



Biological Assessment of  
**Nitram Incorporated**

Hillsborough County  
NPDES #FL0001643  
Sampled March 1997

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October 1997

**Biology Section**  
**Division of Administrative and Technical Services**

## Department of Environmental Protection

### Results of Fifth Year Inspections

Discharger: Nitram Incorporated  
County: Hillsborough  
NPDES Number: FL0001643  
State Permit Expiration Date: 30 January 2000

#### Toxics Sampling Inspection (XSI)

Date Sampled: 17 March 1997

Results: No organic constituents were detected in the effluent. Effluent mercury ( $0.4 \mu\text{g/L}$ ) exceeded the Class III water quality standard of  $0.012 \mu\text{g/L}$ . Since sample contamination was possible, follow up mercury sampling is recommended. Other than iron, all other metals were undetected. Lead was present in sediments from station 4 above the "probable effect level".

#### Compliance Biomonitoring Inspection (CBI)

Date Sampled: 17 March 1997

Results: The effluent was not acutely toxic to the fish, *Menidia beryllina*. Sediment elutriate at test sites 1 and 3 was chronically toxic to larvae of the sea urchin, *Arbacia punctulata*.

#### Impact Bioassessment Inspection (IBI)

Date Sampled: 17 March 1997

Results: The Stream Condition Index (SCI) placed the reference site and test site 2 in the lower range of the "good" category, while test site 1 was placed in the upper range of the "poor" category. The Florida Index scores decreased between the reference site and test site 1 in both the Hester-Dendy and dip net samples. In summary, although Delaney Creek appeared stressed at all sampling sites, the benthic community at test site 1 was marginally worse, potentially related to the toxicity found in sediment elutriate from that location. Periphyton algal density and chlorophyll *a* were higher at test site 1 than at the reference site. All other algal indicators suggested no adverse effects from the discharge.

#### Water Quality Inspection (WQI)

Date Sampled: 17 March 1997

Results: The effluent, with a nitrate-nitrite concentration of  $7.5 \text{ mg/L}$ , caused enrichment of this nutrient at test site 2 ( $2.4 \text{ mg/L}$ ). Nitrate-nitrite levels at the reference site ( $0.26 \text{ mg/L}$ ) and test site 1 ( $0.24 \text{ mg/L}$ ) were also elevated, with values at all three sites being higher than those found in 95% of other Florida streams. The effluent total phosphorus concentration ( $0.06 \text{ mg/L}$ ) was much lower than those found in the receiving water sites, suggesting the phosphorus enrichment in Delaney Creek was due to inputs from other sources. AGP at the reference site ( $24.7 \text{ mg dry wt/L}$ ), test site 1 ( $21.6 \text{ mg dry wt/L}$ ), and test site 2 ( $116.0 \text{ mg/L}$ ) all exceeded the "problem threshold" of  $5.0 \text{ mg dry wt/L}$  for freshwater. Considering the nutrient levels, effluent AGP ( $8.4 \text{ mg dry wt/L}$ ) was lower than expected, suggesting algal growth inhibition.

These fifth year inspections provide the necessary information to evaluate the facility's impact on its receiving waters and to provide the basis for specific condition recommendations for permit renewal.

**Chemistry Summary Table for  
Nitram, Inc.**

	Effluent	Refer ence Site	Test Site 1	Test Site 2	Test Site 3	Test Site 4	Test Site 5
<b>Water Column Organic Constituents (ug/L)</b>							
Chloroform	None Detected				0.76 I	0.54 I	0.56 I
<b>Sediment Organic Constituents (ug/L)</b>							
None Detected		None Detected	None Detected	None Detected	None Detected	None Detected	None Detected
<b>Water Column Metals (ug/L)</b>		<b>Sediment Metals (mg/kg)</b>					
Aluminum	200U	690	1000	470	1300	2310	1600
Arsenic	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.6	1.0 U
Barium	36	2.6	3.7	3.7	4.1	9.0	7.7
Cadmium	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.56	0.5 U
Calcium	190	1700	1700	5600	1800	11,000	6800
Copper	25 U	2.5 U	2.5 U	2.5 U	3.3	20	2.5 U
Chromium	10 U	2.1	3.6	1.6	5.0	8.5	4.4
Iron	85	440	720	360	1100	2500	1600
Lead	5 U	2.1	4.3	2.5	16	200*	43
Magnesium	34	100	170	110	360	650	710
Mercury	0.4	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Nickel	5 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Selenium	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Silver	5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Zinc	20 U	11	21	8.7	24	45	24
<b>Water Column Nutrients (mg/L)</b>							
Ortho-phosphate	0.04 Q		0.97 Q	0.61	0.77 Q	0.89 Q	0.92 Q
Total phosphorus	0.06	0.98	1.1	0.76	0.78 A	0.91	1.4
Ammonia	0.40	0.084	0.081 A	0.16 A	0.23	0.40 A	0.89
Unionized Ammonia (mg/L as NH4)	0.0029						
Nitrate+Nitrite	7.5	0.26	0.24	2.4	0.75	1.0	0.13
TKN	1.1	0.85	0.93	1.0	0.95 A	1.4	1.9
<b>General Phys-Chem Parameters</b>							
Habitat Assessment		74	76	73			
Dissolved Oxygen (mg/L)	7.2	3.9	3.0	4.3	2.9	2.9	0.3
pH (SU)	7.1	7.3	7.3	7.1	7.1	7.0	6.9
Specific Conductance (µmhos/cm )	4,195	592	607	2,070	2,400	3,850	25,100
Salinity (ppt)	2.2	0.3	0.3	1.1	1.3	2.1	15.9
Temperature (°C)	24.6	19.3	19.0	20.4	19.3	19.0	24.7
Total Organic Carbon (mg/L)	5.3 A	17	17	13	13	15	13
Hardness (mg CaCO3)	590						
Algal Growth Potential (mg dry wt/L)	8.4	24.7	21.6	116.0	47.5	40.9	56.3
<b>Toxicity</b>							
Acute Bioassay Fish	Not Toxic						
Acute Bioassay Invertebrate	Test Invalid						
Chronic Bioassay Invertebrate		Not Toxic	Toxic	Not Toxic	Toxic	Not Toxic	Not Toxic

A - Value reported is the mean of two or more determinations

Q - Sample held beyond normal holding time

U - Material analyzed for but not detected; value reported is the minimum detection limit

\* - Value reported is greater than the 'Probable Effect Level'

# Typical Values for Selected Parameters in Florida Waters

Adapted from Joe Hand, FDER, personal communication, 1991

(data was collected between 1980 and 1989)

## Percentile Distribution

Parameter	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	95%
<b>STREAMS</b> (1617 stations)											
Phytoplankton Chlorophyll <i>a</i>	0.22	0.52	0.94	1.60	3.02	4.63	6.72	9.87	14.68	27.35	48.70
Periphyton Chlorophyll <i>a</i>	0.31	0.43	0.77	1.04	2.16	2.94	6.45	10.51	17.00	39.51	60.85
H-D Diversity	0.84	2.12	2.48	2.74	2.88	3.09	3.25	3.40	3.52	3.76	3.90
Qualitative Taxa Richness	9.00	12.00	17.00	20.00	22.00	24.50	26.00	28.00	31.00	37.00	53.00
H-D Taxa Richness	6.00	6.50	9.00	11.50	13.00	15.00	17.00	21.50	26.00	29.00	32.00
TKN	0.30	0.39	0.56	0.73	0.87	1.00	1.11	1.26	1.49	1.93	2.80
Ammonia	0.02	0.02	0.04	0.05	0.06	0.08	0.11	0.14	0.20	0.34	0.60
NO <sub>2</sub> -NO <sub>3</sub>	0.01	0.01	0.03	0.05	0.07	0.10	0.14	0.20	0.32	0.64	1.05
Total Phosphorus	0.02	0.03	0.05	0.06	0.10	0.13	0.18	0.25	0.39	0.74	1.51
Ortho Phosphate	0.01	0.01	0.03	0.04	0.05	0.08	0.11	0.17	0.27	0.59	1.37
Turbidity	0.60	0.90	1.20	1.45	2.10	2.80	3.60	4.50	6.65	10.45	16.30

## LAKES

(477 stations)

Phytoplankton Chlorophyll <i>a</i>	0.80	1.71	2.88	4.28	10.06	13.40	20.00	30.10	47.20	65.44	113.90
Dredge Diversity	0.71	0.97	1.43	1.74	1.98	2.12	2.21	2.59	2.85	3.15	3.17
Dredge Taxa Richness	3.00	5.00	6.50	7.00	9.00	10.00	11.00	13.00	15.00	17.00	21.00
TKN	0.36	0.49	0.67	0.83	1.08	1.26	1.40	1.51	1.68	2.11	3.46
NH <sub>3</sub> +NH <sub>4</sub>	0.01	0.02	0.02	0.03	0.04	0.06	0.08	0.12	0.15	0.21	0.28
NO <sub>2</sub> -NO <sub>3</sub>	0.00	0.00	0.01	0.01	0.01	0.02	0.04	0.05	0.10	0.14	0.23
Total Phosphorus	0.01	0.02	0.02	0.03	0.05	0.07	0.09	0.11	0.14	0.23	0.42
Ortho-Phosphate	0.00	0.01	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.21	0.32
Turbidity	1.00	1.25	1.55	2.05	2.75	4.50	6.45	9.60	14.10	26.00	40.00

## ESTUARIES

(690 stations)

Phytoplankton Chlorophyll <i>a</i>	2.14	3.28	4.49	5.13	6.00	6.93	7.94	9.60	12.40	17.60	22.20
Dredge Diversity	1.34	1.53	1.91	2.28	2.56	2.90	3.15	3.59	4.01	4.53	4.98
Dredge Taxa Richness	4.00	6.00	9.00	11.00	15.00	18.50	25.00	35.00	41.00	62.00	90.00
TKN	0.26	0.34	0.42	0.50	0.59	0.69	0.76	0.82	0.95	1.30	1.49
NH <sub>3</sub> +NH <sub>4</sub>	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.09	0.13	0.22	0.28
NO <sub>2</sub> -NO <sub>3</sub>	0.00	0.00	0.01	0.01	0.01	0.02	0.03	0.05	0.08	0.17	0.23
Total Phosphorus	0.01	0.02	0.06	0.07	0.10	0.11	0.14	0.17	0.23	0.43	0.59
Ortho-Phosphate	0.01	0.02	0.03	0.04	0.04	0.05	0.07	0.09	0.12	0.21	0.44
Turbidity	3.50	4.00	4.50	5.05	5.40	5.60	6.30	6.80	8.00	11.40	11.75

Units:

Phytoplankton Chlorophyll *a* (ug/L), Periphyton Chlorophyll *a* (mg/m<sup>2</sup>), Nutrients (mg/L), Turbidity (NTU), Taxa richness and diversity values are for macroinvertebrates

## Introduction

Nitram Incorporated, a manufacturer of solid ammonium nitrate and ammonium nitrate fertilizer solutions, is located in Tampa, Florida (see maps in appendix). Wastewater from contaminated runoff areas, non-contact cooling water, boiler blowdown, condensate, and demineralizer regenerant are all combined in a 30,000 gallon mix tank, where the mixture is diluted, aerated, and pH adjusted. From the mix tank, wastewater may be routed to a lined holding pond, or may be pumped through a 1,300 foot pipeline to the Class III Delaney Creek, eventually mixing into Hillsborough Bay (see maps in Appendix). A lined hyacinth pond also receives cooling tower blowdown. The daily maximum permit limit for flow is 0.41 MGD; the monthly average is 0.2 MGD. Actual mean flow from the facility, between April, 1996, and September, 1996, was 0.196 MGD.

Permit limits for Nitram Incorporated are as follows: TSS (20 mg/L as a daily maximum), total nitrogen concentration (12 mg/L as a daily maximum, 7 mg/L as a monthly average), total nitrogen load (50 lbs/day as a daily maximum, 25 lbs/day as a monthly average), unionized ammonia (0.02 mg/L as a daily maximum), temperature (90 °F as a daily maximum), dissolved oxygen (6.0 mg/L as a daily minimum), and pH (6.5 - 8.5 SU). Total nitrogen and dissolved oxygen permit limits are based upon a WQBEL (Mandrup-Poulsen 1987).

There are no effluent data available from February, 1995, to April, 1996, because the facility was intentionally not discharging. Since resuming discharge, the facility Monthly Operating Reports indicate exceedences for total nitrogen during the months of June, July, and August, 1996. Data from September, 1996, to the present, have not yet been received.

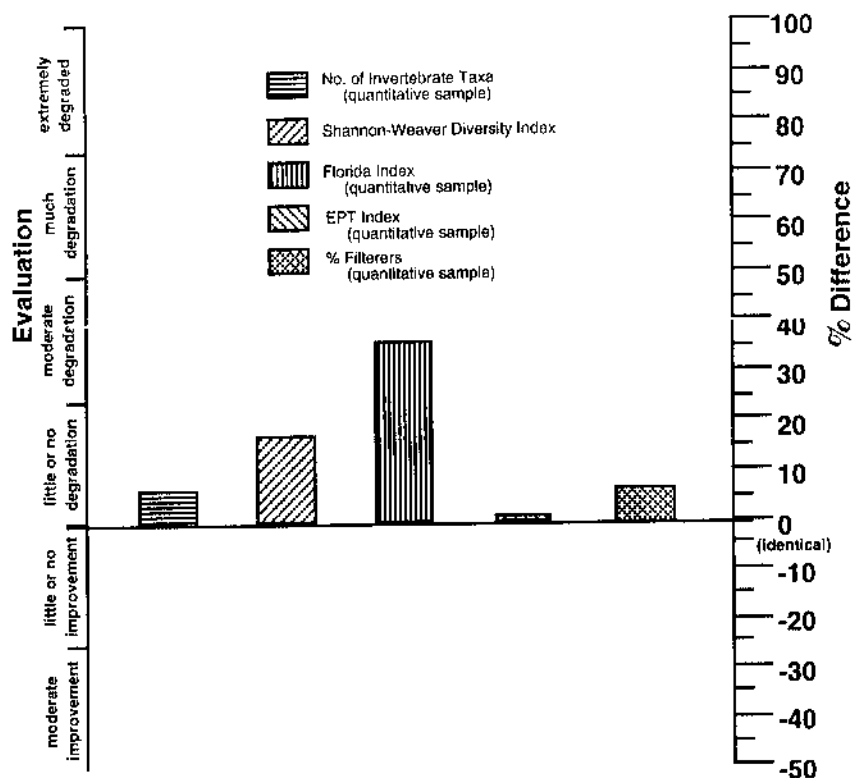
## Methods

The focus of this investigation was to determine the discharger's effects on the receiving waters. A comparison of biological community health was made between a reference site (located in Delaney Creek, approximately 100 m upstream of the discharge) and two test sites (bracketing the discharge in Delaney Creek (see maps in Appendix). Test site

1 was located in Delaney Creek, approximately 30 m upstream of the discharge while test site 2 was approximately 30 m downstream of the outfall. A habitat assessment was performed *in situ* to establish comparability between sites. Supplemental physical/chemical data were also collected on the effluent and study sites. Acute screening toxicity bioassays, using *Menidia beryllina* and *Mysidopsis bahia* as test organisms, were performed on an effluent sample (Weber 1993). In

### Major characteristics of benthic macroinvertebrate community structure of control and test sites.

	Reference Site	Test Site 1	Test Site 2
<b>Macroinvertebrate Qualitative</b>			
Number of Taxa	29	37	32
Florida Index	12	4	10
SCI	21	19	21
EPT Index	3	3	2
% Contribution of Dominant Taxon	54.9	40.1	57.4
% Diptera	73.1	61.7	82.2
% Gastropoda	5.3	6.5	2.9
% Pelecypoda	5.8	0.2	0
% Amphipoda	6.6	21.5	8.8
% Isopoda	6.0	2.0	1.0
% Other	3.2	8.1	5.1
% Predators	4.5	9.5	7.7
% Above Surface Deposit Feeders	39.1	38.3	43.6
% Shredders	5.3	14.7	6.9
% Suspension Feeders	37.9	22.9	35.6
% Scrapers	5.5	7.4	3.5
% Other	7.7	7.2	2.7
<b>Macroinvertebrate Hester-Dendy</b>			
Number of Taxa	32	30	
Florida Index	14	9	
Shannon-Weaver Diversity	3.0	2.5	
EPT Index	1	0	
% Diptera	81.3	74.7	
% Amphipoda	7.1	12.9	
% Isopoda	5.4	4.5	
% Gastropoda	2.8	6.9	
% Other	3.4	1.0	
% Above Surface Deposit Feeders	42.1	42.7	
% Suspension Feeders	35.3	32.7	
% Scrapers	2.9	7.1	
% Shredders	3.5	8.4	
% Other	16.2	9.1	



**Effect of discharge on the benthic macroinvertebrate community.**

addition, sediment elutriate chronic bioassays were performed at the reference site and at 5 test sites, using *Arbacia punctulata* gametes (see map in Appendix for bioassay test sites 3, 4, and 5). The effluent was analyzed for metals and for organic constituents (base neutral and acid extractables, and pesticide extractables). Sediments from all study sites were analyzed for metals and organic compounds. Nutrient analyses were performed on the effluent, reference, and test sites. Methods used for all chemical analyses are on file at the Tallahassee DEP Chemistry Laboratory.

