IMPERIAL IRRIGATION DISTRICT

OPERATING HEADQUARTERS • P. O. BOX 937 • IMPERIAL, CALIFORNIA 92251

GS-BC

May 20, 2010

Matthew Mitchell
Standards and TMDL Office (WTR-2)
USEPA Region 9
75 Hawthorne St.
San Francisco, CA 94105

SUBJECT: Freshwater Designation - Central Drain 5, El Centro, CA

Dear Mr. Mitchell

Attached is the Imperial Irrigation District's (District) request to have the Central 5 Drain designated as "freshwater". We would like to utilize a study conducted for the District's El Centro Generating Station as the basis for the approving this designation. In May 2008, the District's Energy Department submitted this report to the EPA to designate the area adjacent to the Generating Station's discharge point as freshwater. This request was subsequently approved by the USEPA. As noted in the addendum to the Introduction, the Generating Station's discharge point is midway between our two fish facility discharge points. All three discharge points are within approximately ½ mile.

The District's grass carp facilities are currently operating under NPDES WDID # 7A 13 0128 015.

If you have any questions, please contact me at (760) 339-0565.

Sincerely,

MICHAEL R. MIZUMOTO
Supervisor Bio Control Unit

Attch.
MRM

Addendum to Introduction

The Imperial Irrigation District (District) utilizes triploid grass carp for aquatic vegetation control in its irrigation system. The District operates a triploid grass carp hatchery and a grow-out facility in El Centro, CA. Both facilities are covered under a NPDES Permit (WDID # 7A 13 0128 015). Discharge points for both facilities drain into the Central 5 Drain and are approximately ½ mile apart. Discharge sampling sites are located at each discharge point. The hatchery is located on the El Centro Generating Station facility and the grow-out facility is located just to the north of the same El Centro Generating Facility (see attached maps). In May 2008, the District's Energy Department submitted a biological report and requested the section of Central Drain 5 around the El Centro Generating Stations's discharge point be categorized as freshwater. The EPA subsequently approved the request for a freshwater designation.

This addendum is requesting the use of the same report to cover the discharge points of the grass carp hatchery and grass carp grow-out facility. The GPS coordinates for the El Centro Generating Stations discharge point is approximately midway between the two discharge points for the grass carp facilities.

GPS locations:

Grass Carp Hatchery: North 32 degrees, 47.907 ft, West 115 degrees, 32.647 ft

El Centro Generating Station: North 32 degrees, 48.239 ft, West 115 degrees, 32.652 ft

Grass Carp Grow-out Facility: North 32 degrees, 48.443 ft, West 115 degrees, 32.648 ft.

BIOLOGICAL TECHNICAL REPORT

May 23, 2008
Prepared for:
Imperial Irrigation District

Prepared by:

URS Corporation
2020 East First Street, Suite 400
Santa Ana, CA 92705

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

URS Corporation (URS) was retained by the Imperial Irrigation District (IID) to assess the plants, wildlife, and aquatic habitats associated with a water discharge outfall originating at the El Centro Generating Station (ECGS) and empting into Central Drain 5 (hereafter referred to as Drain 5). 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. If determined to be more typical of a freshwater environment, the IID intents to request a change in the National Pollutant Discharge Elmination System (NPDES) permit issued to the ECGS to reclassify the receiving water from marine to freshwater. For the purposes of this document, the "study area" is defined as the ECGS's discharge outfall area and immediately upstream (approximately 480 meters [m]) and downstream (roughly 600 m), from the outfall along Drain 5 (Figure 1) and a 30 m buffer.

The ECGS is located on Villa Avenue just north of Commercial Drive in the City of El Centro, California (Figure 1); within the El Centro 7.5 minute United States Geologic Service (USGS) Quadrangle. The ECGS discharges industrial wastewater via a 12" water discharge line that empties into Drain 5. Drain 5 flows north into the main Central Drain which flows to the Alamo River (located approximately 8 miles to the east). The Alamo River flows north from Mexico to the Salton Sea.

