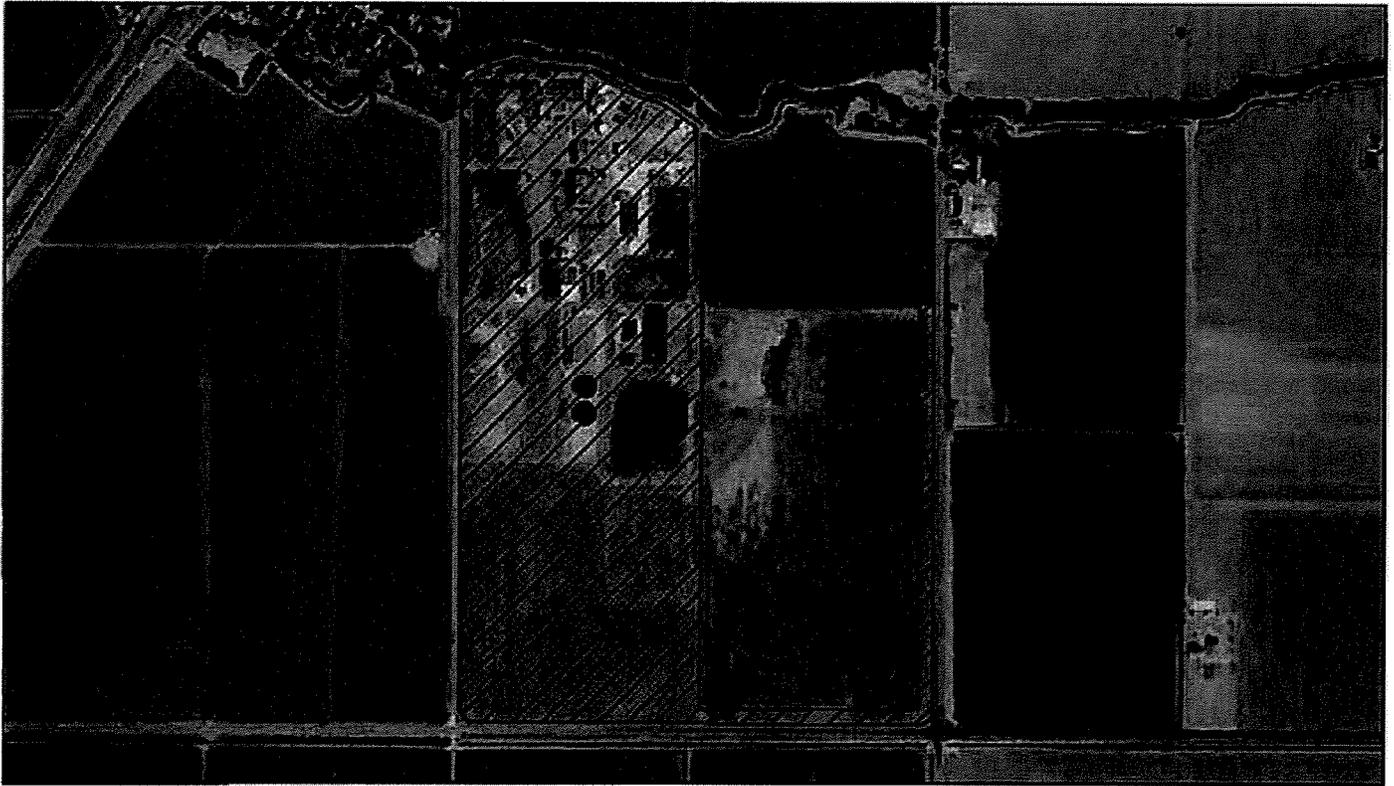


# **APPENDIX F**

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## **WETLAND DELINEATION**



WETLAND DELINEATION  
FOR THE VACAVILLE EASTERLY WASTEWATER TREATMENT PLANT  
TERTIARY PROJECT

**REVISED DECEMBER 2009**

PREPARED FOR:

City of Vacaville  
Public Works Department  
650 Merchant Street  
Vacaville, CA 95688



PREPARED BY:

Analytical Environmental Services  
1801 7th Street, Suite 100  
Sacramento, CA 95811



WETLAND DELINEATION  
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Sacramento, CA 95811



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## **ATTACHMENTS**

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- Attachment 1 Wetland Delineation Data Sheets
- Attachment 2 Plant Indicator Status of Species Observed within the Study Area
- Attachment 3 NPDES Permit - Effluent Discharge
- Attachment 4 NPDES General Permit – Stormwater

# 1.0 INTRODUCTION

## 1.1 PURPOSE

Analytical Environmental Services (AES) conducted a formal delineation of potential wetlands and other waters of the U.S. for the Easterly Wastewater Treatment Plant Tertiary Project (Tertiary Project) in the City of Vacaville, California. The purpose of the delineation was to identify whether wetlands and other waters of the United States (U.S.), as defined by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA), occur within the study area. The results are considered preliminary until the USACE verifies the findings. The preliminary jurisdictional delineation has been updated to reflect the site visit with the USACE on November 3, 2009.

## 1.2 PROJECT APPLICANT AND AGENT

<b>Applicant</b>	<b>Agent</b>
City of Vacaville Public Works Department 650 Merchant Street Vacaville, CA 95688 Attn: Deborah Faaborg, Environmental Project Manager	Analytical Environmental Services 1801 7th Street, Suite 100 Sacramento, California 95811 Phone: (916) 447-3479 Fax: (916) 447-1665

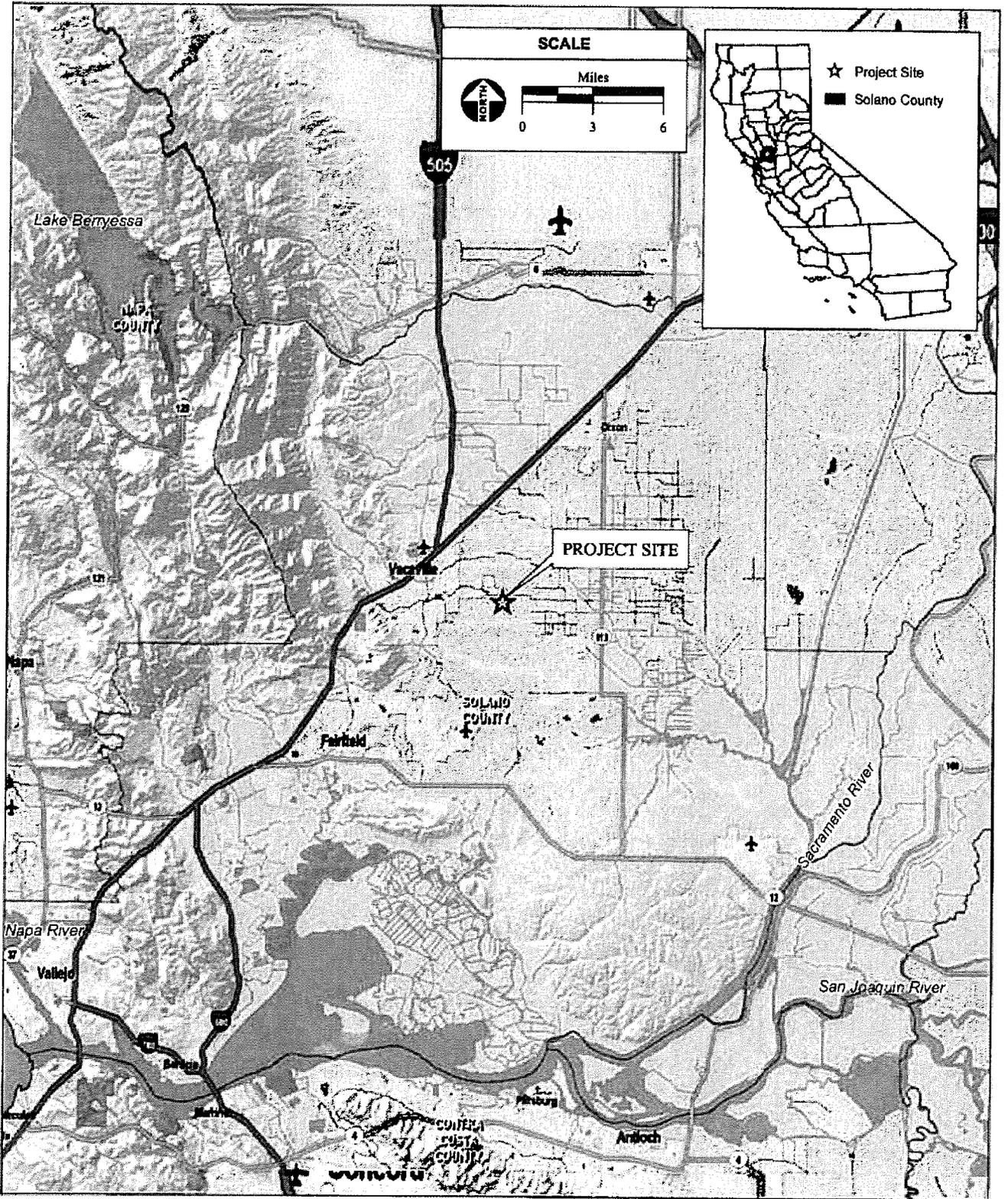
## 1.3 PROJECT LOCATION

The approximately 115-acre study area is located east of central Vacaville and southeast of the unincorporated community of Elmira, California. The regional location of the study area is shown in **Figure 1**. The study area is situated on Township 6 North, Range 1 East, Section 30 of the Elmira U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (quad) (USGS, 1980). The centroid of the study area is 121° 92' 88.6" North, 38° 36' 10.5" West. A topographic map and an aerial photograph of the study area are shown in **Figures 2 and 3**, respectively.

From Sacramento, take I-80 west toward San Francisco for approximately 27 miles. Take the Leisure Town Road/Vaca Valley Parkway exit and turn left onto Leisure Town Road. Drive for 2.7 miles and turn left onto Elmira Road. Drive for 1.3 miles and turn left onto A Street. Turn right onto Vaca Station Road to the study area.

## 1.4 PROJECT DESCRIPTION

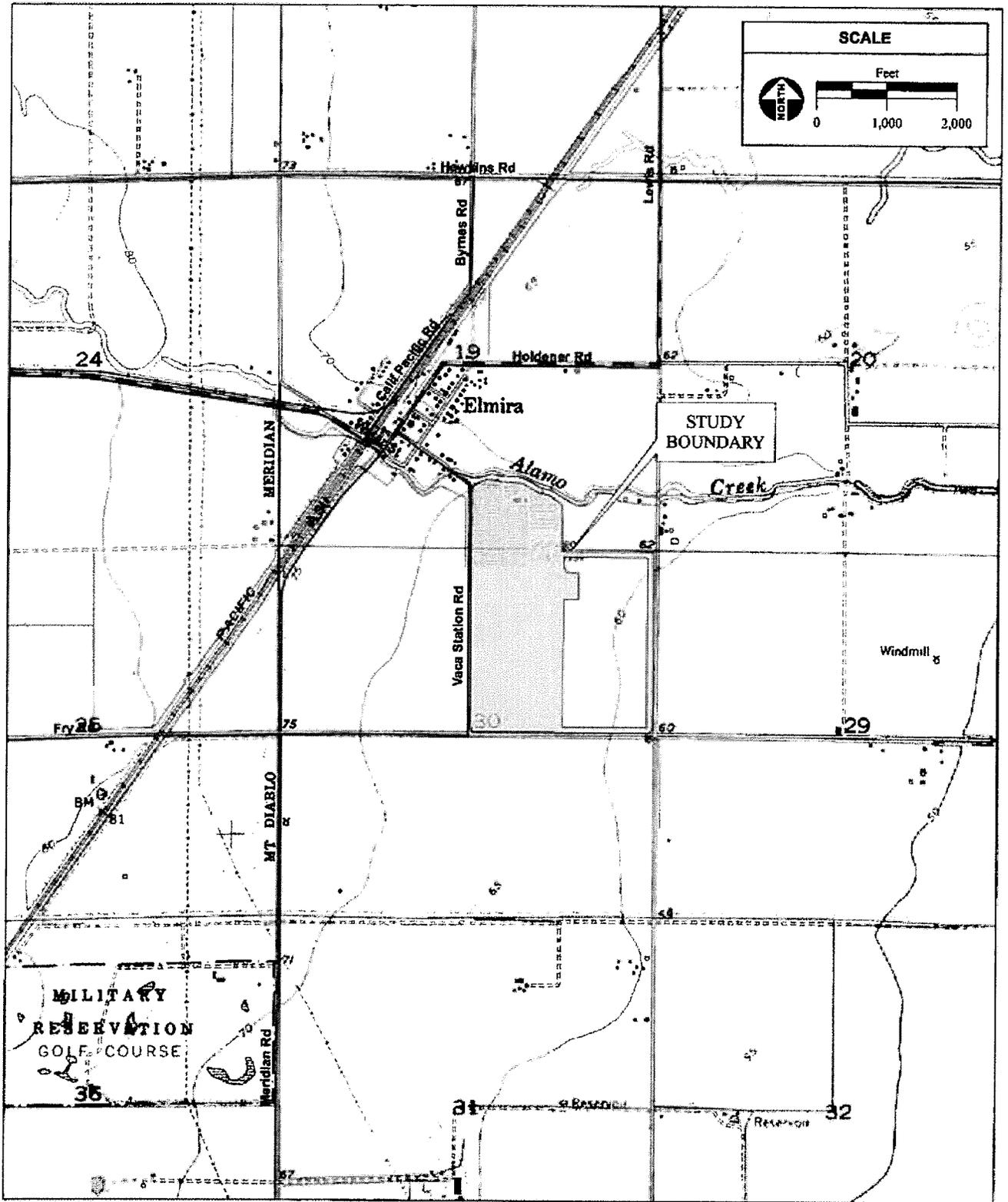
The Tertiary Project would result in modifications to existing facilities and the construction of additional facilities within the study area. The project design is illustrated in **Figure 4**.



SOURCE: StreetMap World, 2009; AES 2009

Vacaville EWWTP Tertiary Project Wetland Delineation / 209508 ■

**Figure 1**  
Regional Location



SOURCE: "Elmira, CA" USGS 7.5 Minute Topographic Quadrangle, T R Section 30, Mt. Diablo Baseline & Meridian; StreetMap World, 2008; AES 2009

Vacaville EWWTP Tertiary Project Wetland Delineation / 209508 ■

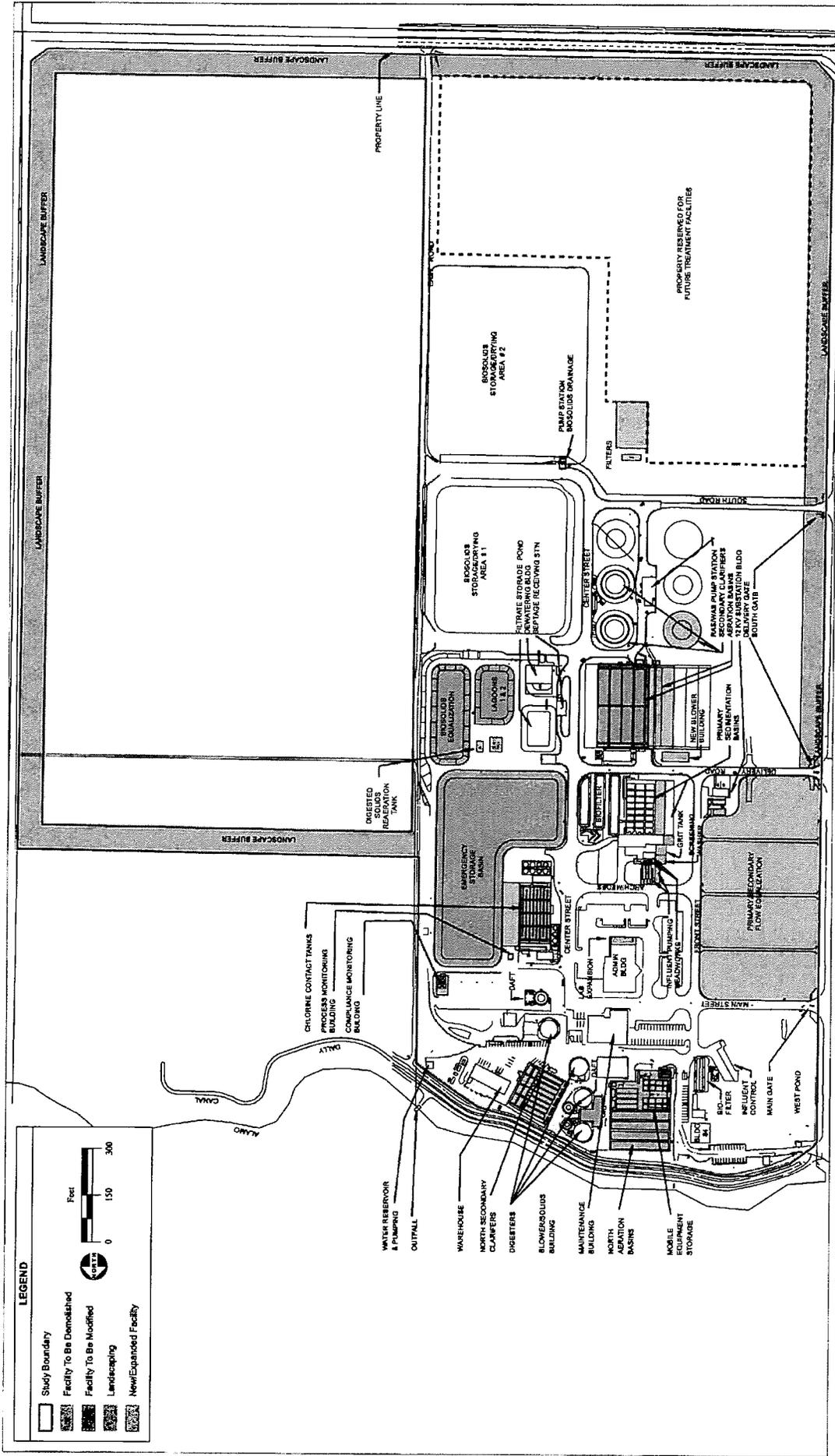
**Figure 2**  
Site and Vicinity Map



SOURCE: West Yost Associates, 2009; DigitalGlobe aerial photograph, 6/2007; AES 2009

Vacaville EWWTP Tertiary Project Wetland Delineation / 209508 ■

Figure 3  
Aerial Photograph



**LEGEND**

- Study Boundary
- Facility To Be Demolished
- Facility To Be Modified
- Landscaping
- New/Expanded Facility

Scale: 0, 150, 300 Feet

North Arrow

SOURCE: West View Associates, 2009; AES, 2009

Kanville EHP7777 Tertiary, Project Wetland Delineation / 2005.08

**Figure 4**  
Project Design

## 1.5 REGULATORY BACKGROUND

Any person, firm, or agency planning to alter or work in navigable waters of the U.S., including the discharge of dredged or fill material, must first obtain authorization from the USACE. Permits, licenses, variances, or similar authorization may also be required by other federal, state, and local statutes. Section 10 of the Rivers and Harbors Act of 1899 prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from the USACE (33 U.S.C. 403). Section 301 of the Federal Water Pollution Control Act and Amendments of 1972 (CWA) prohibit the discharge of pollutants, including dredged or fill material, into waters of the U.S. without a Section 404 permit from the USACE (33 U.S.C. 1344). A Section 401 State Water Quality Certification may be required by the Regional Water Quality Control Board (RWQCB) before other permits are issued. If a proposed project will result in the alteration of a California lake or streambed, the California Department of Fish and Game (CDFG) requires notification prior to commencement, and may require a Lake or Streambed Alteration Agreement.