Benthic macroinvertebrate communities were evaluated at the reference and test sites. Invertebrates were collected from multiple substrates (e.g., snags, leaf packs, vegetation) using discrete dip net sweeps. Additional invertebrate collections were made using Hester-Dendy multiplate samplers which

were incubated for 28 days (Ross 1990). Periphyton was sampled by incubating glass microscope slides in a standard periphytometer for 28 days (Ross 1990). Phytoplankton was sampled at the reference and test sites by subsurface grabs. Chlorophyll *a* was also determined for periphyton and phytoplankton communities (Ross 1990). Algal Growth Potential tests, using both *Selenastrum capricornutum* and *Dunaliella tertiolecta* as test organisms, depending on the salinity at a particular site, followed Miller *et al.* (1978) and EPA (1974).

### Explanation of Measurements of Community Health

Several different measurements of macroinvertebrate and algal community health have been employed to determine the effects of

a discharge. These are briefly discussed here.

**Habitat Assessment:** Seven attributes known to have potential effects on the freshwater stream biota were evaluated and scored, with 20 points possible for each factor. Based on the sum of these individual scores, overall habitat quality is assigned to one of four categories: Optimal (105-140 points); Suboptimal (70-104 points); Marginal (35-69 points); and Poor (0-34 points). For marine systems, overall habitat quality is also assigned to one of four categories: Optimal (75-100 points); Suboptimal (50-75 points); Marginal (25-49 points); and Poor (0-24 points) (see habitat assessment field sheets in Appendix).

**Taxa richness:** Stress tends to reduce the number of different types of organisms present in a system, although moderate nutrient enrichment may sometimes be correlated with increased algal taxa richness.

**Shannon-Weaver diversity:** This index is specified in the Florida Administrative Code as a measure of biological integrity. Low diversity scores are undesirable. They represent conditions where only a few organisms are abundant, to the exclusion of other taxa. Excessive numerical dominance of a single type of organism (a high % contribution of the dominant taxon) is a related measure which is also associated with disturbance.

**Numbers of pollution sensitive taxa:** Some organisms become rare or absent as the intensity or duration of disturbance increases. For example, the Florida Index assigns points to stream-dwelling macroinvertebrates based on their sensitivity to pollution (see Ross 1990). A site with a high Florida Index score is considered healthy. Species sensitivity data from other sources, such as Hulbert (1990), Hudson *et al.*

(1990), Lenat (1993), Farrell (1992), Chang *et al.* (1992), and Whitmore (1989), are used as appropriate.

**Ephemeroptera/Plecoptera/Trichoptera Index:** This index is the sum of the number of EPT taxa present. Higher EPT values are associated with healthier systems.

**Community structure:** Substantial shifts in the proportions of major groups of organisms, compared to reference conditions, may indicate degradation. In marine systems, an increase in the % tubificid oligochaetes, a decrease in the % pelecypods, and a decrease in the number of polychaete taxa are all considered indicators of disturbance (Engel *et al.* 1994).

**Algal biomass:** High algal biomass (algal density or chlorophyll *a*) implies nutrient stress. A decreased diatom to blue-green algae ratio (calculated by dividing the number of individuals in the Bacillariophyta by the number of indi-

viduals in the Bacillariophyta + Cyanophyta) is often indicative of nutrient enriched conditions in flowing streams.

**Trophic composition/feeding guilds:** Disturbance can shift the feeding strategies of invertebrates. In Florida, for example, pollution may be responsible for reducing the numbers of filter-feeders (FDEP 1994) and shredders (EA Engineering 1994).

The Stream Condition Index for Florida (SCI) is a composite macroinvertebrate metric (Barbour *et al.* 1996). The SCI assigns points to a variety of parameters, depending on how closely each parameter approaches an expected reference condition.

For graphical purposes, the percent differences between the reference and test sites involving the number of taxa, the diversity index, the Florida Index, the EPT Index, the diatom to blue-green algae ra-

tio, and the % filter-feeders are measured as the reference site minus test site divided by the reference site. The percent differences between sites involving algal density, chlorophyll *a*, and algal growth potential are measured as the test site minus reference site divided by the reference site.

The following personnel were involved in this investigation: Andrea Grainger, Charles Kovach, Rose Poyner, and Sarah Watkins (DEP Southwest District), Marshall Faircloth, Russel Frydenborg, Joy Jackson, Kathleen Lurding, Elizabeth Miller, Urania Quintana, Lisa Tamburello, David Whiting, Vicki Whiting, (Tallahassee Biology Laboratory). The report was reviewed by the Point Source Studies Review Committee, consisting of Wayne Magley, Jan Mandrup-Poulsen, and Michael Tanski, as well as District representatives.

*Major characteristics of algal community structure of control and test sites.*

	Reference Site	Test Site 1	Test Site 2
<b>Periphyton Algae</b>			
Number of Taxa	26	35	
Shannon-Weaver Diversity	2.9	3.9	
Algal Density (#/sq. cm)	23,350	31,793	
Chlorophyll <i>a</i> (mg/sq. m)	3.8	2.2	
Diatom/Diatom + B-G Abundance Ratio	0.97	0.97	
% Blue-green	2.6	2.9	
% Diatoms	94.3	92.1	
<b>Phytoplankton Algae</b>			
Number of Taxa	7	7	12
Shannon-Weaver Diversity	2.1	1.1	3.1
Algal Density (#/mL)	144	346	210
Chlorophyll <i>a</i> (µg/L)	1.0 U	1.0 U	1.0 U
Diatom/Diatom + B-G Abundance Ratio	0.80	0.90	0.85
% Blue-green	5.7	1.9	14.0
% Green	71.4	80.6	2.0
% Diatoms	22.9	16.7	80.0
Algal Growth Potential (mg dry wt/l)	24.7	21.6	116.0

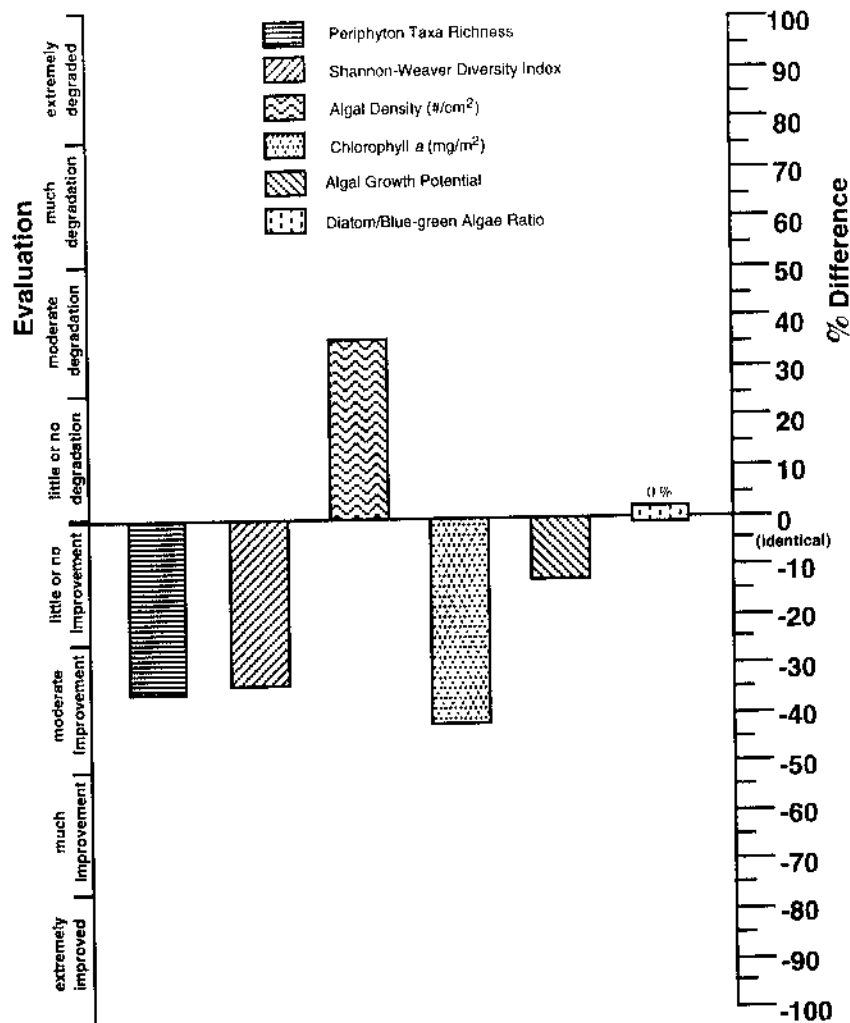
## Results and Discussion

In the vicinity of the study sites, Delaney Creek is undergoing a transition from a sluggish, black-water stream to a tidally influenced system. Land use in the area was predominantly residential, field/pasture, and industrial. Habitat quality was in the low range of the suboptimal category at all three sites, with 74 points at the reference site, 76 points at test site 1, and 73 points at test site 2. The three study sites were comparable with regard to most physical/chemical parameters, such as: Secchi depth (between 0.2 m and 0.5 m),

temperature (19.3 °C at the reference site, 19.0 °C at test site 1, and 20.4 °C at test site 2), and pH (which ranged from 7.1 to 7.3 SU). The conductivity at test site 2 (2,070  $\mu\text{mhos/cm}$ ) was considerably higher than the at reference site (592  $\mu\text{mhos/cm}$ ) or at test site 1 (607  $\mu\text{mhos/cm}$ ), reflecting the increased tidal influences or possible contributions from the effluent. The dissolved oxygen levels at the three receiving water sites (3.9 mg/L at the reference site, 3.0 at test site 1, and 4.3 at test site 2) were below the Class III water quality standard of 5.0 mg/L for freshwater systems.

No organic constituents were detected in the effluent. Metals found in the effluent above detection limits included iron (85  $\mu\text{g/L}$ ) and mercury (0.4  $\mu\text{g/L}$ ). The mercury concentration exceeded the Class III water quality standard of 0.012  $\mu\text{g/L}$ . Since sample contamination was possible, follow up mercury sampling is recommended. Analysis of sediments from the reference site and all five study sites yielded no organic compounds, and the presence of several metals, mostly at non-problem concentrations. The amount of lead (200 mg/kg) found at station 4 was greater than the "probable effect level" suggested by MacDonald (1993).

The Nitram effluent was not acutely toxic to the fish, *Menidia beryllina*. The *Mysidopsis bahia* toxicity test was invalidated due to excessive control mortality. Chronic sediment elutriate bioassays were performed on sediment collected from the reference site and test sites 1 through 5, using *Arbacia punctulata* gametes. The *Arbacia* fertility in elutriate from test sites 1 and 3 was significantly lower than that of the reference site, indicating chronic sediment toxicity at these two sites. The cause or source of this toxicity is not currently



Effect of discharge on the algal community.

known. The sediment elutriate toxicity at test site 1 may be associated with the poor quality benthic community found at that location (see discussion on benthic populations below).

Effluent nitrate-nitrite was 7.5 mg/L, directly contributing to the elevated level observed at test site 2 (2.4 mg/L), located immediately downstream of the effluent. In addition to the high nitrate-nitrite concentrations at test site 2, nitrate-nitrite levels at the reference site (0.26 mg/L) and test site 1 (0.24 mg/L), were also elevated, with values at all three sites being higher than those found in 95% of other Florida streams (see list of typical

water quality values in Appendix). Note that effluent total nitrogen (8.6 mg/L) and unionized ammonia (0.0029 mg/L) complied with permit limits. The effluent total phosphorus concentration (0.06 mg/L) was much lower than those found in the receiving water sites, suggesting inputs from other sources. Total phosphorus at the reference site (0.98 mg/L) and test sites 1 (1.1 mg/L) and test 2 (0.76 mg/L) and orthophosphate at test site 1 (0.97 mg/L) and 2 (0.61 mg/L) were higher than approximately 90% of other Florida streams. A gradual increase in TKN and ammonia was observed between the reference site



and station 5, possibly due to increased stormwater or other inputs.

Considering the nutrient levels, effluent AGP (8.4 mg dry wt/L) was lower than expected, suggesting algal growth inhibition. AGP measured at the reference site (24.7 mg dry wt/L), test site 1 (21.6 mg dry wt/L), and test site 2 (116.0 mg/L) all exceeded the "problem threshold" of 5.0 mg dry wt/L for freshwater (Ron Raschke, USEPA, personal communication).

The quantitative measures of benthic macroinvertebrate community health suggested some adverse effects potentially caused by the discharge. The figure on p. 2 indicates the degree of difference between the invertebrate populations of the reference and test sites. Larger differences (that is, higher percentages) correspond with greater degrees of degradation. Negative values mean the test site is better than the reference.

Although the Hester-Dendy samplers at test site 2 were vandalized, the results for the reference site and test site 1 are reported here. There was little difference between the test and reference site with respect to the number of taxa, the EPT Index, percent filter feeders, or basic community structure. Dipterans comprised 81.3% of the taxa at the reference site and 74.7% at the test site. *Dicrotendipes modestus* was the dominant taxon at both sites (54% at the reference site and 47% at the test site). The amphipod, *Hyalella azteca*, was the next most abundant organism at both the reference site (with 7%) and the test site (13%). However, the Florida Index decreased from 14 at the reference site to 9 at the test site, due to the elimination of some pollution sensitive chironomidae taxa (e.g., *Ablabesmyia* sp. and

*Stenochironomus* sp.). Shannon-Weaver diversity also decreased at the test site (2.5) compared to the reference site (3.0).

Dip net data were available for the reference site, and for test sites 1 and 2. The Stream Condition Index (SCI) placed the reference site and test site 2 site (each with 21 points) in the lower range of the "good" category, while test site 1 (with a score of 19) was placed in the upper range of the "poor" category. Of the measures that make up the SCI, the Florida Index scores were the only ones to differ significantly among the three sites. The reference site and test site 2 received 12 and 10 Florida Index points, respectively, while test site 1 received only 4 points. The absence of trichopterans (e.g., *Hydropsyche* sp. and *Nectopsyche* sp.) and other pollution sensitive taxa at test site 1 accounts for this decline. In summary, although Delaney Creek appeared stressed at all sampling sites, the benthic community at test site 1 was marginally worse, potentially related to the toxicity found in sediment elutriate from that location.

