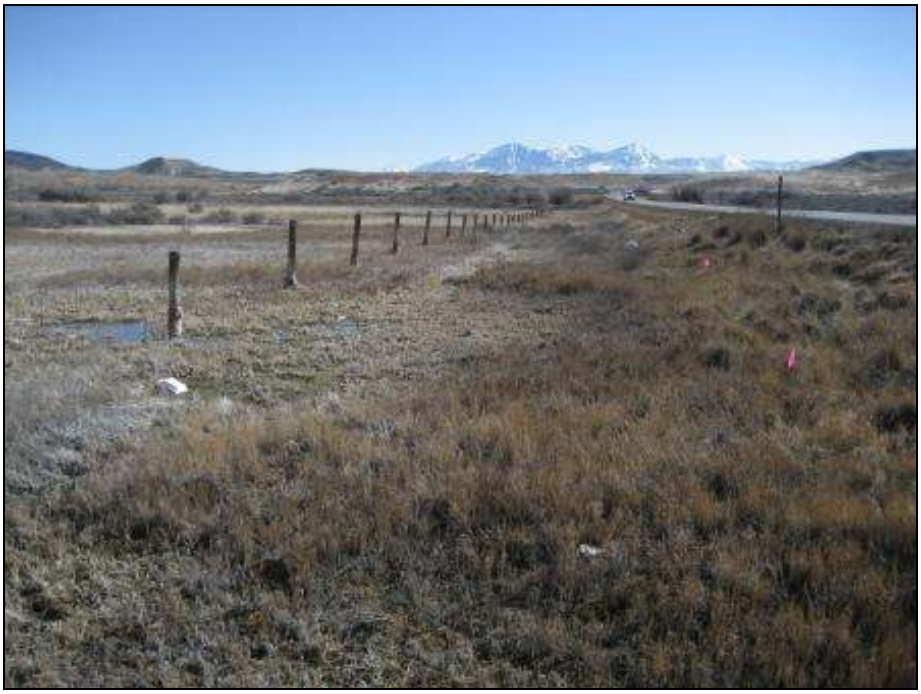
FINAL REPORT

STATE HIGHWAY 92 (AUSTIN TO HOTCHKISS) WETLAND FINDING

PROJECT NUMBER STA 092A-018 (14934)



Prepared for
Colorado Department of Transportation
Region 3

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1.0 INTRODUCTORY STATEMENT

The following is a Wetland Finding for the Colorado Department of Transportation (CDOT) Project STA 092A-018, State Highway (SH) 92 Austin to Hotchkiss PE Corridor (14934).

URS Corporation (URS) was retained by CDOT to delineate wetlands and prepare this document in compliance with Executive Order 11990 "Protection of Wetlands," 23 CFR 771, 23 CFR 777, and Technical Advisory T6640.8A.

2.0 PROJECT LOCATION AND DESCRIPTION

2.1 Location

The project includes 7.2 miles of SH 92, from Milepost (MP) 7.1 to MP 14.2 in Delta County, Colorado. The western project terminus is just east of 2200 Road in the town of Austin and the eastern terminus is just west of Pleasure Park Road (see Location Map in Appendix A). The project can be found on the Orchard City and Lazear, Colorado 7.5-minute US Geological Survey quadrangles and crosses the following Townships, Ranges, and Sections (from west to east):

- Township 15 South, Range 94 West: Section 6 NW ¼, NW ¼ of the NE ¼
- Township 14 South, Range 94 West:
  Section 31 SE ¼
  Section 32 W ½, NE ¼
  Section 33 NW ¼ of the NW ¼
  Section 28 S ½
  Section 27 S ½
  Section 26 S ½
  Section 35 NE ¼ of the NW ¼
  Section 36 NW ¼
- Township 14 South, Range 93 West: Section 31 NW ¼

The Universal Transverse Mercator (UTM) coordinates of the corridor are 13 354063.655N, 301486.881E (west end), and 13 359416.205N, 335150.424E (east end).

2.2 General Setting

The study area generally parallels the North Fork Gunnison River (see Location Map in Appendix A) and is situated between 5,000 (west end) and 5,300 (east end) feet above mean sea level in the Shale Deserts and Sedimentary Basins Ecoregion (EPA 2008) and in the Interior Deserts Land Resource Region (NRCS 2008). The eight digit hydrologic unit code (HUC) is 14020005 (Lower Gunnison).

The area is dominated by the desert shrub vegetation community with relatively small, somewhat saline wetlands along natural and artificial waterways. Some areas near the town of Austin are irrigated and used for grazing and/or hay production. A small population of the federally endangered clay-loving buckwheat (CLB) (*Eriogonum pelinophilum*) can be found in the Mancos Shale badlands near the middle of the project corridor.

According to the Web Soil Survey (NRCS 2008a), soils in the study area are mostly a mix of Billings, Daiser, Chipeta, and Persayo silty clay loams with a large inclusion of Aquic Natrargids in the Lawhead Gulch area. Billings silty clay loam is mostly found in the Currant Creek and Sulphur Gulch areas and is

usually associated with floodplains and alluvial fans. Daiser silty clay loam is also associated with alluvial fans and is found near the western project terminus. Aquic Natargids are only found at Lawhead Gulch and are often associated with oxbows, playas and alluvial flats. They are formed from impermeable shales and have a maximum calcium carbonate content of 40 percent. Chipeta and Persayo silty clay loams are formed from shale and are common in the very dry upland portions of the study area.

2.3 Roadway Description

Originally designed in 1938, the above described segment of highway is outdated and is being upgraded to bring it up to current Federal Highway Administration (FHWA) and CDOT design safety standards. The existing roadway consists of two 12-foot lanes with no shoulders. Major improvements include providing shoulders and flattening side slopes to provide for a safer typical section. The proposed typical section will consist of two 12-foot travel lanes, 8-foot paved shoulders, and 4:1 (H:V) side slopes (in most areas). The horizontal and vertical alignments would be updated to provide a design speed of 65 miles per hour (mph). Climbing lanes would be added to increase the highway safety and capacity in areas where the grade impedes traffic flow. Acceleration and deceleration lanes will be added to the Payne Siding and Main Street intersections to improve safety and traffic flow.

All drainage culverts within the project limits will be replaced. The culverts will be sized according to current CDOT standards and inlet and outlet protection would be provided. The existing Currant Creek Bridge would be replaced by a three-celled 20-foot by 10-foot concrete box culvert (CBC). Several other irrigation CBC extensions would be designed as part of the improvements.

2.4 Project Segments

Terrain, alignment and adjacent development along the highway corridor can generally be grouped into three distinct sections (see Location Map in Appendix A). Thus, it is convenient to divide the project corridor into the following segments:

Segment 1 begins at the westerly terminus of the project, just east of the 2200 Road intersection and continues east for a distance of 0.36 mile. The general land use in this segment is agricultural on the south side of the roadway and mixed agricultural and residential on the north side. The stationing limits for Segment 1 are 11+00 to 30+00. The alignment through Segment 1 is on a tangent and grades are mildly rolling, less than 2 percent.

Segment 2 begins at the east terminus of Segment 1, project Station 30+00 and continues northeasterly for a distance of 1.02 miles to Station 84+00. The general land use in this segment is a mix of agricultural and residential. The entire horizontal alignment in Segment 2 is made up of a long reverse curve. Grades are moderate through Segment 2; 2 percent or less, except for the easterly quarter mile of the segment where a 6 percent grade exists as the profile climbs at the approach to Segment 3.

Segment 3 constitutes the majority of the project, extending 5.8 miles from Segment 2 to the easterly terminus of the project at Station 390+00. The general land use in this segment is rangeland with a few residence and business along the roadway. The horizontal alignment of the segment meanders gradually. The roadway profile follows rolling grades that generally do not exceed 3 percent, except for grades of up to 6 percent at MP 9.4 (Hog Farm Hill).

3.0 PROJECT ALTERNATIVES

Numerous project alternatives were considered during project planning and design. These are discussed by Segment in the following sections.