Waters of the U.S. are defined as:

All waters used in interstate or foreign commerce; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent and ephemeral streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, where the use, degradation, or destruction of which could affect interstate commerce; impoundments of these waters; tributaries of these waters; or wetlands adjacent to these waters (Section 404 of the CWA; 33 CFR Part 328).

With non-tidal waters, in the absence of adjacent wetlands, the extent of the USACE jurisdiction is defined by the ordinary high water mark. The ordinary high water mark is defined, in 33 CFR Part 329.11, as the line on the shore established by the fluctuations of water, and indicated by a clear, natural line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, or the presence of litter and debris.

Wetlands are defined as:

Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (Federal Register, 1980, 1982; Braddock and Huppman, 1995).

The USACE and the U.S. Environmental Protection Agency (USEPA) issued the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* on May 30, 2007, to provide guidance based on the Supreme Court's decision regarding *Rapanos v. United States and Carabell v. United States* (Rapanos Guidance) (USACE, 2007). The decision provides new standards that distinguish between traditional navigable waters (TNWs), relatively permanent waters (RPWs), and non-relatively

permanent waters (non-RPWs). Wetlands adjacent to non-RPWs are subject to CWA jurisdiction if: the water body is relatively permanent, or if a water body abuts a RPW, or if a water body, in combination with all wetlands adjacent to that water body, has a significant nexus with TNWs. The significant nexus standard will be based on evidence applicable to ecology, hydrology, and the influence of the water on the “chemical, physical, and biological integrity of downstream traditional navigable waters” (USACE, 2007). Isolated wetlands are not subject to CWA jurisdiction based on the Supreme Court’s decision regarding Solid Waste Agency of Northern Cook County (SWAANC) (Guzy, 2001).

Roadside ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water are not considered waters of the U.S. because they are not tributaries or they do not have a significant nexus to downstream traditional navigable waters (Federal Register, 1983). The December 2008 memorandum summarizing key points of the Rapanos Guidance also states that agencies generally will not assert jurisdiction over ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water (USACE and USEPA, 2008).

USACE Regulatory Guidance Letter 07-01 (RGL 07-1), *Practices for Documenting Jurisdiction Under Section 9 & 10 of the Rivers and Harbors Act of 1899 and Section 404 of the CWA* (2007), states that upland swales and erosional features (e.g., gullies, small washes characterized by low volume, infrequent, and short duration flow) are generally not waters of the U.S. because they are not tributaries or they do not have a significant nexus to downstream traditional navigable waters.

## **2.0 METHODOLOGY**

### **2.1 DATA REVIEW**

Prior to conducting the field delineation the following information sources were reviewed:

- Elmira quad and street maps (USGS, 1980; StreetMap World, 2008);
- Color aerial photography of the study area and vicinity (West Yost Associates, 2009; DigitalGlobe, 2007);
- Soil survey maps and unit descriptions (NRCS, 2001-2007; 2007);
- Hydric soil information (NRCS, 2009); and
- U.S. Fish and Wildlife Service (USFWS) Wetlands Online Mapper (USFWS, 2009).

### **2.2 DELINEATION SURVEY**

Analytical Environmental Services (AES) biologists Kelly Buja, M.S., and Charlotte Marks conducted a formal delineation of the study area on May 20, 2009. The delineation consisted of walking transects in an east to west direction, mapping habitats types, and documenting wetland features on an aerial photograph in the vicinity of the study area. Data points were obtained by excavating soil pits to a depth

of 18 inches or until an impermeable layer was reached. Plant nomenclature followed *The Jepson Manual: Higher Plants of California* (Hickman, 1993). *The 1988 National List of Vascular Plant Species that Occur in Wetlands, California* (Reed, 1988), was used to determine the status of observed plants as wetland indicator species.

## 2.3 DETERMINATION METHODS

This report has been prepared in accordance with the *Regulatory Branch of the Sacramento District, USACE Minimum Standards* (2001) and the *Corps of Engineers Wetlands Delineation Manual* (1987). The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (dated September 2008) and the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979) were used to delineate wetlands that are potentially subject to USACE jurisdiction under Section 404 of the CWA. The USACE's regulations (33 CFR Part 328) were used to determine the presence of jurisdictional waters of the U.S other than wetlands. *The U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (2007) was used to confirm that the delineation was prepared in accordance with the guidance based on the Rapanos decision.

Wetlands are defined by three factors: a majority of dominant vegetation species are wetland associated species; hydrologic conditions exist that result in periods of flooding, ponding, or saturation during the growing season; and hydric soils are present.

Wetland data sheets were completed at representative locations to determine whether suspect features qualify as jurisdictional waters of the U.S. The data sheets are included in **Attachment 1**. Wetlands were determined based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology indicators.

### Vegetation

Hydrophytic vegetation indicators include: prevalence of hydrophytic vegetation (majority of dominant plant species are obligate or facultative wetland plants) as listed in the *National List of Plant Species that Occur in Wetlands: California* (Reed, 1988) and morphological or physiological adaptations to saturated soil conditions. Plant species not listed in Reed (1988) are considered upland species. The 50/20 rule states that for each stratum in the plant community, dominant species are the most abundant species that immediately exceed 50 percent of the total coverage for the stratum, plus any additional species that individually comprises 20 percent or more of the total cover in the stratum (USACE, 2008). The plant checklist for species within the study area is summarized in **Attachment 2**.

### Soils

Hydric soil indicators include: organic soils (histosols); mineral soils saturated and rich in organics (histic epipedon); sulfidic odor; low dissolved oxygen concentration (aquic moisture regime) and

reducing conditions; gleyed and/or low-chroma soils (chroma of 1 or chroma of 2 with bright mottles); iron and manganese concretions (USACE, 2008); and soils listed on National Hydric Soils (NRCS, 2009).

### Hydrology

Primary wetlands hydrology indicators include: visual observation of saturated soil or inundation, surface soil cracks, inundation visible on aerial imagery, water-stained leaves, oxidized rhizospheres along living roots, aquatic invertebrates, water marks, drift lines, and sediment deposits. Only one primary indicator is necessary to have wetland hydrology. Secondary indicators include: drainage patterns, crayfish burrows, FAC-neutral test, and shallow aquitard. A minimum of two secondary indicators is necessary to establish wetland hydrology (USACE, 2008).

## 3.0 ENVIRONMENTAL SETTING

### 3.1 PRECIPITATION

The Winters (#139) climate data obtained in the vicinity of the study area documented an average total annual precipitation of 15.22 inches from June 2008 to May 2009 (CIMIS, 2009). The Winters (049742) monthly record climate data recorded an average total annual precipitation of 21.84 inches from 1906 through 2008 (WRCC, 2009). Therefore, the average precipitation obtained for the 2008 through 2009 water year is approximately 70 percent of the average total annual precipitation documented over the last 102 years.

### 3.2 SOIL TYPES

Six soil types occur in the study area. Table 1 identifies the soil types by series, map symbols, and hydric characteristics. The soil map is provided in Figure 5 and descriptions are discussed below.

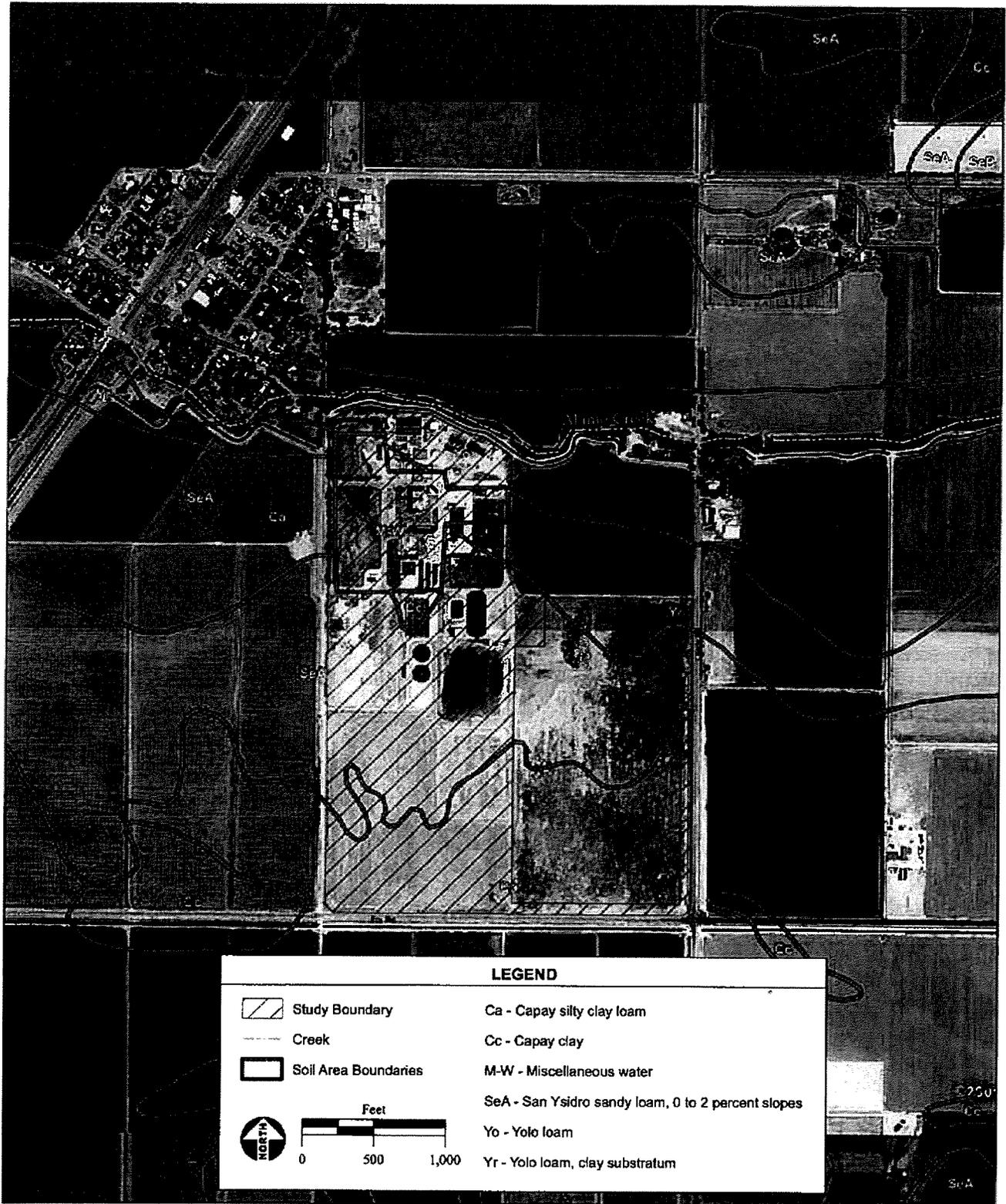
**TABLE 1**  
MAPPED SOIL TYPES

Soil Series	Map Symbol	Hydric
Capay silty clay loam	Ca	--
Capay clay	Cc	Yes
Miscellaneous water	M-W	--
San Ysidro sandy loam, 0 to 2 percent slopes	SeA	--
Yolo loam	Yo	--
Yolo loam, clay substratum	Tr	--

Source: NRCS, 2001-2007; 2007; 2009.

#### Capay Silty Clay Loam (Ca)

This soil type is found on toeslopes of rims on basin floors with parent material of alluvium derived from sedimentary rock. Depth to water table is more than 80 inches. Depth to restrictive feature is more than



SOURCE: West Yost Associates, 2009; DigitalGlobe aerial photograph, 6/2007; USDA NRCS Soils Data, 2001-2007; AES 2009

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**Figure 5**  
Soils Map

80 inches. The soil type is moderately well drained with a low to moderately high capacity of the most limiting layer to transmit water. The soil profile is typically silty clay loam from 0 to 21 inches, clay from 21 to 50 inches, and clay loam from 50 to 80 inches (NRCS, 2007). This soil is not classified as hydric (NRCS, 2009).

### **Capay Clay (Cc)**

This soil type is found on toeslopes of rims on basin floors with parent material of alluvium derived from sedimentary rock. Depth to water table is more than 80 inches. Depth to restrictive feature is more than 80 inches. The soil type is moderately well drained with a low to moderately high capacity of the most limiting layer to transmit water. The soil profile is typically clay from 0 to 50 inches and clay loam from 50 to 62 inches (NRCS, 2007). This soil is classified as hydric (NRCS, 2009).

### **Miscellaneous Water (M-W)**

This designation is found on toeslopes (NRCS, 2009). No additional information is provided.

### **San Ysidro Sandy Loam, 0 to 2 Percent Slopes (SeA)**

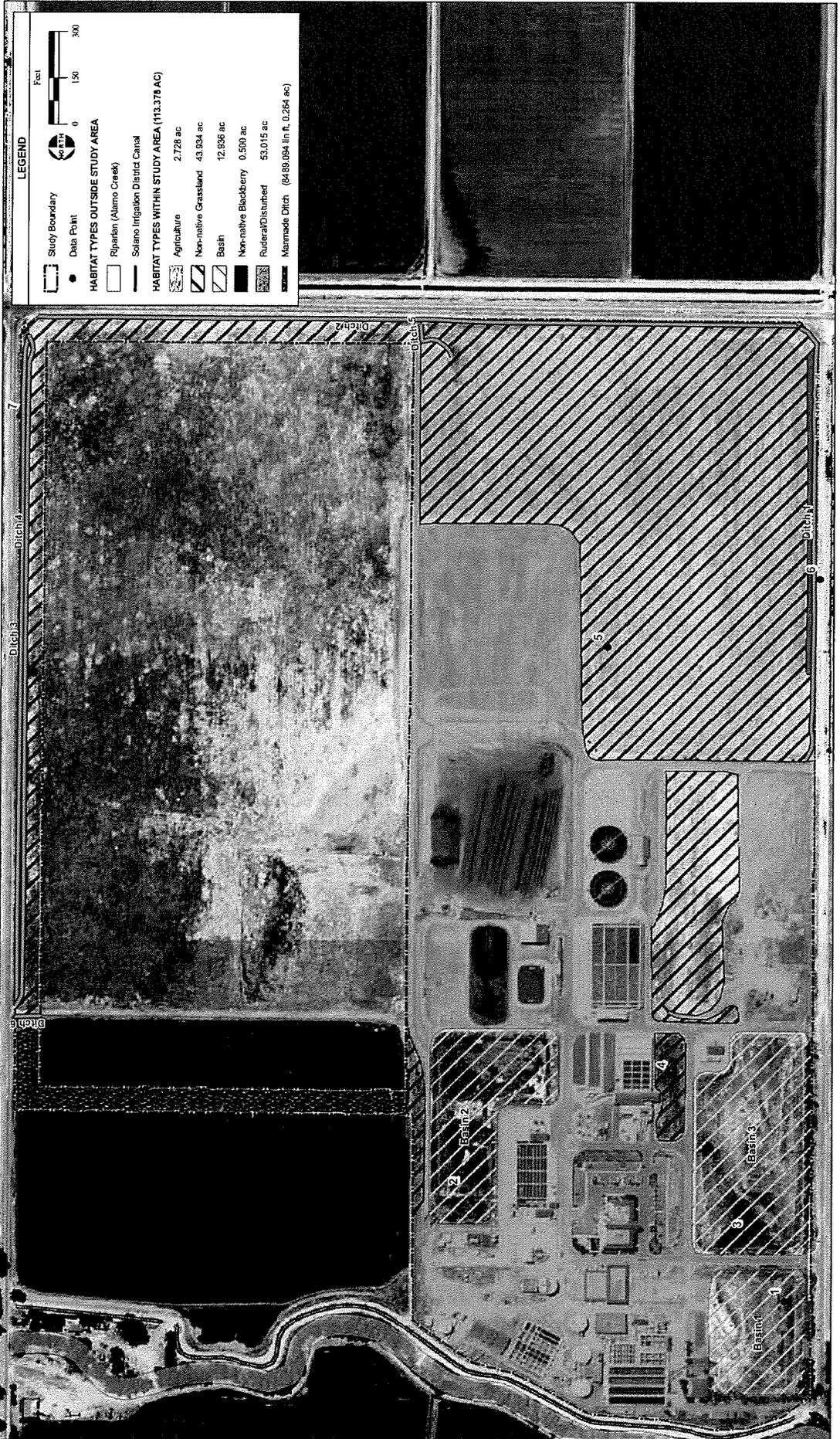
This soil type is found on footslopes of terraces with parent material of alluvium derived from sedimentary rock. Depth to water table is more than 80 inches. The soil type has a very low available water capacity. The soil type is moderately well drained with a low to very low of the most limiting layer to transmit water. The soil profile is typically sandy loam from 0 to 14 inches, clay loam from 14 to 28 inches, sandy clay loam from 28 to 54 inches, and stratified sandy loam to clay loam from 54 to 68 inches (NRCS, 2007). This soil is not classified as hydric (NRCS, 2009).