The figure on p. 4 represents changes in the periphyton algal community. As was noted with the macroinvertebrates, larger differences (that is, higher percentages) correspond with greater degrees of degradation. The periphyton samplers at test site 2 were vandalized, so only the results for the reference site and test site 1 are presented. Most values indicate improvement at test site 1 compared to the reference site. For example, the number of taxa found at test site 1 (35 taxa) was greater than that found at the reference site (26 taxa). Shannon-Weaver diversity values also improved at test site 1 (3.9) compared to the reference site (2.9). Chlorophyll *a* was only slightly higher at the reference site (3.8 mg/m<sup>2</sup>) compared to

test site (2.2 mg/m<sup>2</sup>). There was no difference in the ratio of diatom/blue-green algae between the reference and test site. The pollution tolerant diatom, *Cocconeis placentula*, was the dominant taxon at the reference site (50.5%) and test site 1 (25.5%). Algal density was elevated at both sites, with the test site levels (31,793 cells/cm<sup>2</sup>) being higher than those of the reference site (23,350 cells/cm<sup>2</sup>), possibly due to the higher nutrient concentrations there.

## Conclusions

No organic constituents were detected in the effluent. Effluent mercury (0.4 µg/L) exceeded the Class III water quality standard of 0.012 µg/L. Since sample contamination was possible, follow up mercury sampling is recommended. Lead was detected in sediments from station 4 at a level greater than the "probable effect level" (200 mg/kg).

The effluent was not acutely toxic to the fish, *Menidia beryllina*. Sediment elutriate at test sites 1 and 3 was chronically toxic to *Arbacia punctulata*.

The effluent, with a nitrate-nitrite concentration of 7.5 mg/L, caused enrichment of this nutrient at test site 2 (2.4 mg/L). Nitrate-nitrite levels at the reference site (0.26 mg/L) and test site 1 (0.24 mg/L) were also elevated, with values at all three sites being higher than those found in 95% of other Florida streams. The effluent total phosphorus concentration (0.06 mg/L)

was much lower than those found in the receiving water sites, suggesting the phosphorus enrichment in Delaney Creek was due to inputs from other sources.

AGP at the reference site (24.7 mg dry wt/L), test site 1 (21.6 mg dry wt/L), and test site 2 (116.0 mg/L) all exceeded the "problem threshold" of 5.0 mg dry wt/L for freshwater. Considering the nutrient levels, effluent AGP (8.4 mg dry wt/L) was lower than expected, suggesting algal growth inhibition.

The Stream Condition Index (SCI) placed the reference site and test site 2 in the lower range of the "good" category, while test site 1 was placed in the upper range of the "poor" category. The Florida Index scores decreased between the reference site and test site 1 in both the Hester-Dendy and dip net samples. In summary, although Delaney Creek appeared stressed at all sampling sites, the benthic community at test site 1 was marginally worse, potentially related to the toxicity found in sediment elutriate from that location.

Periphyton algal density was higher at test site 1 than at the reference site, while all other algal indicators suggested no adverse effects from the discharge.

## Literature Cited

- Barbour, M. T., J. Gerritsen, and J. S. White. 1996. Development of the Stream Condition Index for Florida. Prepared for the Fla. Dept. Environ. Protection. 105 p.
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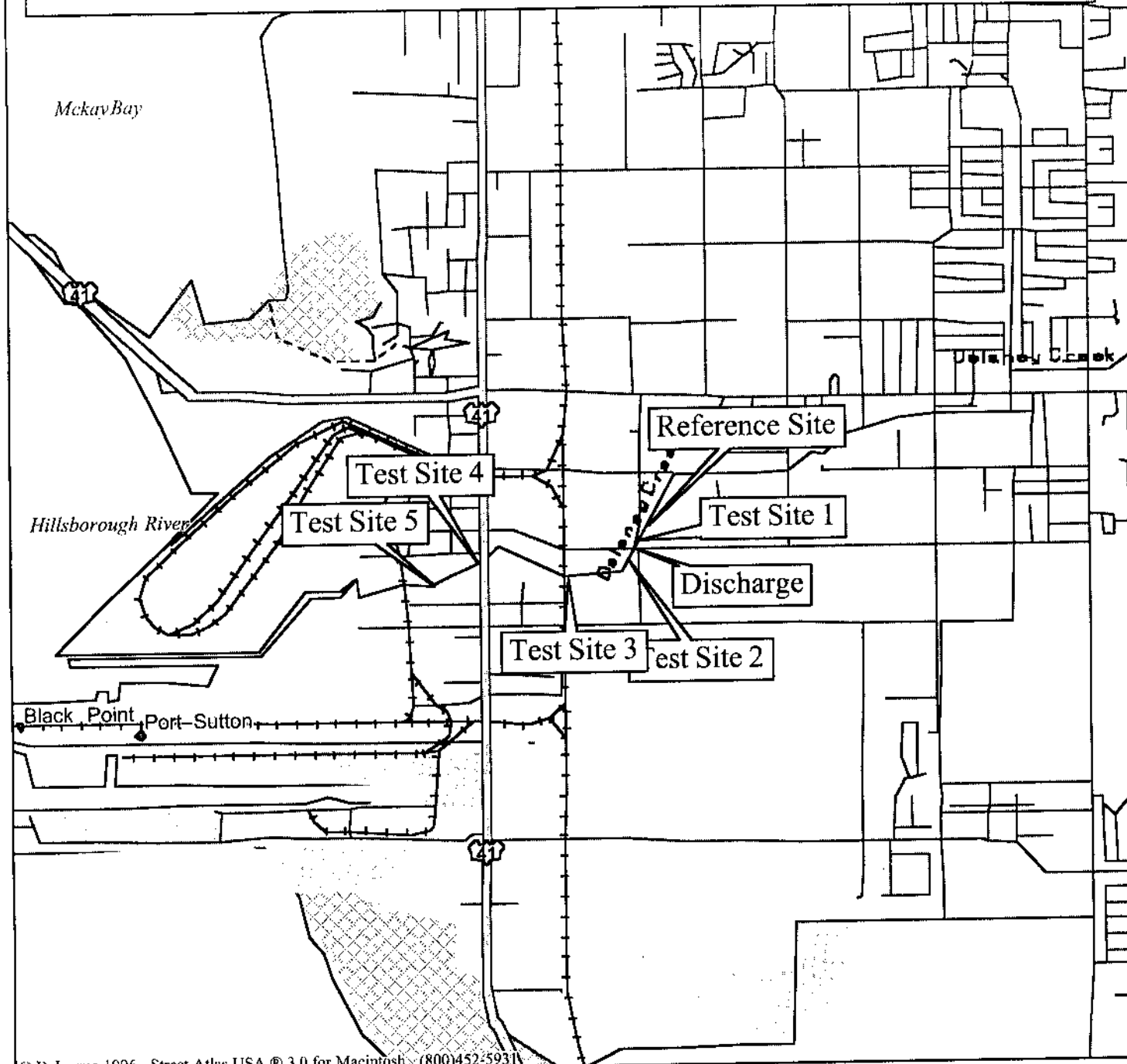
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# Nitram Station Locations



© DeLorme 1996 Street Atlas USA ® 3.0 for Macintosh (800)452-5931

Mag 14.00

Thu Jun 26 16:09 1997

Scale 1:31,250 (at center)

2000 Feet

1000 Meters

- |                           |                          |
|---------------------------|--------------------------|
| — Secondary SR, Road, Hwy | □ Lake, Ocean            |
| — Toll Highway            | Woodland                 |
| — US Highway              | Sand                     |
| + + Railroad              | Wetland                  |
| ▽ Geographic Feature      | — River                  |
| ◆ Locale                  | - - - Intermittent River |
| Population Center         |                          |

The map displays the Port Sutton area, with the following features:

- Test Sites:** Five test sites are marked with black dots and labeled: Test Site 1, Test Site 2, Test Site 3, Test Site 4, and Test Site 5. A reference site is also marked with a black dot and labeled "Reference Site".
- Geographical Features:** The map shows the Port Sutton, Rendola Port, and the Nittam area. The location of the Port Sutton is marked with a black dot and labeled "Port Sutton". The Rendola Port is marked with a black dot and labeled "RENDOLA PORT". The Nittam area is marked with a black dot and labeled "Nittam".
- Roads:** Major roads are shown, including Highway 41 and Highway 45. Other roads include S 16TH, S 17TH, S 18TH, S 19TH, S 20TH, S 21ST, S 22ND, S 23RD, S 24TH, S 25TH, S 26TH, S 27TH, S 28TH, S 29TH, S 30TH, S 31ST, S 32ND, S 33RD, S 34TH, S 35TH, S 36TH, S 37TH, S 38TH, S 39TH, S 40TH, S 41ST, S 42ND, S 43RD, S 44TH, S 45TH, S 46TH, S 47TH, S 48TH, S 49TH, S 50TH, S 51ST, S 52ND, S 53RD, S 54TH, S 55TH, S 56TH, S 57TH, S 58TH, S 59TH, S 60TH, S 61ST, S 62ND, S 63RD, S 64TH, S 65TH, S 66TH, S 67TH, S 68TH, S 69TH, S 70TH, S 71ST, S 72ND, S 73RD, S 74TH, S 75TH, S 76TH, S 77TH, S 78TH, S 79TH, S 80TH, S 81ST, S 82ND, S 83RD, S 84TH, S 85TH, S 86TH, S 87TH, S 88TH, S 89TH, S 90TH, S 91ST, S 92ND, S 93RD, S 94TH, S 95TH, S 96TH, S 97TH, S 98TH, S 99TH, S 100TH, S 101ST, S 102ND, S 103RD, S 104TH, S 105TH, S 106TH, S 107TH, S 108TH, S 109TH, S 110TH, S 111ST, S 112ND, S 113RD, S 114TH, S 115TH, S 116TH, S 117TH, S 118TH, S 119TH, S 120TH, S 121ST, S 122ND, S 123RD, S 124TH, S 125TH, S 126TH, S 127TH, S 128TH, S 129TH, S 130TH, S 131ST, S 132ND, S 133RD, S 134TH, S 135TH, S 136TH, S 137TH, S 138TH, S 139TH, S 140TH, S 141ST, S 142ND, S 143RD, S 144TH, S 145TH, S 146TH, S 147TH, S 148TH, S 149TH, S 150TH, S 151ST, S 152ND, S 153RD, S 154TH, S 155TH, S 156TH, S 157TH, S 158TH, S 159TH, S 160TH, S 161ST, S 162ND, S 163RD, S 164TH, S 165TH, S 166TH, S 167TH, S 168TH, S 169TH, S 170TH, S 171ST, S 172ND, S 173RD, S 174TH, S 175TH, S 176TH, S 177TH, S 178TH, S 179TH, S 180TH, S 181ST, S 182ND, S 183RD, S 184TH, S 185TH, S 186TH, S 187TH, S 188TH, S 189TH, S 190TH, S 191ST, S 192ND, S 193RD, S 194TH, S 195TH, S 196TH, S 197TH, S 198TH, S 199TH, S 200TH, S 201ST, S 202ND, S 203RD, S 204TH, S 205TH, S 206TH, S 207TH, S 208TH, S 209TH, S 210TH, S 211ST, S 212ND, S 213RD, S 214TH, S 215TH, S 216TH, S 217TH, S 218TH, S 219TH, S 220TH, S 221ST, S 222ND, S 223RD, S 224TH, S 225TH, S 226TH, S 227TH, S 228TH, S 229TH, S 230TH, S 231ST, S 232ND, S 233RD, S 234TH, S 235TH, S 236TH, S 237TH, S 238TH, S 239TH, S 240TH, S 241ST, S 242ND, S 243RD, S 244TH, S 245TH, S 246TH, S 247TH, S 248TH, S 249TH, S 250TH, S 251ST, S 252ND, S 253RD, S 254TH, S 255TH, S 256TH, S 257TH, S 258TH, S 259TH, S 260TH, S 261ST, S 262ND, S 263RD, S 264TH, S 265TH, S 266TH, S 267TH, S 268TH, S 269TH, S 270TH, S 271ST, S 272ND, S 273RD, S 274TH, S 275TH, S 276TH, S 277TH, S 278TH, S 279TH, S 280TH, S 281ST, S 282ND, S 283RD, S 284TH, S 285TH, S 286TH, S 287TH, S 288TH, S 289TH, S 290TH, S 291ST, S 292ND, S 293RD, S 294TH, S 295TH, S 296TH, S 297TH, S 298TH, S 299TH, S 300TH, S 301ST, S 302ND, S 303RD, S 304TH, S 305TH, S 306TH, S 307TH, S 308TH, S 309TH, S 310TH, S 311ST, S 312ND, S 313RD, S 314TH, S 315TH, S 316TH, S 317TH, S 318TH, S 319TH, S 320TH, S 321ST, S 322ND, S 323RD, S 324TH, S 325TH, S 326TH, S 327TH, S 328TH, S 329TH, S 330TH, S 331ST, S 332ND, S 333RD, S 334TH, S 335TH, S 336TH, S 337TH, S 338TH, S 339TH, S 340TH, S 341ST, S 342ND, S 343RD, S 344TH, S 345TH, S 346TH, S 347TH, S 348TH, S 349TH, S 350TH, S 351ST, S 352ND, S 353RD, S 354TH, S 355TH, S 356TH, S 357TH, S 358TH, S 359TH, S 360TH, S 361ST, S 362ND, S 363RD, S 364TH, S 365TH, S 366TH, S 367TH, S 368TH, S 369TH, S 370TH, S 371ST, S 372ND, S 373RD, S 374TH, S 375TH, S 376TH, S 377TH, S 378TH, S 379TH, S 380TH, S 381ST, S 382ND, S 383RD, S 384TH, S 385TH, S 386TH, S 387TH, S 388TH, S 389TH, S 390TH, S 391ST, S 392ND, S 393RD, S 394TH, S 395TH, S 396TH, S 397TH, S 398TH, S 399TH, S 400TH, S 401ST, S 402ND, S 403RD, S 404TH, S 405TH, S 406TH, S 407TH, S 408TH, S 409TH, S 410TH, S 411ST, S 412ND, S 413RD, S 414TH, S 415TH, S 416TH, S 417TH, S 418TH, S 419TH, S 420TH, S 421ST, S 422ND, S 423RD, S 424TH, S 425TH, S 426TH, S 427TH, S 428TH, S 429TH, S 430TH, S 431ST, S 432ND, S 433RD, S 434TH, S 435TH, S 436TH, S 437TH, S 438TH, S 439TH, S 440TH, S 441ST, S 442ND, S 443RD, S 444TH, S 445TH, S 446TH, S 447TH, S 448TH, S 449TH, S 450TH, S 451ST, S 452ND, S 453RD, S 454TH, S 455TH, S 456TH, S 457TH, S 458TH, S 459TH, S 460TH, S 461ST, S 462ND, S 463RD, S 464TH, S 465TH, S 466TH, S 467TH, S 468TH, S 469TH, S 470TH, S 471ST, S 472ND, S 473RD, S 474TH, S 475TH, S 476TH, S 477TH, S 478TH, S 479TH, S 480TH, S 481ST, S 482ND, S 483RD, S 484TH, S 485TH, S 486TH, S 487TH, S 488TH, S 489TH, S 490TH, S 491ST, S 492ND, S 493RD, S 494TH, S 495TH, S 496TH, S 497TH, S 498TH, S 499TH, S 500TH, S 501ST, S 502ND, S 503RD, S 504TH, S 505TH, S 506TH, S 507TH, S 508TH, S 509TH, S 510TH, S 511ST, S 512ND, S 513RD, S 514TH, S 515TH, S 516TH, S 517TH, S 518TH, S 519TH, S 520TH, S 521ST, S 522ND, S 523RD, S 524TH, S 525TH, S 526TH, S 527TH, S 528TH, S 529TH, S 530TH, S 531ST, S 532ND, S 533RD, S 534TH, S 535TH, S 536TH, S 537TH, S 538TH, S 539TH, S 540TH, S 541ST, S 542ND, S 543RD, S 544TH, S 545TH, S 546TH, S 547TH, S 548TH, S 549TH, S 550TH, S 551ST, S 552ND, S 553RD, S 554TH, S 555TH, S 556TH, S 557TH, S 558TH, S 559TH, S 560TH, S 561ST, S 562ND, S 563RD, S 564TH, S 565TH, S 566TH, S 567TH, S

