 5.* Bioassay tests conducted on the effluent sample collected 12/8/87 indicates that the effluent caused 100% mortality of the test organisms and resulted in failure of the toxicity test.

Name(s) and Signature(s) of Inspector(s):

Michael F. Williams 

Agency/Office/Telephone: NRCD/Wilmington/256-4161

Date: 12/8/87



NPDES Compliance Inspection Report

Section A: National Data System Coding

Transaction Code: N NPDES NC0063002
Date: 87/12/08 Inspection Type: B Inspector: S
Facility Type: 2 Facility Evaluation Rating: 4
BI: D QA: N

Section B: Facility Data

Name and Location of Facility Inspected:

Tarawa Terrace

Entry Time: 9:20 am Exit Time/Date: 9:55-12/8/87

Permit Effective Date: 2/1/87 Permit Expiration Date: 1/31/92

Name(s), Title(s) of On-Site Representative(s):

Mack Davis, ORC

Phone Number: 451-5988

Name, Title and Address of Responsible Official:

Carl Baker, Utilities Director

Phone Number: 451-5024 Contacted: Yes

Section C: Areas Evaluated During Inspection

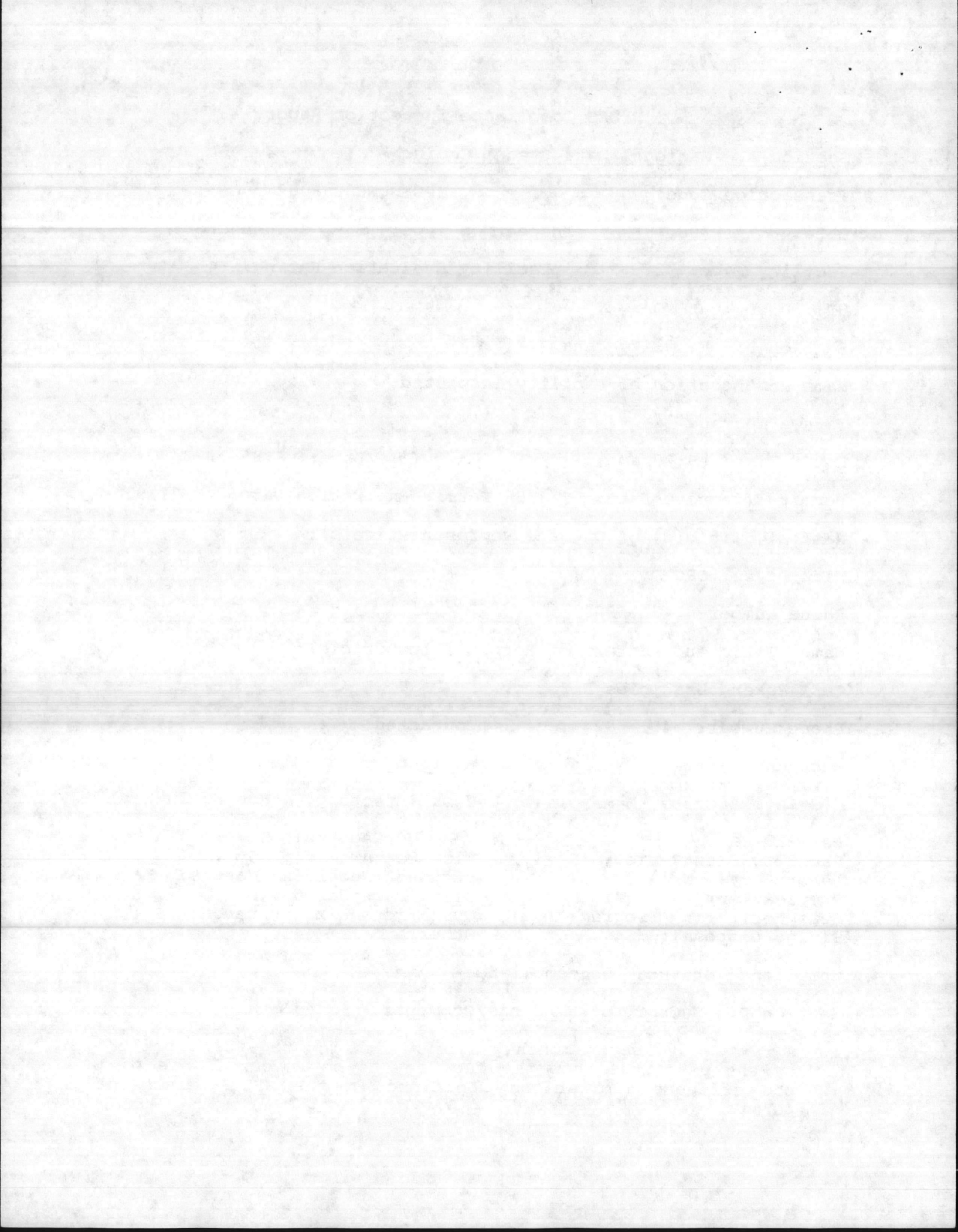
(S=Satisfactory, M=Marginal, U=Unsatisfactory, N=Not Evaluated)

