COUNTY CROSSINGS

PRELIMINARY WETLAND DELINEATION AND JURISDICTIONAL DETERMINATION

COUNTY CROSSINGS DEVELOPMENT

ANTIOCH, CONTRA COSTA COUNTY, CALIFORNIA

USACE Regulatory No.

July 2005

Prepared for:

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I. INTRODUCTION

A preliminary wetland delineation and jurisdictional determination was conducted for the County Crossings development between April and June 2005. The purpose of the survey was to determine the extent of waters of the U.S., including wetlands that may be under the jurisdiction of the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the clean Water Act (CWA)

II. PROJECT LOCATION

The approximate 190-acre project area is located in eastern Antioch, California and is generally bound on the south by State Highway 4, on the north by Oakley Road, on the west by Hillcrest Avenue, and on the east by State Highway 160. The site corresponds to latitude 38°00' North, longitude 121° 45' West and portions of Section 20, 21, 28, and 29, within Township 2 North, Range 2 East of the "Antioch North" 1978, and "Antioch South" 1980, 7.5-minute topographic quadrangles (U.S. Department of the Interior, Geological Survey, (Figure 1 – *Site and Vicinity*).

III. METHODS

The preliminary wetland delineation field survey was conducted by biologist Randall Long, in accordance with the methodology outlined in the *U. S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987). Baseline data used for this delineation included March and April 2005 black and white aerial photographs (1"=200' scale). Soil types were determined using the *Soil Survey of Contra Costa County, California* (U.S. Department of Agriculture, Natural Resources Conservation Service, 1977). Field evidence of hydric soil was determined utilizing the *Munsell Soil Color Charts* (Kollmorgen Instruments Corporation, 1994). Plant species were determined with *The Jepson Manual, Higher Plants of California* (James Hickman, 1993. The wetland status of plants was determined utilizing the *National List of Plant Species That Occur in Wetlands* (Reed, 1997). Wetland boundaries were surveyed and marked with red pin flags and plastic flagging per "*Minimum Standard for Acceptance of Preliminary Wetlands Delineations,* Department of the Army, U.S. Army Engineer District, Sacramento. 2001.