Upstream (south) of the ECGS's discharge point, Drain 5 emerges from a concrete culvert that receives surface water runoff from the surrounding commercial and residential areas. Additionally, a freshwater fish hatchery is located between the aforementioned concrete culvert and the ECGS's outfall along Drain 5, which discharges freshwater through a 12" conduit. Current land use within the vicinity of the ECGS is a mixture of developed and disturbed agricultural, commercial, and residential areas; all of which contribute to surface water flows within Drain 5.

FIGURE 1. PROJECT LOCATION AND SAMPLING SITES MAP

2.0 REGULATORY BACKGROUND

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

> For waters in which the salinity is between 1 and 10 ppt as defined in paragraphs (c)(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 and that the saltwater criteria are more appropriate.

3.0 METHODS

Prior to beginning the field surveys, available information was reviewed from resource management plans and other relevant and available documents to determine locations and types of biological and aquatic resources that have the potential to exist within and adjacent to the study area. A USGS 7.5 minute quadrangle map was also examined to determine the locations of aquatic resources and habitats within the study area.

Those portions of the study area suspected of containing biological and aquatic resources were then assessed by visual observation. A pedestrian-based field survey of the study area was conducted on May 6, 2008 by URS biologists Greg Hoisington and Dallas Pugh. Where access to the entire study area was not possible as a result of dense vegetation, or physical barriers (e.g., private property, and topographic relief), observations were made from the nearest appropriate vantage points with binoculars to document and verify the presence or absence of individual animal and plant species and their habitats. General plant and wildlife species and habitats were recorded within the study area. Additionally, three (3), specific sampling sites were chosen to assess the salinity, temperature, and aquatic species assemblages within Drain 5. The three sampling points included: 1) upstream of the ECGS's discharge locale (SO1); 2) the ECGS's discharge outfall (SO2); and 3) downstream of the ECGS's discharge locale (SO3). Figure 1 identifies the representative sampling locations.

The field survey also assessed general and dominant plant species, and habitat types discovered within the study area. Plant species were identified to the lowest taxonomic level possible. Plants of uncertain identity were collected and subsequently identified from taxonomic keys. Scientific and common species names were recorded according to Hickman (1993). A list of observed plant species is provided in Table 1. Wildlife observations were documented and recorded for birds, mammals, amphibians, reptiles, and invertebrates within the study area as well. The presence of a wildlife species was based on direct observation, wildlife sign (e.g., tracks, burrows, nests, scat), or vocalization. Field data compiled for observed wildlife included the scientific name, common name, habitat, and evidence of sign when no direct observations were made. A list of observed animal species is presented in Table 2. Wildlife taxonomy generally followed The Sibley Guide To Birds (Sibley, 2000), A Field Guide To Western Reptiles and Amphibians (Stebbins, 2003) and A Field Guide To Mammals: North America; north of Mexico (Burt & Grossenheider, 1980).

Water salinity at each of the sampling sites (SO1, SO2 and SO3) was measured by collecting approximately 500 milliliters (mL) of water and using an HACH sensION 156 Portable Multiparameter Meter and probe in accordance with the manufacturers written instructions. The portable meter and probe are accurate to 0.1 ppt. Surface water temperatures were measured with a floating mercury thermometer that was allowed to stabilize in the upper water column while all other data were collected. Water temperatures were measured at each sampling site within areas containing an open canopy and in water depths of approximately 0.3 m. Water depths at each sampling site were visually estimated based on the depth of the water measured against a hand-held dipnet when submerged to the bottom of Drain 5.

Aquatic invertebrate and vertebrate sampling at each sampling site was conducted using a hand-held, 4 millimeter (mm) mesh size dip net that was placed into the lowest portion of Drain 5 and quickly moved forward along the canal for approximately 3 m. After the completion of each “sample sweep,” the contents of the dip net were examined for macroscopic (>4 mm in length) invertebrates and vertebrates. This method was repeated three times at each sampling site. Aquatic insects and invertebrates were collected and identified to the lowest identifiable taxon based on taxonomic keys (Borror et al.). The relative numbers of individuals observed within each taxonomic group at each sample site were recorded on field data sheets following each dip net sweep.