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
FACILITY SUMMARY

Facility Name: <u>Nitram, Inc.</u>		Date Summary Prepared: <u>3/30/97</u>	
Location (attach detailed map):	County <u>Hillborough</u>	District <u>SW District</u>	
Federal Permit # <u>FL0001043</u> and expiration date: <u>6/30/96</u>	State GMS # and <u>4029P20054</u> State expiration date: <u>1/30/2000</u>	Facility Type: <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Municipal <input type="checkbox"/> Federal <input type="checkbox"/> Agricultural Other (list):	
Function of facility: <u>Produces liquid fertilizer by dissolving rock phosphate with nitric acid</u>			
Description of treatment process: <u>The boiler blowdown, wastewater from the demineralized area, demineralized regenerant wastewater condensate leak, and area stormwater are combined in a 30,000 gallon tank where the wastewater is diluted, aerated, and pH adjusted. The non-contact cooling water and cooling water blowdown are diverted to a lined treatment pond then combined with the other wastewater in the above mentioned 30,000 gallon tank, then discharged to Delaney Creek</u>			
Receiving waters: <u>Delaney Creek</u>		Classification: <input type="checkbox"/> I <input type="checkbox"/> II <input checked="" type="checkbox"/> III	
Design Flow: <u>.41 mgd</u> <u>20 mgd (MON. AVG.)</u> MIN. MAX.	Mean Flow: <u>4/96 to 9/96</u> <u>.196 AVG. OF MON. AVG.</u>	Flow during survey:	
Discharge is: <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent <input type="checkbox"/> Seasonal <input type="checkbox"/> Rainfall dependent Other (describe): therefore, the best time to sample is:			
If facility has a mixing zone, give details (size, parameters affected, etc.): <u>No, but is requesting one for temperature</u>			
List effluent limits (if necessary, attach relevant paperwork):		Describe special permit conditions and permit modifications:	
Parameter	Limit (units)		
<u>see attachments</u>			

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
FACILITY SUMMARY

(Facility)

## Description of permitted outfall(s):

8 ft diameter discharge pipe with a 30" flange and 10 ft long to Benjamin Creek. The outfall is located at 35th Avenue

## List permit violations (from MOR data or other source) and plant upsets that occurred within past year:

NO EXCEEDANCES ON NPDES PERMIT LOOKING AT DATA FROM 4/96 TO PRESENT (WHEN DISCHARGE RESUMED) ON STATE SURFACE WATER DISCHARGE PERMIT, FROM APRIL 96 - SEPT 96, THE MONTHLY MAX AND AVG. FOR TOTAL NITROGEN EXCEEDED DURING THE MONTHS OF JUNE, JULY & AUGUST. DATA FROM SEPT 96 TO PRESENT HAS NOT YET BEEN RECEIVED. A TENTATIVE EXPLANATION WAS RECEIVED ON WHY THESE VIOLATIONS OCCURRED. COPY OF LETTER ATTACHED.

## Describe previous impact bioassessments, WQBEL's, and previous or current enforcement actions:

PAULAS CURRENT CO ADDRESSES GW ONLY AT THIS TIME. SURFACE WATER ISSUES IN THE CO HAD BEEN ADDRESSED SEVERAL YEARS AGO. CANNOT LOCATE ANY OTHER ITEMS, I.E.: WQBELS ETC.

## Discuss comparability of MOR results to past DER results and whether there are trends (improving, declining) in the data set:

IN THE PAST TEN YEARS, THE NITROGEN LEVELS HAVE BEEN REDUCED FROM THE OUTFALL, HOWEVER, THEY ARE STILL HIGH.

## Additional information:

## Staff contributing to this review (signature):

Candace Prange (Biologist)

[Signature] (Inspector)

[Signature] (Engineer)

( )

( )

( )

PERMITTEE:  
NITRAM, INCORPORATED

GMS ID No.: 4029P20054  
Permit No.: IO29-254127

SPECIFIC CONDITIONS: (cont'd.)

15.b. TABLE I: Effluent Monitoring Requirements for Monitoring Station 001.

EFFLUENT CHARACTERISTIC	DISCHARGE LIMITATIONS			SAMPLING TYPE	MONITORING FREQUENCY
	DAILY MIN	MONTHLY AVG	DAILY MAX		
Flow (MGD)	N/A	.20	.41	Recorder	Continuous
Total Nitrogen Concentration (mg/l)	N/A	7	12	24-hr composite	Daily
Total Nitrogen Load (lbs/day)	N/A	25	50	24-hr composite	Daily
Nitrate + Nitrite (mg/l)	N/A	Report	Report	24-hr composite	Daily
Total Suspended Solids (mg/l)	N/A	Report	20	24-hr composite	Daily
Total Ammonia Nitrogen (mg/l)	N/A	Report	Report	24-hr composite	Daily
Total Phosphorus (mg/l)	N/A	Report	Report	24-hr composite	Daily
Unionized Ammonia (mg/l)	N/A	Report	0.02	Calculation	Daily
Temperature (°F)	N/A	Report	90.0	In-Situ	Daily
pH (std units)	6.5	Report	8.5	Recorder	Continuous
Dissolved Oxygen (mg/l)	6.0	Report	N/A	Grab	Daily
Specific Conductance (umhos/cm)	N/A	Report	Report	Grab	Daily
* Lined Pond Water Level (ft)	Report	Report	Report	Gauge	Daily
* Lined Pond Available Capacity (inches of rainfall)	Report	Report	Report	Calculation	Daily
* Lined Pond Available Capacity (gallons)	Report	Report	Report	Calculation	Daily
Prilling Towers (Hrs. Operated)	N/A	Report	Report	Logs	Daily

\* Refers to the emergency overflow pond.



**STATE OF FLORIDA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET** (5-10-96)

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER: <b>24040082</b>	DATE (MM/DD): <b>3/17/97</b>	TIME: <b>1050</b>	RECEIVING BODY OF WATER: <b>Delaney Creek</b>
SUBMITTING AGENCY NAME: _____				

REMARKS: <b>Low Tide</b>	COUNTY: <b>Hills</b>	LOCATION: <b>Nitram, Inc.</b>	FIELD ID/NAME: <b>Reference Site</b>
--------------------------	----------------------	-------------------------------	--------------------------------------

**RIPARIAN ZONE/INSTREAM FEATURES**

Predominant Land-Use in Watershed (specify relative percent in each category):

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)
		<b>30</b>		<b>50</b>		<b>20</b>	

Local Watershed Erosion (check box): None ☐ Slight ☐ Moderate ☒ Heavy ☐

Local Watershed NPS Pollution (check box): No evidence ☐ Slight ☐ Moderate potential ☒ Obvious sources ☐

Width of riparian vegetation (m) on least buffered side: \_\_\_\_\_ *List & map dominant vegetation on back*

Artificially Channelized ☒ no recent, severe some recovery mostly recovered more sinuous

Artificially Impounded ☐ yes

High Water Mark: **1** (m above present water level) + **0.3** (present depth in m) = **1.3** (m above bed)

Typical Width (m)/Depth (m)/Velocity (m/sec) Transect

<b>0.05 m/s</b> <b>0.1 m deep</b>	<b>0.04 m/s</b> <b>0.2 m deep</b>	<b>0.08 m/s</b> <b>0.1 m deep</b>
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Canopy Cover % : Open : ☐ Lightly Shaded (11-45%) : ☐ Moderately Shaded (46-80%) : ☒ Heavily Shaded: ☐

**SEDIMENT/SUBSTRATE**

Sediment Odors: Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Anaerobic: ☐ Other: ☐

Sediment Oils: Absent: ☒ Slight: ☐ Moderate: ☐ Profuse: ☐

Sediment Deposition: Sludge: ☐ Sand smothering: none slight moderate severe **Silt smothering** none slight moderate severe Other: ☐

Substrate Types	% coverage	# times sampled	method	Substrate Types	% coverage	# times sampled	method
Woody Debris (Snags)	<b>10</b>	<b>3</b>	<b>net</b>	Sand	<b>40</b>	<b>7</b>	<b>net</b>
Leaf Packs or Mats	<b>40</b>	<b>7</b>	<b>net</b>	Mud/Muck/Silt	<b>10</b>	<b>3</b>	<b>net</b>
Aquatic Vegetation				Other:			
Rock or Shell Rubble				Other:			
Undercut banks/Roots				Draw aerial view sketch of habitats found in 100 m section			

WATER QUALITY	Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (µmho/cm) or Salinity (ppt):	Salinity	Battery	Secchi (m):
Top								<b>VOR</b>
Mid-depth	<b>0.2</b>	<b>19.29</b>	<b>7.3</b>	<b>3.87</b>	<b>18.542.0</b>	<b>0.3</b>	<b>9.5</b>	
Bottom								

System Type : Stream: **4** (1st - 2nd order 3rd - 4th order 5th - 6th order 7th order or greater) Lake: ☐ Wetland: ☐ Estuary: ☐ Other: ☐

Water Odors (check box): Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Other: ☐

Water Surface Oils (check box): None: ☒ Sheen: ☐ Globbs: ☐ Slick: ☐

Clarity (check box): Clear: ☐ Slightly turbid: ☒ Turbid: ☐ Opaque: ☐

Color (check box): Tannic: ☐ Green (algae): ☐ Clear: ☒ Other: ☐

Weather Conditions/Notes: <b>Sunny, clear, not windy</b>	Abundance:	Absent	Rare	Common	Abundant
	Periphyton	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Fish	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Aquatic Macrophytes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Iron/sulfur Bacteria	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLING TEAM: <b>Andrea Grainger</b>	SIGNATURE: <b>Andrea Grainger</b>	DATE: <b>3/17/97</b>
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**STATE OF FLORIDA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**FRESHWATER BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET (4-22-96)**

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER: <b>24040082</b>	DATE (M/D/Y): <b>3/11/97</b>	RECEIVING BODY OF WATER: <b>Delaney Creek.</b>
SUBMITTING AGENCY NAME: _____			

REMARKS: <b>Low tide</b>	COUNTY: <b>Hills</b>	LOCATION: <b>Nitram Inc.</b>	FIELD ID NAME: <b>Reference Site</b>
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Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
<b>Substrate Types &amp; Availability</b> <div style="border: 1px solid black; width: 50px; text-align: center; margin: 5px auto;">15</div>	Greater than 30% snags, logs, tree roots, aquatic vegetation, leaf packs (partially decayed), undercut banks, rock, or other stable habitat. 20 19 18 17 16	16% to 30% snags, logs, tree roots, aquatic vegetation, leaf packs, etc. Adequate habitat. Some substrates may be new fall (fresh leaves or snags). <div style="border: 1px solid black; width: 50px; text-align: center;">15</div> 14 13 12 11	5% to 15% snags, logs, tree roots, aquatic vegetation, leaf packs, etc. Less than desirable habitat, frequently disturbed or removed. 10 9 8 7 6	Less than 5% snags, logs, tree roots, aquatic vegetation, leaf packs, etc. Lack of habitat is obvious, substrates unstable or smothered. 5 4 3 2 1
<b>Water Velocity</b> <div style="border: 1px solid black; width: 50px; text-align: center;">15 89</div>	Max. observed at typical transect: >0.25 m/sec. but < 1 m/sec 20 19 18 17 16	Max. observed at typical transect: 0.1 to 0.25 m/sec 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec <div style="border: 1px solid black; width: 50px; text-align: center;">10 9</div> 8 7 6	Max. observed at typical transect <0.05 m/sec, or spate occurring; > 1 m/sec 5 4 3 2 1
<b>Artificial Channelization</b> <div style="border: 1px solid black; width: 50px; text-align: center;">15</div>	No artificial channelization or dredging. Stream with normal, sinuous pattern 20 19 18 17 16	May have been channelized in the past (>20 yrs), but mostly recovered, fairly good sinuous pattern <div style="border: 1px solid black; width: 50px; text-align: center;">15</div> 14 13 12 11	Channelized, somewhat recovered, but > 80% of area affected 10 9 8 7 6	Artificially channelized, box-cut banks, straight, instream habitat highly altered 5 4 3 2 1
<b>Habitat Smothering</b> <div style="border: 1px solid black; width: 50px; text-align: center;">16</div>	Less than 20% of habitats affected by sand or silt accumulation 20 19 18 17 <div style="border: 1px solid black; width: 20px; text-align: center;">16</div>	20%-50% of habitats affected by sand or silt accumulation 15 14 13 12 11	Smothering of 50%-80% of habitats with sand or silt, pools shallow, frequent sediment movement 10 9 8 7 6	Smothering of >80% of habitats with sand or silt, a severe problem, pools absent 5 4 3 2 1
<b>Bank Stability</b> <div style="border: 1px solid black; width: 50px; text-align: center;">10</div>	Stable. No evidence of erosion or bank failure. Little potential for future problems. 20 19 18 17 16	Moderately stable. Infrequent or small areas of erosion, mostly healed over. 15 14 13 12 11	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. <div style="border: 1px solid black; width: 50px; text-align: center;">10</div> 9 8 7 6	Unstable. Many (60%-80%) raw, eroded areas. Obvious bank sloughing. 5 4 3 2 1
<b>Riparian Buffer Zone Width</b> <div style="border: 1px solid black; width: 50px; text-align: center;">1</div>	Width of native vegetation (least buffered side) greater than 18 m 20 19 18 17 16	Width of native vegetation (least buffered side) 12 m to 18 m 15 14 13 12 11	Width of native vegetation 6 to 12 m, human activities still close to system 10 9 8 7 6	Less than 6 m of native buffer zone due to intensive human activities 5 4 3 2 <div style="border: 1px solid black; width: 20px; text-align: center;">1</div>
<b>Riparian Zone Vegetation Quality</b> <div style="border: 1px solid black; width: 50px; text-align: center;">8</div>	Over 80% of riparian surfaces consist of native plants, including trees, understory shrubs, or non-woody macrophytes. Normal, expected plant community for given sunlight & habitat conditions. 20 19 18 17 16	50% to 80% of riparian zone is vegetated, and/or one class of plants normally expected for the sunlight & habitat conditions is not represented. Some disruption in community evident. 15 14 13 12 11	25% to 50% of riparian zone is vegetated, and/or one or two expected classes of plants are not represented. Patches of bare soil or closely cropped vegetation, disruption obvious. 10 9 <div style="border: 1px solid black; width: 20px; text-align: center;">8</div> 7 6	Less than 25% of streambank surfaces are vegetated and/or poor plant community (e.g. grass monoculture or exotics) present. Vegetation removed to stubble height of 2 inches or less. 5 4 3 2 1

Add 5 points if cross-sectional area of flow is estimated to be > one square meter during periods of normal flow.