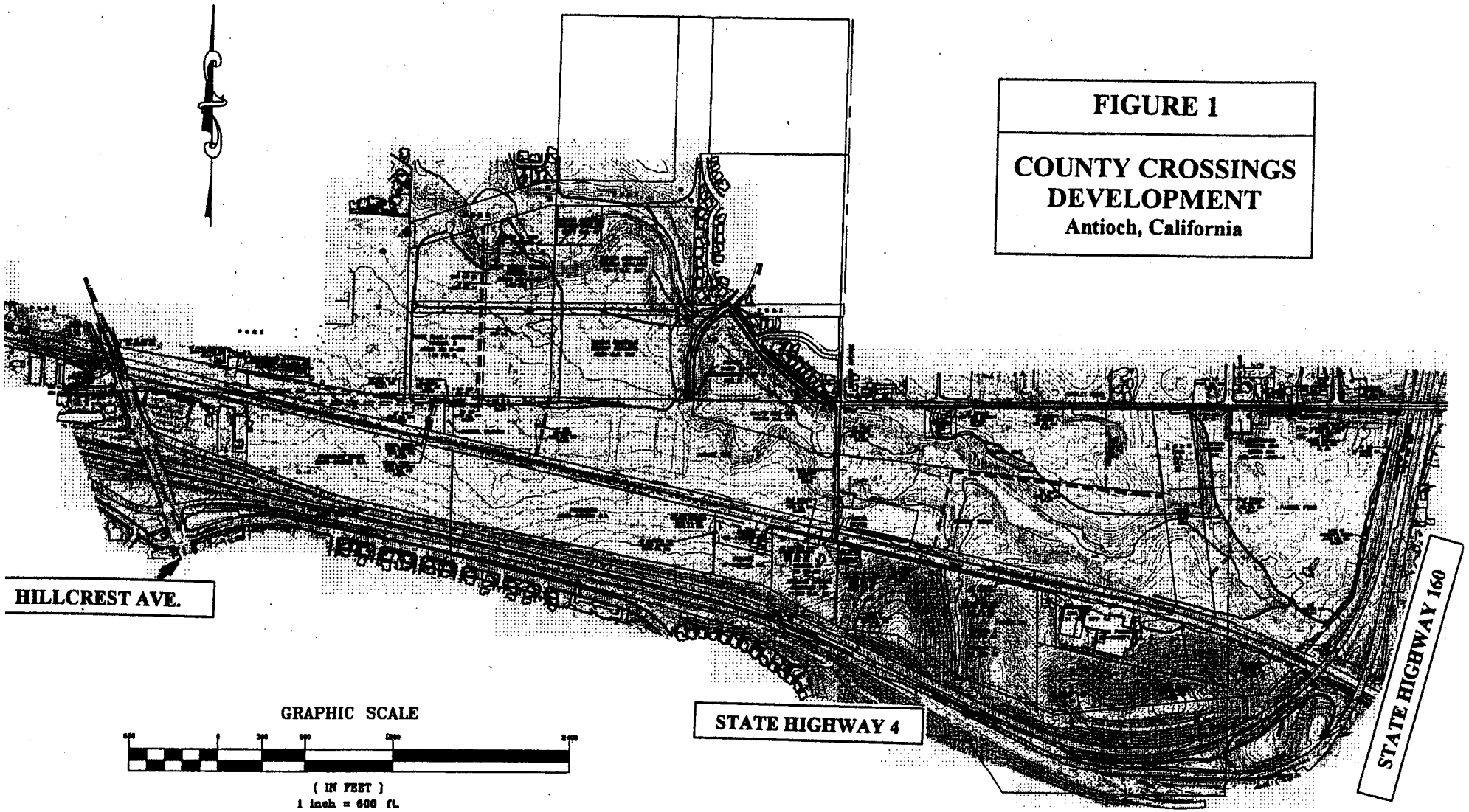
IV. ENVIRONMENTAL SETTING

A Hydrology, Topography, and Soils

With the exception of two hills adjacent to Highway 4, the project site is a shallow valley bisected by East Antioch Creek that flows through the area from east to west and then empties into the San Joaquin River approximately 1½-miles northwest of the site. This portion of East Antioch Creek is a perennial system fed by both storm water and irrigation runoff from adjacent, as well as upstream residential developments, and partially serves as a flood control channel.

FIGURE 1

COUNTY CROSSINGS DEVELOPMENT
Antioch, California



Topography varies from gentle slopes of 2-3 percent on the valley floor to 15-30 percent slopes on hilly areas in the southeast. Elevations range from approximately 20 feet above mean sea level at the western edge of the site, to approximately 200 feet in the southeast.

Soils are of the Capay-Rincon Association. Soils in this association occur on nearly level to strongly sloping topography and are composed of moderately well drained and well drained clays and clay loams on valley fill. Within the project area, individual soil types consist of Sycamore silty clay loam, Zamora silty clay loam, and Delhi sands in the lower areas; and Capay clay, Los osos clay loam, and Diablo clay in the hilly areas. None of these soils are listed as hydric.

B. Hydrologic Features

Hydrologic features within the project area consist of East Antioch Creek, an unnamed tributary on the south side, a ruderal seasonal wetland complex in the northeast portion of the site, and a drainage swale connecting a portion of the seasonal wetlands with the creek. In addition two Contra Costa County Flood Control basins (Oakley and Trembath basins) occur adjacent to project lands in the western part of the area.

East Antioch Creek

Vegetation along East Antioch Creek is primarily categorized as Coastal/Valley freshwater marsh consisting primarily of dense stands of narrow-leaved cattail (*Typha angustifolia*) in association with adjacent seasonally flooded wetlands consisting primarily of creeping wild rye (*Leymus triticoides)* and Italian ryegrass (*Lolium multiflorum*) (sample point # 6). The undulating marsh varies in width from approximately 25 to 250 feet. A small, approximate 0.26-acre pond occurs within the marsh just east of Willow Avenue. Dense riparian vegetation such as red and arroyo willow (*Salix laevigata,* and *lasiolepis)*, and Himalayan blackberry (*Rubus discolor*) surround most of the pond. Aquatic species within the pond consist of water parsley (*Oenanthe sarmentosa*), and pondweed (*Potamogeton nodosus*). Additional willow clusters occur along the creek on the eastern and western side of the property (sample point# 7).

