UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

OFFICE OF THE
REGIONAL ADMINISTRATOR

FEB 0 6 2006

Robert E. Perdue
Executive Officer
Colorado River Basin Regional Water Quality Control Board
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

Dear Mr. Perdue:

The U.S. Environmental Protection Agency (EPA) was requested by the Coachella Valley Water District (CVWD) to approve the use of alternative freshwater criteria for a water body segment, where no marine beneficial use designation occurs, and even though the salinity is above 1 part per thousand. EPA has reviewed the request in accordance with the provisions of the California Toxics Rule (CTR) and has reached a tentative conclusion, subject to upcoming public review, that only freshwater criteria need to be applied in this particular situation.

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

> For waters in which the salinity is between 1 and 10 parts per thousand 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 life and that saltwater criteria are more appropriate. Before approving any change, EPA will publish for public comment a document proposing the change.

It is EPA's understanding that the proposed CVWD permit includes effluent limitations based on both freshwater and saltwater CTR criteria, depending on which is more stringent for any given pollutant, because the Coachella Valley Storm Water Channel into which effluent from the CVWD's Mid-Valley Water Reclamation Plant is discharged, has an average salinity of 1-2 ppt, and that the CVWD would like to have only freshwater criteria apply.

Bioassessment of the Coachella Valley Storm Water Channel at the Mid-Valley Reclamation Plant Discharge

Dr. Monica Swartz, Coachella Valley Water District Biologist

Objective

Conduct a rapid assessment of aquatic and shore organisms in the Coachella Valley Storm Water Channel at the discharge from the Mid-Valley Water Reclamation Plant, and give an expert biological opinion to classify the component biota as members of a freshwater, saltwater, or brackish/estuarine community.

Procedures

On May 23, 2005, at the request of Steve Bigley of the Coachella Valley Water District, I visited the Coachella Valley Storm Water Channel to conduct a bioassessment in the vicinity of the discharge from the Mid-Valley Water Reclamation Plant (63-002 Fillmore Street, Thermal, California). I evaluated sites 200 meters up and down stream of the discharge as well as where the effluent discharge emptied into the Storm Water Channel in order to correspond samples to where water quality sampling occurs. Beginning at the downstream sample site, I waded upstream, sampling invertebrates with a dip net, kick net and by visual examination of surfaces. Invertebrates were identified to family, vertebrates and plants to species, by visual and audio observation. Though multiple visits in different seasons would document species with differential detectability, a single visit was deemed appropriate to accomplish the objective given the clear results detailed below.

Attached is a diagram of sample sites.

Findings

The Coachella Valley Storm Water Channel is typical of freshwater streams in the arid southwest and is categorized as Sonoran Cottonwood-Willow Riparian Forest in the Coachella Valley Multiple Species and Natural Community Conservation Plan. The National Wetlands Inventory program classifies it as a Palustrine shrub-scrub wetland dominated by Facultative Wetland (FACW) plants. The Manual of California Vegetation classifies this as an Arroyo willow or Fremont Cottonwood series under their freshwater floodplain wetland criteria. These vegetation/community types apply to the wet channel downstream to the Salton Sea where there is a transition to Freshwater Marsh habitat.

The substrate is largely sandy with large trees (Cottonwood, Willows, and invasive Tamarisk) along the banks. Vegetation beside the watercourse is dominated by Sedges and Cattails, with the occasional addition of invasive iceplant. Birds

observed in the vegetation were those typical of Riparian areas of this region (Cliff Swallow, Red-shouldered Hawk, Black Phoebe, Abert's Towhee, Song Sparrow and Brown-headed Cowbird). Adult Odonates courting, feeding and mate-guarding are commonly seen with damselfly oviposition observed in two species.

The Channel has swift flowing water 6-8 meters across, with some turbidity upstream of the effluent discharge. At the discharge and for a great distance below it, the water is clearer with higher green algal coverage of rock surfaces. Most fish seen are small poecilids with occasional large carp (all introduced species).