3.1 Segment 1

Widening on centerline – This alternative achieves the design objectives for Segment 1. Cut and fill slopes can be contained within the existing right-of-way. Only temporary construction easements may be required to make new connections for access, drainage and irrigation facilities.

Asymmetrical widening – Shifting the centerline north or south in Segment 1 could offer the potential for better maintenance of traffic during construction. Traffic could remain on the current roadway while construction takes place on the opposite side of the roadway. The shifted alignment, however, would entail significant wetland and right-of-way impacts.

The McNeil Ditch (a concrete lined irrigation channel that parallels the highway) would be impacted with asymmetrical widening to the south.

Conclusion – Widening on centerline is the selected alternative. Even though there are trade-offs during construction, the issue is confined to a relatively short segment of the project, and less wetland impacts are expected.

3.2 Segment 2

Full Design Speed Alternative – Under this alternative, the alignment for SH 92 in Segment 2 would be established using a design speed of 65 mph and maximum super elevation rate of 8 percent, as specified in the project scope of work and CDOT design standards. Two primary factors influence the selection of radii for the horizontal curves:

A. The desire to limit super elevation across the Main Street intersection. A maximum value of 6 percent was selected for the first curve in Segment 2 (Curve 1), resulting in a radius of 2,710 feet.

B. For the northerly curve beginning at Station 60+00 (Curve 2), a minimum radius is required for the alignment to match the start of Segment 3. A radius of 1,480 feet is appropriate per Standard M-203-11.

While this alternative meets the project design speed, it features several significant drawbacks:

- Most new construction would be substantially off the existing alignment and new right-of-way requirements would be significant. The existing roadway embankment could not be incorporated into the new construction.
- Additional skew is introduced to the Main Street intersection.
- Extensive encroachment would be necessary into the Currant Creek floodplain. This could entail soil conditions that are not conducive to roadway construction and greater impacts to wetlands and other water features.
- At the steep grade near the easterly end of Segment 2, large rock cuts and fill areas would be encountered on the new alignment.

Reduced Design Speed Alternative – In response to the issues raised under the Full Design Speed Alternative, a reduced design speed was considered for Segment 2. While this reduction does not meet the original design speed stated in the scope of work, further evaluation determined that a lower design speed is appropriate for both Segments 1 and 2 because of the number of side road intersections and horizontal alignment constraints contained within these segments.

For the 55 mph design speed in Segment 2, Curve 1 can be constructed with a radius of 1,920 feet and a super elevation rate of 6 percent, maintaining the maximum desirable cross-slope at the Main Street intersection. Curve 2 can be constructed with a radius of 1,140 feet and 7.8 percent super elevation rate.

With the smaller radii, the alignment in Segment 2 can be established so as to eliminate or mitigate most of the concerns associated with the Full Design Speed Alternative. Impacts to wetland areas outside the existing corridor would be minimized and the alignment can be optimized to take advantage of the existing roadway embankment and facilitate traffic control during construction.

The one area where the new alignment departs significantly from the existing alignment is along the northerly side of Curve 2. A privately-owned corral would be impacted by the new construction. The study of this issue led to development of the Transitional Design Speed Alternative, discussed below.

Transitional Design Speed Alternative – The solution to mitigating impacts at the corral on the northerly side of Curve 2 involves increasing the radius to 1,375 feet. With such a radius, there are several options for super elevation and accordingly, options for the design speed of Curve 2. A super elevation rate of 7.4 percent allows a design speed of 60 mph, 5 mph more than the alignment to the west, and 5 mph less than Segment 3 to the east. Curve 2 would provide a convenient transition between design speeds in the east and west legs of the project.

A further refinement to Curve 1 was made, matching the 50 mph design speed in Segment 1. At this speed, a radius of 2,040 feet can be used and the roadway cross-slope at Main Street intersection can be reduced to 5 percent.

The Transitional Design Speed Alternative is a variation of the Reduced Design Speed Alternative, modified to reduce impacts at the corral and Dry Creek and provide a transition in project design speeds.

Three wetland areas would be impacted under any widening alternative in Segment 2. The first is located on both sides of the roadway at Station 31+00 and is associated with an irrigation lateral. Drainage culverts run under the roadway. The second is adjacent and hydrologically connected to the first. The third is associated with the North Delta Canal crossing at Station 40+00. Because these wetlands straddle the roadway, there is no clear advantage associated with any of the alternatives in terms of reducing impacts. In addition, the total impacted area is relatively small and thus, not a significant factor in the alternative selection.

Conclusion – The Transitional Design Speed Alternative represents the highest level of refinement of all the alternatives. It is the best option for minimizing impacts and accommodating appropriate design speeds in Segment 2.

3.3 Segment 3

The initial approach for setting an alignment in Segment 3 was based on adding all of the new pavement width to the south side of the existing roadway. Research conducted during the preliminary design phase provided new information and constraints concerning the presence of CLB plants along the highway corridor. In the roadway section east of Payne Siding, several areas of CLB designated habitat were identified as well as the presence of living plants. In addition, several recorded conservation easements were identified along the south right-of-way line in this same vicinity.

Adjustments were made to the initial alignment, giving priority to avoidance of the CLB, its designated habitat areas and the conservation easements. These adjustments were generally achieved through steeper side slopes and or minor alignment shifts along the roadway at the following locations:

- Station 199+00 to 232+00 – Herrick Conservation Easement (south side)
- Station 202+00 to 208+00 – CLB habitat Federal designation (south side)
- Station 212+00 to 216+00 – CLB plants (south side)
- Station 247+00 to 261+00 – CLB habitat Federal designation (south side)
- Station 249+00 to 291+00 – Shea Conservation Easement (south side)
- Station 251+00 to 252+00 – CLB plants (north side)

- Station 259+00 to 291+00 – Shea Conservation Easement (north side & south side)
- Station 291+00 to 390+00 – BLM National Conservation Area (south side)

Multiple wetland areas are located in and surrounding Lawhead Gulch along the alignment in Segment 3.

- Station 255+00, Oasis Ditch Crossing – Very minor impacts will be necessary to reconstruct and extend the pipe crossing. Adjustments in the roadway alignment to avoid impacts on one side of the roadway would be offset by impacts on the opposite side.
- Station 259+00 to 271+00, North Side – Avoidance of these wetlands on the north side of the roadway would entail encroachment into the CLB designated habitat on the south side of SH 92 at Station 260+00.
- Station 276+00 to 278+00 – These wetlands are on opposite sides of the roadway. Adjustments in the roadway alignment to avoid impacts on one side of the roadway would be offset by impacts on the opposite side.

Conclusion – With refinements to the initial alignment, impacts to the CLB and its designated habitat will be avoided. These refinements come at the expense of several tradeoffs, including impacting additional parcels of land and wetlands.

4.0 METHODS

Andy Herb (senior ecologist for AlpineEco) walked portions of the study area between February 27 and 29, 2008 to delineate wetlands and other water features. The areas visited were based on data previously collected by URS in June/July 2007 and Ms. Paula Durkin (CDOT) in November 2007. The study area is shown on Sheets 1—7 in Appendix A and generally consists of a corridor 7.2 miles long and approximately 200 feet wide along SH 92 west of Austin, Colorado.

All wetlands and other water features in the study area were delineated using methods outlined in the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Corps 2006). This involved a detailed examination of plants, soils, and hydrologic conditions. All wetlands were flagged in the field and surveyed using equipment accurate to 1 or 2 centimeters. Photographs were taken of all wetlands and can be found in Appendix B.

Other water features include perennial, intermittent and ephemeral streams; and irrigation ditches and canals. Although these features are not wetlands, they are important aquatic habitats and often provide wetland hydrology to delineated wetlands. Other relevant ecological information was collected during the fieldwork, including information on land use, wildlife, and noxious weeds.

5.0 WETLAND RESOURCES

A total of 15 wetlands and six other water features were identified in the study area. These features are shown on Sheets 1—7 (Appendix A) and briefly discussed in the following sections. Detailed information for each of the wetlands can be found on the Wetland Determination Data Forms in Appendix C.