74

**TOTAL SCORE**

**Comments**

ANALYSIS DATE: <b>3/11/97</b>	ANALYST: <b>Andrea Grainger</b>	SIGNATURE: <i>Andrea Grainger</i>
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**STATE OF FLORIDA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET (5-10-96)**

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER: <b>24040077</b>	DATE (M/D/Y): <b>3/17/97</b>	TIME: <b>1020</b>	RECEIVING BODY OF WATER: <b>Delaney Creek</b>
SUBMITTING AGENCY NAME: _____				

REMARKS: <b>Low Tide</b>	COUNTY: <b>Hills</b>	LOCATION: <b>Nitram, Inc.</b>	FIELD ID NAME: <b>Test Site 1</b>
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**RIPARIAN ZONE/INSTREAM FEATURES**

Predominant Land-Use in Watershed (specify relative percent in each category):

Forest/Natural <input type="checkbox"/>	Silviculture <input type="checkbox"/>	Field/Pasture <b>30</b>	Agricultural <input type="checkbox"/>	Residential <b>50</b>	Commercial <input type="checkbox"/>	Industrial <b>20</b>	Other (Specify) <input type="checkbox"/>
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Local Watershed Erosion (check box): None ☐ Slight ☐ Moderate ☒ Heavy ☐

Local Watershed NPS Pollution (check box): No evidence ☐ Slight ☐ Moderate potential ☒ Obvious sources ☐

Width of riparian vegetation (m) on least buffered side: **2** *List & map dominant vegetation on back*

Artificially Channelized ☐ no recent, severe some recovery mostly recovered more sinuous

Artificially Impounded ☐ yes

High Water Mark: ☐ + **0.5** = **1 1/2**  
(m above present water level) (present depth in m) (m above bed)

Typical Width (m)/Depth (m) /Velocity (m/sec) Transect

<b>0.02 m/s</b> <b>0.3 m deep</b>	<b>0.02 m/s</b> <b>0.5 m deep</b>	<b>0.02 m/s</b> <b>0.4 m deep</b>
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Canopy Cover % : Open : ☐ Lightly Shaded (11-45%): ☐ Moderately Shaded (46-80%): ☒ Heavily Shaded: ☐

**SEDIMENT/SUBSTRATE**

Sediment Odors: Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Anaerobic: ☐ Other: ☐

Sediment Oils: Absent: ☒ Slight: ☐ Moderate: ☐ Profuse: ☐

Sediment Deposition: Sludge: ☐ Sand smothering: none slight moderate severe **Silt smothering** none slight moderate severe Other: ☐

Substrate Types	% coverage	# times sampled	method	Substrate Types	% coverage	# times sampled	method
Woody Debris (Snags)	<b>15</b>	<b>2</b>		Sand	<b>30</b>	<b>5</b>	
Leaf Packs or Mats	<b>20</b>	<b>5</b>		Mud/Muck/Silt	<b>15</b>	<b>3</b>	
Aquatic Vegetation	<b>20</b>	<b>5</b>		Other:			
Rock or Shell Rubble				Other:			
Undercut banks/Roots				Draw aerial view sketch of habitats found in 100 m section			

WATER QUALITY	Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (µmho/cm) or Salinity (ppt):	Salinity	Battery	Secchi (m):
Top								
Mid-depth	<b>0.425</b>	<b>18.96</b>	<b>7.27</b>	<b>3.01</b>	<b>18.607.0</b>	<b>0.3</b>	<b>9.1</b>	<b>V0B</b>
Bottom								

System Type : Stream: **4** (1st - 2nd order 3rd - 4th order 5th - 6th order 7th order or greater) Lake: ☐ Wetland: ☐ Estuary: ☐ Other: ☐

Water Odors (check box): Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Other: ☐

Water Surface Oils (check box): None: ☐ Sheen: ☒ Globbs: ☐ Slick: ☐

Clarity (check box): Clear: ☐ Slightly turbid: ☒ Turbid: ☐ Opaque: ☐

Color (check box): Tannic: ☐ Green (algae): ☒ Clear: ☐ Other: ☐

Weather Conditions/Notes: **Sunny, clear, no wind.**

Abundance:	Absent	Rare	Common	Abundant
Periphyton	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fish	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Aquatic Macrophytes	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Iron/sulfur Bacteria	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLING TEAM: <b>Andrea Grainger</b>	SIGNATURE: <b>Andrea Grainger</b> DATE: <b>3/17/97</b>
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**STATE OF FLORIDA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**FRESHWATER BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET (4-22-96)**

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER: <b>24040077</b>	DATE (M/D/Y): <b>3/11/97</b>	RECEIVING BODY OF WATER: <b>Delaney Creek</b>
SUBMITTING AGENCY NAME: _____			

REMARKS: <b>Low tide</b>	COUNTY: <b>Hills</b>	LOCATION: <b>Nitram, Inc</b>	FIELD ID/NAME: <b>Test Site 1</b>
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Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
<b>Substrate Types &amp; Availability</b>  <div style="border: 1px solid black; width: 50px; text-align: center; margin: 5px auto;">16</div>	Greater than 30% snags, logs, tree roots, aquatic vegetation, leaf packs (partially decayed), undercut banks, rock, or other stable habitat.  20 19 18 17 <b>16</b>	16% to 30% snags, logs, tree roots, aquatic vegetation, leaf packs, etc. Adequate habitat. Some substrates may be new fall (fresh leaves or snags).  15 14 13 12 11	5% to 15% snags, logs, tree roots, aquatic vegetation, leaf packs, etc. Less than desirable habitat, frequently disturbed or removed.  10 9 8 7 6	Less than 5% snags, logs, tree roots, aquatic vegetation, leaf packs, etc. Lack of habitat is obvious, substrates unstable or smothered.  5 4 3 2 1
<b>Water Velocity</b>  <div style="border: 1px solid black; width: 50px; text-align: center; margin: 5px auto;">7</div>	Max. observed at typical transect: >0.25 m/sec. but < 1 m/sec  20 19 18 17 16	Max. observed at typical transect: 0.1 to 0.25 m/sec  15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec  10 9 8 7 6	Max. observed at typical transect <0.05 m/sec, or spate occurring; > 1 m/sec  5 4 3 2 1
<b>Artificial Channelization</b>  <div style="border: 1px solid black; width: 50px; text-align: center; margin: 5px auto;">15</div>	No artificial channelization or dredging. Stream with normal, sinuous pattern  20 19 18 17 16	May have been channelized in the past (>20 yrs), but mostly recovered, fairly good sinuous pattern  <b>15</b> 14 13 12 11	Channelized, somewhat recovered, but > 80% of area affected  10 9 8 7 6	Artificially channelized, box-cut banks, straight, instream habitat highly altered  5 4 3 2 1
<b>Habitat Smothering</b>  <div style="border: 1px solid black; width: 50px; text-align: center; margin: 5px auto;">16</div>	Less than 20% of habitats affected by sand or silt accumulation  20 19 18 17 <b>16</b>	20%-50% of habitats affected by sand or silt accumulation  15 14 13 12 11	Smothering of 50%-80% of habitats with sand or silt, pools shallow, frequent sediment movement  10 9 8 7 6	Smothering of >80% of habitats with sand or silt, a severe problem, pools absent  5 4 3 2 1
<b>Bank Stability</b>  <div style="border: 1px solid black; width: 50px; text-align: center; margin: 5px auto;">10</div>	Stable. No evidence of erosion or bank failure. Little potential for future problems.  20 19 18 17 16	Moderately stable. Infrequent or small areas of erosion, mostly healed over.  15 14 13 12 11	Moderately unstable. Moderate areas of erosion, high erosion potential during floods.  <b>10</b> 9 8 7 6	Unstable. Many (60%-80%) raw, eroded areas. Obvious bank sloughing.  5 4 3 2 1
<b>Riparian Buffer Zone Width</b>  <div style="border: 1px solid black; width: 50px; text-align: center; margin: 5px auto;">1</div>	Width of native vegetation (least buffered side) greater than 18 m  20 19 18 17 16	Width of native vegetation (least buffered side) 12 m to 18 m  15 14 13 12 11	Width of native vegetation 6 to 12 m, human activities still close to system  10 9 8 7 6	Less than 6 m of native buffer zone due to intensive human activities  5 4 3 2 <b>1</b>
<b>Riparian Zone Vegetation Quality</b>  <div style="border: 1px solid black; width: 50px; text-align: center; margin: 5px auto;">11</div>	Over 80% of riparian surfaces consist of native plants, including trees, understory shrubs, or non-woody macrophytes. Normal, expected plant community for given sunlight & habitat conditions.  20 19 18 17 16	50% to 80% of riparian zone is vegetated, and/or one class of plants normally expected for the sunlight & habitat conditions is not represented. Some disruption in community evident.  15 14 13 12 <b>11</b>	25% to 50% of riparian zone is vegetated, and/or one or two expected classes of plants are not represented. Patches of bare soil or closely cropped vegetation, disruption obvious.  10 9 8 7 6	Less than 25% of streambank surfaces are vegetated and/or poor plant community (e.g. grass monoculture or exotics) present. Vegetation removed to stubble height of 2 inches or less.  5 4 3 2 1

Add 5 points if cross-sectional area of flow is estimated to be > one square meter during periods of normal flow.

76

**TOTAL SCORE**

**Comments**

ANALYSIS DATE: <b>3/17/97</b>	ANALYST: <b>Andrea Granger</b>	SIGNATURE: <b>Candrea granger</b>
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**STATE OF FLORIDA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET (5-10-96)**

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER: <b>24040078</b>	DATE (M/D/Y): <b>03/21/17</b>	TIME: <b>0920</b>	RECEIVING BODY OF WATER: <b>Delaney Creek</b>
SUBMITTING AGENCY NAME: _____				

REMARKS: <b>Low Tide</b>	COUNTY: <b>Hills</b>	LOCATION: <b>Nitram, Inc.</b>	FIELD ID/NAME: <b>Test Site 2</b>
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**RIPARIAN ZONE/INSTREAM FEATURES**

Predominant Land-Use in Watershed (specify relative percent in each category):

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)
		<b>30</b>		<b>50</b>		<b>20</b>	

Local Watershed Erosion (check box): None ☐ Slight ☐ Moderate ☐ Heavy ☐

Local Watershed NPS Pollution (check box): No evidence ☐ Slight ☐ Moderate potential ☐ Obvious sources ☐

Width of riparian vegetation (m) on least buffered side: **1** *List & map dominant vegetation on back*

Artificially Channelized ☐ no ☐ recent, severe some recovery ☒ mostly recovered more sinuous

Artificially Impounded ☐ yes

High Water Mark: **1** (m above present water level) + **0.5** (present depth in m) = **1.5** (m above bed)

Canopy Cover %: Open: ☐ Lightly Shaded (11-45%): ☐ Moderately Shaded (46-80%): ☒ Heavily Shaded: ☐

**SEDIMENT/SUBSTRATE**

Sediment Odors: Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Anaerobic: ☐ Other: ☐

Sediment Oils: Absent: ☒ Slight: ☐ Moderate: ☐ Profuse: ☐

Sediment Deposition: Sludge: ☐ Sand smothering: none slight ☐ moderate severe ☐ Silt smothering: none slight ☐ moderate severe ☒ Other: ☐

Substrate Types	% coverage	# times sampled	method	Substrate Types	% coverage	# times sampled	method
Woody Debris (Snags)	<b>5</b>	<b>3</b>		Sand	<b>50</b>	<b>5</b>	
Leaf Packs or Mats	<b>20</b>	<b>5</b>		Mud/Muck/Silt	<b>20</b>	<b>5</b>	
Aquatic Vegetation	<b>5</b>	<b>2</b>		Other:			
Rock or Shell Rubble				Other:			
Undercut banks/Roots				<i>Draw aerial view sketch of habitats found in 100 m section</i>			

WATER QUALITY	Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (µmho/cm) or Salinity (ppt):	Salinity	Battery	Secchi (m):
Top								
Mid-depth	<b>0.25</b>	<b>20.36</b>	<b>7.09</b>	<b>4.28</b>	<b>2070.0</b>	<b>1.1</b>	<b>9.50</b>	<b>VOB</b>
Bottom								

System Type: Stream: ☒ (1st - 2nd order 3rd - 4th order) ☐ (5th - 6th order 7th order or greater) Lake: ☐ Wetland: ☐ Estuary: ☐ Other: ☐

Water Odors (check box): Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Other: ☐

Water Surface Oils (check box): None: ☐ Sheen: ☒ Globbs: ☐ Slick: ☐ *alot of gas sheen*

Clarity (check box): Clear: ☐ Slightly turbid: ☒ Turbid: ☐ Opaque: ☐

Color (check box): Tannic: ☐ Green (algae): ☒ Clear: ☐ Other: ☐

Weather Conditions/Notes: <b>Clear, sunny, no wind.</b>	Abundance:	Absent	Rare	Common	Abundant
	Periphyton	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Fish	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Aquatic Macrophytes	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Iron/sulfur Bacteria	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLING TEAM: <b>Granger</b>	SIGNATURE: <b>Candrea Granger</b>	DATE: <b>3/17/17</b>
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**STATE OF FLORIDA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**FRESHWATER BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET (4-22-96)**

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER: <b>24040078</b>	DATE (M/D/Y): <b>3/11/97</b>	RECEIVING BODY OF WATER: <b>DeLaney Creek</b>
SUBMITTING AGENCY NAME: _____			

REMARKS: <b>Low hde</b>	COUNTY: <b>Hills</b>	LOCATION: <b>Nitram, Inc</b>	FIELD ID/NAME: <b>Test Site 2</b>
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Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
<b>Substrate Types &amp; Availability</b> <div style="border: 1px solid black; width: 50px; text-align: center; margin: 5px auto;">16</div>	Greater than 30% snags, logs, tree roots, aquatic vegetation, leaf packs (partially decayed), undercut banks, rock, or other stable habitat. 20 19 18 17 <b>16</b>	16% to 30% snags, logs, tree roots, aquatic vegetation, leaf packs, etc. Adequate habitat. Some substrates may be new fall (fresh leaves or snags). 15 14 13 12 11	5% to 15% snags, logs, tree roots, aquatic vegetation, leaf packs, etc. Less than desirable habitat, frequently disturbed or removed. 10 9 8 7 6	Less than 5% snags, logs, tree roots, aquatic vegetation, leaf packs, etc. Lack of habitat is obvious, substrates unstable or smothered. 5 4 3 2 1
<b>Water Velocity</b> <div style="border: 1px solid black; width: 50px; text-align: center; margin: 5px auto;">8</div>	Max. observed at typical transect: >0.25 m/sec. but < 1 m/sec 20 19 18 17 16	Max. observed at typical transect: 0.1 to 0.25 m/sec 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 10 9 <b>8</b> 7 6	Max. observed at typical transect <0.05 m/sec, or spate occurring; > 1 m/sec 5 4 3 2 1
<b>Artificial Channelization</b> <div style="border: 1px solid black; width: 50px; text-align: center; margin: 5px auto;">15</div>	No artificial channelization or dredging. Stream with normal, sinuous pattern 20 19 18 17 16	May have been channelized in the past (>20 yrs), but mostly recovered, fairly good sinuous pattern <b>15</b> 14 13 12 11	Channelized, somewhat recovered, but > 80% of area affected 10 9 8 7 6	Artificially channelized, box-cut banks, straight, instream habitat highly altered 5 4 3 2 1
<b>Habitat Smothering</b> <div style="border: 1px solid black; width: 50px; text-align: center; margin: 5px auto;">15</div>	Less than 20% of habitats affected by sand or silt accumulation 20 19 18 17 <b>16</b>	20%-50% of habitats affected by sand or silt accumulation <b>15</b> 14 13 12 11	Smothering of 50%-80% of habitats with sand or silt, pools shallow, frequent sediment movement 10 9 8 7 6	Smothering of >80% of habitats with sand or silt, a severe problem, pools absent 5 4 3 2 1
<b>Bank Stability</b> <div style="border: 1px solid black; width: 50px; text-align: center; margin: 5px auto;">10</div>	Stable. No evidence of erosion or bank failure. Little potential for future problems. 20 19 18 17 16	Moderately stable. Infrequent or small areas of erosion, mostly healed over. 15 14 13 12 11	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. <b>10</b> 9 8 7 6	Unstable. Many (60%-80%) raw, eroded areas. Obvious bank sloughing. 5 4 3 2 1
<b>Riparian Buffer Zone Width</b> <div style="border: 1px solid black; width: 50px; text-align: center; margin: 5px auto;">1</div>	Width of native vegetation (least buffered side) greater than 18 m 20 19 18 17 16	Width of native vegetation (least buffered side) 12 m to 18 m 15 14 13 12 11	Width of native vegetation 6 to 12 m, human activities still close to system 10 9 8 7 6	Less than 6 m of native buffer zone due to intensive human activities 5 4 3 2 <b>1</b>
<b>Riparian Zone Vegetation Quality</b> <div style="border: 1px solid black; width: 50px; text-align: center; margin: 5px auto;">8</div>	Over 80% of riparian surfaces consist of native plants, including trees, understory shrubs, or non-woody macrophytes. Normal, expected plant community for given sunlight & habitat conditions. 20 19 18 17 16	50% to 80% of riparian zone is vegetated, and/or one class of plants normally expected for the sunlight & habitat conditions is not represented. Some disruption in community evident. 15 14 13 12 11	25% to 50% of riparian zone is vegetated, and/or one or two expected classes of plants are not represented. Patches of bare soil or closely cropped vegetation, disruption obvious. 10 9 <b>8</b> 7 6	Less than 25% of streambank surfaces are vegetated and/or poor plant community (e.g. grass monoculture or exotics) present. Vegetation removed to stubble height of 2 inches or less. 5 4 3 2 1

☐ Add 5 points if cross-sectional area of flow is estimated to be > one square meter during periods of normal flow.