Un-named Tributary

The unnamed tributary is also a freshwater marsh dominated by narrow-leaved cattail and creeping wildrye in the reach from East Antioch Creek south to where it is culverted beneath the railroad line (sample point # 5), then by mugwort (*Artemesia douglasiana*), water parsley, and rabbitfoot grass (*Polypogon monspeliensis*) along the reach from the railroad line south to the culvert beneath Highway 4 (sample point # 4). An additional approximate 0.03-acre pond occurs in the upper reach of the tributary just south of the railroad line.

Ruderal Seasonal Wetland

The ruderal seasonal wetland complex, composed of three segments in the northeast portion of the site, is the result of a previous sand mining operation that excavated through the Delhi sands soil type down to the clay subsoil and now impounds runoff from adjacent residential properties as well as Highway 160. Vegetation in the eastern wetland is dominated by Fremont cottonwood (*Populus fremontii*), rabbitfoot grass, and spiny cocklebur (*Xanthium spinosum*) (sample point # 1). Vegetation in the middle wetland includes curly dock, meadow foxtail (*Alopecurus saccatus*), and Italian ryegrass (sample point # 2. Vegetation in the western wetland consists of narrow-leaf milkweed (*Asclepias fascicularis*), curly dock (*Rumex crispus*), brass buttons (*Cotula coronopifolia*), popcornflower (*Plagiobothrys stipitatus*), and papoose spikeweed (*Centromadia parryi* ssp. *parryi*) (sample point # 3).

Drainage Swale

The swale is an artificial feature that was created to drain the larger of the seasonal wetlands, and as such, forms a connection to East Antioch Creek. However, the majority of the swale is either unvegetated or contains mostly upland vegetation such as Italian ryegrass, soft chess (*Bromus mollis*), yellow star thistle (*Centaurea solstitialis*) and hoary mustard (*Hirshmedlia incana*) (sample point # 9). Due to its characteristics (artificially constructed in uplands, primarily upland vegetative cover, lack of banks or scour) it may not be jurisdictional.

V. PRELIMINARY DELINEATION

Table 1 shows the amount of waters of the U.S. including wetlands.

PRELIMINARY WETLAND DELINEATION
SUMMARY OF WETLANDS AND OTHER WATERS OF THE U.S.

CLASSIFICATION	SQUARE FEET	LF	ACRES
WETLANDS:			
COASTAL/VALLEY FRESHWATER MARSH	565,119	6,053	12.97
RUDERAL SEASONAL WETLAND	115,374		2.65
OTHER WATERS:			
DRAINAGE SWALE	10,720	678	0.25
POND	12,652		0.29
TOTALS:	**703,865**	**6,731**	**16.16**

See Exhibit A-*Wetland DelineationMap*.

VI. APPENDIX

Figures:

Figure 1	Site and Vicinity

Exhibits:

Exhibit A	Wetland Delineation Map
Exhibit B	Data Point Samples
Exhibit C	Aerial Photos of the Project Area
Exhibit D	Photographs of the Hydrologic Features

EXHIBIT A

Wetland Delineation map

EXHIBIT B

Data Point Samples

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site	COUNTY CROSSINGS	Date	5/11/05
Applicant / Owner	TRANSLAND DEVELOPMENT LLC	County	CONTRA COSTA
Investigator	R. LONG	State	CA
Do Normal Circumstances exist on the site?	(YES) NO	Community ID	SEAS. WETLAND
Is the site significantly disturbed (Atypical Situation)?	(YES) NO	Transect ID	#1
Is the area a potential Problem Area? (If needed, explain on reverse)	YES (NO)	Plot ID	A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 POPULUS FREMONTII		FACW	9		
2 XANTHIUM SPINOSUM		FAC	10		
3 POLYPOGON MONOSPELIENSIS		FACW	11		
4			12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100%

Remarks EASTERN SEAS. WETLAND IN THE "SAND PIT" SEAS. WETLAND COMPLEX. WATER SOURCE IS A 30" CMP DRAIN FROM HIGHWAY 4. (RUDERAL SEASONAL WETLAND)

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data Available

FIELD OBSERVATIONS	
Depth of Surface Water	(in)
Depth to Free Water in Pit	(in)
Depth to Saturated Soil	6 (in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☒ Saturated in Upper 12 Inches
- ☒ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☒ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☒ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