5.1 Wetlands

A total of 1.34 acres (58,450 square feet (sf)) of wetlands were delineated in the study area (Table 1). All of the wetlands are classified as palustrine emergent (PEM) according to Cowardin, et al. (1979) and can be placed into two distinct groups based on their primary sources of hydrology. These include "natural wetlands" and those associated with irrigation practices.

State Highway 92 Wetland Finding

Table 1: Summary of Wetlands

ID	Classification[1]	Feature Name	Wetland Type	Station	Approx. Milepost/ Side of Road[2]	Current Wetland Area (sf)	Permanent Impact Area (sf)	Temporary Impact Area (sf)	Nature of Impacts	Mitigation Type
Irrigation-Related Wetlands (West to East)										
1-1	PEM	--	Irrigation return flow	30+50	7.3/N,S	1,021	506	140	Fill for embankment and installation of new culvert	Bank
1-2	PEM	--	Irrigation collection	31+50	7.3/N,S	5,578	2,681	529	Fill for embankment and installation of new culverts	Bank
1-3	PEM	North Delta Canal	Irrigation canal fringe	40+00	7.5/N.S	976	315	77	Fill for embankment and installation of new culvert	Bank
1-4	PEM	--	Irrigation collection	58+50	7.8/W	2,606	0	0	None	Bank
6-3	PEM	Oasis Ditch	Irrigation canal fringe	255+00	11.5/N,S	436	229	51	Fill for embankment and installation of new culvert	Bank
					Subtotal	**10,617**	**3,731**	**797**	**--**	--
Natural Wetlands (West to East)										
2-1	PEM	Currant Creek	Creek fringe	64+00	8.0/W,E	1,306	886	34	Fill for embankment, installation of new culvert with riprap	Bank and some on-site plantings
6-6	PEM	--	Floodplain wetlands	259+50	11.7/N	3,508	3,340	168	Fill for embankment	Bank
6-8	PEM	--	Floodplain wetlands	265+00	11.8/S	12,734	6,683	2,955	Fill for embankment and installation of new culvert	Bank
6-9	PEM	--	Floodplain wetlands	266+00	11.8/N	6,462	3,766	814	Fill for embankment and installation of new culvert	Bank

State Highway 92 Wetland Finding

ID	Classification[1]	Feature Name	Wetland Type	Station	Approx. Milepost/ Side of Road[2]	Current Wetland Area (sf)	Permanent Impact Area (sf)	Temporary Impact Area (sf)	Nature of Impacts	Mitigation Type
6-4	PEM	Lawhead Gulch Tributary	Floodplain wetlands	270+00	11.9/N	6,403	5,398	506	Fill for embankment and installation of new culvert	Bank
6-7	PEM	--	Floodplain wetlands	272+50	12.0/S	328	0	0	None	Bank
6-2	PEM	Lawhead Gulch	Floodplain wetlands	274+00	12.0/N,S	1,511	1,205	55	Fill for embankment and installation of new culvert	Bank
6-5	PEM	--	Floodplain wetlands	278+00	12.1/N,S	12,688	4,395	2,453	Fill for embankment	Bank
6-1	PEM	--	Floodplain wetlands	284+00	12.2/N,S	2,548	862	377	Fill for embankment and installation of new culvert	Bank
8-1	PEM	Sulphur Gulch	Creek fringe	370+00	13.7,N,S	345	59	0	Fill for embankment and installation of new culvert	Bank
					Subtotal	**47,833**	**26,594**	**7,362**	**--**	**--**
					TOTAL	**58,450**	**30,325**	**8,159**	**--**	**--**

[1] Based on Cowardin, et al. (1979)
[2] Side of Road: N=north, S=south, E=east, W=west

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5.1.1 Natural Wetlands

A total of 10 wetlands (some with multiple parts), encompassing 1.10 acres (47,833 sf) or 82 percent of the total wetland acreage in the study area, are associated with natural waterways and their floodplains. This includes wetlands in the vicinity of Currant Creek, Lawhead Gulch (and its tributaries), and Sulphur Gulch. These wetlands consist of either narrow "fringe" wetlands along the banks of the waterways (Currant Creek and Sulphur Gulch), or large wetland complexes on a broad floodplain (Lawhead Gulch and tributaries).

The narrow fringe wetlands along Currant Creek (Wetland 2-1, Sheet 2 in Appendix A) and Sulphur Gulch (Wetland 8-1, Sheet 7 in Appendix A) are generally 2 to 5 feet wide on each side of the channel and dominated by saltgrass (*Distichlis spicata*) with a mix of other species like reed canarygrass (*Phalaris arundinacea*), common threesquare (*Schoenoplectus pungens*), and foxtail barley (*Hordeum jubatum*). The wetland hydrology for these sites is generally provided through capillary action from the flowing channel and/or overbank flooding during runoff events. Soils are clayey with some cobble and gravel, and are mapped as Billings silty clay loam.

The majority of the wetlands in the study area (79.0 percent) are "natural" and are associated with Lawhead Gulch and its tributaries (Wetlands 6-1, 6-2, 6-4, 6-5, 6-6, 6-7, 6-8, and 6-9) . This area can be found on Sheets 4, 5 and 6 in Appendix A and consists of a large wetland complex associated with a large, irregular floodplain. The wetlands in this area have a very high salt content and include small salt flats that are nearly devoid of vegetation. There are substantial salt deposits on the ground surface that appear to be the result of the evaporation of groundwater that is brought to the surface via capillary action. The dominant vegetation in these areas is saltgrass, with seablight (*Suaeda* spp.) around and in the most alkaline areas and pockets of other salt-tolerant plants like cosmopolitan bulrush (*Schoenoplectus maritimus*), scratchgrass (*Muhlenbergia asperifolia*), and Nuttall's alkaligrass (*Puccinellia airoides*). Wetland hydrology for these sites is generally a result of high groundwater with supplemental surface water from overbank flooding. Soils in this area are clayey and some of the most saline areas do not exhibit hydric soil indicators due to high pH. The mapped soil type is Aquic Natrargids.

Delineation of wetlands associated with Lawhead Gulch was somewhat difficult since saltgrass (which is facultative and often present in non-wetlands) was present in most roadside areas. Generally, wetlands with a dense and robust saltgrass-dominated community that contained scattered other facultative or wetter plants were included (assuming hydric soils and hydrology were present). If stands of saltgrass were mixed with weedy or more upland species like Russian knapweed (*Acroptilon repens*), prickly lettuce (*Lactuca serriola*), cheatgrass (*Bromus tectorum*), Canada thistle (*Cirsium arvense*), or four-wing saltbush (*Atriplex canescens*), they were generally excluded.

5.1.2 Irrigation-Related Wetlands

A total of five wetlands, encompassing 0.24 acre or 18 percent of the total wetland acreage in the study area, are associated with irrigation practices. This includes narrow fringe wetlands along the North Delta Canal (Sheet 1 in Appendix A) and the Oasis Ditch (Sheet 4 in Appendix A), as well as several larger wetlands associated with unnamed ditches and irrigated fields. The largest irrigation-related wetlands involve the inadvertent collection of irrigation overflow and/or return flow in the right-of-way (Wetlands 1-1 and 1-2 on Sheet 1 in Appendix A). One large wetland is a result of a breached ditch (Wetland 1-4 on Sheet 2 in Appendix A).

The narrow fringe irrigation-related wetlands include Wetlands 1-3 (North Delta Canal) and 6-3 (Oasis Canal), which can be found on Sheets 1 and 5, respectively. They are generally dominated by dense stands of reed canarygrass, with pockets of saltgrass and other grasses and forbs. These wetlands are mostly 3 to 5 feet wide (on both sides of the waterway) and get their wetland hydrology via capillary

action from the channel itself. Soils are generally clayey, but somewhat disturbed as a result of regular dredging. They are mapped as Daiser silty clay loam.

