File for Sewage T. Plant NPDES Permit

Danny Sharpe

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

7225 Wrightsville Avenue, Wilmington, N.C. 28403-3696 • Telephone 919-256-4161

(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, KWE
From: Larry Ausley
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 juvinile 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.

	Mortality(%)	Total Residual Chlorine(mg/l)
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.

cc [redacted]

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.

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 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** 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.

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 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** 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.

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

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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.

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