73

**TOTAL SCORE**

**Comments**  
**HD was vandalized at this site.**

ANALYSIS DATE: <b>3/17/97</b>	ANALYST: <b>Granger</b>	SIGNATURE: <b>Candrea Granger</b>
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**STATE OF FLORIDA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET (5-10-96)**

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER: <b>240 40079</b>	DATE (M/D/Y): <b>3/17/97</b>	TIME: <b>0830</b>	RECEIVING BODY OF WATER: <b>Delaney Creek</b>
SUBMITTING AGENCY NAME: _____				

REMARKS: <b>Low hdy</b>	COUNTY: <b>Hills</b>	LOCATION: <b>Nitram, Inc.</b>	FIELD ID/NAME: <b>Test Site 3</b>
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**RIPARIAN ZONE/INSTREAM FEATURES**

Predominant Land-Use in Watershed (specify relative percent in each category):

Forest/Natural <input type="checkbox"/>	Silviculture <input type="checkbox"/>	Field/Pasture <b>30</b>	Agricultural <input type="checkbox"/>	Residential <b>50</b>	Commercial <input type="checkbox"/>	Industrial <b>20</b>	Other (Specify) <input type="checkbox"/>
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Local Watershed Erosion (check box): None ☐ Slight ☐ Moderate ☒ Heavy ☐

Local Watershed NPS Pollution (check box): No evidence ☐ Slight ☐ Moderate potential ☒ Obvious sources ☐

Width of riparian vegetation (m) on least buffered side: \_\_\_\_\_ *List & map dominant vegetation on back*

Artificially Channelized ☒ no recent, severe some recovery mostly recovered more sinuous

Artificially Impounded ☐ yes

High Water Mark: ☐ + **0.7** = **1.7**  
(m above present water level) (present depth in m) (m above bed)

Typical Width (m)/Depth (m)/Velocity (m/sec) Transect **7 m wide**

0.05 m/s 0.2 m deep	0.05 m/s 0.3 m deep	0.05 m/s 0.1 m deep
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Canopy Cover % : Open : ☐ Lightly Shaded **(11-45%): ☒** Moderately Shaded (46-80%): ☐ Heavily Shaded: ☐

**SEDIMENT/SUBSTRATE**

Sediment Odors: Normal: ☐ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Anaerobic: ☒ Other: ☐

Sediment Oils: Absent: ☒ Slight: ☐ Moderate: ☐ Profuse: ☐

Sediment Deposition: Sludge: ☐ Sand smothering: none slight moderate severe **Silt smothering: none slight moderate severe** Other: ☐

Substrate Types	% coverage	# times sampled	method	Substrate Types	% coverage	# times sampled	method
Woody Debris (Snags)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leaf Packs or Mats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mud/Muck/Silt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aquatic Vegetation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rock or Shell Rubble	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Undercut banks/Roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draw aerial view sketch of habitats found in 100-m section			

WATER QUALITY	Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (µmho/cm) or Salinity (ppt):	Salinity	Battery	Secchi (m):
Top								<b>VOB</b>
Mid-depth	<b>0.15</b>	<b>19.33</b>	<b>7.07</b>	<b>2.86</b>	<b>2400.0</b>	<b>1.3</b>	<b>9.00</b>	
Bottom								

System Type : Stream: ☐ (1st - 2nd order 3rd - 4th order 5th - 6th order 7th order or greater) Lake: ☐ Wetland: ☐ Estuary: ☒ Other: ☐

Water Odors (check box): Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Other: ☐

Water Surface Oils (check box): None: ☐ Sheen: ☒ Globbs: ☐ Slick: ☐

Clarity (check box): Clear: ☐ Slightly turbid: ☐ Turbid: ☒ Opaque: ☐

Color (check box): Tannic: ☐ Green (algae): ☒ Clear: ☐ Other: ☐

Weather Conditions/Notes: **Sunny, clear, no wind**

Abundance:	Absent	Rare	Common	Abundant
Periphyton	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fish	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Aquatic Macrophytes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Iron/sulfur Bacteria	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLING TEAM: <b>Andrea Granger</b>	SIGNATURE: <b>Andrea Granger</b>	DATE: <b>3/17/97</b>
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STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
MARINE BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET

*This site registers 5.0 ppt salinity*

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER: <b>24040079</b>	DATE (MM/DD): <b>3/17/97</b>	RECEIVING BODY OF WATER: <b>Delaney Creek</b>
SUBMITTING AGENCY NAME: _____			

REMARKS: <b>Low tide</b>	LOCATION: <b>Nitram, Inc.</b>	FIELD ID NAME: <b>Test Site 3</b>
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Habitat Parameter score	Excellent	Good	Fair	Poor
Littoral Alterations <b>9</b>	None—Unaltered shoreline. 9-10 points	Mostly natural shoreline, but with occasional riprap. 6-8 points	Shoreline consisting mostly of riprap and vertical seawalls. 3-5 points	Shoreline consisting almost entirely of vertical seawalls. 0-2 points
Community Types Observed <b>26</b>	At least four communities observed from the following list: mangrove swamp, marsh, oyster bar, grass bed, reef, saltern, natural beach, or tidal creek. 38-50 points	Two or three communities observed from those listed. 26-37 points <i>mangrove tidal creek</i>	One community observed from those listed. 13-25 points	No communities observed from those listed. 0-12 points
Tidal Fluctuation <b>3</b>	>0.75 m. 4-5 points	0.5 - 0.75 m. 3 points	0.25 - 0.5 m. 2 points	<0.25 m. 0-1 point
Freshwater Discharges/Alterations <b>3</b>	Only natural runoff. 9-10 points	Mostly natural runoff, but with a few, small stormwater sources. 6-8 points	Considerable stormwater discharge from local roads, parking lots, etc. 3-5 points	Extensive manmade discharges, especially from canals draining large tracts of land. 0-2 points
Flow and Wave Action <b>5</b>	Light to moderate wave action present except under the harshest weather conditions. Flow unrestricted by manmade structures. 9-10 points	—	—	Heavy wave action sometimes present even during average weather conditions, or flow restricted by manmade structures so that velocities are very high. 0-2 points
Sediment Type <b>3</b>	Combination of sand, gravel, and shell. 12-15 points	Primarily sand, with small areas of mud. 8-11 points	Mixture of sand and mud, or well-aerated mud only. 4-7 points	Anaerobic mud. 0-3 points

TOTAL SCORE **49**

COMMENTS: *There is construction of Delaney Creek Restoration Site along side. This gets to be about 5' to 5' high tide*

ANALYSIS DATE: <b>3/17/97</b>	ANALYST: <b>Andrea Granger</b>	SIGNATURE: <i>Andrea Granger</i>
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**STATE OF FLORIDA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET** (5-10-96)

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER: <b>24040076</b>	DATE (M/D/Y): <b>03/17/97</b>	TIME: <b>0730</b>	RECEIVING BODY OF WATER: <b>Delaney Creek</b>
SUBMITTING AGENCY NAME: _____				

REMARKS: <b>Low Tide</b>	COUNTY: <b>Hills</b>	LOCATION: <b>Nitram, Inc</b>	FIELD ID NAME: <b>Test Site 4</b>
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**RIPARIAN ZONE/INSTREAM FEATURES**

Predominant Land-Use in Watershed (specify relative percent in each category):

Forest/Natural <input type="checkbox"/>	Silviculture <input type="checkbox"/>	Field/Pasture <b>30</b>	Agricultural <input type="checkbox"/>	Residential <b>50</b>	Commercial <input type="checkbox"/>	Industrial <b>26</b>	Other (Specify) <input type="checkbox"/>
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Local Watershed Erosion (check box): None ☐ Slight ☐ Moderate ☒ Heavy ☐

Local Watershed NPS Pollution (check box): No evidence ☐ Slight ☐ Moderate potential ☒ Obvious sources ☐

Width of riparian vegetation (m) on least buffered side: **3** *List & map dominant vegetation on back*

Artificially Channelized ☐ no ☐ recent, severe ☐ some recovery ☒ mostly recovered ☐ more sinuous

Artificially Impounded ☐ yes ☐ no

High Water Mark: ☐ (m above present water level) + **0.5** (present depth in m) = **1.5** (m above bed)

Typical Width (m)/Depth (m)/Velocity (m/sec) Transect

<b>0.04 m/s</b> <b>0.1 m deep</b>	<b>0.05 m/s</b> <b>0.3 m deep</b>	<b>0.05 m/s</b> <b>0.1 m deep</b>
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Canopy Cover % : Open : ☐ Lightly Shaded **(11) 45%** ☒ Moderately Shaded (46-80%): ☐ Heavily Shaded: ☐

**SEDIMENT/SUBSTRATE**

Sediment Odors: Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Anaerobic: ☐ Other: ☐

Sediment Oils: Absent: ☒ Slight: ☐ Moderate: ☐ Profuse: ☐

Sediment Deposition: Sludge: ☐ Sand smothering: ☐ Silt smothering: ☒ Other: ☐

Substrate Types	% coverage	# times sampled	method
Woody Debris (Snags)			
Leaf Packs or Mats			
Aquatic Vegetation			
Rock or Shell Rubble			
Undercut banks/Roots			

Substrate Types	% coverage	# times sampled	method
Sand			
Mud/Muck/Silt			
Other:			
Other:			

*Draw aerial view sketch of habitats found in 100 m section*

WATER QUALITY	Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (µmho/cm) or Salinity (ppt):	Salinity	Batter	Secchi (m):
Top								
Mid-depth	<b>0.2</b>	<b>19.01</b>	<b>7.02</b>	<b>2.94</b>	<b>3850.0</b>	<b>2.1</b>	<b>9.90</b>	<b>VOR</b>
Bottom								

System Type : Stream: ☐ (1st - 2nd order) ☐ (3rd - 4th order) ☐ (5th - 6th order) ☐ (7th order or greater) Lake: ☐ Wetland: ☐ Estuary: ☒ Other: ☐

Water Odors (check box): Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Other: ☐

Water Surface Oils (check box): None: ☐ Sheen: ☒ Globbs: ☐ Slick: ☐

Clarity (check box): Clear: ☐ Slightly turbid: ☒ Turbid: ☐ Opaque: ☐

Color (check box): Tannic: ☐ Green (algae): ☒ Clear: ☐ Other: ☐

Weather Conditions/Notes:	Abundance:
<b>Still early in AM, Sun up, little cool.</b>	Periphyton <input type="checkbox"/> Absent <input type="checkbox"/> Rare <input checked="" type="checkbox"/> Common <input type="checkbox"/> Abundant <input type="checkbox"/>
	Fish <input type="checkbox"/> Absent <input type="checkbox"/> Rare <input checked="" type="checkbox"/> Common <input type="checkbox"/> Abundant <input type="checkbox"/>
	Aquatic Macrophytes <input type="checkbox"/> Absent <input type="checkbox"/> Rare <input checked="" type="checkbox"/> Common <input type="checkbox"/> Abundant <input type="checkbox"/>
	Iron/sulfur Bacteria <input checked="" type="checkbox"/> Absent <input type="checkbox"/> Rare <input type="checkbox"/> Common <input type="checkbox"/> Abundant <input type="checkbox"/>

SAMPLING TEAM: <b>Korach / Grainger</b>	SIGNATURE: <b>condregrays</b>	DATE: <b>3/17/97</b>
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STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION  
MARINE BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER: <b>24040076</b>	DATE (MM/DD/YY): <b>3/17/97</b>	RECEIVING BODY OF WATER: <b>Delaney Creek</b>
SUBMITTING AGENCY NAME: _____			

REMARKS: <b>Low tide</b>	LOCATION: <b>Nitram, Inc</b>	FIELD ID NAME: <b>Test site 4</b>
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Habitat Parameter score	Excellent	Good	Fair	Poor
<b>Littoral Alterations</b> <b>10</b>	None—Unaltered shoreline. 9-10 points	Mostly natural shoreline, but with occasional riprap. 6-8 points	Shoreline consisting mostly of riprap and vertical seawalls. 3-5 points	Shoreline consisting almost entirely of vertical seawalls. 0-2 points
<b>Community Types Observed</b> <b>26</b>	At least four communities observed from the following list: <u>mangrove</u> swamp, marsh, oyster bar, grass bed, reef, saltern, <u>natural beach</u> , or <u>tidal creek</u> . 38-50 points	Two or three communities observed from those listed. 26-37 points <i>Some white mangrove but also of brazilian pepper.</i>	One community observed from those listed. 13-25 points	No communities observed from those listed. 0-12 points
<b>Tidal Fluctuation</b> <b>4</b>	>0.75 m. 4-5 points	0.5 - 0.75 m. 3 points	0.25 - 0.5 m. 2 points	<0.25 m. 0-1 point
<b>Freshwater Discharges/Alterations</b> <b>5</b>	Only natural runoff. 9-10 points	Mostly natural runoff, but with a few, small stormwater sources. 6-8 points	Considerable stormwater discharge from local roads, parking lots, etc. 3-5 points	Extensive manmade discharges, especially from canals draining large tracts of land. 0-2 points
<b>Flow and Wave Action</b> <b>7</b>	Light to moderate wave action present except under the harshest weather conditions. Flow unrestricted by manmade structures. 9-10 points	—	—	Heavy wave action sometimes present even during average weather conditions, or flow restricted by manmade structures so that velocities are very high. 0-2 points
<b>Sediment Type</b> <b>7</b>	Combination of sand, gravel, and shell. 12-15 points	Primarily sand, with small areas of mud. 8-11 points	Mixture of sand and mud, or well-aerated mud only. 4-7 points	Anaerobic mud. 0-3 points