The larger irrigation-related wetlands are mostly found at the west end of the study area, on Sheets 1 and 2 (Appendix A) and include Wetlands 1-1, 1-2, and 1-4. These wetlands are mostly dominated by rabbitfoot grass (*Polypogon monspeliensis*), Emory's sedge (*Carex emoryi*), creeping spikerush (*Eleocharis palustris*), and reed canarygrass, with numerous other grasses and forbs adapted to seasonal inundation. Most of these wetlands have pockets of weedy tree species along their perimeters, mostly Russian olive (*Elaeagnus angustifolia*) and saltcedar (*Tamarix ramosissima*). These wetlands get their hydrology from the collection of irrigation water and generally contain clayey soils (mapped as Daiser and Billings silty clay loam).

5.1.3 Wetland Functions

An assessment of the functions and values of wetlands within the study area was completed using a modified version of the Montana Department of Transportation Wetland Functional Assessment (Montana) Method (Berglund 1999). This method is currently being revised by CDOT for use in Colorado and involves the completion of a five page data sheet to produce relatively repeatable results.

The functional ratings given to each group of wetlands represents the function or value as it relates to the health and vigor of the ecosystem in general. A high rating translates to a wetland function or value that is essential for the continued health of the ecosystem. The ratings are shown in Table 2 and briefly summarized below.

Table 2: Wetland Functions and Values[1]

Wetland Functions and Values	Irrigation-Related Wetlands		Natural Wetlands	
	Fringe Wetlands	Overflow/ Collection Wetlands	Fringe Wetlands	Lawhead Gulch Floodplain Wetlands
Federally Listed Species Habitat	L	L	L	L
State Listed Species Habitat	L	L	M	H
General Wildlife Habitat	L	M	M	H
General Fish Habitat	N/A	N/A	M	L
Flood Attenuation	L	M	L	M
Short- and Long-Term Water Storage	L	M	L	H
Sediment/Nutrient/Toxicant Removal and Retention	M	M	M	M
Sediment/Shoreline Stabilization	H	N/A	H	N/A
Production Export/Food Chain Support	L	L	M	M
Groundwater Discharge/Recharge	L	L	L	H
Uniqueness	L	L	L	M
Recreation/Education Potential	L	L	L	M

[1]Ratings based on a modified version of the Montana Method (Berglund 1999); H = high, M = moderate, L = low, N/A = not applicable

The wetlands associated with Lawhead Gulch and its tributaries are the most ecologically functional in the study area. This is generally a result of their large size and perennial water source, combined with evidence of regular ponding. They received a high rating for state-listed species habitat due to a recent

sighting of northern leopard frog (*Rana pipiens*) by a URS employee in summer 2007. The flood attenuation, sediment/nutrient/toxicant removal and retention, and production export/food chain support functions would have been rated high instead of moderate if the wetlands had higher vegetative cover or more structurally diverse vegetation communities.

The fringe wetlands (both irrigation-related and natural) are somewhat less functional than other wetlands in the study area as a result of their extremely small size. They generally provide excellent sediment/shoreline stabilization due to the presence of dense vegetation immediately adjacent to a flowing channel, but do not provide good flood attenuation or water storage. The moderate rating for state-listed species habitat for natural fringe wetlands is a result of the presence of limited suitable habitat and suspected presence of northern leopard frog.

The irrigation-related overflow/collection wetlands were generally rated low to moderate. These wetlands would be rated higher if they were larger and had a year-round water source. The low rating for production export/food chain support is a result of the wetlands generally having a restricted outlet (or no outlet at all).

5.2 Other Water Features

A total of six other water features were identified in the study area. These features support all of the natural wetlands and most of the irrigation-related wetlands identified in the study area. All of the other water features are listed in Table 3.

Table 3: Other Water Features in the Study Area

Waterway (West to East) [1]	ID Number	Type	Wetlands Present	Milepost (approx.)	Sheet Number (Appendix A)
North Delta Canal	1-3	Irrigation Canal	Yes	7.5	1
Currant Creek	2-1	Perennial Creek	Yes	8.0	2
Dry Creek	2-2	Intermittent Creek	No	8.2	3
Oasis Ditch	6-3	Irrigation Canal	Yes	11.6	4
Lawhead Gulch Tributary	6-4	Perennial Creek	Yes	11.8	5
Sulphur Gulch	8-1	Intermittent Creek	Yes	13.7	7

[1]The mainstem of Lawhead Gulch is not considered an other water feature since it has a mostly vegetated channel (no defined bed and banks) and is included as a wetland .

5.3 Noxious Weeds

A total of 12 state-listed noxious weed species were identified in the study area. Although most of them are not found in wetlands, most are in habitats immediately adjacent to wetlands or in other moist areas. The management of these species should be considered during construction activities to minimize the potential for spreading. The species are listed in Table 4 with their rankings (as determined by the State of Colorado and Delta County).

Table 4: Noxious Weeds in the Study Area[1]

Common Name	Scientific Name	State Rank	Delta County Rank
Russian knapweed	*Acroptilon repens*	B	Class I
Cheatgrass	*Bromus tectorum*	C	None
Whitetop	*Cardaria draba*	B	Class I
Musk thistle	*Carduus nutans*	B	Class I
Chicory	*Chichorium intybus*	C	None
Canada thistle	*Cirsium arvense*	B	Class I
Bull thistle	*Cirsium vulgare*	B	None
Russian olive	*Elaeagnus angustifolia*	B	Class II
Redstem filaree	*Erodium cicutarium*	B	None
Halogeton	*Halogeton glomeratus*	C	Class II
Yellow toadflax	*Linaria vulgaris*	B	Class I
Saltcedar	*Tamarix ramosissima*	B	Class II

[1]State Rank: B=stop continued spread of species; C=provide education, research and biological control to those that wish to manage these species. County Rank: Class I=listed for control on public and private land; Class II=listed for control on public lands only.

The management of noxious weeds for this project will not involve widespread application of herbicide due to the presence of CLB plants, extensive aquatic habitats, and large parcels of adjacent private lands that are infested with noxious weeds. Instead, all noxious weeds in the work area will be mechanically cleared prior to construction (including some of the large saltcedar and Russian olive along Currant Creek), with some spot-spraying in certain locations (if necessary). Native shrubs outside of the footprint of permanent improvements will be avoided whenever possible. After construction, all disturbed areas will be reseeded with a native seed mix containing species adapted to local conditions.

6.0 PROJECT IMPACTS

6.1 Wetland Impacts

Impacts to wetlands were assessed by overlaying the proposed roadway plans with the wetland and other water features maps. The wetlands overlapped by roadway cuts or fills are considered permanently impacted. Temporarily impacted wetlands are those overlapped by a 5-foot buffer around all cut and fill lines. Sheets 1—7 in Appendix A show the areas of impact and Table 1 summarizes the impacts by wetland.

Temporary Impacts – A total of 0.19 acre (8,159 sq ft) of wetlands would be temporarily impacted by project activities. These impacts are associated with construction access needed for the placement of culverts, installing erosion control measures, and other minor and localized activities. These impacts may include cutting or covering vegetation and/or placing temporary fill into a wetland area. These wetlands would experience temporary modification or loss of functions, which should be restored after construction.

Permanent Impacts – There would be 0.70 acre (30,325 sf) of wetlands permanently impacted by the project. Most of these wetlands are located immediately adjacent to the existing roadway embankment in the vicinity of Lawhead Gulch and will be filled as a result of roadway widening. Other permanent impacts will be the result of the installation of new culverts (including the placement of riprap aprons).

6.2 Wildlife and Habitat Issues

6.2.1 Birds

Numerous swallow nests were observed under the Currant Creek Bridge. In order to comply with Migratory Bird Treaty Act, these nests and other potential nesting habitat for migratory birds (primarily woody vegetation), should be removed during the non-nesting season (September 15 to February 15) immediately before construction. If construction will not occur until during the following nesting season, netting can be placed in cleared nesting locations (ideal for bridges) to deter new breeding pairs from building nests.

In addition, a bald eagle was observed foraging in the study area and can be expected to be in the corridor during the winter months. The bald eagle is protected under the Bald and Golden Eagle Protection Act. If bald eagles are observed perching or roosting in or near the study area regularly during construction, protective measures may be required.