### **Yolo Loam (Yo)**

This soil type is found on toeslopes of alluvial fan with parent material of alluvium derived from sedimentary rock. Depth to water table is more than 80 inches. Depth to restrictive feature is more than 80 inches. The soil type is well drained with a moderately high to high capacity of the most limiting layer to transmit water. The soil profile is typically loam from 0 to 60 (NRCS, 2007). This soil is not classified as hydric (NRCS, 2009).

### **Yolo Loam, Clay Substratum (Yr)**

This soil type is found on toeslopes of alluvial fans with parent material of alluvium derived from sedimentary rock. Depth to water table is more than 80 inches. Depth to restrictive feature is 40 to 60 inches to strongly contrasting textural stratification. The soil type is well drained with a moderately low to moderately high capacity of the most limiting layer to transmit water. The soil profile is typically loam from 0 to 45 inches and clay from 45 to 60 inches (NRCS, 2007). This soil is not classified as hydric (NRCS, 2009).



**Figure 6**  
 Habitat Types, Wetland Features, and Other Waters

### 3.3 HABITAT TYPES

Terrestrial habitat types within the study area include: nonnative grassland, nonnative blackberry, agriculture, and ruderal/developed areas. Aquatic habitat types within the study area include: basins, biosolid lagoons, and manmade ditches. Dominant vegetation in each terrestrial habitat type is discussed below. Dominant vegetation in each aquatic habitat type is discussed in **Section 4.0**. A habitat map is illustrated in **Figure 6**. Photographs of the study area are shown in **Figure 7**.

#### Nonnative Grassland

Nonnative grassland occurs primarily in the southwestern portion of the study area (**Figure 7: Photograph 1**). This habitat type also occurs in two small areas towards the northwestern portion of the study area and along the southwestern and western boundary of the study area. Dominant vegetation observed in the nonnative grassland includes: winter vetch (*Vicia villosa*), purple wild radish (*Raphanus sativus*), plantain (*Plantago lanceolata*), alfalfa (*Medicago polymorpha*), yellow star thistle (*Centaurea solstitialis*), field mustard (*Brassica rapa*), common groundsel (*Senecio vulgaris*), wild oat (*Avena fatua*), and ripgut grass (*Bromus diandrus*).

#### Nonnative Blackberry

This area occurs adjacent to a roadside ditch and is comprised primarily of non-native blackberry vegetation (*Rubus discolor*).

#### Agriculture

Agriculture occurs on the northeast side of the study area, within the proposed landscape buffer area. Sunflowers (*Eriophyllum* sp.) are the primary crop type grown within the study area (ESA, 2009).

#### Ruderal/Disturbed

Ruderal/developed areas include existing buildings, parking lots, graded, access, and paved roads, and ornamental landscaping. Existing ornamental landscaping within the study area includes ornamental trees and shrubs that have been planted around the existing administration building, parking lot, and access road.

#### Basins, Biosolid Lagoons, and Manmade Ditches

These habitat types are discussed in **Section 4.0, Delineation Results**.

### 3.4 HYDROLOGY

Treated wastewater within the project site is discharged to Old Alamo Creek under NPDES Permit Number CA0077691 (RWQCB, 2008). The NPDES Permit is provided as **Attachment 3**. Old Alamo Creek flows west to east approximately 40 feet north of the northern boundary of the project site. Old



**PHOTO 1:**  
View to south of nonnative grassland in southern portion of the study area.



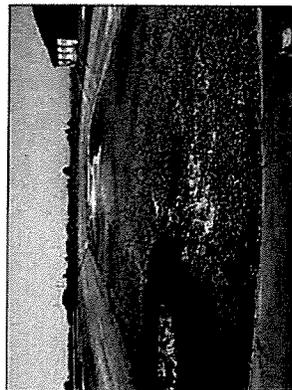
**PHOTO 2:**  
View facing southeast of stormwater detention basin (Basin 1) in western portion of the study area.



**PHOTO 3:**  
View facing northeast of emergency storage basin (Basin 2) in eastern portion of study area.



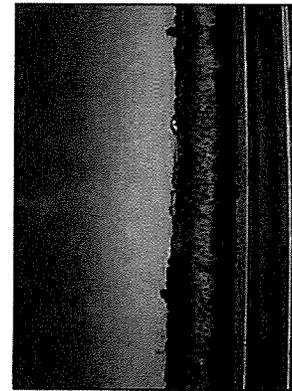
**PHOTO 4:**  
View facing east of stormwater detention basin (Basin 3) in western portion of the study area.



**PHOTO 5:**  
View facing south of biosolids lagoon located in eastern portion of the study area.



**PHOTO 6:**  
View facing south of roadside ditch (Ditch 1) adjacent to Vaca Station Road.



**PHOTO 7:**  
View facing north of roadside ditch (Ditch 2) adjacent to Fry Road.



**PHOTO 8:**  
View facing north of roadside ditch (Ditch 3) adjacent to Lewis Road.

Alamo Creek is tributary to Alamo Creek. Alamo Creek is tributary to Ulatis Creek. Ulatis Creek is tributary to Cache Slough. Cache Slough is tributary to the Sacramento River Deep Water Ship Canal. The Sacramento River Deep Water Ship Canal is a traditionally navigable waters of the U.S.

The Solano Irrigation District (SID) Canal flows west to east approximately 20 feet north of the northern boundary of the study area. The irrigation canal is lined and does not contain vegetation. The irrigation canal transports irrigation water to farm land in the vicinity of the study area.

Several manmade ditches are located along the perimeter of the study area. These ditches collect stormwater runoff from the adjacent roadways and vacant fields. Water within the manmade ditches exits the south side of the study area through culverts beneath Fry Road and drain to a roadside ditch on the south side of Fry Road. The roadside ditch connects to another roadside ditch through a culvert. The roadside ditch continues south for approximately 0.5 miles to a manmade concrete lined channelized creek. This manmade concrete lined channelized creek flows east for approximately 4.75 miles to its confluence with Alamo Creek. Alamo Creek is tributary to Ulatis Creek. Ulatis Creek is tributary to Cache Slough. Cache Slough is tributary to the Sacramento River Deep Water Ship Canal. The Sacramento River Deep Water Ship Canal is a traditionally navigable waters of the U.S.

Wetland features identified within the study area are discussed in **Section 4.0**.

## 4.0 DELINEATION RESULTS

Wetland features in the study area include the existing basins, biosolid lagoons, and manmade ditches. **Figure 6** illustrates wetland features by acreages and paired data points in the vicinity of the study area. Wetland determination data forms for the paired data points are presented in **Attachment 1**. Photographs of wetland features are provided in **Figure 7**.

### Basin

Three existing manmade basins occur within the northern portion of the study area (**Figure 7: Photographs 2, 3 and 4**). The unlined basins are manmade, engineered, and constructed fully in uplands. Dominant obligate and/or facultative vegetation observed in the basins include prickly lettuce (*Lactuca serriola*), rough cocklebur (*Xanthium strumarium*), broad-leaf cattail (*Typha latifolia*), Italian ryegrass (*Lolium multiflorum*), and curly dock (*Rumex crispus*). At the time of the survey, the three manmade basins contained ponded water in low spots located within portions of the basins.

Basin 1 (**Figure 7: Photograph 2**) functions as a stormwater detention basin and receives runoff from the parking lot and administrative buildings to the north, and via direct precipitation. Water within Basin 1 ponds until it percolates into the ground and historically has never been discharged to Old Alamo Creek outside the northern boundary of the study area. While there is a culvert that connects Basin 1 to Old

Alamo Creek, a hydrological connection is prevented via a mechanical valve that has historically never been opened. Stormwater discharge at the EWWTP is regulated under NPDES General Permit No. CAS000004 (Attachment 4).

Basin 2 (**Figure 7: Photograph 3**) functions as an unlined emergency storage basin for the diversion of treated effluent that potentially does not meet compliance criteria prior to discharge to Old Alamo Creek. Any effluent that is temporarily stored within Basin 2 is returned to the headworks for retreatment. Additionally, the basin receives some water from direct precipitation events. Stormwater that is inadvertently captured within the basin typically ponds until it percolates into the ground.

Basin 3 (**Figure 7: Photograph 4**) functions as a stormwater detention basin and receives runoff from the parking lot and administrative buildings to the north, and via direct precipitation. Water within Basin 3 ponds until it percolates into the ground and historically has never been discharged to Old Alamo Creek outside the northern boundary of the study area. While there is a culvert that connects Basin 3 to Basin 1, a hydrological connection between the two basins is prevented via a mechanical valve that has historically never been opened.

### **Biosolid Lagoons**

Two biosolid lagoons occur within the study area (**Figure 7: Photograph 5**). These lagoons are currently lined with polypropylene liner and function as storage for liquid sludge produced at EWWTP prior to completion of the biosolid dewatering process. Some liquid in the lagoons is received via direct precipitation. No vegetation was observed in the biosolid lagoons.

### **Manmade Ditches**

Three manmade roadside ditches (Ditches 1, 2, and 3 within **Figure 6**) and three manmade agricultural ditches (Ditches 4, 5 and 6 within **Figure 6**) occur along the perimeter of the study area (**Figure 7: Photographs 6, 7 and 8**). Features observed along the bed and banks of the manmade ditches include defined bed and banks that range between approximately one- and 1.5-feet wide and distinct drainage patterns. Although hydric soils necessary to meet the criteria of wetland features are not present, the features are considered ditches because they contain defined beds and banks in accordance with the USACE regulations identified in 33 CFR Part 328. The manmade ditches receive water via direct precipitation during rain events and from runoff from Vaca Station Road, Fry Road, Lewis Road, and adjacent nonnative grassland and agricultural areas. The ditches were excavated wholly in and drain only uplands and do not carry a relatively permanent flow of water. Water from the ditches is culverted under Fry Road, drains to a roadside ditch which flows in an easterly direction on the south side of Fry Road, flows through a culvert to another roadside ditch that flows in a southerly direction adjacent to the west side of Lewis Road, and eventually discharges to New Alamo Creek, a tributary to the Delta.

## **5.0 ANALYSIS**

All wetland and water features identified within the study area were assessed to determine whether these features would potentially be subject to USACE jurisdiction under Section 404 of the CWA. The three basins and biosolid lagoons within the study area do not have a significant federal nexus to a waters of the U.S. These engineered features were dug wholly in uplands, receive artificial hydrology, and serve no connectivity for fish and wildlife species.

Three manmade roadside ditches and three manmade agricultural ditches occur within the study area. Although there is an indirect hydrologic connection to New Alamo Creek approximately 1 mile from the the study area, the ditches were excavated wholly in and drain only uplands and do not carry a relatively permanent flow of water as the manmade ditches only receive water following direct precipitation events and runoff from the adjacent uplands. In accordance with RGL 07-01, the roadside ditches were determined not to be potentially jurisdictional features.

## **6.0 CONCLUSION**

In conclusion, there are no potentially jurisdictional features within the study area.

## 7.0 REFERENCES

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# ***ATTACHMENTS***

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# ***ATTACHMENT 1***

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***DELINEATION DATA SHEETS***

WETLAND DETERMINATION DATA FORM – Arid West Region

Routine Wetland Determination

(1 Nov 2006 COE Arid West Wetlands Delineation Manual)

Project/Site: Easterly Wastewater Treatment Plant City/County: Vacaville Sampling Date: May 20, 2009  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 1  
 Investigator(s): Kelly Buja and Charlotte Marks Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Stormwater basin Local relief (concave, convex, none): concave Slope (%): 5  
 Subregion (LRR): C Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of the year? Yes  No  (If no, explain in remarks.)  
 Are Vegetation  Soil , Or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation  Soil , Or Hydrology  Naturally problematic? (If needed, explain any answers in remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the sampled area	
Wetland hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: The stormwater basin meets the criteria of a wetland.				

**VEGETATION**

<u>Tree Stratum</u>	(use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>	
1.	_____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW or FAC: <u>2</u> (A)	
2.	_____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3.	_____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
4.	_____	_____	_____	_____		
Total Cover:		<u>0</u>				
<u>Sapling/Shrub Stratum:</u>					<b>Prevalence Index worksheet:</b>	
1.	_____	_____	_____	_____	Total % Cover of: _____ Multiply by:	
2.	_____	_____	_____	_____	OBL Species: _____ x 1 = _____	
3.	_____	_____	_____	_____	FACW Species _____ x 2 = _____	
4.	_____	_____	_____	_____	FAC Species _____ x 3 = _____	
5.	_____	_____	_____	_____	FACU Species _____ x 4 = _____	
Total Cover:		<u>0</u>			UPL Species _____ x 5 = _____	
<u>Herb Stratum:</u>					Column Totals: _____ (A) _____ (B)	
1.	<u>Xanthium strumarium</u>	<u>20</u>	<u>DOM</u>	<u>FAC</u>	Prevalence Index = B/A = _____	
2.	<u>Lolium multiflorum</u>	<u>10</u>			Hydrophytic Vegetation Indicators:	
3.	<u>Lactuca serriola</u>	<u>5</u>			<input checked="" type="checkbox"/> Dominance Test is >50%	
4.	<u>Malva parviflora</u>	<u>10</u>			<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
5.	<u>Rumex crispus</u>	<u>10</u>			<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
6.	<u>Typha latifolia</u>	<u>30</u>	<u>DOM</u>	<u>OBL</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
7.	<u>Cyperus sp.</u>	<u>5</u>				
8.	_____	_____	_____	_____		
Total Cover:		<u>90</u>				
<u>Woody Vine Stratum:</u>					<sup>1</sup> Indicators of Hydric soil and wetland hydrology must be present.	
1.	_____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
2.	_____	_____	_____	_____		
% Bare Ground in Herb Stratum		% Cover of Biotic Crust				
Remarks: 10 percent standing water.						

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)												
Depth Inches	Matrix		Redox Features				Texture	Remarks				
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>						
0-5	10 YR 3/2			80			Clay Loam					
			7.5 YR 4/6	20	C	M						
<sup>1</sup> Type : C=Concentration, D=Depletion, RM=Reduced Matrix <sup>2</sup> Location: PL=Pore Lining, RC=Root Channel, M=Matrix												
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)					<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)				<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)			
<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____					<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present.							
					<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>							
Remarks:												

**HYDROLOGY**

Wetland Hydrology Indicators:				Secondary Indicators (2or more required)																						
Primary Indicators (any one indicator is sufficient)																										
<input checked="" type="checkbox"/> Surface water (A1)	<input type="checkbox"/> High water Table (A2)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water Marks (B1) (Riverine)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible-Aerial Imagery (C9)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> FAC-Neutral test (D5)
<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): -- Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): -- Saturation Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): -- (includes capillary fringe)								<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available)																										
Remarks:																										

WETLAND DETERMINATION DATA FORM – Arid West Region

Routine Wetland Determination

(1 Nov 2006 COE Arid West Wetlands Delineation Manual)

Project/Site: Easterly Wastewater Treatment Plant City/County: Vacaville Sampling Date: May 20, 2009  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 2  
 Investigator(s): Kelly Buja and Charlotte Marks Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Stormwater basin Local relief (concave, convex, none): concave Slope (%): 5  
 Subregion (LRR): C Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of the year? Yes  No  (If no, explain in remarks.)  
 Are Vegetation  Soil , Or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation  Soil , Or Hydrology  Naturally problematic? (If needed, explain any answers in remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the sampled area
Wetland hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: The stormwater basin meets the criteria of a wetland.			