Permit: S	Records/Reports: S
Facility Site Review: N	Flow Measurement: S
Laboratory: N	Effluent/Receiving Waters: M*
Pretreatment: N	Compliance Schedules: N
Self-Monitoring Program: S	Operations & Maintenance: S
Sludge Disposal: S	Other:

Compliance Status: Noncompliance

Section D: Summary of Findings/Comments

1. A review of recent monthly self monitoring reports submitted by the permittee show the facility to be in compliance with the effluent limitations contained in the NPDES discharge permit.



Page Two
Tarawa Terrace

2. Visual observations made during the inspection indicate the facility was well operated and maintained.
3. The effluent was noted to be relatively clear on the date of inspection.
- 4.* On 12/8/87 the residual chlorine was measured at 2.71 mg/l. This is an excessive amount of residual and is most probably the cause of the failure of the toxicity tests. The effluent caused 100% mortality of the test organisms within a 24-hour period.

Name(s) and Signature(s) of Inspector(s):

Michael F. Williams 

Agency/Office/Telephone: NRCD/Wilmington/256-4161

Date: 12/8/87

NPDES Compliance Inspection Report

Section A: National Data System Coding

Transaction Code: N NPDES NC0062995
Date: 87/12/08 Inspection Type: B Inspector: S
Facility Type: 2 Facility Evaluation Rating: 4
BI: D QA: N

Section B: Facility Data

Name and Location of Facility Inspected:

Camp Geiger

Entry Time: 10:30 am Exit Time/Date: 11:15-12/8/87

Permit Effective Date: 2/1/87 Permit Expiration Date: 1/31/92

Name(s), Title(s) of On-Site Representative(s):

Mack Davis, ORC

Phone Number: 451-5988

Name, Title and Address of Responsible Official:

Carl Baker, Utilities Director

Phone Number: 451-5024 Contacted: Yes

Section C: Areas Evaluated During Inspection

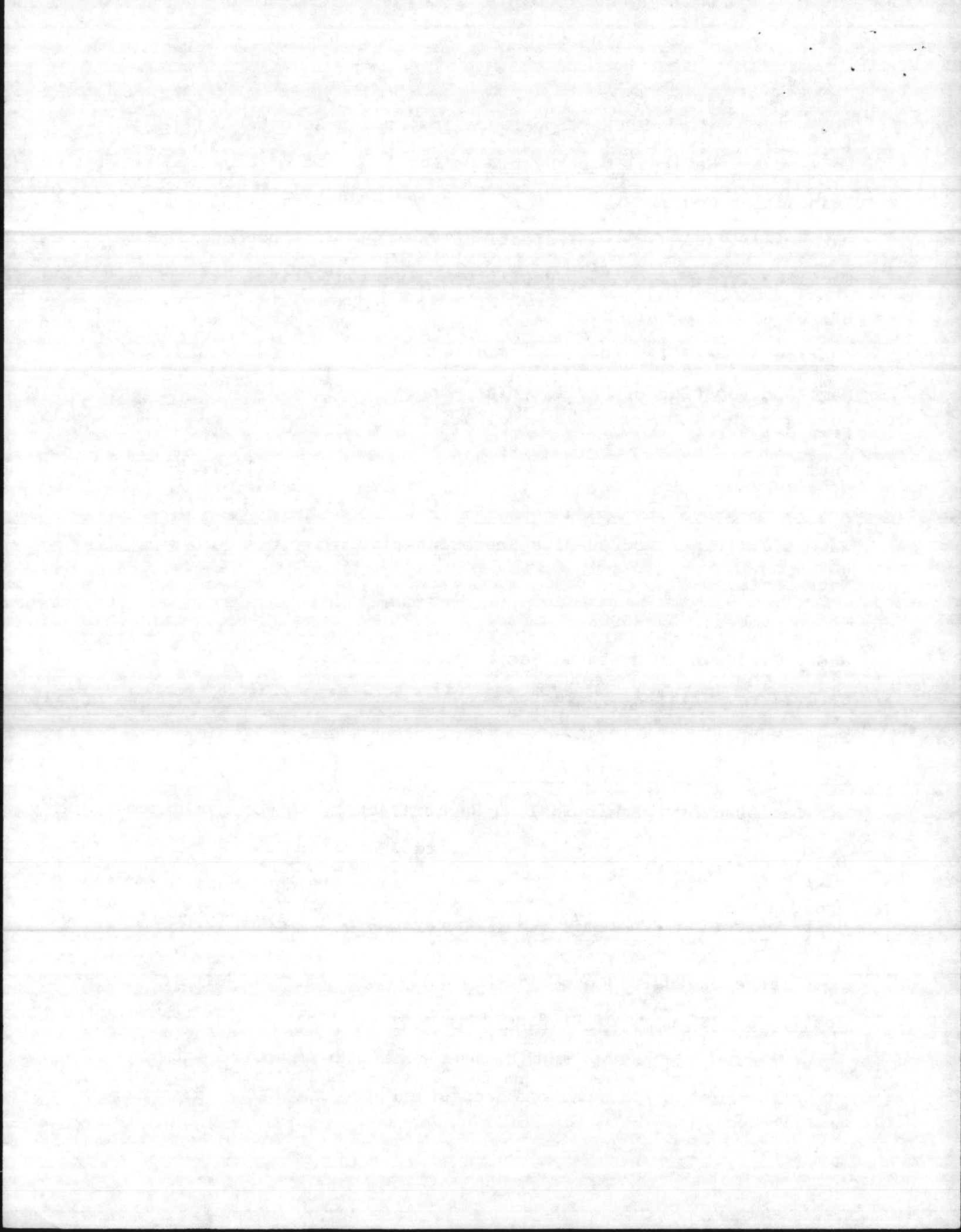
(S=Satisfactory, M=Marginal, U=Unsatisfactory, N=Not Evaluated)