6.2.1 Plants

The Great Basin wildrye (*Leymus cinereus*) herbaceous vegetation community has been ranked as "critically imperiled" in the State of Colorado by the Colorado Natural Heritage Program. This community was identified in the study area, just south of Currant Creek on the east side of SH 92 at Station 61+00. It is a very narrow plant community, lining approximately 50 to 100 feet of a small ephemeral drainage that begins at a culvert under SH 92. This area will be under the new roadway embankment and the plants may be salvaged by transplanting. Salvaging would entail using a backhoe or similar equipment to remove as many intact plants from their current locations and placing them further east (outside of the impact area) in a similar position along the same drainage. This activity should be monitored by CDOT environmental personnel.

7.0 WETLAND MITIGATION

7.1 Compensatory Mitigation

The 0.70 acre (30,325 sf) of wetlands permanently impacted as a result of the project will be compensated for by purchasing credits from the WetBank Gunnison at a 1:1 ratio. Information regarding mitigation site selection can be found in Appendix D. In addition, permanent impacts to wetlands associated with Currant Creek will be informally compensated on-site. This compensation will involve relocating wetland vegetation (as appropriate) and willow plantings.

7.2 Other Mitigation Measures

In addition to the wetland avoidance measures discussed in Section 3.0 Project Alternatives, the following mitigation measures will be implemented during construction to minimize impacts to wetlands and other habitats:

- Design widths will be reduced to the extent practical within wetland areas.
- Best Management Practices (BMPs) will be implemented during all phases of construction to reduce impacts from sedimentation and erosion.
- When practical, construction in waterways will be performed during low-flow or dry periods.
- Flowing water will be diverted around active construction areas.

- There will be no equipment staging, storage of materials, use of chemicals (such as soil stabilizers, dust inhibitors, and fertilizers), or equipment refueling within 50 feet of wetlands or other water features.
- No unpermitted discharges will be allowed.
- Prior to construction, orange temporary fence and sediment control measures will be placed at the edge of the work area to protect wetlands located outside the planned area of disturbance.
- The location and design of any temporary crossing of other water features will be approved by the project biologist.
- All areas of temporary wetland impacts that involve vehicular traffic will be covered with a geotextile, straw, and soil prior to use.
- Where appropriate, wetland soils and vegetation will be stripped and used to revegetate disturbed areas. The existing Currant Creek Bridge will be removed as part of this project and the area beneath this structure will be used for placing salvaged wetland soils and willow cuttings.
- The Great Basin wildrye plants located on the east side of SH 92 near Station 61+00 will be salvaged and transplanted, as directed by the project biologist.

8.0 PERMITTING REQUIREMENTS

8.1 Section 404 Permit

Prior to project construction, CDOT must receive authorization under Section 404 of the Clean Water Act for filling wetlands. The authorization is under the authority of the Sacramento District of the US Army Corps of Engineers (Corps) and will consist of a Nationwide Permit No. 23 for Approved Categorical Exclusions. The Project Manager for the Corps is Mr. Steve Moore.

8.2 Other Permitting

The Colorado Division of Wildlife is automatically notified by the Corps for any issues pertaining to Senate Bill (SB) 40. In addition, the application for the Colorado Department of Public Safety stormwater discharge permit for sediment and erosion control will be sent to the Colorado Department of Health and Environment (CDPHE) approximately 10 days prior to the start of construction. To comply with this permit, the project must have and maintain a stormwater management plan (SWMP), which will be kept at the project office and updated as needed. To ensure that the appropriate BMPs are used and properly installed, the project will also be subject to periodic inspections by the regional erosion control audit team (RECAT) until final inspection and release of the permit by CDPHE.

9.0 CONCLUSION

Based upon the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

10.0 LITERATURE CITED

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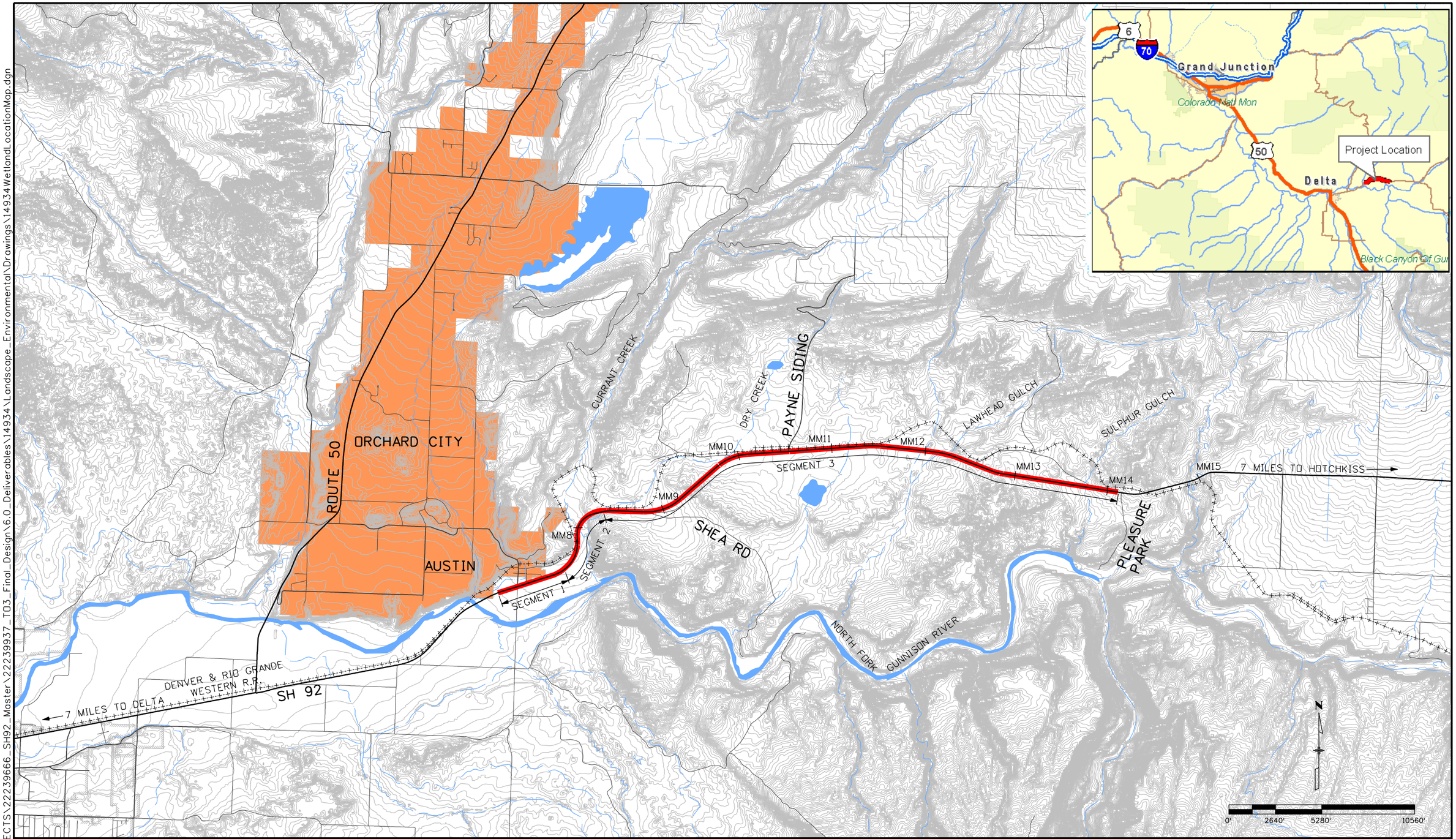
Appendix A
Location Map and
Wetland Maps (Sheets 1—7)