In fish-free pools separated from the main course, algae mats and duckweed cover the surface. Mosquito larvae, *Physa* snails, and Gammarid amphipods are active beneath the vegetation. The sediment has large numbers of *Chironomus* midge larvae. These pools are likely good amphibian breeding habitat in the appropriate season.

Occasional areas of stones and pieces of broken concrete provide solid substrates on the sandy bottom. These stones are covered with algae, larval caddisfly casings, midge larvae, *Physa* snails, and leeches. Stone microhabitats appear to have the greatest aquatic insect diversity.

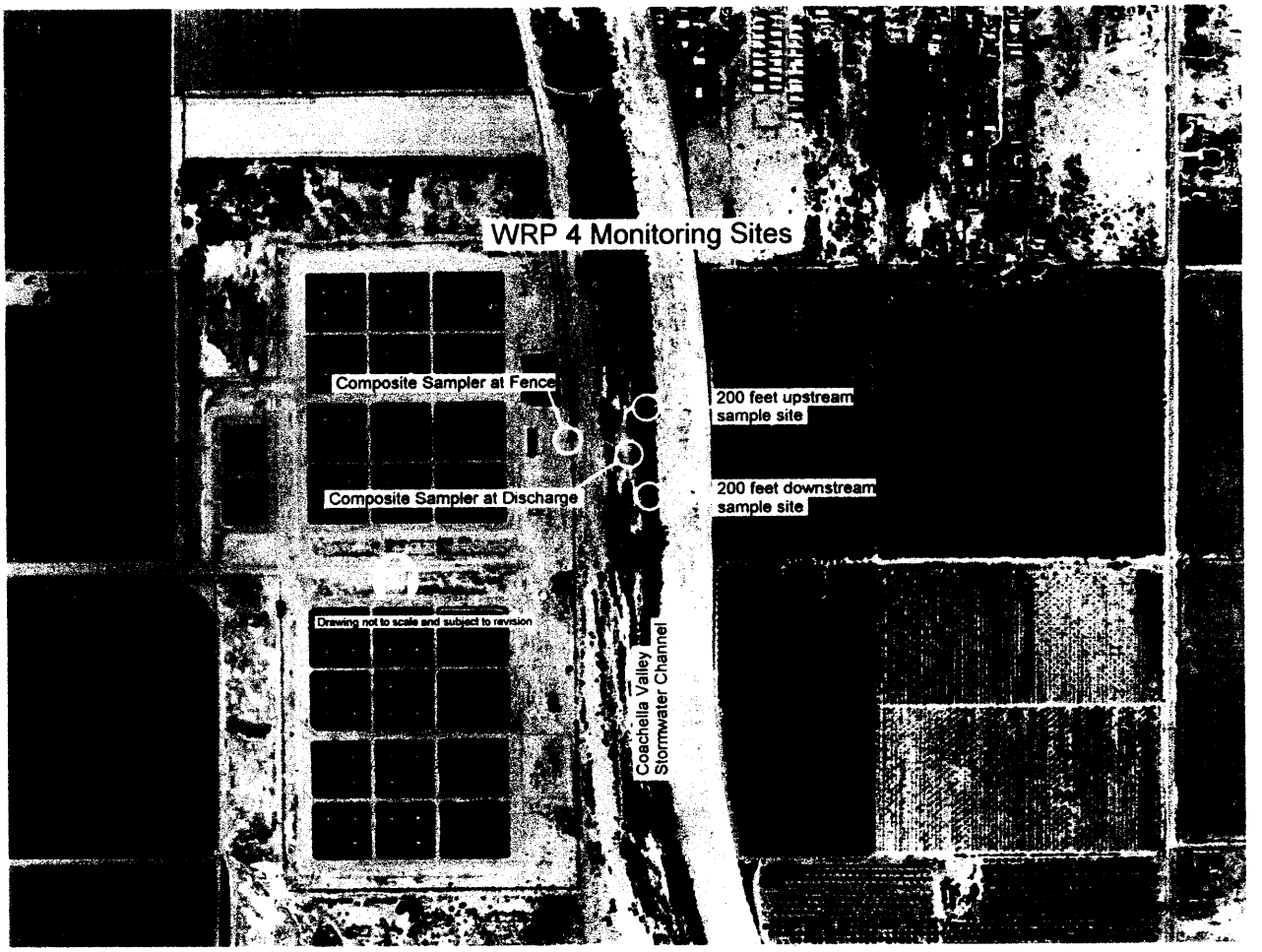
Attached is a list of organisms found at the sample sites.

