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Site: F. O'Connor
Break: 3.7.7
Other: _____

C.C. JOHNSON & MALHOTRA, P.C.

MEMORANDUM

TO: Dave Brooks, Camp, Dresser and McKee, Boston, MA
FROM: Natasha Brock, C. C. Johnson & Malhotra, P.C. *NMB*
Silver Spring, MD
DATE: December 9, 1986
SUBJECT: Trip Report
DOCUMENT CONTROL NO.: 319-ES1-IO-DRRN-1

C. C. Johnson and Malhotra (CCJM) was asked to observe an aquatic biota sampling at the F. O'Connor site located in Augusta, Maine. The sampling is part of the remedial investigation being conducted by E.C. Jordan. CCJM was to act as an EPA representative to observe sampling procedure.

BACKGROUND/SCOPE

A biotic sampling on the F. O'Connor site and vicinity was conducted on October 28-31, 1986 in accordance with Phase II of the Remedial Site Investigation. The sampling areas included two upgradient locations on Riggs Brook (BIO-1 and BIO-8), one location adjacent to the site on Riggs Brook (BIO-2), one location at the confluent of Riggs Brook and East Riggs Brook (BIO-3), one location downgradient on Riggs Brook (BIO-4), one location at the lower lagoon (BIO-5), one location at the upland marsh (BIO-6) and one location at the upper lagoon (BIO-7) (see Map for locations).

The personnel present at the time of sampling were:

Gretchen Mikeska	E. C. Jordan
Bud Brown	Eco-Analyst
Paul Leeper	Eco-Analyst
Natasha Brock	C. C. Johnson

The samples collected were representative of the different trophic levels, i.e. for predator species: pickerel, for forage species: pumpkinseed and golden shiners and for detritus feeders: bullhead catfish and frogs.

The methods of capture employed were minnow traps set with bait and electrofishing with seine nets to block in large areas. The minnow traps were baited with dry dog food and set for approximately 18-24 hours at the designated sites.



SDMS Doc ID 567543

C.C. JOHNSON & MALHOTRA, P.C.

Page 2

Electro-fishing involved wading into the water, except in instances where the water was too deep (e.g. $> 3 \frac{1}{2}$ feet). The seine nets were used at the Beaver's Bridge site (downgradient) as the fish would escape if disturbed by the waders or the boat.

After the samples were collected, they were placed on ice, with place, date and time noted. I accompanied the Eco-Analyst personnel to the lab where the specimens were identified, weighed, measured and abnormalities noted. The specimens were then placed in foil, labeled with job number, date and time of capture and site, and placed in zipper closure plastic bags. The specimens were placed in a freezer to await shipment to another location for analysis.

DATA

The site sample data are presented below by sample location:

BIO - 1: Upgradient, Riggs Brook

Location: SW of site, 200 yds, south side of SR 17
Visit 1: set minnow trap at 13:30, 10/27/86
Visit 2: collection of trap at 9:40, 10/28/86
catch - sticklebacks, frog and bellastoma
electro-fishing at 10:10
catch - sticklebacks and frogs
note: electric generator set at stake, fishing done 25m in either direction from stake, fishing done by wading

BIO - 2: Adjacent to site, Riggs Brook

Location: S of site, 100 yds north of SR 17
Visit 1: Set minnow trap at 14:00, 10/28/86
Visit 2: Collection of trap at 9:25, 10/29/86
catch - sticklebacks and shiner
electro-fishing at 9:35
catch - sticklebacks, tadpole, catfish, newt and pickerel
note: fishing technique the same as at BIO - 1, fishing done by wading

BIO - 3: Downgradient, confluent of Riggs Brook and East Riggs Brook

Location: SE of site, 1/4 mile
Visit 1: minnow trap set at 14:30, 10/28/86
frog specimen taken
Visit 2: collection of trap at 10:25, 10/29/86
catch - catfish
electro-fishing at 11:00
catch - golden shiners, sunfish, pickerel, salamander
note: electro-fishing technique same as BIO - 1, fishing done by wading

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OCCO 003

0416

C.C. JOHNSON & MALHOTRA, P.C.