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LOCATION MAP

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Detailer:	B. TENNANT		
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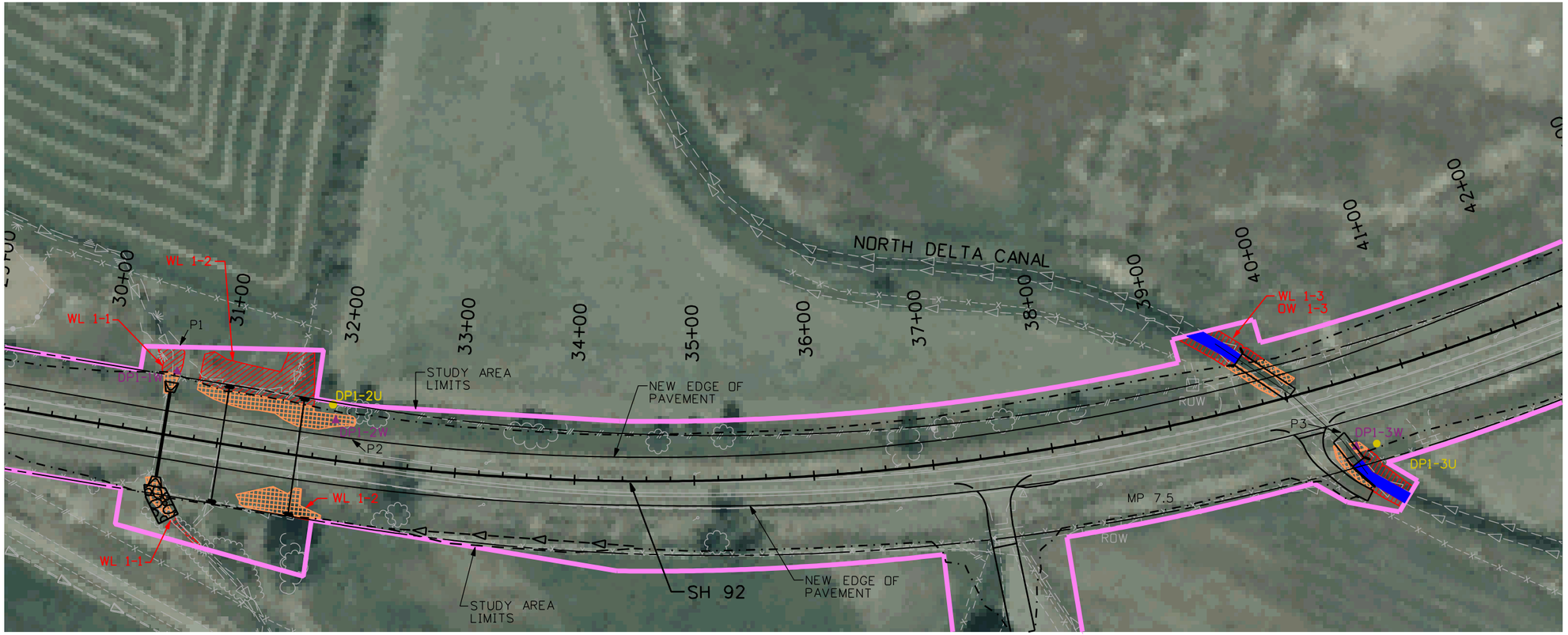

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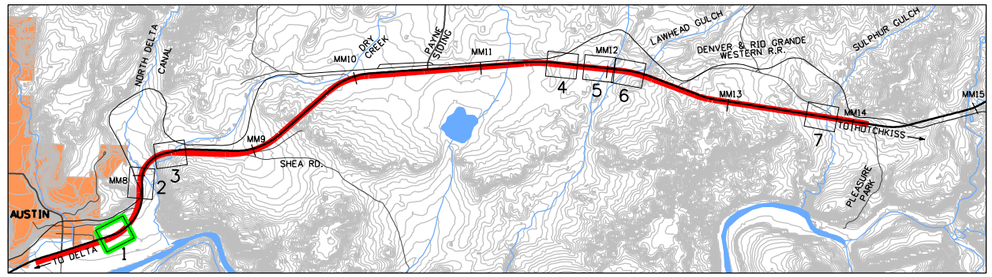

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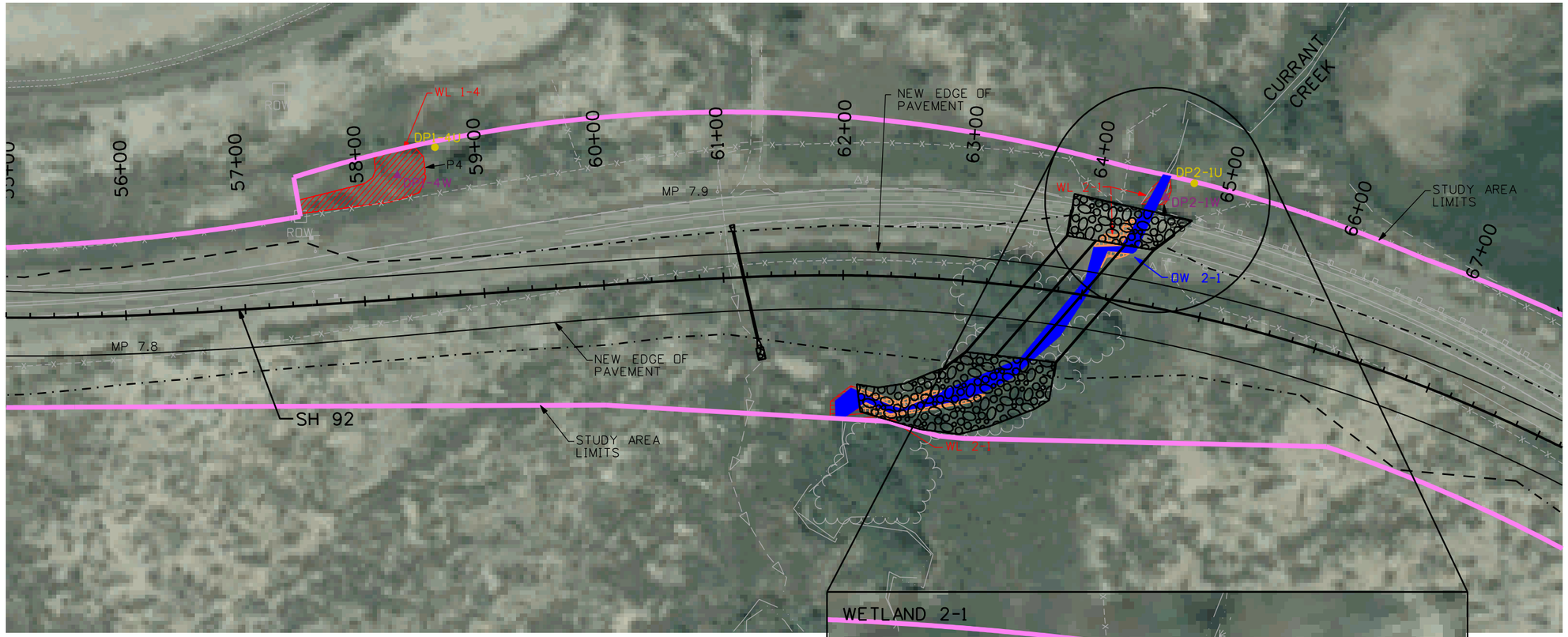

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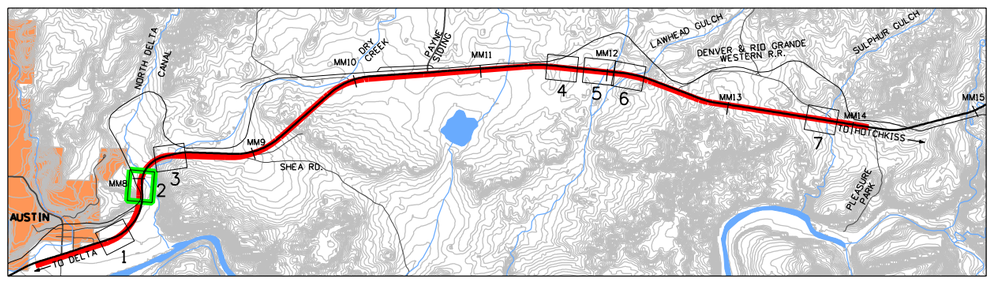

