



BARRETT'S BIOLOGICAL SURVEYS

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September 17, 2008

Mr. Tony Cornejo
Waterworks Supervisor
McCabe School
701 West McCabe Road
El Centro, CA 92243

Re: Biological Assessment of the McCabe School Wastewater Treatment Facility
Discharge Location

Dear Mr. Cornejo,

This letter report documents the results of the bioassessment of the Wildcat Drain (Attached map) at the McCabe School's wastewater treatment facility discharge. Samples were taken at three locations along the Wildcat Drain using an aquatic kick net dragged along the drain bottom. These samples were gathered 100 meters upstream of discharge, at the discharge and 100 meters downstream of the discharge. Water samples were collected at the same areas. The Wildcat Drain flows to New River. The New River flows approximately 50 miles north through Imperial County to the Salton Sea.

Objective

Barrett's Biological Surveys was retained by McCabe School to conduct a rapid assessment of aquatic and shore organisms in the Wildcat Drain at the point of discharge from the McCabe School wastewater treatment facility (located at 701 West McCabe Road, El Centro, CA). The objective of this survey was to determine whether the water, plant life and aquatic life at this discharge point are more typical of saltwater or freshwater environments. The goal of McCabe School is to gain approval from the U.S. Environmental Protection Agency (EPA) to use alternative freshwater criteria for a body of water segment where no marine beneficial use designation occurs, even if the salinity is above one part per thousand.

Background

The McCabe School wastewater treatment facility discharges into the Wildcat Drain which ultimately flows north to the Salton Sea. The Wildcat Drain is approximately 20 feet wide with a flow of less than 1 foot deep at all three collection sites. The Wildcat Drain turns north approximately 5 feet from the discharge point. The flow is piped

approximately 310 feet under a canal and a road and then is discharged into an open drain.

The Wildcat Drain discharges into the New River which drains into the Salton Sea. The New River flows north from Mexico. Agricultural drain waters, industrial wastes and treated and untreated wastewater enter the United States within the flow of the New River. In the United States, agricultural drain and runoff water and treated wastewater enter the New River. All agricultural water is from the Colorado River and enters Imperial County through the All American Canal.

Agricultural water from the Colorado River has elevated salt levels. Farmers have installed tile at an average depth of 3 to 4 feet in their farmground to remove excess salinity and prevent salt contamination of their ground. As a result of removing salt from the soil, drain waters show an elevated salinity level.

The California Toxics Rule (CT) 40 CFR 131.38(c)(3) provides that waters that have salinity between 1 and 10 parts per thousand should be addressed as follows:

For waters in which the salinity is between 1 and 10 parts per thousand as defined in paragraphs at (3)(i) and (ii) of this section, the applicable criteria are the more stringent of the freshwater or saltwater criteria. However, the Regional Administrator may approve the use of the alternative freshwater or saltwater criteria if scientifically defensible information and data demonstrate that on a site-specific basis, the biology of the water body is dominated by freshwater aquatic life and that freshwater criteria are more appropriate; or conversely, the biology of the water body is dominated by saltwater aquatic life and that saltwater criteria are more appropriate.

Methods

A bioassessment of the outfall was conducted between the hours of 0830 and 1445 (28.1°C) on September 5, 2008 by M. Barrett and G. Barrett of Barrett's Biological Surveys. Sampling stations were established at the discharge and 100 meters upstream and downstream. At each sampling station the following data were collected:

- Water salinity
- Dominant vegetation
- Aquatic organisms
- Animals

Aquatic invertebrates were collected from shore using an aquatic kick net, which was dragged along the bottom of the Wildcat Drain perpendicular to the bank for a linear distance of approximately 5 feet. This net is also efficient in capture of small fishes.

Shore vegetation and animal species were visually observed.

Equipment used:

- Aquatic kick net
- Swing sampler/wide mouth bottles
- Garmin GPS
- Swarovski binoculars
- Caldwell wind wizard

Results and Discussion

The Wildcat Drain serves as the discharge point for the McCabe School wastewater treatment plant. The dominant plant in the project area included Bermuda grass (*Cynodon dactylon*) and salt cedar (*Tamarix sp.*).