(#1)

SOILS

Map Unit Name (Series and Phase): DELHI SAND	Drainage Class:
Taxonomy (Subgroup)	Field Observations Confirm Mapped Type? (YES) NO

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	10YR 4/4	ORANGE	NUMEROUS	SANDY-LOAM

HYDRIC SOIL INDICATORS:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☒ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: PAIRED DATA POINT IS 10YR 3/4. DOMINANT PLANTS ARE: VICIA SATIVA & HIRSCHFELDIA INCANA. (UPLAND VEG)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(YES) NO	Is this Sampling Point Within a Wetland? (YES) NO
Wetland Hydrology Present?	(YES) NO	
Hydric Soils Present?	YES (NO)	

Remarks

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site	COUNTY CROSSINGS	Date	5/11/05
Applicant / Owner	TRANSCAN DEVELOPMENT LLC	County	CONTRA COSTA
Investigator	R. LONG	State	CA
Do Normal Circumstances exist on the site?	(YES) NO	Community ID	SEAS. WETLAND
Is the site significantly disturbed (Atypical Situation)?	(YES) NO	Transect ID	#2
Is the area a potential Problem Area? (If needed, explain on reverse)	YES (NO)	Plot ID	A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 ALOPECURUS SACCATUS		FACW	9		
2 LOLIUM MULTIFLORUM		FAC	10		
3 RUMEX CRISPUS		FACW	11		
4			12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100%

Remarks MIDDLE WETLAND IN THE "SAND PIT" COMPLEX.
(RUDERAL SEASONAL WETLAND)

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data Available

FIELD OBSERVATIONS

Depth of Surface Water	(in)
Depth to Free Water in Pit	6 (in)
Depth to Saturated Soil	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☒ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☒ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☒ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

(#2)

SOILS

Map Unit Name (Series and Phase): DELHI SAND	Drainage Class:
Taxonomy (Subgroup)	Field Observations Confirm Mapped Type? (YES) NO

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	10YR 3/3	ORANGE	NUMEROUS	SANDY-LOAM

HYDRIC SOIL INDICATORS:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☒ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: PAIRED DATA POINT IS 10YR 3/4. DOMINANT PLANTS ARE: VICIA SATIVA & HIRSCHFELDIA INCANA. (UPLAND VEG)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(YES) NO	Is this Sampling Point Within a Wetland? (YES) NO
Wetland Hydrology Present?	(YES) NO	
Hydric Soils Present?	YES (NO)	

Remarks

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site	COUNTY CROSSINGS	Date	5/11/05
Applicant / Owner	TRANSCAN DEVELOPMENT LLC.	County	CONTRA COSTA
Investigator	R. LONG	State	CA
Do Normal Circumstances exist on the site?	(YES) NO	Community ID	SOAS. WETLAND
Is the site significantly disturbed (Atypical Situation)?	(YES) NO	Transect ID	#3
Is the area a potential Problem Area? (If needed, explain on reverse)	YES (NO)	Plot ID	A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 ASCLEPIAS FASCICULARIS		FAC	9		
2 COTULA CORONOPIFOLIA		FACW	10		
3 CENTROMADIA PARRHI SSP. PARRYI		FAC	11		
4 RUMEX CRISPUS		FACW	12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100%

Remarks WESTERN SOAS. WETLAND WITHIN THE "SAND PIT" SOAS. WETLAND COMPLEX. (RUDERAL SEASONAL WETLAND)

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data Available

FIELD OBSERVATIONS		
Depth of Surface Water	AT SURFACE	(in)
Depth to Free Water in Pit		(in)
Depth to Saturated Soil		(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☒ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☒ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

(#3)

SOILS

Map Unit Name (Series and Phase): DEZHI SAND | Drainage Class:

Taxonomy (Subgroup) | Field Observations Confirm Mapped Type? (YES) NO

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12	A	10YR 6/6	ORANGE	NUMEROUS	SANDY-LOAM

HYDRIC SOIL INDICATORS:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☒ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: PAIRED DATA POINT IS 10YR 5/5. DOMINANT PLANTS ARE: VICIA SATIVA, GRINDELIA CAMPORUM, & HIRSCHFELDIA INCANA. (Upland Veg.)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(YES) NO	Is this Sampling Point Within a Wetland? (YES) NO
Wetland Hydrology Present?	(YES) NO	
Hydric Soils Present?	YES (NO)	