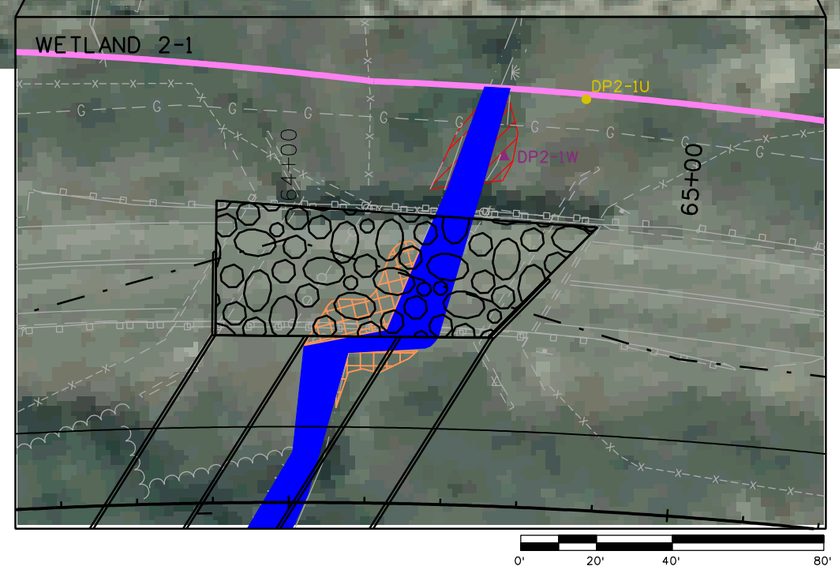

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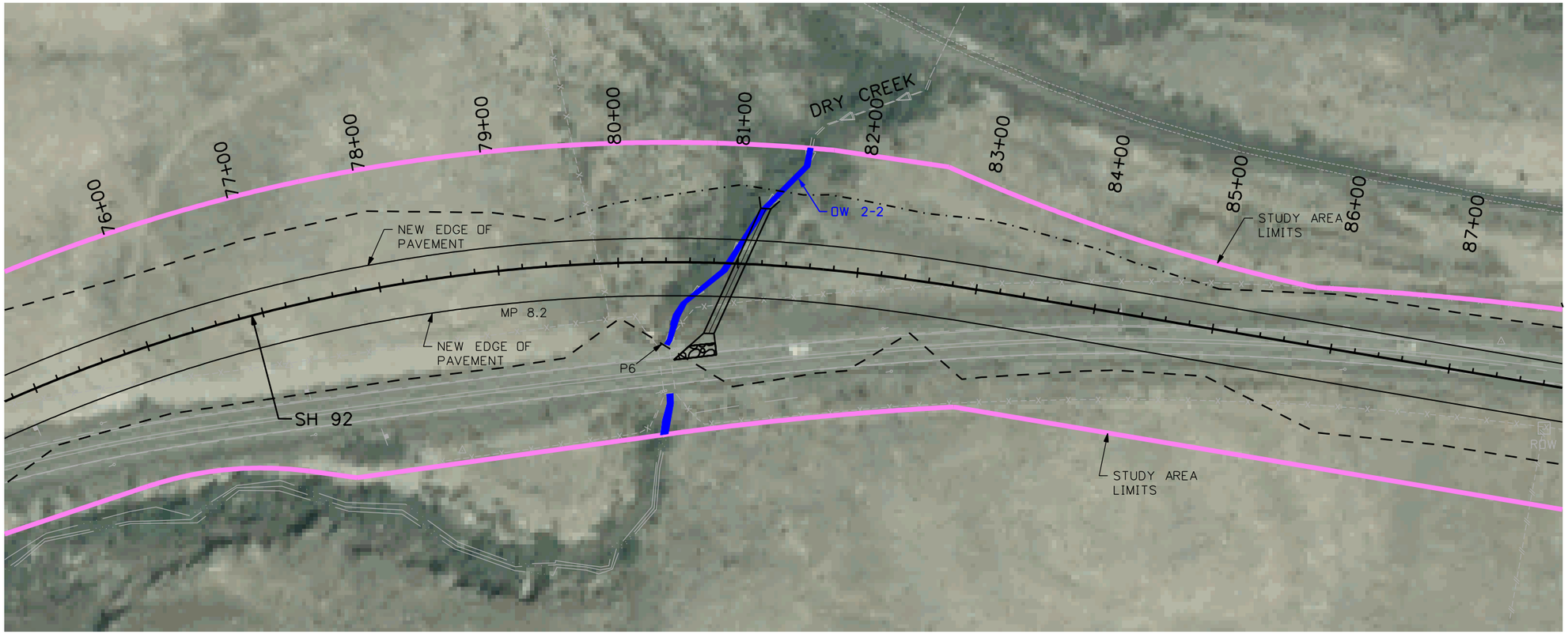

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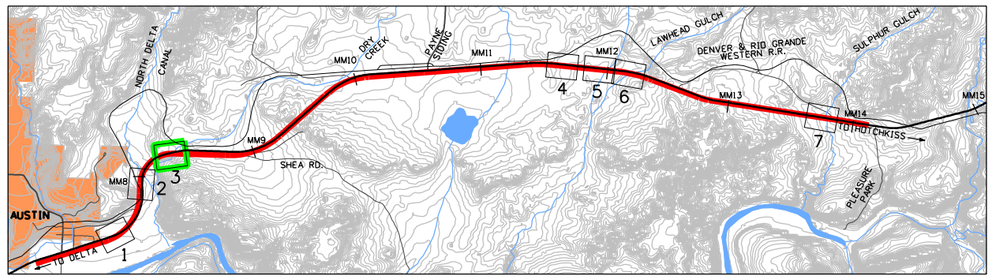

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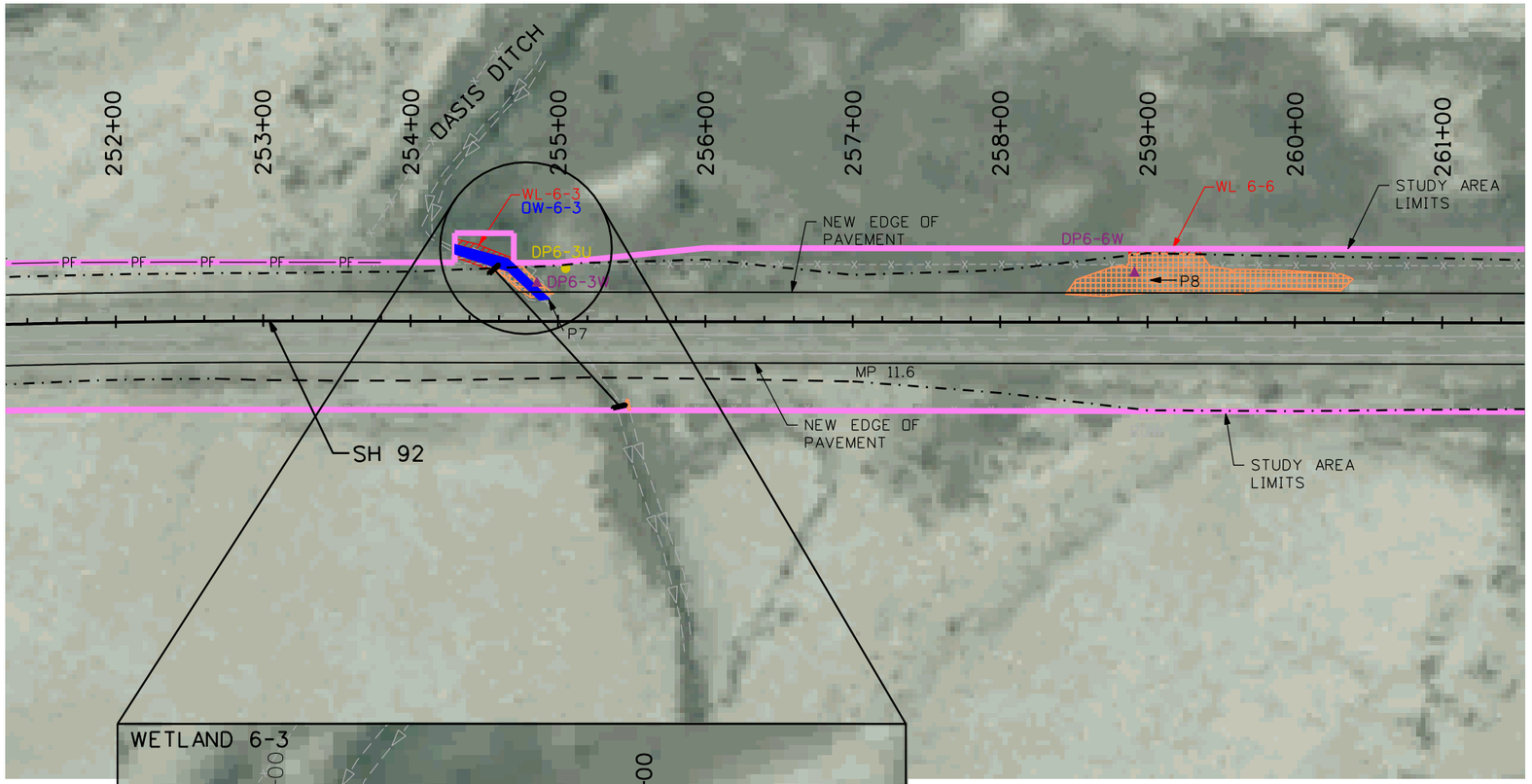