**VEGETATION**

<u>Tree Stratum</u>	(use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>	
1.	_____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW or FAC: <u>2</u> (A)	
2.	_____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)	
3.	_____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)	
4.	_____	_____	_____	_____		
Total Cover:		<u>0</u>				
<u>Sapling/Shrub Stratum:</u>					<b>Prevalence Index worksheet:</b>	
1.	_____	_____	_____	_____	Total % Cover of:	Multiply by:
2.	_____	_____	_____	_____	OBL Species:	_____ x 1 = _____
3.	_____	_____	_____	_____	FACW Species	_____ x 2 = _____
4.	_____	_____	_____	_____	FAC Species	_____ x 3 = _____
5.	_____	_____	_____	_____	FACU Species	_____ x 4 = _____
Total Cover:		<u>0</u>			UPL Species	_____ x 5 = _____
<u>Herb Stratum:</u>					Column Totals: _____ (A) _____ (B)	
1.	<u>Deschampsia danthonioides</u>	<u>2</u>			Prevalence Index = B/A = _____	
2.	<u>Lolium multiflorum</u>	<u>20</u>	<u>DOM</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators:	
3.	<u>Lactuca serriola</u>	<u>5</u>			<input checked="" type="checkbox"/> Dominance Test is >50%	
4.	<u>Malva parviflora</u>	<u>10</u>	<u>DOM</u>	<u>UPL</u>	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
5.	<u>Rumex crispus</u>	<u>20</u>	<u>DOM</u>	<u>FACW</u>	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
6.	<u>Typha latifolia</u>	<u>10</u>			<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
7.	<u>Cyperus sp.</u>	<u>5</u>			<sup>1</sup> Indicators of Hydric soil and wetland hydrology must be present.	
8.	_____	_____	_____	_____		
Total Cover:		<u>72</u>			Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
<u>Woody Vine Stratum:</u>						
1.	_____	_____	_____	_____		
2.	_____	_____	_____	_____		
Total Cover:		_____				
% Bare Ground in Herb Stratum <u>28</u>		% Cover of Biotic Crust				

Remarks:

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)								
Depth Inches	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10 YR 3/2			80			Clay Loam	
			7.5 YR 4/6	20	C	M		
<sup>1</sup> Type : C=Concentration, D=Depletion, RM=Reduced Matrix <sup>2</sup> Location: PL=Pore Lining, RC=Root Channel, M=Matrix								
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)				<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)		
<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____				<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present.				
Remarks:				<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

**HYDROLOGY**

Wetland Hydrology Indicators:			Secondary Indicators (2or more required)		
Primary Indicators (any one indicator is sufficient)					
<input checked="" type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)			
<input type="checkbox"/> High water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)			
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Thin Muck Surface (C7)			
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible-Aerial Imagery (C9)			
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)			
		<input type="checkbox"/> FAC-Neutral test (D5)			
<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): -- Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): -- Saturation Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): -- (includes capillary fringe)			<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available)					
Remarks:					

WETLAND DETERMINATION DATA FORM – Arid West Region

Routine Wetland Determination

(1 Nov 2006 COE Arid West Wetlands Delineation Manual)

Project/Site: Easterly Wastewater Treatment Plant City/County: Vacaville Sampling Date: May 20, 2009

Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 3

Investigator(s): Kelly Buja and Charlotte Marks Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Stormwater basin Local relief (concave, convex, none): concave Slope (%): 5

Subregion (LRR): C Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of the year? Yes  No  (If no, explain in remarks.)

Are Vegetation  Soil , Or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No

Are Vegetation  Soil , Or Hydrology  Naturally problematic? (If needed, explain any answers in remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the sampled area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Wetland hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: The stormwater basin meets the criteria of a wetland.			

**VEGETATION**

<u>Tree Stratum</u> (use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
Total Cover: <u>0</u>				
<b><u>Sapling/Shrub Stratum:</u></b>				<b>Prevalence Index worksheet:</b>
1. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____
2. _____	_____	_____	_____	OBL Species: _____ x 1 = _____
3. _____	_____	_____	_____	FACW Species _____ x 2 = _____
4. _____	_____	_____	_____	FAC Species _____ x 3 = _____
5. _____	_____	_____	_____	FACU Species _____ x 4 = _____
Total Cover: <u>0</u>				UPL Species _____ x 5 = _____
<b><u>Herb Stratum:</u></b>				Column Totals: _____ (A) _____ (B)
1. <u>Xanthium strumarium</u>	<u>20</u>	<u>DOM</u>	<u>FAC</u>	Prevalence Index = B/A = _____ Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. <u>Lolium multiflorum</u>	<u>10</u>			
3. <u>Lactuca serriola</u>	<u>5</u>			
4. <u>Polypogon monspeliensis</u>	<u>10</u>			
5. <u>Rumex crispus</u>	<u>20</u>	<u>DOM</u>	<u>FACW</u>	
6. <u>Typha latifolia</u>	<u>15</u>			
7. <u>Cyperus eragrostis</u>	<u>5</u>			
8. _____	_____	_____	_____	
Total Cover: <u>85</u>				
<b><u>Woody Vine Stratum:</u></b>				<sup>1</sup> Indicators of Hydric soil and wetland hydrology must be present.
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
Total Cover: _____				
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			
Remarks: 10 percent standing water.				

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)								
Depth Inches	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10 YR 3/2			80			Clay Loam	
			7.5 YR 4/6	20	C	M		
<sup>1</sup> Type : C=Concentration, D=Depletion, RM=Reduced Matrix <sup>2</sup> Location: PL=Pore Lining, RC=Root Channel, M=Matrix								
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)				<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)		
<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____				<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present.				
Remarks:				<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

**HYDROLOGY**

Wetland Hydrology Indicators:			Secondary Indicators (2or more required)		
Primary Indicators (any one indicator is sufficient)					
<input checked="" type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)			
<input type="checkbox"/> High water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)			
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Thin Muck Surface (C7)			
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible-Aerial Imagery (C9)			
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)			
		<input type="checkbox"/> FAC-Neutral test (D5)			
<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): -- Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): -- Saturation Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): -- (includes capillary fringe)			<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available)					
Remarks:					

WETLAND DETERMINATION DATA FORM – Arid West Region

Routine Wetland Determination

(1 Nov 2006 COE Arid West Wetlands Delineation Manual)

Project/Site: Easterly Wastewater Treatment Plant City/County: Vacaville Sampling Date: May 20, 2009

Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 4

Investigator(s): Kelly Buja and Charlotte Marks Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Ruderal field Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): C Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of the year? Yes  No  (If no, explain in remarks.)

Are Vegetation  Soil , Or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No

Are Vegetation  Soil , Or Hydrology  Naturally problematic? (If needed, explain any answers in remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the sampled area
Wetland hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:			

**VEGETATION**

<u>Tree Stratum</u>	(use scientific names.)	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	<b>Dominance Test worksheet:</b>
1.	_____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
Total Cover:		<u>0</u>			
<b><u>Sapling/Shrub Stratum:</u></b>					<b>Prevalence Index worksheet:</b>
1.	_____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____
2.	_____	_____	_____	_____	OBL Species: _____ x 1 = _____
3.	_____	_____	_____	_____	FACW Species _____ x 2 = _____
4.	_____	_____	_____	_____	FAC Species _____ x 3 = _____
5.	_____	_____	_____	_____	FACU Species _____ x 4 = _____
Total Cover:		<u>0</u>			UPL Species _____ x 5 = _____
<b><u>Herb Stratum:</u></b>					Column Totals: _____ (A) _____ (B)
1.	<u><i>Centaurea solstitialis</i></u>	<u>30</u>	<u>DOM</u>	<u>UPL</u>	Prevalence Index = B/A = _____
2.	<u><i>Brassica rapa</i></u>	<u>10</u>			Hydrophytic Vegetation Indicators:
3.	<u><i>Convolvulus arvensis</i></u>	<u>20</u>	<u>DOM</u>	<u>UPL</u>	<input type="checkbox"/> Dominance Test is >50%
4.	<u><i>Senecio vulgaris</i></u>	<u>10</u>			<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>
5.	<u><i>Geranium dissectum</i></u>	<u>10</u>			<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
6.	<u><i>Erodium botrys</i></u>	<u>5</u>			<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
7.	<u><i>Trifolium dubium</i></u>	<u>3</u>			
8.	<u><i>Vicis villosa</i></u>	<u>12</u>			
Total Cover:		<u>100</u>			<sup>1</sup> Indicators of Hydric soil and wetland hydrology must be present.
<b><u>Woody Vine Stratum:</u></b>					Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
Total Cover:		_____			
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust _____			
Remarks:					



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Routine Wetland Determination

(1 Nov 2006 COE Arid West Wetlands Delineation Manual)

Project/Site: Easterly Wastewater Treatment Plant City/County: Vacaville Sampling Date: May 30, 2009  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 5  
 Investigator(s): Kelly Buja and Charlotte Marks Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Ruderal field Local relief (concave, convex, none): convex Slope (%): <1  
 Subregion (LRR): C Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

Are climatic/hydrologic conditions on the site typical for this time of the year? Yes  No  (If no, explain in remarks.)  
 Are Vegetation  Soil , Or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation  Soil , Or Hydrology  Naturally problematic? (If needed, explain any answers in remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the sampled area	
Wetland hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: upland				

**VEGETATION**

<u>Tree Stratum</u>	(use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>	
1.	_____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW or FAC: <u>0</u> (A)	
2.	_____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)	
3.	_____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)	
4.	_____	_____	_____	_____		
	Total Cover:	<u>0</u>				
<b><u>Sapling/Shrub Stratum:</u></b>					<b>Prevalence Index worksheet:</b>	
1.	_____	_____	_____	_____	Total % Cover of:	Multiply by:
2.	_____	_____	_____	_____	OBL Species:	_____ x 1 = _____
3.	_____	_____	_____	_____	FACW Species	_____ x 2 = _____
4.	_____	_____	_____	_____	FAC Species	_____ x 3 = _____
5.	_____	_____	_____	_____	FACU Species	_____ x 4 = _____
	Total Cover:	<u>0</u>			UPL Species	_____ x 5 = _____
<b><u>Herb Stratum:</u></b>					Column Totals:	_____ (A) _____ (B)
1.	<u>Avena fatua</u>	<u>20</u>	<u>DOM</u>	<u>FACU</u>	Prevalence Index = B/A =	
2.	<u>Geranium molle</u>	<u>20</u>	<u>DOM</u>	<u>UPL</u>	Hydrophytic Vegetation Indicators:	
3.	<u>Brassica rapa</u>	<u>5</u>			<input type="checkbox"/> Dominance Test is >50%	
4.	<u>Medicago polymorpha</u>	<u>20</u>	<u>DOM</u>	<u>UPL</u>	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
5.	<u>Centaurea solstitialis</u>	<u>20</u>	<u>DOM</u>	<u>UPL</u>	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
6.	_____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
7.	_____	_____	_____	_____	<sup>1</sup> Indicators of Hydric soil and wetland hydrology must be present.	
8.	_____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
	Total Cover:	<u>85</u>				
<b><u>Woody Vine Stratum:</u></b>						
1.	_____	_____	_____	_____		
2.	_____	_____	_____	_____		
	Total Cover:	_____				
% Bare Ground in Herb Stratum		<u>15</u>	% Cover of Biotic Crust			
Remarks:						



WETLAND DETERMINATION DATA FORM – Arid West Region

Routine Wetland Determination

(1 Nov 2006 COE Arid West Wetlands Delineation Manual)

Project/Site: Easterly Wastewater Treatment Plant City/County: Vacaville Sampling Date: May 30, 2009

Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 6

Investigator(s): Kelly Buja and Charlotte Marks Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Roadside ditch Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): C Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

Are climatic/hydrologic conditions on the site typical for this time of the year? Yes  No  (If no, explain in remarks.)

Are Vegetation  Soil , Or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No

Are Vegetation  Soil , Or Hydrology  Naturally problematic? (If needed, explain any answers in remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the sampled area
Wetland hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: while the data does not meet the criteria for a wetland feature because of the soil, it has an ordinary high water mark.			

**VEGETATION**

<u>Tree Stratum</u>	(use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>	
1.	_____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW or FAC: <u>3</u> (A)	
2.	_____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)	
3.	_____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
4.	_____	_____	_____	_____		
Total Cover:		<u>0</u>				
<u>Sapling/Shrub Stratum:</u>					<b>Prevalence Index worksheet:</b>	
1.	_____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____	
2.	_____	_____	_____	_____	OBL Species: _____ x 1 = _____	
3.	_____	_____	_____	_____	FACW Species _____ x 2 = _____	
4.	_____	_____	_____	_____	FAC Species _____ x 3 = _____	
5.	_____	_____	_____	_____	FACU Species _____ x 4 = _____	
Total Cover:		<u>0</u>			UPL Species _____ x 5 = _____	
<u>Herb Stratum:</u>					Column Totals: _____ (A) _____ (B)	
1.	<u>Cynodon dactylon</u>	<u>10</u>	<u>DOM</u>	<u>FAC</u>	Prevalence Index = B/A = _____	
2.	<u>Cyperus eragrostis</u>	<u>5</u>			Hydrophytic Vegetation Indicators:	
3.	<u>Lactuca serriola</u>	<u>6</u>			<input checked="" type="checkbox"/> Dominance Test is >50%	
4.	<u>Rumex crispus</u>	<u>12</u>	<u>DOM</u>	<u>FACW</u>	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
5.	<u>Lolium multiflorus</u>	<u>10</u>	<u>DOM</u>	<u>FAC</u>	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
6.	_____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
7.	_____	_____	_____	_____		
8.	_____	_____	_____	_____		
Total Cover:		<u>43</u>			<sup>1</sup> Indicators of Hydric soil and wetland hydrology must be present.	
<u>Woody Vine Stratum:</u>					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1.	_____	_____	_____	_____		
2.	_____	_____	_____	_____		
Total Cover:		_____				
% Bare Ground in Herb Stratum		<u>57</u>	% Cover of Biotic Crust			
Remarks:						

Profile Description: (Describe the depth needed to document the Indicator or confirm the absence of Indicators.)								
Depth Inches	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8"	10 YR 4/3	70		98			Clay loam	
			7.5 YR 4/6	2	C	M		
<sup>1</sup> Type : C=Concentration, D=Depletion, RM=Reduced Matrix			<sup>2</sup> Location: PL=Pore Lining, RC=Root Channel, M=Matrix					
<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>					<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>			
<input type="checkbox"/>	Histosol (A1)		<input type="checkbox"/>	Sandy Redox (S5)		<input type="checkbox"/>	1 cm Muck (A9) (LRR C)	
<input type="checkbox"/>	Histic Epipedon (A2)		<input type="checkbox"/>	Stripped Matrix (S6)		<input type="checkbox"/>	2 cm Muck (A10) (LRR B)	
<input type="checkbox"/>	Black Histic (A3)		<input type="checkbox"/>	Loamy Mucky Mineral (F1)		<input type="checkbox"/>	Reduced Vertic (F18)	
<input type="checkbox"/>	Hydrogen Sulfide (A4)		<input type="checkbox"/>	Loamy Gleyed Matrix (F2)		<input type="checkbox"/>	Red Parent Material (TF2)	
<input type="checkbox"/>	Stratified Layers (A5) (LRR C)		<input type="checkbox"/>	Depleted Matrix (F3)		<input type="checkbox"/>	Other (Explain in Remarks)	
<input type="checkbox"/>	1 cm Muck (A9) (LRR D)		<input type="checkbox"/>	Redox Dark Surface (F6)				
<input type="checkbox"/>	Depleted Below Dark Surface (A11)		<input type="checkbox"/>	Depleted Dark Surface (F7)				
<input type="checkbox"/>	Thick Dark Surface (A12)		<input type="checkbox"/>	Redox Depressions (F8)				
<input type="checkbox"/>	Sandy Mucky Mineral (S1)		<input type="checkbox"/>	Vernal Pools (F9)				
<input type="checkbox"/>	Sandy Gleyed Matrix (S4)							
<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____						<b><sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present.</b>		
						<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks:								

**HYDROLOGY**

Wetland Hydrology Indicators:				Secondary Indicators (2or more required)			
Primary Indicators (any one indicator is sufficient)							
<input type="checkbox"/>	Surface water (A1)			<input type="checkbox"/>	Water Marks (B1) (Riverine)		
<input type="checkbox"/>	High water Table (A2)			<input type="checkbox"/>	Sediment Deposits (B2) (Riverine)		
<input type="checkbox"/>	Saturation (A3)			<input type="checkbox"/>	Drift Deposits (B3) (Riverine)		
<input type="checkbox"/>	Water Marks (B1) (Nonriverine)			<input checked="" type="checkbox"/>	Drainage Patterns (B10)		
<input type="checkbox"/>	Sediment Deposits (B2) (Nonriverine)			<input type="checkbox"/>	Dry-Season Water Table (C2)		
<input type="checkbox"/>	Drift Deposits (B3) (Nonriverine)			<input type="checkbox"/>	Thin Muck Surface (C7)		
<input type="checkbox"/>	Surface Soil Cracks (B6)			<input type="checkbox"/>	Crayfish Burrows (C8)		
<input type="checkbox"/>	Inundation Visible on Aerial Imagery (B7)			<input type="checkbox"/>	Saturation Visible-Aerial Imagery (C9)		
<input type="checkbox"/>	Water-Stained Leaves (B9)			<input type="checkbox"/>	Shallow Aquitard (D3)		
<input type="checkbox"/>				<input checked="" type="checkbox"/>	FAC-Neutral test (D5)		
<b>Field Observations:</b>							
Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): --	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): --				
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): --				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available)							
Remarks: -1' wide OHWM -roadside ditch							

WETLAND DETERMINATION DATA FORM – Arid West Region

Routine Wetland Determination

(1 Nov 2006 COE Arid West Wetlands Delineation Manual)

Project/Site: Easterly Wastewater Treatment Plant City/County: Vacaville Sampling Date: May 30, 2009

Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 7

Investigator(s): Kelly Buja and Charlotte Marks Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Roadside ditch Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): C Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

Are climatic/hydrologic conditions on the site typical for this time of the year? Yes  No  (If no, explain in remarks.)