Remarks

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site	COUNTY CROSSINGS	Date	5/11/05
Applicant / Owner	TRANSCAN DEVELOPMENT LLC	County	CONTRA COSTA
Investigator	R. LOHS	State	CA
Do Normal Circumstances exist on the site?	(YES) NO	Community ID	FRESHWATER MARSH
Is the site significantly disturbed (Atypical Situation)?	YES (NO)	Transect ID	# 4
Is the area a potential Problem Area? (If needed, explain on reverse)	YES (NO)	Plot ID	A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 ARTEMESIA DOUGLASIANA		FACW	9		
2 LOLIUM MULTIFLORUM		FAC	10		
3 SCIRPUS CALIFORNICUS		OBL	11		
4 OENANTHE SARMENTOSA		OBL	12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100%

Remarks UNNAMED TRIBUTARY MARSH FROM RR TRACKS SOUTH TO HIGHWAY 4.

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data Available

FIELD OBSERVATIONS

Depth of Surface Water	AT SURFACE	(in)
Depth to Free Water in Pit		(in)
Depth to Saturated Soil		(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☒ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☒ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

#(4)

SOILS

Map Unit Name (Series and Phase): DIABLO CLAY	Drainage Class:
Taxonomy (Subgroup)	Field Observations Confirm Mapped Type? (YES) NO

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
6	A	7.5YR 5/1	ORANGE	FEW	GRAVELLY

HYDRIC SOIL INDICATORS:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☒ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: PAIRED DATA POINT IS 7.5YR 5/3. DOMINANT PLANTS ARE AVENA FATUA, BROMUS HORDEACEUS, AND BROMUS DIANDRUS. (UPLAND VEG.)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(YES) NO	Is this Sampling Point Within a Wetland? (YES) NO
Wetland Hydrology Present?	(YES) NO	
Hydric Soils Present?	YES (NO)	

Remarks

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site	COUNTY CROSSINGS	Date	5/11/05
Applicant / Owner	TRANSCAN DEVELOPMENT LLC	County	CONTRA COSTA
Investigator	R. LONG	State	CA
Do Normal Circumstances exist on the site?	(YES) NO	Community ID	FRESHWATER MARSH
Is the site significantly disturbed (Atypical Situation)?	YES (NO)	Transect ID	#5
Is the area a potential Problem Area? (If needed, explain on reverse)	YES (NO)	Plot ID	A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 TYPHA ANGUSTIFOLIA		OBL	9		
2 SCIRPUS CALIFORNICUS		OBL	10		
3 JUNCUS BALTICUS		OBL	11		
4 LEYMUS TRITICOIDES		FAC+	12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100%

Remarks UN-NAMED TRIBUTARY MARSH FROM RR TRACKS NORTH TO EAST ANTIOCH CREEK.

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data Available

FIELD OBSERVATIONS	
Depth of Surface Water	AT SURFACE (in)
Depth to Free Water in Pit	(in)
Depth to Saturated Soil	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☒ Inundated
- ☒ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☒ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

#(5)

SOILS

Map Unit Name (Series and Phase): Los Osos Clay Loam	Drainage Class:
Taxonomy (Subgroup)	Field Observations Confirm Mapped Type? (YES) NO

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
8	A	10YR 4/4	ORANGE	NUMEROUS	GRAVELLY

HYDRIC SOIL INDICATORS:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☒ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: PAIRED DATA POINT IS 10YR 4/5. DOMINANT PLANTS ARE: AVENA FATUA, BROMUS HORDEACEUS, & BROMUS DIANDRUS. (UPLAND VEG.)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(YES) NO	Is this Sampling Point Within a Wetland? (YES) NO
Wetland Hydrology Present?	(YES) NO	
Hydric Soils Present?	YES (NO)	

Remarks

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site	COUNTY CROSSINGS	Date	6/14/05
Applicant / Owner	TRANSCAN DEVELOPMENT LLC	County	CONTRA COSTA
Investigator	R. LONG	State	CA
Do Normal Circumstances exist on the site?	(YES) NO	Community ID	FRESHWATER MARSH
Is the site significantly disturbed (Atypical Situation)?	YES (NO)	Transect ID	#6
Is the area a potential Problem Area? (If needed, explain on reverse)	YES (NO)	Plot ID	A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 *Leymus triticoides*		FAC+	9		
2 *Lolium multiflorum*		FAC	10		
3			11		
4			12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100%

Remarks SEASONALLY WET FLOOD PLAIN. WEST SIDE OF WILLOW AVE.