4.0 RESULTS AND CONCLUSIONS

Drain 5 near the Generating Station's discharge locale (e.g., SO2) contains a bank-to-bank width (top of canal) of approximately 10 m with a varying bed width (bottom of canal) of approximately 3 m. Water depths at the time of sampling ranged from roughly 0.5 m deep near the discharge (SO2) to less than 0.2 m downstream (e.g., SO3) from the Generating Station. Drain 5 included an earthen substrate which appeared to contain loosely-packed soils and was sporadically vegetated with woody and non-woody perennials, annuals, and grasses; upstream and downstream of SO2. The vegetation community was ruderal / non-native and generally homogeneous throughout Drain 5. Vegetation density within the study area varied, but generally increased downstream of SO2. A list of all vegetation present within the study area is presented in Table 1. Dominant wildlife within the study area included mallard (*Anas platyrhynchos*), American coot (*Fulica americana*), killdeer (*Charadrius vociferous),* black-necked stilt (*Himantopus mexicanus),* clubtail dragonfly *(Gomphus sp.),* and bluets *(Enallagma sp.).* Four pairs of burrowing owls (*Athene cunicularia*), a state species of concern, were observed along Drain 5 as well. A list of all wildlife present within the study area is presented in Table 2.

4.1 SAMPLE SITE 1

S01 is located approximately 480 m upstream of the Generating Station's discharge locale where a 12" freshwater fish hatchery's discharge line intercepts Drain 5 (Figure 1). Surface water temperature at this site was approximately 26 ^{0}C (80 ^{0}F) and dominant vegetation included blue paloverde (*Cercidium floridum*), salt cedar (*Tamarix ramosissima*), narrow-leaved cattail (*Typha latifolia*), salt heliotrope (*Heliotropum currassiviscium*), and California palm (*Washingtonia filifera*) (See Photograph Log, photo 1). Despite the common names that salt cedar and salt heliotrope imply, these species are well-adapted to thrive in non-haline environments (i.e. freshwater). Cattails and California palm, however, can only grow in freshwater environments and their presence is indicative of a fresh water habitat. Salinity was 1.2 ppt, which suggests that this is a freshwater system with trace amounts of salts present; salt water environments generally contain salinity greater than 30 ppt while brackish water generally contains greater than 10-15 ppt (Castro and Huber, 2000). Furthermore, water boatman (*Hesperocorixa* sp.) was the only aquatic invertebrate species found in the dip netting samples at SO1. Water boatman is an obligate freshwater invertebrate. Field data suggests that the trace amounts of salts are likely present due to the surrounding agricultural runoff. In summary, the biology of this sample site is dominated by freshwater aquatic life.

4.2 SAMPLE SITE 2

S02 is located at the ECGS's discharge outfall (Figure 1). Surface water temperature at this site was 30 ^{0}C (86 ^{0}F) and dominant vegetation included salt cedar (*Tamarix ramosissima*), Chinese elm (*Ulmus parvifolia*), and Russian thistle (*Salsola tragus*) (See Photograph Log, photos 2 and 3). Salinity at this sample site was 2.0 ppt, which indicates that it's a freshwater system with trace amounts of salts present, likely a result of evaporation. Again, salt water environments generally contain salinity greater than 30 ppt (Castro and Huber, 2000). Aquatic invertebrate species included mosquito fish (*Gambusia affinis*) and crayfish (*Procambarus* sp.), both of which are freshwater

species. In summary, the biology of this sample site is dominated by freshwater aquatic life.

4.3 SAMPLE SITE 3

S03 is located approximately 600 m downstream of the ECGS's discharge outfall (Figure 1). Surface water temperature at this site was 30 ^{0}C (86 ^{0}F) and dominant vegetation included salt cedar (*Tamarix ramosissima*) and poa (*Poa* sp.) (See Photograph Log, photo 4). Salinity at this site was 1.7 ppt, which indicates that this site is a freshwater system with trace amounts of salts present. Aquatic invertebrate species included crayfish (*Procambarus* sp.), which are typical of freshwater environments. In summary, the biology of this sample site is dominated by freshwater aquatic life.