Are Vegetation  Soil , Or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No

Are Vegetation  Soil , Or Hydrology  Naturally problematic? (If needed, explain any answers in remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the sampled area
Wetland hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Remarks: while the data does not meet the criteria for a wetland feature because of the soil, it has an ordinary high water mark.

**VEGETATION**

<u>Tree Stratum</u>	(use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>	
1.	_____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW or FAC: <u>2</u> (A)	
2.	_____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3.	_____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>10</u> (A/B)	
4.	_____	_____	_____	_____		
Total Cover:		<u>0</u>				
<u>Sapling/Shrub Stratum:</u>					<b>Prevalence Index worksheet:</b>	
1.	_____	_____	_____	_____	Total % Cover of:	Multiply by:
2.	_____	_____	_____	_____	OBL Species:	x 1 = _____
3.	_____	_____	_____	_____	FACW Species	x 2 = _____
4.	_____	_____	_____	_____	FAC Species	x 3 = _____
5.	_____	_____	_____	_____	FACU Species	x 4 = _____
Total Cover:		<u>0</u>			UPL Species	x 5 = _____
<u>Herb Stratum:</u>					Column Totals: _____ (A) _____ (B)	
1.	<u>Cynodon dactylon</u>	<u>10</u>	<u>DOM</u>	<u>FAC</u>	Prevalence Index = B/A = _____	
2.	<u>Brassica rapa</u>	<u>5</u>			Hydrophytic Vegetation Indicators:	
3.	<u>Lactuca serriola</u>	<u>6</u>			<input checked="" type="checkbox"/> Dominance Test is >50%	
4.	<u>Rumex crispus</u>	<u>15</u>	<u>DOM</u>	<u>FACW</u>	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
5.	_____	_____	_____	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
6.	_____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
7.	_____	_____	_____	_____	<sup>1</sup> Indicators of Hydric soil and wetland hydrology must be present.	
8.	_____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Total Cover:		<u>36</u>				
<u>Woody Vine Stratum:</u>						
1.	_____	_____	_____	_____		
2.	_____	_____	_____	_____		
Total Cover:		_____				
% Bare Ground in Herb Stratum		<u>64</u>	% Cover of Biotic Crust			

Remarks: \_\_\_\_\_



# ***ATTACHMENT 2***

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***PLANT INDICATOR STATUS***

**PLANT SPECIES OBSERVED WITHIN THE STUDY AREA**  
**Easterly Wastewater Treatment Plant Tertiary Project**  
**City of Vacaville, California**

Delineation Conducted on May 20, 2009

(\*) Asterisk indicates a non-native sp.  
 (+) Plus indicates cultivated or ornamental sp.

SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS
<i>Alopecurus saccatus</i>	Pacific foxtail	OBL
<i>Avena fatua</i>	Wild oat	UPL
<i>Brassica rapa</i>	Field mustard	UPL
<i>Bromus diandrus</i>	Ripgut brome	UPL
<i>Capsella bursa-pastoris</i>	Shepherd common purse	UPL
<i>Centaurea solstitialis</i>	Yellow star-thistle	UPL
<i>Conium maculatum</i>	Poison hemlock	FACW
<i>Convolvulus arvensis</i>	Morning glory	UPL
<i>Cotula coronopifolia</i>	Brassbuttons	FACW
<i>Cyperus</i> sp.	Flatsedge	UKN
<i>Cyperus eragrostis</i>	Tall flatsedge	FACW
<i>Eriophyllum</i> sp.	Sunflower	UPL
<i>Erodium botrys</i>	Filaree	UPL
<i>Festuca</i> sp.	Fescue	UKN
<i>Geranium dissectum</i>	Cut-leaved geranium	UPL
<i>Juncus balticus</i>	Baltic rush	OBL
<i>Lactuca serriola</i>	Prickly lettuce	FAC
<i>Lolium multiflorum</i>	Italian ryegrass	FAC
<i>Lotus humistratus</i>	Short-podded lotus	UPL
<i>Malva parviflora</i>	Cheeseweed	UPL
<i>Medicago polymorpha</i>	Bur clover	UPL
<i>Plantago lanceolata</i>	Plantain	FAC
<i>Poa annua</i>	Annual bluegrass	FACW
<i>Poa</i> sp.	Bluegrass	UKN
<i>Polypogon monspeliensis</i>	Annual rabbit-foot grass	FACW
<i>Quercus douglasii</i>	Blue oak	UPL
<i>Quercus lobata</i>	Valley oak	UPL
<i>Quercus wislizenii</i>	Interior live oak	UPL
<i>Raphanus sativus</i>	Purple wild radish	UPL
<i>Robinia pseudoacacia</i>	Black locust	FAC
<i>Rosa californica</i>	Wild rose	UPL
<i>Rubus discolor</i>	Himalayan blackberry	FACW
<i>Rumex crispus</i>	Curly dock	FACW

SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS
<i>Salix</i> sp.	Willow	UKN
<i>Schinus</i> sp.	Peppertree	UPL
<i>Senecio vulgaris</i>	Common groundsel	UPL
<i>Silybum marianum</i>	Milk thistle	UPL
<i>Taeniatherum caput-medusae</i>	Medusahead grass	UPL
<i>Trifolium dubium</i>	Shamrock clover	UPL
<i>Trifolium repens</i>	White clover	UPL
<i>Trifolium variegatum</i>	White-tip clover	UPL
<i>Typha latifolia</i>	Broad-leaf cattail	OBL
<i>Vicia villosa</i>	Winter vetch	UPL
<i>Xanthium strumarium</i>	Rough cockle-bur	FAC

<sup>1</sup>OBL = Obligate  
 FACW = Facultative wetland  
 FAC = Facultative  
 FACU = Facultative upland  
 UPL = Upland  
 UKN = Unknown

# **ATTACHMENT 3**

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***NPDES PERMIT - EFFLUENT DISCHARGE***

**Please Refer to Appendix C of the EWWTP Tertiary Project  
Draft EIR for the NPDES Permit for Effluent Discharge**

# ***ATTACHMENT 4***

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***NPDES GENERAL PERMIT – STORMWATER***

STATE WATER RESOURCES CONTROL BOARD (SWRCB)  
WATER QUALITY ORDER NO. 2003 – 0005 – DWQ

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
GENERAL PERMIT NO. CAS000004

WASTE DISCHARGE REQUIREMENTS (WDRS)  
FOR  
STORM WATER DISCHARGES FROM  
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (GENERAL PERMIT)

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FACT SHEET  
FOR  
STATE WATER RESOURCES CONTROL BOARD (SWRCB)  
WATER QUALITY ORDER NO. 2003 – 0005 – DWQ  
  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
GENERAL PERMIT NO. CAS000004  
  
WASTE DISCHARGE REQUIREMENTS (WDRS)  
FOR  
STORM WATER DISCHARGES FROM  
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (GENERAL PERMIT)

BACKGROUND

In 1972, the federal Water Pollution Control Act (also referred to as the Clean Water Act [CWA]) was amended to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with a NPDES permit. The 1987 amendments to CWA added section 402(p), which established a framework for regulating storm water discharges under the NPDES Program. Subsequently, in 1990, the U.S. Environmental Protection Agency (U.S. EPA) promulgated regulations for permitting storm water discharges from industrial sites (including construction sites that disturb five acres or more) and from municipal separate storm sewer systems (MS4s) serving a population of 100,000 people or more. These regulations, known as the Phase I regulations, require operators of medium and large MS4s to obtain storm water permits. On December 8, 1999, U.S. EPA promulgated regulations, known as Phase II, requiring permits for storm water discharges from Small MS4s and from construction sites disturbing between one and five acres of land. This General Permit regulates storm water discharges from Small MS4s.

An “MS4” is a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) designed or used for collecting or conveying storm water; (ii) which is not a combined sewer; and (iii) which is not part of a Publicly Owned Treatment Works (POTW). [See Title 40, Code of Federal Regulations (40 CFR) §122.26(b)(8).]

A “Small MS4” is an MS4 that is not permitted under the municipal Phase I regulations, and which is “owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity...” (40 CFR §122.26(b)(16)). Small MS4s *include systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares, but do not include separate storm sewers in*

*very discrete areas, such as individual buildings.* This permit refers to MS4s that operate throughout a community as “traditional MS4s” and MS4s that are similar to traditional MS4s but operated at a separate campus or facility as “non-traditional MS4s.”

Federal regulations allow two permitting options for storm water discharges (individual permits and general permits). SWRCB elected to adopt a statewide general permit for Small MS4s in order to efficiently regulate numerous storm water discharges under a single permit. In certain situations a storm water discharge may be more appropriately and effectively regulated by an individual permit, a region-specific general permit, or by inclusion in an existing Phase I permit. In these situations, the Regional Water Quality Control Board (RWQCB) Executive Officer will direct the Small MS4 operator to submit the appropriate application, in lieu of a Notice of Intent (NOI) to comply with the terms of this General Permit. In these situations, the individual or regional permits will govern, rather than this General Permit.

#### NINTH CIRCUIT COURT RULING

On January 14, 2003, the Ninth Circuit Court issued its decision in *Environmental Defense Center v. EPA*. This ruling upheld the Phase II regulations on all but three of the 20 issues contested. In summary, the court determined that applications for general permit coverage (including the NOI and Storm Water Management Program [SWMP]) must be made available to the public, the applications must be reviewed and determined to meet the Maximum Extent Practicable standard by the permitting authority before coverage commences, and there must be a process to accommodate public hearings. This General Permit is consistent with the ruling. Should the ruling be revised or vacated in the future, SWRCB may modify the General Permit.

#### ENTITIES SUBJECT TO THIS GENERAL PERMIT

This General Permit regulates discharges of storm water from “regulated Small MS4s.” A “regulated Small MS4” is defined as a Small MS4 that discharges to a water of the United States (U.S.) or to another MS4 regulated by an NPDES permit, and which is designated in one of the following ways:

1. Automatically designated by U.S. EPA pursuant to 40 CFR section 122.32(a)(1) because it is located within an urbanized area defined by the Bureau of the Census (see Attachment 1); or
2. Traditional Small MS4s that serve cities, counties, and unincorporated areas that are designated by SWRCB or RWQCB after consideration of the following factors:
  - a. High population density – High population density means an area with greater than 1,000 residents per square mile. Also to be considered in this definition is a high density created by a non-residential population, such as tourists or commuters.
  - b. High growth or growth potential – If an area grew by more than 25 percent between 1990 and 2000, it is a high growth area. If an area anticipates a growth rate of more than 25 percent over a 10-year period ending prior to the end of the first permit term, it has high growth potential.

- c. Significant contributor of pollutants to an interconnected permitted MS4 – A Small MS4 is interconnected with a separately permitted MS4 if storm water that has entered the Small MS4 is allowed to flow directly into a permitted MS4. In general, if the Small MS4 discharges more than 10 percent of its storm water to the permitted MS4, or its discharge makes up more than 10 percent of the other permitted MS4's total storm water volume, it is a significant contributor of pollutants to the permitted MS4. In specific cases, the MS4s involved or third parties may show that the 10 percent threshold is inappropriate for the MS4 in question.
- d. Discharge to sensitive water bodies – Sensitive water bodies are receiving waters, which are a priority to protect. They include the following:
- ≠# those listed as providing or known to provide habitat for threatened or endangered species;
  - ≠# those used for recreation that are subject to beach closings or health warnings; or
  - ≠# those listed as impaired pursuant to CWA section 303(d) due to constituents of concern in urban runoff (these include biochemical oxygen demand [BOD], sediment, pathogens, petroleum hydrocarbons, heavy metals, floatables, polycyclic aromatic hydrocarbons [PAHs], trash, and other constituents that are found in the MS4 discharge).
- Additional criteria to qualify as a sensitive water body may exist and may be determined by SWRCB or RWQCB on a case-by-case basis.
- e. Significant contributor of pollutants to waters of the U.S. – Specific conditions presented by the MS4 may lead to significant pollutant loading to waters of the U.S. that are otherwise unregulated or inadequately regulated. An example of such a condition may be the presence of a large transportation industry.

These factors are to be considered when evaluating whether a Small MS4 should be regulated pursuant to this General Permit. An MS4 and the population that it serves need not meet all of the factors to be designated. SWRCB designates a number of Small MS4s according to these criteria through this General Permit (see Attachment 2).

Non-traditional Small MS4s may also be designated to seek permit coverage. These include non-traditional MS4s that are located within or discharge to a permitted MS4 and those that pose significant water quality threats. In general, these are storm water systems serving public campuses (including universities, community colleges, primary schools, and other publicly owned learning institutions with campuses), military bases, and prison and hospital complexes within or adjacent to other regulated MS4s, or which pose significant water quality threats. SWRCB considered designating non-traditional Small MS4s when adopting this General Permit. However, the *Environmental Defense Center* ruling requires that SWRCB and RWQCBs change their procedures for implementing this General Permit. In compliance with that decision, each

NOI and SWMP must be reviewed and approved, and in some cases considered in a public hearing, prior to the Small MS4 obtaining coverage under the General Permit. Therefore, SWRCB is delaying making these designations and the General Permit does not designate any non-traditional MS4s. A list of non-traditional MS4s that are anticipated to be designated within this permit term is included in Attachment 3 of this General Permit. These or other non-traditional MS4s may be designated by SWRCB or RWQCB at any time subsequent to the adoption of this General Permit.

The criteria selected to designate Small MS4s to be regulated are based on the potential to impact water quality due to conditions influencing discharges into their system or due to where they discharge. Some of the definitions provide “cut-off numbers.” Although there is no regulatory standard that mandates which numbers to use, dividing lines must be established in order to effectively use them as criteria.

Specifically, the high growth factor uses 25 percent growth over ten years. The average growth (based on county data from the Census) in California between 1990 and 2000 was 15.8 percent. The standard deviation was 9.9. Growth rates outside one standard deviation are more than 25.7 percent. The standard deviation is generally an indication of the spread of data. In defining the high growth factor, the standard deviation was used because it sets the limits within which most areas of California fall. County data was used because it was consistently available, whereas 1990 populations for several of the cities and places were not readily available. Additionally, county data gives a broader picture of the growth dynamics in California. Because the data is not normally distributed, 68 percent of the data points do not necessarily fall within one standard deviation of the mean. It does, however, provide a number in which to compare city and place growth rates to the average growth rate of California. The number was rounded to 25 percent for ease of application and with the understanding that it is an approximation.

The significant contributor of pollutants to an interconnected permitted MS4 definition uses a volume value of 10 percent, with the assumption that storm water contains pollutants. This is meant to capture flows that may affect water quality or the permit compliance status of another MS4, but exclude incidental flows between communities.

## APPLICATION REQUIREMENTS

Regulated Small MS4s, automatically designated because they are within an urbanized area (Attachment 1), must submit to the appropriate RWQCB by August 8, 2003 a complete application package. A complete package includes an NOI (Attachment 7), a complete SWMP (one hard copy and one electronic copy in Word or PDF format), and an appropriate fee.

The August 8, 2003 deadline is an administrative deadline to comply with the General Permit. Section 122.33(c)(1) of 40 CFR required automatically designated Small MS4s to submit an application by March 10, 2003. Those applications received from Small MS4s that submitted applications to comply with the federal deadline will be considered as an application to meet the requirements of this General Permit. If the application package is deemed complete by the RWQCB staff, it will be posted on the internet and made available for public review and public hearing if requested subsequent to permit adoption.

Regulated Small MS4s that are traditional MS4s designated by the SWRCB or RWQCB must submit to the appropriate RWQCB, within 180 days of notification of designation (or at a later

date stated by SWRCB or RWQCB), an NOI (Attachment 7), a complete SWMP (one hard copy and one electronic copy in Word or PDF format), and an appropriate fee. Those traditional MS4s identified in Attachment 2 of this General Permit are being notified of their designation by SWRCB upon adoption of this General Permit. They must, therefore, submit their NOI and SWMP by October 27, 2003.

Regulated Small MS4s that are non-traditional MS4s designated by SWRCB or RWQCB, including those in Attachment 3, must submit to the appropriate RWQCB, within 180 days of notification of designation (or at a later date stated by SWRCB or RWQCB), an NOI (Attachment 7), a complete SWMP (one hard copy and one electronic copy in Word or PDF format), and an appropriate fee.