Permit: S	Records/Reports: S
Facility Site Review: N	Flow Measurement: S
Laboratory: N	Effluent/Receiving Waters: M*
Pretreatment: N	Compliance Schedules: N
Self-Monitoring Program: S	Operations & Maintenance: S
Sludge Disposal: S	Other:

Compliance Status: Noncompliance

Section D: Summary of Findings/Comments

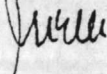
1. A review of recent monthly self monitoring reports submitted by the permittee show the facility to be in compliance with the effluent limitations contained in the NPDES discharge permit.



Page Two
Camp Geiger

2. Visual observations made during the inspection indicate the facility was well operated and maintained.
3. The effluent was noted to be relatively clear on the date of inspection.
- 4.* Residual chlorine of the effluent sample collected 12/8/87 measured 1.85 mg/l, which is an excessive amount of residual.
- 5.* The toxicity test results indicate that on the date of sample collection, the effluent failed the test by causing 100% mortality of the test organisms. Excessive chlorine is the likely cause.

Name(s) and Signature(s) of Inspector(s):

Michael F. Williams 

Agency/Office/Telephone: NRCD/Wilmington/256-4161

Date: 12/8/87

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MAIN

NC Department of Natural Resources
and Community Development
Division of Environmental Management
Mr. Charles Wakili
Wilmington Regional Office
7225 Wrightsville Avenue
Wilmington, NC 28405-3696