Conclusion

Notably, none of the species found in saltwater ecosystems including those found downstream in the Salton Sea were present in the Storm Water Channel above or below the effluent discharge (dominant Salton Sea organisms include the barnacle- *Balanus amphrite,* pileworm- *Neanthes succinea* and brackish water snail- *Thiara granifera*). The Cottonwood and Willow trees present in the Storm Water Channel are notoriously sensitive to saltwater. A previous experimental revegetation study in the watershed found that 1,200 ppm is the threshold salinity for Cottonwood/Willow establishment and higher salinity increases mortality and decreases plant height and biomass (Anderson and Ohmart, 1985, in The Restoration of Rivers and Streams: Theories and Experience). The presence of large numbers of aquatic insects, other freshwater invertebrates, and riparian vegetation indicate that the Coachella Valley Storm Water Channel clearly supports a freshwater ecosystem at the Mid-Valley Water Reclamation Plant discharge site.

These sample data demonstrate that this site contains only freshwater aquatic life. Though it is impossible to prove the absence of saltwater organisms, the extensive freshwater ecology observed and the historical state and federal classifications of this site lead me to assess that the area surrounding the effluent discharge in the Coachella Valley Storm Water Channel is and always has been classified a freshwater ecosystem.

Sampling points in the Coachella Valley Storm Water Channel at the Mid-Valley Water Reclamation Plant (WRP 4) discharge.



List of organisms found on May 23, 2005 in the Coachella Valley Storm Water Channel in the vicinity of the discharge from the Mid-Valley Water Reclamation Plant. Invertebrates are mostly identified only to family since further detail does not provide additional information for the purposes of this document.

Animals

Platyhelminthes – flatworms
- Turbellaria
  - Tricladida
    - Planariidae

Nematoda - roundworms

Annelida
- Hirudinea - leeches

Mollusca
- Gastropoda - snails
  - Limnophila
    - Physidae
- Bivalvia - clams
  - Veneroida
    - Corbiculidae

Arthropoda
- Crustacea
  - Amphipoda - scuds
    - Gammaridae
- Insecta
  - Odonata - dragonflys
    - Coenagrionidae
    - Libellulidae
  - Hemiptera - waterbugs
    - Belostomatidae
    - Notonectidae
  - Coleoptera – water beetles
    - Dytiscidae
    - Hydrophilidae
  - Trichoptera – caddisflys
    - Hydropsychidae
  - Diptera – midges, mosquitos
    - Chironomidae
    - Simuliidae
    - Culicidae

Chordata
- Osteichthyes
  - Cypriniformes
    - Cyprinidae
      - *Cyprinus carpio*
  - Cyprinodontiformes
    - Poeciliidae
      - *Gambusia affinis*
      - *Poecilia latipinna*
      - *Poecilia mexicana*
  - Perciformes
    - Cichlidae
      - *Tilapia* sp.

Common Plants

Tamarix ramosissima - Saltcedar
Salix lasiolepis – Arroyo willow
Populus fremontii - Cottonwood
Pluchea sericea - Arrowweed
Baccharis salicifolia - Mulefat
Carpbrotus sp. - Iceplant
Scirpus californicus - Bulrush
Typha domingensis - Cattails
Phragmites communis – Common reed
Lemna sp. – Duckweed

Photos of Vegetation at discharge site. The largest tree in photos is an Arroyo Willow.