Regulated Small MS4s relying entirely on Separate Implementing Entities (SIEs) that are also permitted, to implement their entire storm water programs are not required to submit a SWMP if the SIE being relied on has an approved SWMP. Proof of SWMP approval, such as a copy of the RWQCB letter, must be submitted to the RWQCB by the applying Small MS4, along with the NOI and an appropriate fee.

Regulated Small MS4s that fail to obtain coverage under this General Permit or another NPDES permit for storm water discharges will be in violation of the CWA and the Porter-Cologne Water Quality Control Act.

Receipt of applications deemed complete by RWQCB staff will be acknowledged on SWRCB's website at <http://www.swrcb.ca.gov/stormwtr/index.html> for a minimum of 60 days. When a SWMP is received by an RWQCB, those members of the public that have indicated they would like to receive notice, will receive an email from RWQCB staff that a SWMP has been received. During this 60-day public review period, a member of the public may request a copy of the SWMP and request that a public hearing be held by RWQCB. If a public hearing is requested, the hearing itself will be public noticed for a minimum of 30 days. If no hearing is requested, the RWQCB Executive Officer will notify the regulated MS4 that it has obtained permit coverage only after RWQCB staff has reviewed the SWMP and has determined that the SWMP meets the MEP standard established in this permit.

Attachment 8 lists RWQCB contact information for questions and submittals.

## GENERAL PERMIT REQUIREMENTS

### Prohibitions

This General Permit effectively prohibits the discharge of materials other than storm water that are not "authorized non-storm water discharges" (see General Permit § D.2.c) or authorized by a separate NPDES permit. This General Permit also incorporates discharge prohibitions contained in Statewide Water Quality Control Plans and Regional Water Quality Control Plans (Basin Plans).

### Effluent Limitations

Permittees must implement Best Management Practices (BMPs) that reduce pollutants in storm water runoff to the technology-based standard of Maximum Extent Practicable (MEP) to protect water quality. In accordance with 40 CFR section 122.44(k)(2), the inclusion of BMPs in lieu of numeric effluent limitations is appropriate in storm water permits.

Discharges shall not contain reportable quantities of hazardous substance as established at 40 CFR section 117.3 or 40 CFR section 302.4.

### Preparation of SWMP

This General Permit requires regulated Small MS4s to:

1. Develop and implement a SWMP that describes BMPs, measurable goals, and timetables for implementation in the following six program areas (Minimum Control Measures):

#### Public Education

The Permittee must educate the public in its permitted jurisdiction about the importance of the storm water program and the public's role in the program.

#### Public Participation

The Permittee must comply with all State and local notice requirements when implementing a public involvement/participation program.

#### Illicit Discharge Detection and Elimination

The Permittee must adopt and enforce ordinances or take equivalent measures that prohibit illicit discharges. The Permittee must also implement a program to detect illicit discharges.

#### Construction Site Storm Water Runoff Control

The Permittee must develop a program to control the discharge of pollutants from construction sites greater than or equal to one acre in size within its permitted jurisdiction. The program must include inspections of construction sites and enforcement actions against violators.

#### Post Construction Storm Water Management

The Permittee must require long-term post-construction BMPs that protect water quality and control runoff flow, to be incorporated into development and significant redevelopment projects. Post-construction programs are most efficient when they stress (i) low impact design; (ii) source controls; and (iii) treatment controls.

For non-traditional MS4s that seek coverage under this Permit, implementation of this

control measure will not require redesign of projects under active construction at the time of designation or for K-12 school or community college facilities that have been submitted to the Department of General Services, Division of the State Architect before adoption of the permit, and which receive final approval from the State Allocation Board or the Public Works Board, as appropriate on or before December 31, 2004. SWMP must, however, specify how the control measure will be implemented within five years of designation.

#### Pollution Prevention/Good Housekeeping for Municipal Operations

The Permittee must examine its own activities and develop a program to prevent the discharge of pollutants from these activities. At a minimum, the program must educate staff on pollution prevention, and minimize pollutant sources.

2. Reduce its discharge of pollutants to the MEP.
3. Annually report on the progress of SWMP implementation.

#### Development and Implementation of SWMP

SWMP must describe how pollutants in storm water runoff will be controlled and describe BMPs that address the six Minimum Control Measures. Each BMP must have accompanying measurable goals that will be achieved during the permit term, or within five years of designation if designated subsequent to permit adoption, as a means of determining program compliance and accomplishments and as an indicator of potential program effectiveness. The measurable goals should be definable tasks such as number of outreach presentations to make, number of radio spots to purchase, or percentage of pollutant loading to reduce (other examples of measurable goals can be found on U.S. EPA's web-site at <http://cfpub.epa.gov/npdes/stormwater/measurablegoals/index.cfm>). This approach provides the flexibility to target an MS4's problem areas while working within the existing organization.

It is not anticipated that the SWMP be fully implemented upon submittal with the NOI. It is the intent of this General Permit that SWMPs submitted with the NOI contain sufficient information such that RWQCB staff and interested parties understand the BMPs that will be implemented or will be developed and implemented over the course of the General Permit term or, for Small MS4s designated subsequent to permit adoption, over a five-year period from designation. It is also expected that SWMPs will protect water quality, contain measurable goals and schedules, and assign responsible parties for each BMP. It is anticipated that the SWMP initially submitted may be revised or modified based on review of RWQCB staff or on comments provided by interested parties in accordance with Provisions G and H.19 of the General Permit.

For example, it may be proposed that a storm water logo be developed (or an existing one modified) by the end of the first year; an ordinance prohibiting non-storm water discharges be adopted by the end of the second year; a survey of non-storm water discharges throughout the city be completed by the end of the second year; a brochure targeting the restaurant community regarding proper practices to eliminate non-storm water discharges be developed or obtained by the end of the fourth year; and the brochure be distributed to 25 percent of the restaurants

within the city during health department inspections by the end of the fifth year. (This example mentions only one activity each year. In fact, numerous activities will occur throughout the permit term that ensure that a SWMP addressing all six Minimum Control Measures is implemented by the end of the permit term, or within five years of designation for Small MS4s designated subsequent to adoption of the Permit.)

The main goal of this General Permit is to protect water quality from the impacts of storm water runoff from Small MS4s. The intent is that storm water quality impacts will be considered in all aspects of a municipality's activities and that multiple departments within the municipality will work together to implement storm water BMPs. For instance, the planning department may work with the public works department when considering projects and their potential storm water impacts. Also, the health department can work with public works in a complementary manner to spread a consistent message about illicit discharges.

Many of the activities that a municipality already does can be recognized as a benefit to storm water or can be modified to add a storm water quality twist. A critical element of SWMP development is an assessment of activities already being conducted. For example, many communities already have a household hazardous waste program, which can be assumed to reduce illicit discharges to the MS4. Likewise, they examine potential flooding impacts of new development. This process can be modified to also examine water quality impacts as well as quantity.

Similarly, the Minimum Control Measures emphasize working with the public to prevent pollution during their everyday activities as well as to gain support for program funding. The MS4 has the flexibility to target specific segments of its residential or employee population in ways that are most appropriate for that particular segment. Taken together, the suite of public education approaches an MS4 takes can create a robust multimedia campaign that has a single message, which is threaded throughout the community through implementation of BMPs in the six program areas.

For links to information on how to implement each of the Minimum Control Measures, including sample ordinances that address the respective Minimum Control Measures, please see SWRCB's internet site at <http://www.swrcb.ca.gov/stormwtr/municipal.html>. Additionally, in accordance with 40 CFR section 122.34(d)(2), SWRCB provides U.S. EPA's menu of BMPs to consider when developing a SWMP. This menu is available on U.S. EPA's internet site at [http://cfpub1.epa.gov/npdes/stormwater/swphase2.cfm?program\\_id=6](http://cfpub1.epa.gov/npdes/stormwater/swphase2.cfm?program_id=6). The menu provides examples of BMPs and associated measurable goals; however, other BMPs and measurable goals may be used.

## MEP

MEP is the technology-based standard established by Congress in CWA section 402(p)(3)(B)(iii) that municipal dischargers of storm water must meet. Technology-based standards establish the level of pollutant reductions that dischargers must achieve. MEP is generally a result of emphasizing pollution prevention and source control BMPs as the first lines of defense in

combination with structural and treatment methods where appropriate serving as additional lines of defense. The MEP approach is an ever evolving, flexible, and advancing concept, which considers technical and economic feasibility. As knowledge about controlling urban runoff continues to evolve, so does that which constitutes MEP. The individual and collective activities elucidated in the MS4's SWMP become its proposal for reducing or eliminating pollutants in storm water to the MEP. The way in which MEP is met may vary between communities.

The MEP standard applies to all regulated MS4s, including those in Phase I and Small MS4s regulated by this General Permit. Consistent with U.S. EPA guidance, the MEP standard in California is applied so that a first-round storm water permit requires BMPs that will be expanded or better-tailored in subsequent permits. In choosing BMPs, the major focus is on technical feasibility, but cost, effectiveness, and public acceptance are also relevant. If a Permittee chooses only the most inexpensive BMPs, it is likely that MEP has not been met. If a Permittee employs all applicable BMPs except those that are not technically feasible in the locality, or whose cost exceeds any benefit to be derived, it would meet the MEP standard. MEP requires Permittees to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs are not technically feasible, or the cost is prohibitive. (See SWRCB Order WQ 2000-11, <http://www.swrcb.ca.gov/resdec/wqorders/2000/00wqo.html>.)

Generally, in order to meet MEP, communities that have greater water quality impacts must put forth a greater level of effort. Alternatively, for similar water quality conditions, communities should put forth an equivalent level of effort. However, because larger communities have greater resources (both financial resources as well as existing related programs that can help in implementing storm water quality programs), it may appear that they have more robust storm water programs. Additionally, because storm water programs are locally driven and local conditions vary, some BMPs may be more effective in one community than in another. A community that has a high growth rate would derive more benefit on focusing on construction and post-construction programs than on an illicit connection program because illicit connections are more prevalent in older communities.

In accordance with the Ninth Circuit Court ruling, prior to obtaining permit coverage, SWMPs will be evaluated for compliance with the MEP standard by the RWQCB Executive Officer or, if requested, considered for approval in a public hearing conducted by RWQCB.

Many Phase I MS4s have been permitted under storm water regulations for more than ten years and have had that time to develop programs intended to reduce pollutants in their storm water discharge to MEP. It is understood that storm water quality programs and regulations are new to the entities that will be regulated under this General Permit. Therefore, it is anticipated that this General Permit term will serve as a "ramping-up" period and that programs implemented by Phase II communities will not necessarily conform to programs implemented by Phase I communities. Despite this understanding, however, many of the lessons learned and information developed by Phase I communities is available to smaller communities as a guide and may be used by Phase II communities.

By the expiration date of this General Permit, traditional and non-traditional Small MS4s serving a population of 50,000 people or more, or that are subject to high growth, must require specific design standards as part of their post-construction program (as outlined in Attachment 4 of this General Permit, or a functionally equivalent program that is acceptable to the appropriate RWQCB), and they must comply with water quality standards through implementing better-tailored BMPs in an iterative process. These more stringent requirements are applied to communities that are larger and, therefore, capable of a more extensive storm water program, and to communities that are fast growing, and therefore may have greater impacts on storm water runoff associated with construction and the loss of pervious lands. Studies have found the amount of impervious surface in a community is strongly correlated with the community's water quality. New development and redevelopment result in increased impervious surfaces in a community. The design standards in Attachment 4 focus on mitigating the impacts caused by increased impervious surfaces through establishing minimum BMP requirements that stress (i) low impact design; (ii) source controls; and (iii) treatment controls. The design standards include minimum sizing criteria for treatment controls and establish maintenance requirements.

BMPs that may be used to comply with the design standards can be found in U.S. EPA's Toolbox of BMPs at [http://cfpub1.epa.gov/npdes/stormwater/swphase2.cfm?program\\_id=6](http://cfpub1.epa.gov/npdes/stormwater/swphase2.cfm?program_id=6). Additionally, some RWQCBs may have lists of approved references and resources.

Small MS4s designated subsequent to permit adoption have five years from designation to achieve compliance with the Supplemental Provisions. Attachment 5 provides a list of communities that SWRCB anticipates being subject to the provisions in Attachment 4.

#### Receiving Water Limitations

Attachment 4 establishes receiving water limitations that apply to larger and fast-growing regulated Small MS4s that are required to comply with Supplemental Provisions of this General Permit. This permit allows regulated Small MS4s up to five years to fully implement their SWMPs. Therefore, regulated Small MS4s must begin to comply with the receiving water limitations iterative process once their plans are fully implemented. The receiving water limitation language provided in this General Permit is identical to the language established in SWRCB Water Quality Order WQ-99-05 adopted by SWRCB on June 17, 1999. As interpreted in SWRCB Water Quality Order WQ-2001-15, adopted by SWRCB on November 15, 2001, the receiving water limitations in this General Permit do not require strict compliance with water quality standards. SWRCB language requires that SWMPs be designed to achieve compliance with water quality standards over time, through an iterative approach requiring improved BMPs. Upon full implementation of the SWMP, exceedances of water quality standards must be addressed through the iterative process.

#### Reporting Requirements

The Permittee must track and assess its program to ensure BMP effectiveness and must conform to other monitoring requirements that may be imposed by RWQCB.

The Permittee is required to submit annual reports to the appropriate RWQCB by September 15th of each year (for Small MS4s designated with the adoption of this permit, the first annual report is to be submitted in 2004), or as otherwise required by the RWQCB Executive Officer. Among other things, the Permittee shall evaluate its compliance with permit conditions, evaluate and assess the effectiveness of its BMPs, summarize the results of any monitoring performed, summarize the activities planned for the next reporting cycle, and, if necessary, propose changes to SWMP.

### Monitoring

Inspections, as a form of visual monitoring, are important to a storm water program. Inspections of storm water runoff and infrastructure (such as drop inlets, basins, and gutters) can say a lot about the effectiveness and needs of a storm water program. Through inspections, non-storm water discharges can be discovered and subsequently stopped, maintenance needs can be identified, and visual pollutants and erosion problems can be detected. Inspections of facilities are also important for public education and outreach, to ensure proper BMP implementation and maintenance, and to detect non-storm water discharges. Additionally, chemical monitoring can be used to involve the public through citizen monitoring groups, detect pollutants, identify and target pollutants of concern, illustrate water quality improvements and permit compliance, and participate in total maximum daily load (TMDL) development and implementation.

Monitoring environmental indicators through bio-assessments or other less technical methods may also be a key component of a program. Although it may be more challenging, it is also very valuable because it is the “final product,” not just for a storm water program but for the broader environmental health of a community.

More specifically, the objectives of a monitoring program may include:

- ## Assessing compliance with this General Permit;
- ## Measuring and improving the effectiveness of SWMP;
- ## Assessing the chemical, physical, and biological impacts on receiving waters resulting from urban runoff;
- ## Characterizing storm water discharges;
- ## Identifying sources of pollutants; and
- ## Assessing the overall health and evaluating long-term trends in receiving water quality.

While only inspections of construction sites, as part of the Construction Site Storm Water Runoff Control Minimum Control Measure, are specifically required, as elucidated above, other monitoring tasks may be appropriate in a storm water program. Also, the RWQCB can require additional monitoring.

### Termination of Coverage

A Permittee may terminate coverage if: a new operator has assumed responsibility for the regulated Small MS4; the Permittee has ceased operation of its MS4; or all discharge of runoff from the Small MS4 has been eliminated. To terminate coverage, the Permittee must submit to RWQCB a written request for permit termination.

### Reliance on a SIE

A Permittee may rely on a separate entity to implement one or more of the six Minimum Control Measures, if the separate entity can appropriately and adequately address the storm water issues of the Permittee. To do this, both entities must agree to the arrangement, and the Permittee must comply with the applicable parts of the SIE's program. The arrangement is subject to the approval of the RWQCB Executive Officer.

In accordance with section 122.35(a)(3), the Permittee remains responsible for compliance with its permit obligations if SIE fails to implement the control measure(s) (or component thereof). Therefore, the entities are encouraged to enter into a legally binding agreement to minimize any uncertainty about compliance with the permit.

If the Permittee relies on an SIE to implement all six Minimum Control Measures and SIE also has a storm water permit, the Permittee relying on SIE must still submit an NOI, appropriate fee, proof that SIE's SWMP has been approved by RWQCB or its staff, and certification of the arrangement. However, the Permittee is not required to develop or submit a SWMP or annual reports, unless requested to do so by the RWQCB Executive Officer. The arrangement is subject to the approval of the RWQCB Executive Officer.

School districts present an example of where an SIE arrangement may be appropriate, either by forming an agreement with a city or with an umbrella agency, such as the County Office of Education. Because schools provide a large audience for storm water education, as part of the agreement, the two entities may coordinate an education program. An individual school or a school district may agree to provide a one-hour slot for all the second and fifth grade classes during which the city would bring in its own storm water presentation. Alternatively, the school could agree to teach a lesson in conjunction with an outdoor education science project, which may also incorporate a public involvement component. Additionally, the school and the city or Office of Education may arrange to have the school's maintenance staff attend the other entity's training sessions.