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data Available

FIELD OBSERVATIONS		
Depth of Surface Water		(in)
Depth to Free Water in Pit		(in)
Depth to Saturated Soil	>12	(in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☒ Water Marks
- ☒ Drift Lines
- ☐ Sediment Deposits
- ☒ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☒ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

#60

SOILS

Map Unit Name (Series and Phase): Sycamore Silty Clay Loam | Drainage Class: Moderate

Taxonomy (Subgroup) | Field Observations Confirm Mapped Type? (YES) NO

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
8	A	10YR 6/4	orange	Numerous ½"	clay

HYDRIC SOIL INDICATORS:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☒ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Paired Data Point is 10YR 6/6. Dominant Plants: Avena fatua, Lolium multiflorum. (Upland Veg.)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(YES) NO	Is this Sampling Point Within a Wetland? (YES) NO
Wetland Hydrology Present?	(YES) NO	
Hydric Soils Present?	YES (NO)	

Remarks: Flood plain portion of the marsh on west side of Willow Ave.

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site	COUNTY CROSSINGS	Date	6/14/05
Applicant / Owner	TRANSLAN DEVELOPMENT LLC	County	CONTRA COSTA
Investigator	R. LONG	State	CA
Do Normal Circumstances exist on the site?	(YES) NO	Community ID	FRESHWATER MARSH (WILLOW SCRUB)
Is the site significantly disturbed (Atypical Situation)?	YES (NO)	Transect ID	7
Is the area a potential Problem Area? (If needed, explain on reverse)	YES (NO)	Plot ID	A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 SALIX LASIOLEPIS		FACW	9		
2 TYPHA ANGUSTIFOLIA		OBL	10		
3 LOLIUM MULTIFLORUM		FAC	11		
4			12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100%

Remarks: WILLOW SCRUB PORTION OF MARSH AT EAST END OF PROJECT AREA.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks)
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☒ No Recorded Data Available

FIELD OBSERVATIONS	
Depth of Surface Water	(in)
Depth to Free Water in Pit	(in)
Depth to Saturated Soil	6 (in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☒ Saturated in Upper 12 Inches
- ☒ Water Marks
- ☒ Drift Lines
- ☐ Sediment Deposits
- ☒ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☒ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

#(7)

SOILS

Map Unit Name (Series and Phase): ZAMORA SILTY CLAY LOAM	Drainage Class:
Taxonomy (Subgroup)	Field Observations Confirm Mapped Type? (YES) NO

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	10YR 5/3	ORANGE	NUMEROUS	Clay loam

HYDRIC SOIL INDICATORS:

- ☐ Histosol
- ☐ Histic Epipedon
- ☒ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☒ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: PAIRED DATA POINT IS 10YR 5/2. DOMINANT PLANTS: AVENA FATUA, BROMUS DIANDRUS, LOLIUM MULTIFLORUM. (UPLAND VEG.)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(YES) NO	Is this Sampling Point Within a Wetland? (YES) NO
Wetland Hydrology Present?	(YES) NO	
Hydric Soils Present?	YES (NO)	

Remarks

WILLOW SCRUB AT EXTREME EASTERN PORTION OF CREEK.

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site	COUNTY CROSSINGS	Date	6/14/05
Applicant / Owner	TRANSCAN DEVELOPMENT LLC	County	CONTRA COSTA
Investigator	R. LONG	State	CA
Do Normal Circumstances exist on the site?	(YES) NO	Community ID	FRESHWATER MARSH
Is the site significantly disturbed (Atypical Situation)?	YES (NO)	Transect ID	8
Is the area a potential Problem Area? (If needed, explain on reverse)	YES (NO)	Plot ID	A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 TYPHA ANGUSTIFOLIA		OBL	9		
2 LEYMUS TRITICOIDES		FAC+	10		
3 LOLIUM MULTIFLORUM		FAC	11		
4			12		
5			13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100%