Salinity

Water salinity was measured using a hand held, temperature compensated salinity refractometer (VeeGee Refractometer Model STX-3). Instrument is accurate to 1% . Equipment was cleaned with distilled water after each sampling.

Readings:

100 meters upstream of discharge: 3% = 3 ppt

Discharge: 3% = 3 ppt

100 meters downstream of discharge: 3% = 3 ppt

Vegetation

Vegetation was similar at all sampling sites (Attached Photographs). The dominate species included Bermuda grass and salt cedar. Also observed: Alkali heliotrope (*Heliotropium curassavicum*), watergrass (*Echinochloa sp.*), Mexican sprangletop (*Leptochloa uninervia*). Sago pondweed (*Potamogeton pectinatus*) was growing on the bottom of the drain. All are common along agricultural waterways and Bermuda and salt cedar can tolerate some salinity. Pondweeds are considered native freshwater plants.

The Wildcat Drain receives water from agricultural drainage which has originated from the Colorado River, a freshwater source.

Aquatic Invertebrates

The aquatic invertebrates and vertebrates collected at each sampling site are presented in Table 1, below.

A number of insect larvae were collected representing the family Chironomidae. Many Chironomidae and Libellulidae are tolerant of salinity and identification beyond family was not possible.

Fishes

Three species of fish were observed:

1. Mosquito fish (*Gambusia affinis*). This fish was observed at the sampling site located 100 m downstream of the discharge. Mosquito fish can tolerate salinity and therefore are not a good indicator of freshwater (Moyle, P, *Inland Fishes of California*, 1976).
2. Several catfish (*Ictalurus punctatus*) carcasses were found on the bank near the discharge site. Catfish prefer .5 to 3 ppt salinity (Tucker, C. *Water Quantity and Quality Requirements for Channel Catfish Hatcheries*, 1991).
3. Red Shiner (*Notropis lutrensis*) which are not known to be tolerant of saline conditions (Moyle, 1976).

Vertebrates

A bullfrog (*Rana catesbeiana*) was observed perched on the outflow pipe of the third site - 100 m downstream.

Grackles (*Quiscalus mexicanus*) were observed in the project area and crickets (*Gryllodes sigulatus*) were heard.

Table 1
 List of Organisms Found at Sampling Sites

Sample	100 M Upstream	Discharge	100 M Downstream
Classification			
<u>Arthropoda</u> Insecta Diptera - midge, mosquitoes Chironomidae	Present	Present	Present
Odonata - Dragonflies Libellulidae	Present	Present	Present
<u>Chordata</u> Osteichthyes Cyprinodontiformes Poeciliidae <i>Gambusia affinis</i> Cyprinidae <i>Notropis lutrensis</i> Actinopterygii Siluriformes Ictaluridae <i>Ictalurus punctatus</i>	Not Present	Present	Present
<u>Amphibia</u> Ranidae <i>Rana catesbeiana</i>	Not Present	Not Present	Present

Conclusion

Based on the freshwater aquatic organisms and freshwater vegetation and wildlife at the Wildcat Drain where it receives the discharge from the McCabe School wastewater treatment plant, it is concluded that this is a freshwater ecosystem.

Species typically found in a saltwater system, such as barnacles (*Balanus amphrite*), pileworms (*Nenathes succinea*), or brackish water snail (*Thiara granifera*) were not observed. Saltwater vegetation or wildlife were also not observed.