### Retention of Records

The Permittee is required to retain records of all monitoring information and copies of all reports required by this General Permit for a period of at least five years from the date generated. This period may be extended by request of SWRCB or RWQCB.

## Role of RWQCBs

RWQCBs and their staff will review and decide whether to approve SWMPs and, where requested, conduct public hearings on NOIs and SWMPs. Upon approval, they will notify Permittees that they have obtained permit coverage. They will also oversee implementation and compliance with this General Permit. As appropriate, they will review reports, require modification to SWMPs and other submissions, impose region-specific monitoring requirements, conduct inspections, take enforcement actions against violators of this General Permit, and make additional designations of regulated Small MS4s pursuant to this General Permit. They may also issue individual permits to regulated Small MS4s, and alternative general permits to categories of regulated Small MS4s. Upon issuance of such permits by an RWQCB, this General Permit shall no longer regulate the affected Small MS4s.

The Permittee and RWQCB are encouraged to work together to accomplish the goals of the storm water program. Specifically, they can coordinate the oversight of construction and industrial sites. For example, Permittees are required to implement a construction program. This program must include procedures for construction site inspection and enforcement. Construction sites disturbing an acre of land or more are also subject to inspections by RWQCB under the Statewide General Permit for Discharges of Storm Water Associated with Construction Activity. U.S. EPA intended to provide a structure that requires permitting through the federal CWA while at the same time achieving local oversight of construction projects. A structured plan review process and field enforcement at the local level, which is also required by this General Permit, were cited in the preamble to the Phase II regulations as the most effective components of a construction program.

Similarly, as part of the illicit discharge detection and elimination program, the Permittee may inspect facilities that are permitted by the Statewide General Permit for Discharges of Storm Water Associated with Industrial Activity and subject to RWQCB inspections.

The Small MS4 and RWQCB are encouraged to coordinate efforts and use each of their enforcement tools in the most effective manner. For instance, the Small MS4 may identify a construction site operator that is not in compliance with the local requirements and the Construction General Permit. The Small MS4 may establish a fee for re-inspection if a site is out of compliance. If education efforts and the inspection fee fail to bring the site into compliance, the Small MS4 may contact RWQCB and arrange a dual inspection and start enforcement procedures under the CWA if compliance is not achieved.

## Relationship Between the Small MS4 Permit and the General Permit for Discharges of Storm Water Associated with Industrial Activity (Industrial Permit)

Some MS4 operators may also have facilities that are subject to the Industrial Permit. While the intent of both of these permits is to reduce pollutants in storm water, neither permit's requirements totally encompass the other. This General Permit requires that MS4 operators address six Minimum Control Measures, while the Industrial Permit requires the development and implementation of Storm Water Pollution Prevention Plans (SWPPP) for certain "industrial" activities as well as requiring specific visual and chemical monitoring. In the Preamble to the Phase II regulations, U.S. EPA notes that for a combination permit to be acceptable, it must contain all of the requirements for each permit. Further, "when viewed in its entirety, a

combination permit, which by necessity would need to contain all elements of otherwise separate industrial and MS4 permit requirements, and require NOI information for each separate industrial activity, may have few advantages when compared to obtaining separate MS4 and industrial general permit coverage.”

Where the permits do overlap, one program may reference the other. More specifically, the Good Housekeeping for Municipal Operations Minimum Control Measure requires evaluation of municipal operations, some of which may be covered under the Industrial Permit. The development and implementation of SWPPP under the Industrial Permit will likely satisfy the Good Housekeeping requirements for those industrial activities. SWMP may incorporate by reference the appropriate SWPPP.

There may be instances where a non-traditional MS4 has, under the Industrial Permit, obtained coverage for the entire facility (rather than only those areas where industrial activities occur) and has developed a SWPPP that addresses the six Minimum Control Measures required by this General Permit. In these instances, the non-traditional Small MS4 is not required to obtain coverage under this General Permit. The entity should, in such cases, provide to the appropriate RWQCB documentation that its SWPPP addresses the six Minimum Control Measures.

**STATE WATER RESOURCES CONTROL BOARD (SWRCB)  
WATER QUALITY ORDER NO. 2003 - 0005 – DWQ**

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
GENERAL PERMIT NO. CAS00000X**

**WASTE DISCHARGE REQUIREMENTS (WDRs)  
FOR  
STORM WATER DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM  
SEWER SYSTEMS (MS4s) (GENERAL PERMIT)**

SWRCB finds that:

1. Urban runoff is a leading cause of pollution throughout California.
2. Pollutants of concern found in urban runoff include sediments, non-sediment solids, nutrients, pathogens, oxygen-demanding substances, petroleum hydrocarbons, heavy metals, floatables, polycyclic aromatic hydrocarbons (PAHs), trash, and pesticides and herbicides.
3. During urban development, two important changes occur. First, where no urban development has previously occurred, natural vegetated pervious ground cover is converted to impervious surfaces such as paved highways, streets, rooftops, and parking lots. Natural vegetated soil can both absorb rainwater and remove pollutants providing a very effective purification process. Because pavement and concrete can neither absorb water nor remove pollutants, the natural purification characteristics of the land are lost. Second, urban development creates new pollutant sources as human population density increases and brings with it proportionately higher levels of vehicle emissions, vehicle maintenance wastes, municipal sewage, pesticides, household hazardous wastes, pet wastes, trash, etc., which can be washed into the MS4. As a result of these two changes, the runoff leaving a developed urban area may be significantly greater in volume, velocity, and/or pollutant load than pre-development runoff from the same area.
4. A higher percentage of impervious area correlates to a greater pollutant loading, resulting in turbid water, nutrient enrichment, bacterial contamination, organic matter loads, toxic compounds, temperature increases, and increases of trash or debris.
5. Pollutants present in storm water can have damaging effects on both human health and aquatic ecosystems. In addition, the increased flows and volumes of storm water discharged from impervious surfaces resulting from development can significantly impact beneficial uses of aquatic ecosystems due to physical modifications of watercourses, such as bank erosion and widening of channels.

6. When water quality impacts are considered during the planning stages of a project, new development and many redevelopment projects can more efficiently incorporate measures to protect water quality.
7. On December 8, 1999, the U.S. Environmental Protection Agency (EPA) promulgated regulations under authority of the Clean Water Act (CWA) section 402(p)(6). These regulations require SWRCB to issue NPDES storm water permits to operators of small municipal separate storm sewer systems (Small MS4s) that discharge to waters of the U.S.
8. Of the Small MS4s defined by federal regulations, only “regulated Small MS4s” must obtain a permit. Title 40 of the Code of Federal Regulations (40 CFR) section 122.32(a) describes regulated Small MS4s as those traditional Small MS4s located within an urbanized area as determined by the latest Decennial Census by the Bureau of the Census and other Small MS4s that are designated by the permitting authority in accordance with designation criteria in Findings 10 and 11 below. Traditional Small MS4s within urbanized areas (Attachment 1) are automatically designated and are not subject to the designation criteria provided in Finding 10.
9. Section 123.35(b) of 40 CFR requires SWRCB to develop a process, as well as criteria, to designate Small MS4s as regulated Small MS4s.
10. In developing the designation criteria, factors were chosen to include parameters that may affect water quality. The following criteria will be considered in designating Small MS4s operated within a city or county as regulated Small MS4s.
  - a. High population density – High population density means an area with greater than 1,000 residents per square mile. Also to be considered in this definition is a high density created by a non-residential population, such as tourists or commuters.
  - b. High growth or growth potential – If an area grew by more than 25 percent between 1990 and 2000, it is a high growth area. If an area anticipates a growth rate of more than 25 percent over a 10-year period ending prior to the end of the first permit term, it has high growth potential.
  - c. Significant contributor of pollutants to an interconnected permitted MS4 – A Small MS4 is interconnected with a separately permitted MS4 if storm water that has entered the Small MS4 is allowed to flow directly into a permitted MS4. In general, if the Small MS4 discharges more than 10 percent of its storm water to the permitted MS4, or its discharge makes up more than 10 percent of the other permitted MS4’s total storm water volume, it is a significant contributor of pollutants to the permitted MS4. In specific cases, the MS4s involved or third parties may show that the 10 percent threshold is inappropriate for the MS4 in question.
  - d. Discharge to sensitive water bodies – Sensitive water bodies are receiving waters, which are a priority to protect. They include the following:

- ≠# those listed as providing or known to provide habitat for threatened or endangered species;
- ≠# those used for recreation that are subject to beach closings or health warnings; or
- ≠# those listed as impaired pursuant to CWA section 303(d) due to constituents of concern in urban runoff (these include biochemical oxygen demand (BOD), sediment, pathogens, oil and grease, and other constituents that are found in the MS4 discharge).

Additional criteria to qualify as a sensitive water body may exist and may be used by SWRCB or RWQCB on a case-by-case basis.

- e. Significant contributor of pollutants to waters of the United States (U.S.) – Specific conditions presented by the MS4 may lead to significant pollutant loading to waters of the U.S. that are otherwise unregulated or inadequately regulated. An example of such a condition may be the presence of a large transportation industry.

This General Permit serves as notice to those Small MS4s on Attachment 2 that they are designated as regulated Small MS4s by the SWRCB at the time of permit adoption.

11. Section 122.26(b)(16)(iii) of 40 CFR defines systems that are similar to separate storm sewer systems in cities and counties, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares as Small MS4s. In this General Permit these types of Small MS4s are referred to as non-traditional MS4s that may be designated as regulated Small MS4s and required to seek coverage under this General Permit or coverage under a separate permit. Non-traditional MS4s often operate storm sewers that are similar to traditional MS4s operated by cities or counties and discharge the same types of pollutants that are typically associated with urban runoff.
12. This permit does not designate any non-traditional MS4s. SWRCB or RWQCB may designate non-traditional MS4s at any time subsequent to the adoption of this General Permit. Non-traditional MS4s that may be designated at a future date include, but are not limited to, those listed in Attachment 3 of this General Permit.
13. Non-traditional Small MS4 entities that are designated, but whose entire facilities are subject to the NPDES General Permit for the Discharge of Storm Water Associated with Industrial Activities and whose Storm Water Pollution Prevention Plan (SWPPP) addresses all six Minimum Control Measures described in this General Permit, are not required to obtain coverage under this General Permit. Such entities must present documentation to the appropriate RWQCB, showing that they meet the requirements for exclusion from coverage.
14. This General Permit requires regulated Small MS4s (Permittees) to develop a Storm Water Management Program (SWMP) designed to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP) and to protect water quality. Upon approval of SWMP by the Regional Water Quality Control Board (RWQCB) or its Executive Officer,

the Permittees obtain coverage under this General Permit. This General Permit requires implementation of SWMP.

15. SWMP will be available for public review and comment and may be subject to a public hearing if requested prior to approval.
16. Permittees can satisfy the requirements through effective implementation of a SWMP, which must contain Best Management Practices (BMPs) that address six Minimum Control Measures. SWMP must incorporate measurable goals and time schedules of implementation.
17. The MEP standard is an ever-evolving, flexible, and advancing concept, which considers technical and economic feasibility. As knowledge about controlling urban runoff continues to evolve, so does that which constitutes MEP. Reducing the discharge of storm water pollutants to MEP in order to protect beneficial uses requires review and improvement, which includes seeking new opportunities. To do this, the Permittee must conduct and document evaluation and assessment of each relevant element of its program and revise activities, control measures, BMPs, and measurable goals, as necessary to meet MEP.
18. This General Permit includes Supplemental Provisions that apply to traditional and non-traditional Small MS4s serving a population of 50,000 people or more, or that are subject to high growth. These requirements address post-construction requirements and compliance with water quality standards. These Supplemental Provisions are similar to requirements for Medium and Large MS4s (Phase I), and are appropriate because larger Small MS4s are able to have more robust storm water programs and fast-growing Small MS4s may cause greater impacts to water quality.
19. The Receiving Water Limitations language contained in Attachment 4 is identical to the language established in SWRCB Water Quality Order WQ-99-05 adopted by the SWRCB on June 17, 1999. As interpreted in SWRCB Water Quality Order WQ-2001-15, adopted by the SWRCB on November 15, 2001, the receiving water limitations in this General Permit do not require strict compliance with water quality standards, but instead require compliance with water quality standards over time, through an iterative approach requiring improved BMPs.
20. The post-construction requirements, or Design Standards, contained in Attachment 4 are consistent with Order WQ-2000-11 adopted by SWRCB on October 5, 2000.
21. The purpose of the annual performance review is to evaluate (1) SWMP's effectiveness; (2) the implementation of SWMP (3) status of measurable goals; (4) effectiveness of BMPs; and (5) improvement opportunities to achieve MEP.
22. To apply for permit coverage authorizing storm water discharges to surface waters pursuant to this General Permit, the Permittees must submit a complete application package to the appropriate RWQCB. An application package includes a Notice of Intent

(NOI) to comply with the terms of this General Permit, appropriate fee (in accordance with the most recent fee schedule<sup>1</sup>), and SWMP. Permittees relying entirely on separately permitted Separate Implementing Entities (SIEs) to implement their entire programs are not required to submit a SWMP if the SIE being relied on has an approved SWMP. Attachment 8 gives contact information for each RWQCB.

23. Upon receipt of a complete permit application, the application will be public noticed for thirty days on SWRCB's website. During the public notice period, a member of the public may request that a public hearing be conducted by RWQCB. If no public hearing is requested, the application may be approved by the RWQCB Executive Officer. Permittees obtain coverage under the General Permit only after the SWMP has been approved.
24. Each Permittee is individually responsible for adoption and enforcement of ordinances and/or policies, implementation of identified control measures/BMPs needed to prevent or reduce pollutants in storm water, and for allocation of funds for the capital, operation and maintenance, and enforcement expenditures necessary to implement and enforce such control measures/BMPs within its jurisdiction. Enforcement actions concerning this General Permit will be pursued only against the individual Permittee responsible for specific violations of this General Permit.
25. In accordance with 40 CFR section 122.28(b)(3), a RWQCB may issue an individual MS4 NPDES Permit to a Permittee otherwise subject to this General Permit, or adopt an alternative general permit that covers storm water discharges regulated by this General Permit. The applicability of this General Permit is automatically terminated on the effective date of the individual permit or the date of approval for coverage under the alternative general permit.
26. Certain BMPs implemented or required by Permittees for urban runoff management may create a habitat for vectors (e.g., mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperative effort between the Permittees, local vector control agencies, RWQCB staff, and the State Department of Health Services is necessary to identify and implement appropriate vector control measures that minimize potential nuisances and public health impacts resulting from vector breeding.
27. This General Permit may be reopened and modified if the decision in *Environmental Defense Center v. EPA* is revised or vacated.
28. This NPDES Permit is consistent with the antidegradation policies of 40 CFR section 131.12, SWRCB Resolution 68-16, and RWQCBs' individual Basin Plans. Implementing storm water quality programs that address the six Minimum Control Measures in previously unregulated areas will decrease the pollutant loading to the receiving waters and improve water quality.

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<sup>1</sup> California Code of Regulations. Title 23. Division 3. Chapter 9 Waste Discharge Reports and Requirements. Article 1 Fees.

29. Following public notice in accordance with State and federal laws and regulations, SWRCB, in public hearings on December 2, 2002 and April 30, 2003, heard and considered all comments. SWRCB has prepared written responses to all significant comments.
30. This action to adopt an NPDES Permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code § 21100, et seq.) in accordance with section 13389 of the Porter-Cologne Water Quality Control Act (Porter-Cologne) (Division 7 of the California Water Code).
31. This NPDES Permit is in compliance with Part 402 of CWA and shall take effect 100 days after adoption by SWRCB. Once in effect, RWQCBs shall enforce the provisions herein.

IT IS HEREBY ORDERED that operators of Small MS4s subject to this General Permit shall comply with the following:

A. APPLICATION REQUIREMENTS

1. Deadlines for Application

- a. By August 8, 2003, all Permittees automatically designated (see Attachment 1) must either apply for coverage under this General Permit (either individually or as a co-permittee), submit an application for an individual or alternative general Small MS4 permit (if applicable), or submit a joint application for modification of an existing large or medium MS4 permit (40 CFR §122.33(c)(1)).

Permittees that submitted complete application packages prior to the adoption of this General Permit to meet the federal regulation March 10, 2003 deadline have complied with this requirement and are not required to submit a duplicate application package.

- b. By October 27, 2003, traditional Small MS4s designated according to Finding 10 (see Attachment 2), must either apply for coverage under this General Permit (either individually or as a co-permittee), submit an application for an individual or alternative general Small MS4 permit, or submit a joint application for modification of an existing large or medium MS4 permit (40 CFR §122.33(c)(2)). Written notices will be sent to designated parties subsequent to adoption of this General Permit.
- c. Non-traditional Small MS4s, or other Small MS4s, which are designated by RWQCB or SWRCB after adoption of this General Permit must apply for coverage under this General Permit (either individually or as a co-

permittee), submit a complete application for an individual or alternative general Small MS4 permit, or submit a joint application for modification of an existing large or medium MS4 permit (40 CFR §122.33(c)(2)). Applications must be submitted within 180 days of designation unless a later date is provided in the designation letter.