TOTAL SCORE **59**

COMMENTS: **This site is east of a RCRA site known as Chlonde Metals**

ANALYSIS DATE: <b>3/17/97</b>	ANALYST: <b>Granger</b>	SIGNATURE: <i>Condrea Granger</i>
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**STATE OF FLORIDA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET (5-10-90)**

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER: <b>24046080</b>	DATE (M/D/Y): <b>3/17/97</b>	TIME: <b>0645</b>	RECEIVING BODY OF WATER: <b>Delaney Creek</b>
SUBMITTING AGENCY NAME: _____				

REMARKS: <b>Low Tide</b>	COUNTY: <b>Hills</b>	LOCATION: <b>Nitram, Inc.</b>	FIELD ID NAME: <b>Test Site 5</b>
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**RIPARIAN ZONE/INSTREAM FEATURES**

Predominant Land-Use in Watershed (specify relative percent in each category):

Forest/Natural <input type="checkbox"/>	Silviculture <input type="checkbox"/>	Field/Pasture <b>30</b>	Agricultural <input type="checkbox"/>	Residential <b>50</b>	Commercial <input type="checkbox"/>	Industrial <b>20</b>	Other (Specify) <input type="checkbox"/>
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Local Watershed Erosion (check box): None ☐ Slight ☐ Moderate ☒ Heavy ☐

Local Watershed NPS Pollution (check box): No evidence ☐ Slight ☐ Moderate potential ☒ Obvious sources ☐

Width of riparian vegetation (m) on least buffered side: **18** *List & map dominant vegetation on back*

Artificially Channelized ☐ no ☐ recent, severe some recovery ☒ mostly recovered more sinuous

Artificially Impounded ☐ yes ☐ no

High Water Mark: **1m** (m above present water level) + **1m** (present depth in m) = **2m** (m above bed)

Typical Width (m)/Depth (m)/Velocity (m/sec) Transect

<b>0.84 m/s</b> ↓ <b>0.3 m deep</b>	<b>0.04 m/s</b> ↓ <b>1 m deep</b>	<b>0.84 m/s</b> ↓ <b>m deep</b>
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Canopy Cover % : Open : ☐ Lightly Shaded (**11-45%**): ☒ Moderately Shaded (46-80%): ☐ Heavily Shaded: ☐

**SEDIMENT/SUBSTRATE**

Sediment Odors: Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Anaerobic: ☐ Other: ☐

Sediment Oils: Absent: ☒ Slight: ☐ Moderate: ☐ Profuse: ☐

Sediment Deposition: Sludge: ☐ Sand smothering: none slight ☐ moderate severe ☐ **Silt smothering: none slight ☒ moderate severe ☐** Other: ☐

Substrate Types	% coverage	# times sampled	method	Substrate Types	% coverage	# times sampled	method
Woody Debris (Snags)				Sand			
Leaf Packs or Mats				Mud/Muck/Silt			
Aquatic Vegetation				Other:			
Rock or Shell Rubble				Other:			
Undercut banks/Roots							

*Draw aerial view sketch of habitats found in 100 m section*

WATER QUALITY	Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (µmho/cm) or Salinity (ppt):	Salinity	Battery	Secchi (m):
Top								
Mid-depth	<b>0.5</b>	<b>24.69</b>	<b>6.92</b>	<b>0.34</b>	<b>25100.0</b>	<b>15.9</b>	<b>9.30</b>	<b>0.6</b>
Bottom								

System Type : Stream: ☐ (1st - 2nd order 3rd - 4th order 5th - 6th order 7th order or greater) Lake: ☐ Wetland: ☐ Estuary: ☒ Other: ☐

Water Odors (check box): Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Other: ☐

Water Surface Oils (check box): None: ☐ Sheen: ☒ Globbs: ☐ Slick: ☐

Clarity (check box): Clear: ☐ Slightly turbid: ☒ Turbid: ☐ Opaque: ☐

Color (check box): Tannic: ☐ Green (algae): ☒ Clear: ☐ Other: ☐

Weather Conditions/Notes:	Abundance:	Absent	Rare	Common	Abundant
<b>Sun just came up 15 minutes ago, still little cloudy, cool. Saw big otter chasing fish.</b>	Periphyton	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Aquatic Macrophytes	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Iron/sulfur Bacteria	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLING TEAM: <b>Grainger/Kovach</b>	SIGNATURE: <b>Candrea</b>	DATE: <b>3/17/97</b>
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**STATE OF FLORIDA**  
**DEPARTMENT OF ENVIRONMENTAL REGULATION**  
**MARINE BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET**

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER: <u>240.40080</u>	DATE (MO/Y): <u>3/11/97</u>	RECEIVING BODY OF WATER: <u>Delaney Creek.</u>
SUBMITTING AGENCY NAME: _____			

REMARKS: <u>low tide</u>	LOCATION: <u>Nitram, Inc.</u>	FIELD ID NAME: <u>Test site S</u>
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Habitat Parameter score	Excellent	Good	Fair	Poor
Littoral Alterations <u>10</u>	None—Unaltered shoreline. 9-10 points	Mostly natural shoreline, but with occasional riprap. 6-8 points	Shoreline consisting mostly of riprap and vertical seawalls. 3-5 points	Shoreline consisting almost entirely of vertical seawalls. 0-2 points
Community Types Observed <u>37</u>	At least four communities observed from the following list: <u>mangrove swamp, marsh, oyster bar, grass bed, reef, saltern, natural beach, or tidal creek.</u> 38-50 points	Two or three communities observed from those listed. <u>26-37</u> points	One community observed from those listed. 13-25 points	No communities observed from those listed. 0-12 points
Tidal Fluctuation <u>4</u>	>0.75 m. 4-5 points	0.5 - 0.75 m. 3 points	0.25 - 0.5 m. 2 points	<0.25 m. 0-1 point
Freshwater Discharges/Alterations <u>5</u>	Only natural runoff. 9-10 points	Mostly natural runoff, but with a few, small stormwater sources. 6-8 points	Considerable stormwater discharge from local roads, parking lots, etc. 3-5 points	Extensive manmade discharges, especially from canals draining large tracts of land. 0-2 points
Flow and Wave Action <u>7</u>	Light to moderate wave action present except under the harshest weather conditions. Flow unrestricted by manmade structures. 9-10 points	—	—	Heavy wave action sometimes present even during average weather conditions, or flow restricted by manmade structures so that velocities are very high. 0-2 points
Sediment Type <u>11</u>	Combination of sand, gravel, and shell. 12-15 points	Primarily sand, with small areas of mud. 8-11 points	Mixture of sand and mud, or well-aerated mud only. 4-7 points	Anaerobic mud. 0-3 points

<b>TOTAL SCORE</b> <del>67</del> <u>(74)</u>
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COMMENTS: <u>This site is next to a monitoring site for a RCRA site known as Chlonde Metals.</u>
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ANALYSIS DATE: <u>3/11/97</u>	ANALYST: <u>Granger</u>	SIGNATURE: <u>Condrea Granger</u>
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# FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Nitram  
 County: Hillsborough  
 Contact / District: Andrea Grainger / Southwest  
 NPDES Permit #: FL0001643  
 LIMS Sample #: 173584 LIMS Job #: 97-MAR-25-01

Sample Collection: Date 3/24/97 Time 0950  
 Test Beginning: Date 3/25/97 Time 1545  
 Test Ending: Date 3/27/97 Time 1635  
 Organism Batch #: 79 Diluent Batch #: 6  
 Organism Age: 2 days (collected 3-23-97)  
 Test Organism: Ameletus barkeri

sample log: 3-25-97 JS  
 Test Type: Screening / Definitive  
 Instrument Calibrations: pH meter # 7851

Temperature range: room 24.4°C - 25.6°C  
 incubator 24.4°C - 25.6°C  
 Test Number: 1 of 2

Remarks: D = dead, M = missing  
 Test invalidated at 24 hr due to excessive water control mortality. Suspect secondary shock to the entire system by salt change from 20‰ to 0‰ in only 3 hours.

Sample was scheduled A wrote # in wrong row on bioassay sample row KR 3-26-97  
 as possible with next  
 prepared ahead of time  
 OK

Temperature °C D.O. mg/L Conductivity µmhos/cm  
 90H018262 90H018262 G9005749  
 24.5 @ 24.6 8.4 @ 23.7°C 101.8 @ 103.1  
 1001 @ 985 @ 25.1°C  
 24.6 @ 24.5 8.2 @ 25.2°C 101.8 @ 104.5  
 1001 @ 1002 @ 25.1°C  
 24.2 @ 24.3 8.4 @ 23.8°C 103.8 @ 101.8  
 1002 @ 1001 @ 25.1°C  
 1001 @ 985

Conc.	Chamber #	Number Live			pH			Temperature (°C)			D.O. (mg/L)			UNCORRECTED Cond. (mmhos/cm)		
		0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h
CTL A	A13	5	5	5	8.6	8.0	8.0	24.2	24.9	25.0	7.9	7.2	7.2	10.10	10.40	10.64
CTL B	A14	5	2 <sup>30</sup>	0 <sup>20</sup>	8.6	8.1	8.0	24.2	24.6	25.0	7.9	7.1	7.2	10.10	10.45	10.77
CTL C	A15	5	3 <sup>30</sup>	1 <sup>20</sup>	8.6	8.0	8.0	24.2	25.4	25.0	7.8	7.1	7.2	10.10	10.65	10.88
CTL D	A16	5	4 <sup>10</sup>	4	8.6	8.1	8.0	24.2	24.8	24.6	7.8	7.1	7.2	10.10	10.60	10.29
100% A	A17	5	4 <sup>10</sup>	4	7.7	8.2	8.3	24.0	25.1	25.1	7.9	7.1	7.0	10.25	10.80	11.03
100% B	A18	5	3 <sup>20</sup>	3	7.7	8.2	8.3	23.9	25.0	24.7	7.9	7.1	7.0	10.25	10.75	10.63
100% C	A19	5	4 <sup>10</sup>	4	7.7	8.2	8.4	23.9	25.3	24.7	7.9	7.1	7.1	10.25	10.85	10.84
100% D	A20	5	2 <sup>30</sup>	2	7.7	8.2	8.4	23.9	25.4	24.6	8.0	7.0	7.1	10.30	10.80	10.86
Measured/Loaded by:	ND	KR	ND	JS	KR	KR	JS	KR	KR	JS	KR	KR	JS	ND	KR	KR
Recorded by:	JS	KR	ND	ND	ND	JS	ND	ND	JS	ND	ND	JS	ND	ND	ND	JS

Investigators' Signatures

Nashville  
John  
Yellow  
John  
John  
John  
John

Salt Water

Water Quality Parameters

Field Total Residual Cl<sub>2</sub> (mg/L): Not measured  
 Lab Total Residual Cl<sub>2</sub> (mg/L): 2.03  
 Alkalinity (mg/L as CaCO<sub>3</sub>): 45  
 Hardness (mg/L as CaCO<sub>3</sub>): 590  
 Total ammonia (mg/L as N): 2.0017  
 Ammonia Control: 5.9 ppt  
 Meter #98136 Meter Slope: -55  
 Blank: 2.0017  
 Salinity: 5.9 ppt  
 Sample Salinity: 5.9 ppt

## form updated 4/01/96



601 1893



NOTES IN FILE - 1111

REFERENCE SITE - GOOD

Summer Index Period: Stream Condition Index for Florida (SCI) (April 1996)													
Macroinvertebrate Dip Net (20 sweeps of most productive substrates)		Panhandle			Peninsula			Northeast					
	Value	5	3	1	Score	5	3	1	Score	5	3	1	Score
Total Number of Taxa	24	≥ 31	30-16	<16	7	≥ 26	25-14	<14	5	≥ 22	21-12	<12	
EPT Index		≥ 7	6-4	<4		≥ 4	3-2	<2	3	.	≥ 2	<2	
# Chironomid Taxa	2	≥ 9	8-5	<5		≥ 7	6-4	<4	1	≥ 7	6-4	<4	
% Contribution of Dominant Taxon	55	≤ 22	23-61	>61		≤ 29	30-64	>64	3	≤ 31	32-66	>66	
% Diptera	73	.	≤ 50	>50		.	≤ 37	>37	1	.	≤ 47	>47	
Florida Index	12	≥ 16	15-8	<8		≥ 7	6-4	<4	5	≥ 8	7-4	<5	
% Suspension feeders/Filterers	38	≥ 12	11-6	<6		.	≥ 7	<7	3	.	≥ 7	<7	
Total Score		Panhandle				Peninsula				Northeast			
Interpretation of Score		Excellent			27-33	Excellent			26-32	Excellent			25-29
		Good			21-26	Good			20-25	Good			19-24
		Poor			14-20	Poor			13-19	Poor			13-18
		Severely Degraded			7-13	Severely Degraded			7-12	Severely Degraded			7-12

Summer Index Period: Stream Condition Index for Florida (SCI) (April 1996)													
Macroinvertebrate Dip Net (20 sweeps of most productive substrates)	Value	Panhandle			Peninsula			Northeast					
		5	3	1	Score	5	3	1	Score	5	3	1	Score
Total Number of Taxa		≥ 31	30-16	<16		≥ 26	25-14	<14		≥ 22	21-12	<12	
EPT Index		≥ 7	6-4	<4		≥ 4	3-2	<2		-	≥ 2	<2	
# Chironomid Taxa		≥ 9	8-5	<5		≥ 7	6-4	<4		≥ 7	6-4	<4	
% Contribution of Dominant Taxon		≤ 22	23-61	>61		≤ 29	30-64	>64		≤ 31	32-66	>66	
% Diptera		-	≤ 50	>50		-	≤ 37	>37		-	≤ 47	>47	
Florida Index		≥ 16	15-8	<8		≥ 7	6-4	<4		≥ 8	7-4	<5	
% Suspension feeders/Filterers		≥ 12	11-6	<6		-	≥ 7	<7		-	≥ 7	<7	
Total Score		Panhandle				Peninsula				Northeast			
Interpretation of Score		Excellent			27-33	Excellent			26-32	Excellent			25-29
		Good			21-26	Good			20-25	Good			19-24
		Poor			14-20	Poor			13-19	Poor			13-18
		Severely Degraded			7-13	Severely Degraded			7-12	Severely Degraded			7-12

NTRAM Inc FYI - 1997  
TEST SITE 1 -- POOR

Summer Index Period: Stream Condition Index for Florida (SCI) (April 1996)												
Macroinvertebrate Dip Net (20 sweeps of most productive substrates)	Value	Panhandle			Peninsula			Northeast				
		5	3	1	Score	5	3	1	Score	5	3	1
Total Number of Taxa	37	≥ 31	30-16	<16		≥ 26	25-14	<14	5	≥ 22	21-12	<12
EPT Index	3	≥ 7	6-4	<4		≥ 4	3-2	<2	3	-	≥ 2	<2
# Chironomid Taxa	2	≥ 9	8-5	<5		≥ 7	6-4	<4	1	≥ 7	6-4	<4
% Contribution of Dominant Taxon	40	≤ 22	23-61	>61		≤ 29	30-64	>64	3	≤ 31	32-66	>66
% Diptera	62	-	≤ 50	>50		-	≤ 37	>37	1	-	≤ 47	>47
Florida Index	4	≥ 16	15-8	<8		≥ 7	6-4	<4	3	≥ 8	7-4	<5
% Suspension feeders/Filterers	23	≥ 12	11-6	<6		-	≥ 7	<7	3	-	≥ 7	<7
Total Score		Panhandle				Peninsula			19	Northeast		
Interpretation of Score		Excellent			27-33	Excellent			26-32	Excellent		
		Good			21-26	Good			20-25	Good		
		Poor			14-20	Poor			13-19	Poor		
		Severely Degraded			7-13	Severely Degraded			7-12	Severely Degraded		