4.4 CONCLUSION

Salinity at each of the three sampling locations ranged between 1.2-2.0 ppt, which indicates that within the study area, the discharge is representative of a freshwater habitat. A predominance of floral and fauna species observed at each sampling site and throughout the length of the study area are also indicative of freshwater environments. Obligate freshwater species observed included crayfish, water boatman, dragon fly, mosquito fish, water fowl, California palm, and cattails. Although several observed plant species such as salt cedar and salt heliotrope were common throughout the study area, these species are equally well adapted to fresh water environments. Consequently, the biology of the aforementioned sample sites are dominated by freshwater aquatic life.

Plant species observed within the study area are listed below in Table 1: Observed Plants.

TABLE 1. OBSERVED PLANTS

Scientific Name	Common Name
Cercidium floridum	Blue paloverde
Disticlis spicata	Salt grass
Heliotropium curassivicum	Salt heliotrope
Malva parviflora	cheeseweed
Rumex crispus	Curley dock
Poa sp.	Grass
Sisymbrium irio	London rocket
Sonchus oleraceur	Sow thistle
Tamarix ramosissima	Salt cedar
Typha latifolia	Broad-leaved cattail
Ulmus parvifolia	Chinese elm
Washingtonia filifera	California fan palm

Wildlife species observed within the study area are detailed below in Table 2: Observed Wildlife.

TABLE 2. OBSERVED WILDLIFE

CLASS MALACOSTRACA	**CRUSTACEANS**
CAMBARIDAE	**CRAYFISH**
Procambarus sp.	crayfish
CLASS INSECTA	**INSECTS**
CORIXIDAE	**WATER BOATMEN**
Hesperocorixa sp.	water boatmen
COENAGRIONIDAE	**NARROW-WINGED DAMSELFLIES**
Enallagma sp.	bluets
GOMPHIDAE	**CLUBTAIL DRAGONFLIES**
Gomphus sp.	clubtail dragonfly
CLASS OSTEICTHYES	**BONY FISH**
POECILIIDAE	**CARPS AND MINNOWS**
Gambusia affinis	mosquitofish
CLASS AVES	**BIRDS**
ANATIDAE	**DUCKS, GEESE, SWANS**
Anas platyrhynchos	mallard
CATHARTIDAE	**NEW WORLD VULTURES**
Cathartes aura	turkey vulture
RALLIDAE	**RAILS, GALLINULES, COOTS**
Fulica americana	American coot
CHARADRIIDAE	**PLOVERS**
Charadrius vociferus	killdeer
RECURVIROSTRIDAE	**STILTS & AVOCETS**
Himantopus mexicanus	black-necked stilt
Recurvirostra americana	American avocet
COLUMBIDAE	**PIGEONS & DOVES**
Columba livia	rock dove
Zenaida macroura	mourning dove
STRIGIDAE	**TRUE OWLS**
Athene cunicularia	burrowing owl
HIRUNDINIDAE	**SWALLOWS**
Stelgidopteryx serripennis	northern rough-winged swallow
ICTERIDAE	**BLACKBIRDS**
Sturnella neglecta	western meadowlark

5.0 REFERENCES

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APPENDIX A: STUDY AREA PHOTOGRAPHS

Photograph: 1

Photo Date: 6 May, 2008.

Location: Sample Site 1 (S01).

Direction: Facing downstream (north) from the fish hatchery discharge outfall.

Photograph: 2

Photo Date: 6 May, 2008.

Location: Sample Site 2 (S02).

Direction: Facing downstream (north) from the generating station discharge outfall.

			**Photograph:** 3 **Photo Date:** 6 May, 2008. **Location:** Sample Site 2 (S02). **Direction:** East
			**Photograph:** 4 **Photo Date:** 6 May, 2008. **Location:** Sample Site 3 (S03). **Direction:** North.