Remarks FRESHWATER MARSH NEAR WESTERN END OF PROJECT AREA. (TREMBATH FLOOD CONTROL BASIN)

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data Available

FIELD OBSERVATIONS	
Depth of Surface Water	(in)
Depth to Free Water in Pit	(in)
Depth to Saturated Soil	8 (in)

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☒ Saturated in Upper 12 Inches
- ☒ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☒ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- ☒ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

(8)

SOILS

Map Unit Name (Series and Phase): SYCAMORE SILTY CLAY LOAM	Drainage Class:
Taxonomy (Subgroup)	Field Observations Confirm Mapped Type? (YES) NO

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	10YR 3/6	ORANGE	SCATTERED	CLAY LOAM

HYDRIC SOIL INDICATORS:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☒ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks:
FRESHWATER MARSH NEAR TRENBATH FLOOD CONTROL BASIN. PAIRED DATA POINT IS 10YR 3/5. DOMINANT PLANTS: AVENA FATUA, BROMUS HORDEACEUS.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(YES) NO	Is this Sampling Point Within a Wetland? (YES) NO
Wetland Hydrology Present?	(YES) NO	
Hydric Soils Present?	YES (NO)	

Remarks

DATA FORM

ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site	COUNTY CROSSINGS			Date	5/11/05
Applicant / Owner	TRANSCAN DEVELOPMENT LLC			County	CONTRA COSTA
Investigator				State	CA
Do Normal Circumstances exist on the site?		YES	NO	Community ID	DRAINAGE SWALE
Is the site significantly disturbed (Atypical Situation)?		YES	NO	Transect ID	# 9
Is the area a potential Problem Area? (If needed, explain on reverse)		YES	NO	Plot ID	A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 LOLIUM MULTIFLORUM		FAC	9		
2 BROMUS MOLLIS		FACU	10		
3 CENTAUREA SOLSTITIALIS		NOT LISTED	11		
4 HIRSCHFELDIA INCANA		NOT LISTED	12		
5 RUMEX CRISPUS		FACU	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 10%

Remarks DRAINAGE SWALE LEADING FROM LARGEST RUDERAL SEAS. WETLAND TO EAST ANTIOCH CREEK. PRIMARILY UPLAND VEG. MAY NOT BE JURISDICTIONAL.

HYDROLOGY

☐ Recorded Data (Describe in Remarks)
- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

FIELD OBSERVATIONS

WETLAND HYDROLOGY INDICATORS

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☒ Drainage Patterns in Wetlands

(#9)

SOILS

Map Unit Name (Series and Phase): DUNN SAND	Drainage Class:
Taxonomy (Subgroup)	Field Observations Confirm Mapped Type? (YES) NO

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	10 YR 4/4	ORANGE	FEW, SCATTERED	SANDY-LOAM

HYDRIC SOIL INDICATORS:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: PAIRED DATA POINT IS 10YR 3/4. DOMINANT PLANTS ARE: VICIA SATIVA & HIRSCHFELDIA INCANA. (UPLAND VEG)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES (NO)	(MOSTLY UPLAND)
Wetland Hydrology Present? (1)	(YES) NO	Is this Sampling Point Within a Wetland? (YES) NO (2)
Hydric Soils Present?	YES (NO)	

Remarks

(1) DRAINAGE SWALE WITH PRIMARILY UPLAND VEG.

(2) CONNECTS TWO WETLANDS.

EXHIBIT C

Aerial Photographs of the Project Area

EXHIBIT D

Photographs of the Hydrologic Features

East Antioch Creek near eastern side of the project area (August 2004)

East Antioch Creek near the pond in the center of the project area (April 2005)

East Antioch Creek on east side of Willow Avenue (May 2005)

East Antioch Creek at east side of Willow Avenue (May 2005)

Larger Pond in East Antioch Creek east of Willow Avenue (April 2005)

Smaller pond in southern tributary marsh south of railroad tracks (May 2005)

Largest ruderal seasonal wetland (August 2004)

Largest ruderal seasonal wetland (April 2005)

Eastern ruderal seasonal wetland near Highway 160 (April 2005)

Middle ruderal seasonal wetland (April 2005)

Drainage swale at outlet of largest ruderal seasonal wetland (May 2005)

Drainage swale near outfall into East Antioch Creek (May 2005)