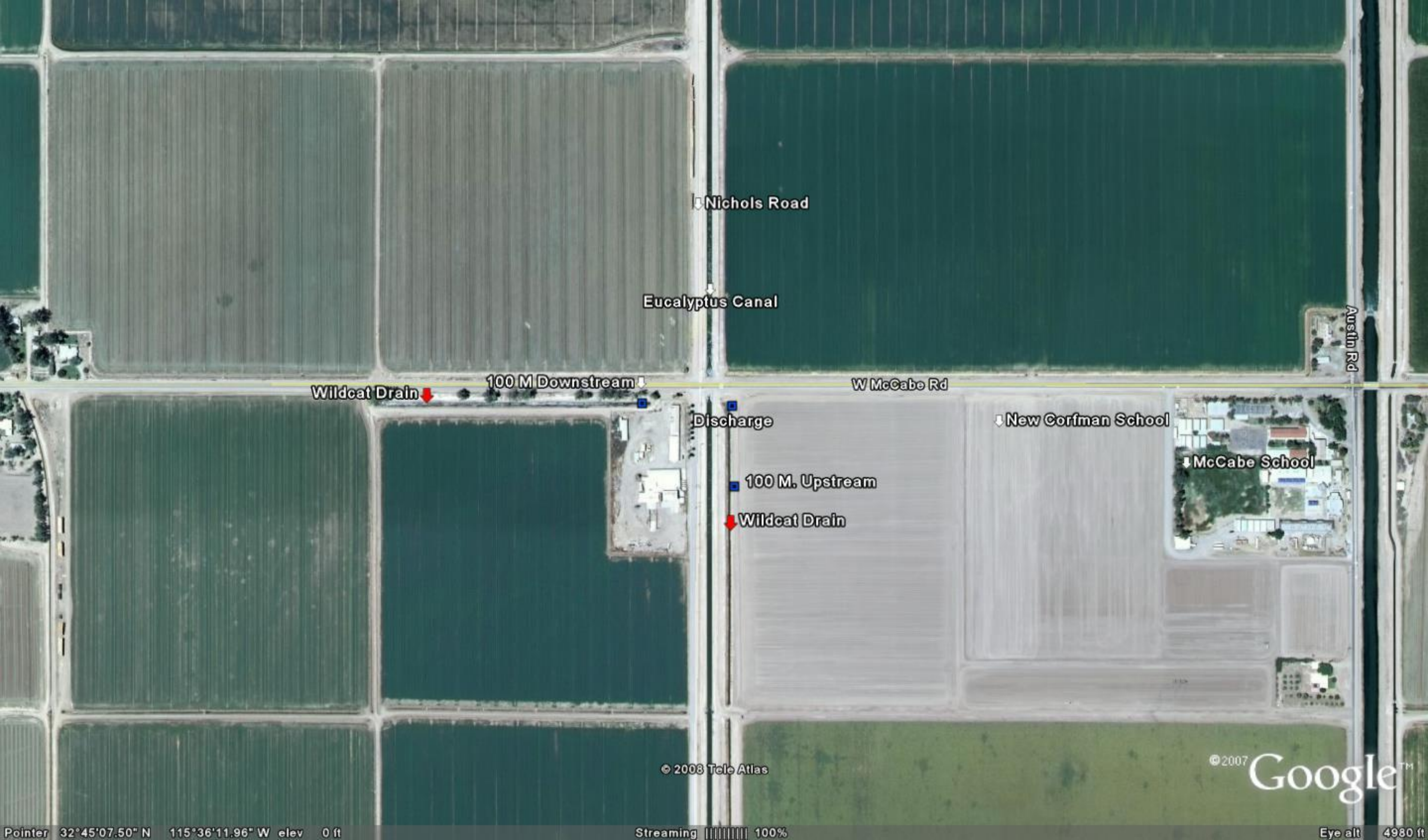
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The discharge area is a typical agricultural drain found in Imperial County and easily accessed. As a result, the samples collected during this rapid assessment are considered representative of the overall system.

Sincerely,



Marie Barrett
Biologist



Nichols Road

Eucalyptus Canal

Austin Rd

W McCabe Rd

Wildcat Drain

100 M Downstream

Discharge

New Corfman School

McCabe School

100 M. Upstream

Wildcat Drain

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PHOTOGRAPHS



Project Site – 100 Meters Upstream
32°45'4.9"/115°36'11.0"
(NAD 83)



Discharge Area
32°45'8.1"/115°36'15.3"
NAD 83



100 Meters Downstream
32°45'8.2"/115°36'15.3"
NAD 83



Catfish Found in Vicinity of Discharge

Works Referenced

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