2. General Permit Application

To obtain coverage under this General Permit, submit to the appropriate RWQCB a completed NOI (Attachment 7), a complete SWMP (one hard copy and one electronic copy in Word or PDF format), and appropriate fee. SWMP shall meet all the requirements of Section D of this General Permit. Permittees relying entirely on SIEs pursuant to Provision D.6 and permitted under the NPDES program are not required to submit a SWMP.

3. General Permit Coverage

Permit coverage will be in effect upon the completion of the following:

- a. The Permittee has submitted a complete permit application to the appropriate RWQCB,
- b. Receipt of a complete application is noticed for a minimum of 60 days and copies provided to the public for review and comment upon request,
- c. The proposed SWMP has been reviewed by RWQCB staff, and
- d. SWMP has been approved by the RWQCB Executive Officer, or approved by RWQCB in a public hearing, if requested.

B. DISCHARGE PROHIBITIONS

1. Discharges of waste that are prohibited by Statewide Water Quality Control Plans or applicable Regional Water Quality Control Plans (Basin Plans) are prohibited.
2. Discharges from the MS4s regulated under this General Permit that cause or threaten to cause nuisance are prohibited.
3. Discharges of material other than storm water to waters of the U.S. or another permitted MS4 must be effectively prohibited, except as allowed under Provision D.2.c, or as otherwise authorized by a separate NPDES permit.

C. EFFLUENT LIMITATIONS

1. Permittees must implement BMPs that reduce pollutants in storm water to the technology-based standard of MEP.
2. Storm water discharges regulated by this General Permit shall not contain a hazardous substance in amounts equal to or in excess of a reportable quantity listed in 40 CFR Part 117 or 40 CFR Part 302.

D. STORM WATER MANAGEMENT PROGRAM REQUIREMENTS

The Permittee shall maintain, implement, and enforce an effective SWMP, and develop adequate legal authority to implement and enforce the SWMP, designed to reduce the discharge of pollutants from the permitted MS4 to MEP and to protect water quality. SWMP shall serve as the framework for identification, assignment, and implementation of control measures/BMPs. The Permittee shall implement SWMP and shall subsequently demonstrate its effectiveness and provide for necessary and appropriate revisions, modifications, and improvements to reduce pollutants in storm water discharges to the MEP. SWMP shall be fully implemented by the expiration of this General Permit, or within five years of designation for Small MS4s designated subsequent to Permit adoption, with reasonable progress made towards implementation throughout the term of the General Permit. Existing programs that have storm water quality benefits can be identified in the SWMP and be a part of a Permittee's storm water program.

SWMP shall be revised to incorporate any new or modified BMPs or measurable goals developed through the Permittee's annual reporting process. The Permittee shall incorporate changes required by or acceptable to the RWQCB Executive Officer into applicable annual revisions to SWMP and adhere to its implementation.

1. The Permittee shall maintain, implement, and enforce an effective SWMP designed to reduce the discharge of pollutants from the regulated Small MS4 to the MEP and to protect water quality.
2. SWMP must describe BMPs, and associated measurable goals, that will fulfill the requirements of the following six Minimum Control Measures.
  - a. **Public Education and Outreach on Storm Water Impacts**  
The Permittee must implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff. For non-traditional Permittees, the employee/user population may serve as "the public" to target for outreach and involvement.

Non-traditional Small MS4s that discharge into medium and large MS4 may integrate public education and outreach program with the existing MS4 public education and outreach programs.

b. **Public Involvement/Participation**

The Permittee must at a minimum comply with State and local public notice requirements when implementing a public involvement/participation program.

c. **Illicit Discharge Detection and Elimination**

The Permittee must:

- 1) Develop, implement, and enforce a program to detect and eliminate illicit discharges (as defined at 40 CFR §122.26(b)(2)) into the regulated Small MS4;
- 2) Develop, if not already completed, a storm sewer system map, showing the location of all outfalls and the names and locations of all waters of the U.S. that receive discharges from those outfalls;
- 3) To the extent allowable under State or local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges into the MS4 and implement appropriate enforcement procedures and actions;
- 4) Develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, to the system that are not authorized by a separate NPDES permit;
- 5) Inform public employees, businesses, and the general public of the hazards that are generally associated with illegal discharges and improper disposal of waste; and
- 6) Address the following categories of non-storm water discharges or flows (i.e., authorized non-storm water discharges) only where they are identified as significant contributors of pollutants to the Small MS4:

1. water line flushing;
2. landscape irrigation;
3. diverted stream flows;
4. rising ground waters;
5. uncontaminated ground water infiltration (as defined at 40 CFR §35.2005(20)) to separate storm sewers;
6. uncontaminated pumped ground water;
7. discharges from potable water sources;
8. foundation drains;
9. air conditioning condensation;
10. irrigation water;
11. springs;
12. water from crawl space pumps;
13. footing drains;
14. lawn watering;
15. individual residential car washing;
16. flows from riparian habitats and wetlands; and
17. dechlorinated swimming pool discharges.

Discharges or flows from fire fighting activities are excluded from the effective prohibition against non-storm water and need only be addressed where they are identified as significant sources of pollutants to waters of the U.S.

If a RWQCB Executive Officer determines that any individual or class of non-storm water discharge(s) listed above may be a significant source of pollutants to waters of the U.S. or physically interconnected MS4, or poses a threat to water quality standards (beneficial uses), the RWQCB Executive Officer may require the appropriate Permittee(s) to monitor and submit a report and to implement BMPs on the discharge.

d. **Construction Site Storm Water Runoff Control**

The Permittee must develop, implement, and enforce a program to reduce pollutants in any storm water runoff to the Small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of storm water discharges from construction activity disturbing less than one acre must be included in your program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. The program must include the development and implementation of, at a minimum:

- 1) An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions, or other effective mechanisms, to ensure compliance, to the extent allowable under State, or local law;

- 2) Requirements for construction site operators to implement appropriate erosion and sediment control BMPs;
- 3) Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;
- 4) Procedures for site plan review which incorporate consideration of potential water quality impacts;
- 5) Procedures for receipt and consideration of information submitted by the public; and
- 6) Procedures for site inspection and enforcement of control measures.

e. **Post-Construction Storm Water Management in New Development and Redevelopment**

The Permittee must:

- 1) Develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the Small MS4 by ensuring that controls are in place that would prevent or minimize water quality impacts;
- 2) Develop and implement strategies, which include a combination of structural and/or non-structural BMPs appropriate for your community;
- 3) Use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State or local law. For those Small MS4s described in Supplemental Provision E below, the requirements must at least include the design standards contained in Attachment 4 of this General Permit or a functionally equivalent program that is acceptable to the appropriate RWQCB; and
- 4) Ensure adequate long-term operation and maintenance of BMPs.

The General Permit does not require redesign of K-12 school or community college facilities that have been submitted to the Department of General Services, Division of the State Architect before adoption of the permit, and which receive final approval from the State Allocation Board or the Public Works Board, as appropriate, on or before December 31, 2004.

f. **Pollution Prevention/Good Housekeeping for Municipal Operations**

The Permittee must:

- 1) Develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations; and
  - 2) Using training materials that are available from U.S. EPA, the State, or other organizations, the program must include employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet building maintenance, new construction and land disturbances, and storm water system maintenance.
3. SWMP must identify the measurable goals for each of the BMPs, including, as appropriate, the months and years for scheduled actions, including interim milestones and the frequency of the action.
  4. SWMP must identify the person or persons who will implement or coordinate SWMP, as well as each Minimum Control Measure.
  5. Termination of coverage

A Permittee may terminate coverage if a new operator has assumed responsibility for the MS4, the Permittee has ceased operation of the MS4, or the Permittees has eliminated discharges from the MS4. To terminate coverage, the Permittee must submit a written request to the RWQCB.

6. Reliance on a SIE

The Permittee may rely on a SIE to satisfy one or more of the permit obligations, if the separate entity can appropriately and adequately address the storm water issues of the Permittee. The Permittee must describe the arrangement in the SWMP and the arrangement is subject to the approval of the RWQCB Executive Officer. The other entity must agree to implement the control measure(s), or components thereof, to achieve compliance with the General Permit. The Permittee remains responsible for compliance with this General Permit if the SIE fails to implement the control measure(s).

If the Permittee relies on an SIE to implement all six Minimum Control Measures and the SIE also has a storm water permit issued by SWRCB or RWQCB, the Permittee relying on the SIE must still submit an NOI, appropriate fee, and certification of the arrangement. The Permittee must note this fact in the NOI and provide proof that the SIE has an approved SWMP, but is not required to maintain a SWMP nor submit annual reports.

7. Outfalls not identified in the storm sewer system map required by Provision D.2.c.2), but constructed within the permitted area during the term of this General Permit to receiving waters identified in the NOI, shall not be considered a material change in character, location, or volume of the permitted discharge, and shall be allowed under the terms of this General Permit without permit application or permit modification, provided that the following information be provided in the subsequent annual report:
  - a. Receiving water name;
  - b. Storm sewer system map of added area;
  - c. Certification that SWMP shall be amended to include the drainage area.

E. SUPPLEMENTAL PROVISIONS

Those regulated traditional and non-traditional Small MS4s serving a population over 50,000 or that are subject to high growth (at least 25 percent over ten years) must comply with the requirements in Attachment 4 of this General Permit. Compliance is required upon full implementation of the Small MS4s' storm water management plan.

Attachment 5 provides a list of communities that SWRCB anticipates being subject to the provisions in Attachment 4.

F. REPORTING REQUIREMENTS AND MONITORING

1. Reporting

The Permittee must submit annual reports to the appropriate RWQCB by September 15th of each year (for Small MS4s designated with the adoption of this permit, the first annual report is to be submitted in 2004), or as otherwise required by the RWQCB Executive Officer, unless exempted under Provision D.6. The report shall summarize the activities performed throughout the reporting period (July 1 through June 30) and must include:

- a. The status of compliance with permit conditions;
- b. An assessment of the appropriateness and effectiveness of the identified BMPs;
- c. Status of the identified measurable goals;
- d. Results of information collected and analyzed, including monitoring data, if any, during the reporting period;

- e. A summary of the storm water activities the Permittee plans to undertake during the next reporting cycle;
  - f. Any proposed change(s) to SWMP along with a justification of why the change(s) are necessary; and
  - g. A change in the person or persons implementing and coordinating SWMP.
2. RWQCB may impose additional monitoring requirements, which may include a reporting component. RWQCBs may adopt such requirements on an individual or group basis.
  3. Recordkeeping

The Permittee must keep records required by this General Permit for at least five years or the duration of the General Permit if continued. The RWQCB Executive Officer may specify a longer time for record retention. The Permittee must submit the records to the RWQCB Executive Officer upon request. The Permittee must make the records, including the permit and SWMP, available to the public during regular business hours.

#### G. RWQCB AUTHORITIES

RWQCBs will review and approve SWMPs prior to permit coverage being in effect and will conduct public hearings of individual permit applications upon request. Where there is no hearing, the Executive Officer may approve the SWMP. RWQCBs will also oversee compliance with this General Permit. Oversight may include, but is not limited to, reviewing reports, requiring modification to SWMPs and other submissions, imposing region-specific monitoring requirements, conducting inspections, taking enforcement actions against violators of this General Permit, and making additional designations of Permittees pursuant with the criteria described in this General Permit and Fact Sheet. The RWQCBs may also issue individual permits to regulated Small MS4s, and alternative general permits to categories of regulated Small MS4s. Upon issuance of such permits by an RWQCB, this General Permit shall no longer regulate the affected Small MS4(s).

#### H. STANDARD PROVISIONS

##### 1. General Authority

Three of the minimum control measures (illicit discharge detection and elimination, and the two construction-related measures) require enforceable controls on third party activities to ensure successful implementation of the measure. Some non-traditional operators, however, may not have the necessary legal regulatory authority to adopt these enforceable controls. As in the case of

local governments that lack such authority, non-traditional MS4s are expected to utilize the authority they do possess and to seek cooperative arrangements.

## 2. Duty to Comply

The Permittee must comply with all of the conditions of this General Permit. Any permit noncompliance constitutes a violation of CWA and the Porter-Cologne and is grounds for enforcement action and/or removal from General Permit coverage. In the event that the Permittee is removed from coverage under the General Permit, the Permittee will be required to seek coverage under an individual or alternative general permit.

## 3. General Permit Actions

This General Permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a General Permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not nullify any General Permit condition.

If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under section 307(a) of CWA for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this General Permit, this General Permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition and Permittee so notified.

## 4. Noncompliance Reporting

Permittees who cannot certify compliance and/or who have had other instances of noncompliance shall notify the appropriate RWQCB within 30 days. Instances of noncompliance resulting in emergencies (i.e., that endanger human health or the environment) shall be reported orally to the RWQCB within 24 hours from the time the discharger becomes aware of the circumstance and in writing to the RWQCB within five days of the occurrence. The notification shall identify the noncompliance event and an initial assessment of any impact caused by the event, describe the actions necessary to achieve compliance, and include a time schedule indicating when compliance will be achieved. The time schedule and corrective measures are subject to modification by the RWQCB Executive Officer.

## 5. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this General Permit.

6. Duty to Mitigate

The Permittee shall take all responsible steps to minimize or prevent any discharge in violation of this General Permit that has a reasonable likelihood of adversely affecting human health or the environment.

7. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain any facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this General Permit and with the requirements of SWMP. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance may require the operation of backup or auxiliary facilities or similar systems installed by the Permittee when necessary to achieve compliance with the conditions of this General Permit.

8. Property Rights

This General Permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor does it authorize any infringement of federal, State, or local laws or regulations.

9. Duty to Provide Information

The Permittee shall furnish RWQCB, SWRCB, or U.S. EPA, during normal business hours, any requested information to determine compliance with this General Permit. The Permittee shall also furnish, upon request, copies of records required to be kept by this General Permit.

10. Inspection and Entry

The Permittee shall allow RWQCB, SWRCB, U.S. EPA, or an authorized representative of RWQCB, SWRCB, or U.S. EPA, upon the presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the Permittee's premises during normal business hours where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this General Permit;
- b. Access and copy, during normal business hours, any records that must be kept under the conditions of this General Permit within a reasonable time from notification;

- c. Inspect during normal business hours any municipal facilities; and
- d. Sample or monitor at reasonable times for the purpose of assuring General Permit compliance.

11. Signatory Requirements

All NOIs, SWMPs, certifications, reports, or other information prepared in accordance with this General Permit submitted to SWRCB or RWQCB shall be signed by either a principal executive officer, ranking elected official, or duly authorized representative. The principal executive officer of a Federal agency includes the chief executive officer of the agency or the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of U.S. EPA).

12. Certification

Any person signing documents under Section H.11 above shall make the following certification:

*I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete.*

*I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

13. Anticipated Noncompliance

The Permittee will give advance notice to the RWQCB and local storm water management agency of any planned changes in the regulated Small MS4 activity that may result in noncompliance with General Permit requirements.

14. Penalties for Falsification of Reports

Section 309(c)(4) of CWA provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under this General Permit, including reports of compliance or noncompliance, shall upon conviction, be punished by a fine of not more than \$10,000 or by imprisonment for not more than two years or by both.

15. Penalties for Violations of Permit Conditions

- a. Part 309 of CWA provides significant penalties for any person who violates a permit condition implementing Parts 301, 302, 306, 307, 308, 318, or 405 of CWA or any permit condition or limitation implementing any such section in a permit issued under Part 402. Any person who violates any permit condition of this General Permit is subject to a civil penalty not to exceed \$27,500 per calendar day of such violation, as well as any other appropriate sanction provided by Part 309 of CWA.
- b. Porter-Cologne also provides for administrative, civil, and criminal penalties, which in some cases are greater than those under CWA.

16. Oil and Hazardous Substance Liability

Nothing in this General Permit shall be construed to preclude the institution of any legal action against the Permittee or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject to under Part 311 of CWA.

17. Severability

The provisions of this General Permit are severable; and, if any provision of this General Permit or the application of any provision of this General Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this General Permit shall not be affected thereby.

18. Reopener Clause

This General Permit may be modified, revoked and reissued, or terminated for cause due to promulgation of amended regulations, or otherwise in accordance with 40 CFR sections 122.62, 122.63, 122.64, and 124.5.

19. Availability

A copy of this General Permit and SWMP shall be made available for public review.

20. Transfers

This General Permit is not transferable. A Permittee must submit written notification to the appropriate RWQCB to terminate coverage of this General Permit.

21. Continuation of Expired Permit

This General Permit expires five years from the date of adoption. This General Permit continues in force and in effect until a new General Permit is issued or the SWRCB rescinds this General Permit. Only those Small MS4s authorized to discharge under the expiring General Permit are covered by the continued General Permit.

#### CERTIFICATION

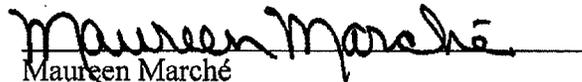
The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of SWRCB held on April 30, 2003.

AYE: Arthur G. Baggett, Jr.  
Peter S. Silva  
Richard Katz  
Gary M. Carlton

NO: None

ABSENT: None

ABSTAIN: None

  
Maureen Marché  
Clerk to the Board

**Appendices to NPDES General Permit No. CAS000004 are available at the City of Vacaville Public Works Department for review.**