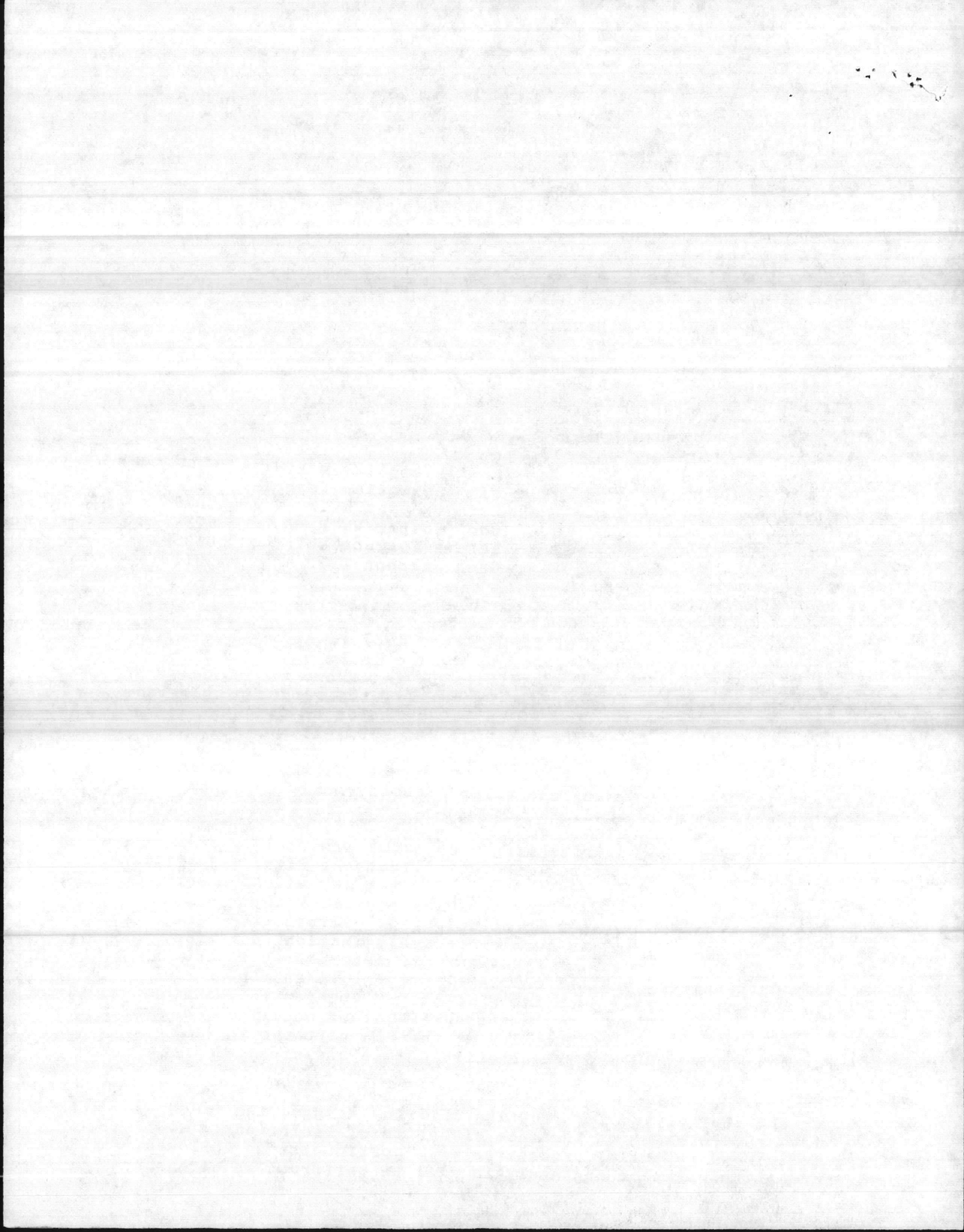
Re: NPDES Compliance Bioreactor
Inspection Report
Hadnot Point WWTP - 000003029
Camp Geiger WWTP - 000002995
Terava Terrace WWTP - 0000063002
Camp Johnson WWTP - 000003011

Dear Mr. Wakili:

In response to your letter of 22 December 1987 regarding the subject inspection reports, chlorine dosage is being reduced at the wastewater treatment facilities in an effort to reduce the residual chlorine discharge. Currently, the residual chlorine is 2.0 mg/l and is to be lowered to 1.0 mg/l for 30 days to evaluate the impact on coliform counts and BOD. If the effluent is within other discharge limits, further reduction of chlorine dosage will be implemented on a trial basis for an additional 30 days. During the trial periods, daily coliform analysis will be conducted.

Problems are experienced in obtaining a chlorine residual of 0.2 mg/l at the Hadnot Point Wastewater Treatment Plant and still meet the coliform discharge limit of 16.0 per 100 ml. To meet all permit parameters, including toxicity requirements, modification to the treatment system is anticipated. Alternatives are being investigated, such as accelerated chlorination, aeration, and chlorine contact chamber redesigned to determine the best method to further reduce the chlorine residual if reduction of dosage does not provide acceptable results. Changes in location of sampling points may be implemented with other modifications if sampling ports can be installed at the end of the outfall lines to provide a more representative sample of actual effluent characteristics.

During the test period for reducing chlorine dosage, the Bnee requests a moratorium on issuance of Notice of Violations. Monitoring and reporting procedures will continue to be followed, and additional samples and analysis will be performed as necessary.



6280
MAIN

to assist in resolution of the toxicity problem.

For additional information, please contact Mr. Carl Baker,
Director, Utilities Branch, Base Maintenance Division at (919)
451-5161/3024.

J. BALZELL
Colonel, U. S. Marine Corps
Assistant Chief of Staff, Facilities
By direction of The Commanding General