Page 3

BIO - 4: Downgradient, Riggs Brook, Beaver's Bridge

Location: E of site, 1/2 mile

Visit 1: electro-fishing at 14:40, 10/28/86
catch - pumpkinhead sunfish, tadpoles, brown bullhead catfish,
frog, hellgramite, walking stick, caddisfly larvae
Visit 2: minnow traps set at 11:30, 10/29/86
Visit 3: trap collected at 8:00, 10/30/86
catch - catfish, shiners, sunfish
electro-fishing at 8:45, and 8:55 for 4A and 4B, respectively
site divided into two sections: 4A upgradient of dam and 4B
downgradient of dam
catch for 4A - suckers, catfish, shiners, pickerel, sunfish,
crawfish
catch for 4B - shiners, catfish, tadpole, crawfish
note: electro-fishing done from boat using same technique as
BIO - 1, area in 4A netted off to contain fish, split sample
done for transport to Dave Brooks, CDM.

BIO - 5: On-site

Location: lower lagoon

Visit 1: minnow trap set 12:00, 10/30/86
electro-fish at 11:10
catch - tadpoles, sample separated for transport to D. Brooks,
CDM
Visit 2: trap collected at 9:45, 10/31/86
catch - tadpoles
note: muskrat den in center of lagoon, no sighting of animal,
fishing done by wading

BIO - 6: On-site

Location: upland marsh

Visit 1: electro-fish at 10:35 on 10/30/86
catch - tadpoles, salamander minnow trap set 12:00
Visit 2: trap retrieved at 9:35 on 10/31/86
catch - tadpoles

BIO - 7: On-site

Location: upper lagoon

Visit 1: electro-fish at 11:30 on 10/30/86
catch - frogs, tadpoles
minnow trap set at 10:30 on 10/30/86
Visit 2: trap retrieved at 9:50 on 10/31/86
catch - nothing

BIO - 8: Upgradient, Riggs Brook

Location: 1/2 mile SW of site, E. Riggs Brook

electro-fish at 11:45 on 10/31/86
catch - sunfish, catfish, eel, tadpoles, shiners
note: sampling done by wading

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0417

C.C. JOHNSON & MALHOTRA, P.C.

Page 4

Also present on the site, but not collected for samples, are snakes, fox and muskrats. The snakes were sighted, only the homes and droppings were found of the latter two.

DISCUSSION

The sampling methods used were efficient in gathering a representative sample of the biota present at each site. However in deep water when the boat was used, scaring of the fish made sampling more lengthy and increased the probability of some missed samples.

Weighing and measuring of samples were done in the lab instead of in the field, as specified by a memo from EPA. The specimens were kept on ice for about 2-4 hours before the physical parameters were taken. Further, due to the stress endurance levels of the species caught, many was still alive after the 2-4 hour holding period. None of the samples were homogenized or filleted.

Along with the samples taken by Eco-Analyst for E. C. Jordan, two samples were taken for CDM. The samples were catfish caught at BIO - 4 and tadpoles caught at BIO - 5. These samples were put on ice, as the E. C. Jordan samples, physical parameters taken at the lab, wrapped in foil and zipper lock bags and frozen. The samples were shipped the following day packed in dry ice via Federal Express to Dave Brooks in Boston.

The overall appearance of the site vegetation showed various levels of stress. At the highest levels of contamination according to E. C. Jordan personnel there was no vegetation on the ground. However, around the upper lagoon which has the highest contamination level of the watersheds, cattails and grass grow in and along the water's edge. At the other watersheds, grass and cattails grow abundantly. At the other contaminated areas vegetation growth is not visibly affected. During the time of the biota sampling almost all of the vegetation was brown, but was green earlier in the season according to site personnel.

Attachment

cc: Edward Hagarty (CCJM)
NPMO (FPC) Rex Hart
REM II, Region I Library

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04191