NITRAM Inc FYI - 1997  
TEST SITE 2 - GOOD

Summer Index Period: Stream Condition Index for Florida (SCI) (April 1996)												
Macroinvertebrate Dip Net (20 sweeps of most productive substrates)	Value	Panhandle				Peninsula				Northeast		
		5	3	1	Score	5	3	1	Score	5	3	1
Total Number of Taxa	32	≥ 31	30-16	<16		≥ 26	25-14	<14	5	≥ 22	21-12	<12
EPT Index	2	≥ 7	6-4	<4		≥ 4	3-2	<2	3	.	≥ 2	<2
# Chironomid Taxa	2	≥ 9	8-5	<5		≥ 7	6-4	<4	1	≥ 7	6-4	<4
% Contribution of Dominant Taxon	57	≤ 22	23-61	>61		≤ 29	30-64	>64	3	≤ 31	32-66	>66
% Diptera	82	.	≤ 50	>50		.	≤ 37	>37	1	.	≤ 47	>47
Florida Index	10	≥ 16	15-8	<8		≥ 7	6-4	<4	5	≥ 8	7-4	<5
% Suspension feeders/Filterers	36	≥ 12	11-6	<6		.	≥ 7	<7	3	.	≥ 7	<7
Total Score		Panhandle				Peninsula				Northeast		
Interpretation of Score		Excellent				Excellent				Excellent		
		Good				Good				Good		
		Poor				Poor				Poor		
		Severely Degraded				Severely Degraded				Severely Degraded		
						27-33			26-32			25-29
						21-26			20-25			19-24
						14-20			13-19			13-18
						7-13			7-12			7-12

Summer Index Period: Stream Condition Index for Florida (SCI) (April 1996)												
Macroinvertebrate Dip Net (20 sweeps of most productive substrates)	Value	Panhandle				Peninsula				Northeast		
		5	3	1	Score	5	3	1	Score	5	3	1
Total Number of Taxa		≥ 31	30-16	<16		≥ 26	25-14	<14		≥ 22	21-12	<12
EPT Index		≥ 7	6-4	<4		≥ 4	3-2	<2		.	≥ 2	<2
# Chironomid Taxa		≥ 9	8-5	<5		≥ 7	6-4	<4		≥ 7	6-4	<4
% Contribution of Dominant Taxon		≤ 22	23-61	>61		≤ 29	30-64	>64		≤ 31	32-66	>66
% Diptera		.	≤ 50	>50		.	≤ 37	>37		.	≤ 47	>47
Florida Index		≥ 16	15-8	<8		≥ 7	6-4	<4		≥ 8	7-4	<5
% Suspension feeders/Filterers		≥ 12	11-6	<6		.	≥ 7	<7		.	≥ 7	<7
Total Score		Panhandle				Peninsula				Northeast		
Interpretation of Score		Excellent				Excellent				Excellent		
		Good				Good				Good		
		Poor				Poor				Poor		
		Severely Degraded				Severely Degraded				Severely Degraded		
						27-33			26-32			25-29
						21-26			20-25			19-24
						14-20			13-19			13-18
						7-13			7-12			7-12

Benthic macroinvertebrate taxa list for Nitram Inc., collected via Hester-Dendy artificial substrates in Delaney Creek, on 17 March, 1997. Densities, in number/m<sup>2</sup>, represent the mean of four replicates.

	Test Site 1	Reference Site
<b>Amphipoda</b>		
<i>Hyalella azteca</i>	198	52
<b>Coleoptera</b>		
<i>Dineutus</i> sp.	2	10
<i>Hydroporus</i> sp.	1	—
<i>Macronychus glabratus</i>	—	1
<i>Neoporus</i> sp.	1	1
<i>Stenelmis</i> sp.	7	1
<b>Decapoda</b>		
Cambaridae	1	—
<b>Diptera</b>		
<i>Ablabesmyia mallochi</i>	4	10
<i>Ablabesmyia rhamphe</i> grp.	10	33
<i>Asheum beckae</i>	3	5
<i>Chironomus</i> sp.	42	13
<i>Cladotanytarsus</i>	8	5
<i>Dicrotendipes</i> sp.	8	8
<i>Dicrotendipes modestus</i>	830	562
<i>Dicrotendipes neomodestus</i>	128	96
<i>Glyptotendipes</i> sp.	4	5
<i>Goeldichironomus</i> sp.	14	23
<i>Goeldichironomus fluctuans</i>	2	—
<i>Goeldichironomus holoprasinus</i>	13	5
<i>Labrundinia</i> sp.	4	—
<i>Paratanytarsus</i> sp. A Epler	3	—
<i>Polypedilum</i> sp.	—	2
<i>Polypedilum halterale</i> grp.	4	3
<i>Polypedilum scalaenum</i> grp.	10	5
<i>Polypedilum</i> sp. A Epler	—	2
<i>Simulium</i> sp.	1	—
<i>Stenochironomus</i> sp.	—	2
<i>Tanytarsus</i> sp.	7	38
<i>Tanytarsus</i> sp. A Epler	—	2
<i>Tanytarsus</i> sp. C Epler	—	2
<i>Tanytarsus</i> sp. G Epler	20	5
<i>Tanytarsus</i> sp. L Epler	3	3
<i>Tanytarsus</i> sp. S Epler	—	2
<i>Tanytarsus</i> sp. T Epler	—	136
<i>Thienemanniella xena</i>	—	3
Chironomidae	34	19
<b>Gastropoda</b>	5	1
<i>Pyrogophorus platyrachis</i>	101	33
<b>Isopoda</b>		
<i>Caecidotea</i> sp.	2	—

<i>Grandidierella bonnieroides</i>	1	34
<i>Uromunna</i> sp.	67	66
<b>Odonata</b>		
<i>Argia</i> sp.	—	2
<i>Argia fumipennis</i>	—	2
<i>Argia sedula</i>	3	5
<i>Enallagma</i> sp.	—	2
<i>Enallagma cardenium</i>	—	3
<i>Epithea princeps regina</i>	1	—
<i>Ischnura</i> sp.	1	—
<b>Trichoptera</b>	—	1
<i>Hydroptila</i> sp.	—	13

Benthic macroinvertebrate taxa list for Nitram Inc., collected via 20 discrete dip net sweeps in Delaney Creek, on 17 March, 1997.

	Test Site 1	Test Site 2	Reference Site
<b>Acarina</b>			
<i>Atractides</i> sp.	1	—	—
<b>Amphipoda</b>	2	—	—
<i>Grandidierella bonnieroides</i>	3	10	5
<i>Hyaella azteca</i>	91	71	43
<b>Coleoptera</b>			
<i>Celina</i> sp.	—	—	1
<i>Dubiraphia vittata</i>	1	1	—
<i>Microcyloopus pusillus</i>	1	—	—
<i>Neoporus</i> sp.	—	1	—
<i>Peltodytes</i> sp.	4	1	—
<i>Stenelmis</i> sp.	4	9	3
<i>Tropisternus</i> sp.	—	3	—
Curculionidae	—	1	—
Elmidae	—	1	—
<b>Decapoda</b>			
Cambaridae	—	1	—
<b>Diptera</b>			
<i>Ablabesmyia mallochi</i>	—	7	—
<i>Ablabesmyia rhamphe</i> grp.	—	—	9
<i>Chironomus</i> sp.	18	28	9
<i>Clinotanypus</i> sp.	3	—	—
<i>Culicoides</i> sp.	—	—	1
<i>Dicrotendipes</i> sp.	—	42	22
<i>Dicrotendipes modestus</i>	179	494	381
<i>Dicrotendipes neomodestus</i>	10	111	40
<i>Dicrotendipes simpsoni</i>	—	7	—
<i>Goeldichironomus</i> sp.	8	—	4
<i>Goeldichironomus holoprasinus</i>	5	—	—
<i>Heliopsis</i> sp.	1	—	—
<i>Odontomyia</i> sp.	1	1	—
<i>Palpomyia</i> / <i>Bezzia</i> grp.	5	3	3
<i>Polypedilum</i> sp.	3	—	—
<i>Polypedilum halterale</i> grp.	5	—	4
<i>Polypedilum illinoense</i> grp.	5	14	—
<i>Polypedilum scalaenum</i> grp.	3	—	9
<i>Procladius</i> sp.	8	21	9
<i>Stenochironomus</i> sp.	—	—	4
<i>Tanytarsus</i> sp.	3	—	27
<i>Tanytarsus</i> sp. G Epler	8	—	—
Chironomidae	8	28	12
Culicidae	1	—	—
Tabanidae	1	—	—

<b>Ephemeroptera</b>			
<i>Baetis intercalaris</i>	1	—	—
<i>Caenis</i> sp.	1	—	—
<b>Gastropoda</b>	—	—	2
<i>Melanoides tuberculata</i>	1	—	—
<i>Planorbella duryi</i>	—	1	—
<i>Pyrogophorus platyrachis</i>	28	26	33
Hydrobiidae	—	—	4
<b>Hemiptera</b>	2	—	—
<i>Hebrus</i> sp.	1	—	1
<i>Mesovelis</i> sp.	—	1	—
<i>Ranatra</i> sp.	1	—	—
Belostomatidae	1	2	—
Saldidae	3	—	—
<b>Isopoda</b>			
<i>Caecidotea</i> sp.	—	—	19
<i>Cyathura polita</i>	—	—	1
<i>Uromunna</i> sp.	9	9	24
<b>Odonata</b>			
<i>Argia</i> sp.	—	1	1
<i>Argia sedula</i>	—	1	—
<i>Enallagma</i> sp.	—	1	—
<i>Enallagma cardenium</i>	1	—	—
<i>Ischnura</i> sp.	4	—	—
<i>Ischnura hastata</i>	1	—	—
<i>Pachydiplax longipennis</i>	—	1	—
Coenagrionidae	5	5	1
Macromiidae	—	1	1
<b>Oligochaeta</b>			
<i>Aulodrilus pigueti</i>	1	—	—
<i>Haber</i> sp.	—	—	1
<i>Limnodrilus hoffmeisteri</i>	3	1	3
<b>Pelecypoda</b>			
<i>Corbicula fluminea</i>	1	—	42
<b>Polychaeta</b>			
<i>Boccardia</i> sp.	—	1	—
<b>Trichoptera</b>			
<i>Hydroptila</i> sp.	—	3	1
<i>Nectopsyche</i> sp.	—	1	—
<i>Nectopsyche pavidula</i>	—	—	1
<i>Oecetis</i> sp.	—	6	4
Hydroptilidae	—	—	1
Trichoptera	—	4	5

Periphyton taxa list and densities (#/cm<sup>2</sup>) for Nitram Inc., collected via glass microscope slides in Delaney Creek, on 17 March, 1997.

	Test Site 1	Reference Site
<b>Bacillariophyceae</b>		
<i>Achnanthes exigua</i>	1,583	726
<i>Achnanthes hauckiana</i>	528	242
<i>Achnanthes hustedtii</i>	528	242
<i>Achnanthes lanceolata</i>	5,145	2,299
<i>Achnanthes linearis</i>	132	—
<i>Amphora</i> sp.	396	242
<i>Bacillaria paradoxa</i>	1,451	726
<i>Cocconeis placentula</i>	7,652	11,009
<i>Cyclotella meneghiniana</i>	660	363
<i>Diploneis</i> sp.	132	—
<i>Eunotia</i> sp.	132	—
<i>Frustulia</i> sp.	132	—
<i>Gomphonema parvulum</i>	132	121
<i>Gyrosigma acuminatum</i>	—	121
<i>Gyrosigma</i> sp.	132	121
<i>Navicula</i> sp.	528	121
<i>Navicula auriculata</i>	132	—
<i>Navicula capitata</i>	132	605
<i>Navicula cincta</i>	923	484
<i>Navicula cryptocephala</i>	660	968
<i>Navicula exigua</i>	264	605
<i>Navicula lanceolata</i>	132	—
<i>Navicula minima</i>	1,847	242
<i>Navicula pupula</i>	132	121
<i>Navicula radiosa</i>	—	121
<i>Navicula tenera</i>	132	—
<i>Navicula viridula</i>	1,451	121
<i>Nitzschia amphibia</i>	132	—
<i>Nitzschia filiformis</i>	—	121
<i>Nitzschia fonticola</i>	187	726
<i>Nitzschia palea</i>	660	—
<i>Nitzschia thermalis</i>	528	—
<i>Pleurosigma</i> sp.	132	—
<i>Synedra</i> sp.	—	121
Pennales	1,583	1,452
<b>Chlorophyceae</b>		
<i>Chlorococcum</i> sp.	396	—
<i>Stigeoclonium</i> sp.	396	242
<b>Chrysophyceae</b>		
<i>Dinobryon</i> sp.	660	363
<b>Cyanophyceae</b>		
<i>Merismopedia</i> sp.	—	121



<i>Oscillatoria</i> sp.	528	484
<i>Spirulina</i> sp.	396	—
<b>Euglenophyceae</b>		
<i>Euglena</i> sp.	132	—
<i>Eutreptia</i> sp.	—	121

Phytoplankton taxa list for Nitram, Inc., collected via subsurface grabs in Delaney Creek on 17 March 1997.

	Test Site 1	Test Site 2	Test Site 3	Test Site 4	Test Site 5	Reference Site
<b>Cyanophyceae</b>						
<i>Lyngbya</i> sp.	-	29	4	-	-	- 8
<i>Oscillatoria</i> sp.	6	-	-	-	-	
<b>Bacillariophyceae</b>						
<i>Achnanthes</i> sp.	32	38	8	-	6	12
<i>Amphora</i> sp.	-	-	-	-	6	-
<i>Bacillaria</i> sp.	-	8	4	-	-	-
<i>Capartogramma crucicula</i>	-	4	-	-	-	-
<i>Cocconeis</i> sp.	3	25	12	-	-	4
<i>Cyclotella</i> sp.	-	-	-	76	605	-
<i>Eunotia</i> sp.	-	4	-	-	-	-
<i>Navicula</i> sp.	6	38	49	5	6	12
<i>Nitzschia</i> sp.	13	21	16	19	6	4
<i>Nitzschia longissima</i>	-	-	4	-	11	-
<i>Surirella</i> sp.	-	8	-	-	-	-
Centrales	-	8	-	-	-	-
Pennales	3	13	8	-	-	-
<b>Chlorophyceae</b>	-	-	-	5	-	49
<i>Carteria</i> sp.	-	-	12	-	-	41
<i>Chlorococcum</i> sp.	279	4	-	5	50	12
<b>Dinophyceae</b>	-	-	-	483	465	-
<b>Cryptophyceae</b>	-	4	-	-	-	-
<i>Chroomonas</i> sp.	3	-	-	14	-	-
<i>Cryptomonas</i> sp.	-	4	4	5	-	-

Fill Out This Section For All Surface Water Discharger Inspections (CEI, CSI, CBI, PAI, XSI - RI Optional)

Transaction Code			NPDES NUMBER						YR/MO/DA				Insp Type	Inspector	Fac Type												
1	N	2	5	3	F	L	0	0	1	6	4	3	11	12	9	7	0	3	1	7	17	18	X	19	S	20	2

Remarks

21

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Fill Out This Section For All Surface Water Discharger Inspections (CEI, CSI, CBI, PAI, XSI - RI Optional)

Transaction Code			NPDES NUMBER						YR/MO/DA				Insp Type	Inspector	Fac Type												
1	N	2	5	3	F	L	0	0	1	6	4	3	11	12	9	7	0	3	1	7	17	18	B	19	S	20	2

Remarks

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