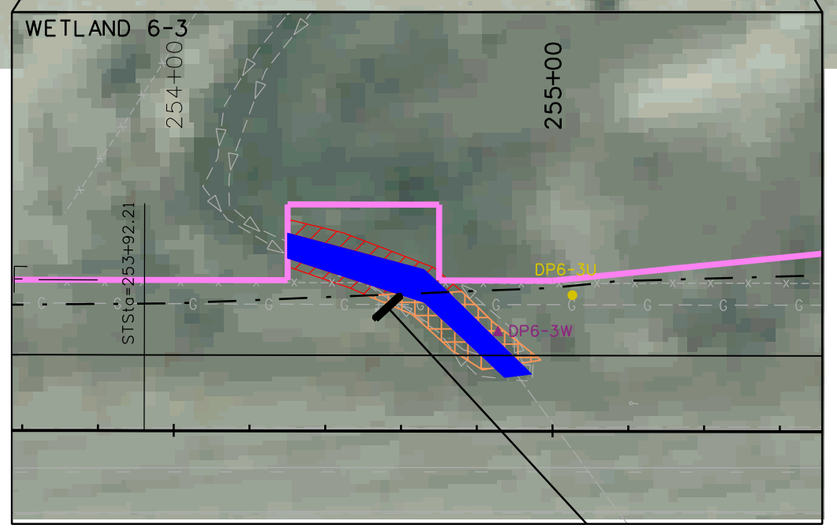

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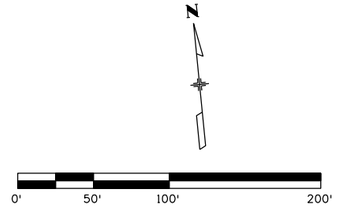

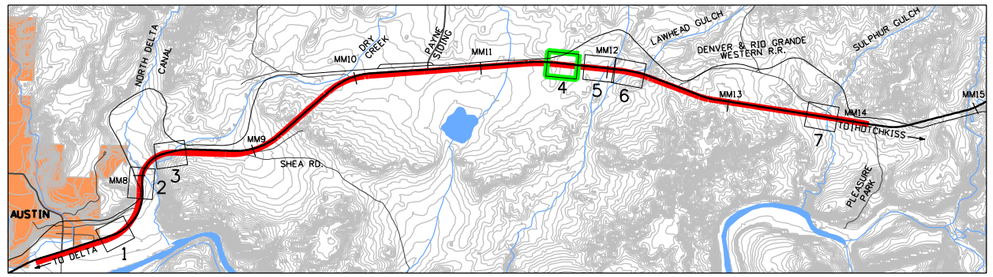

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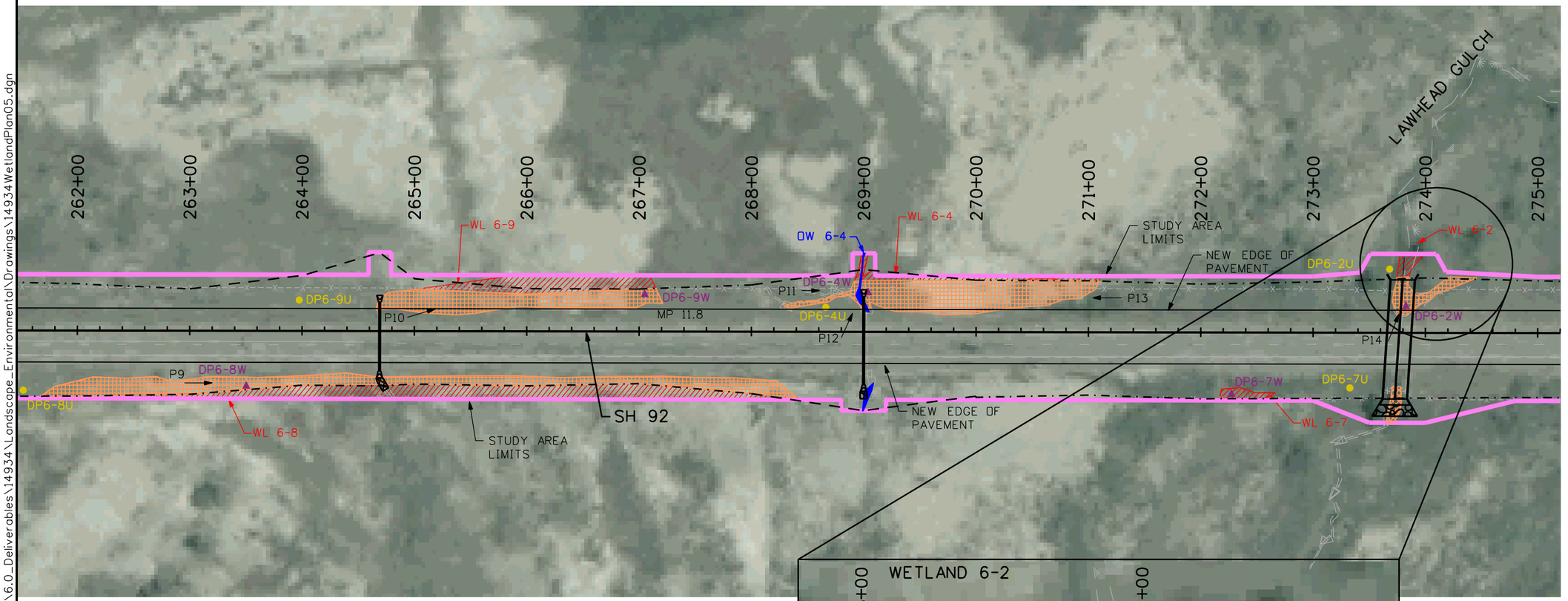

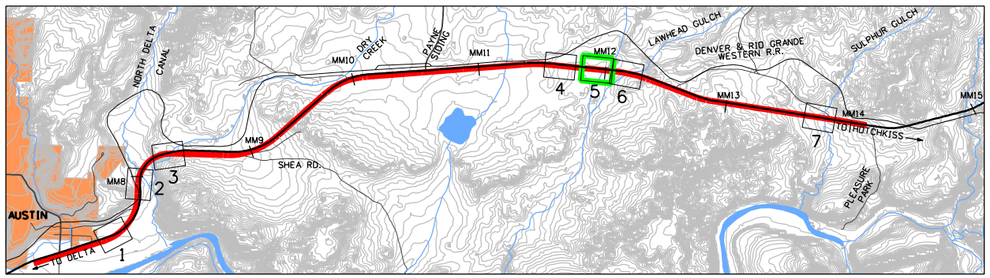

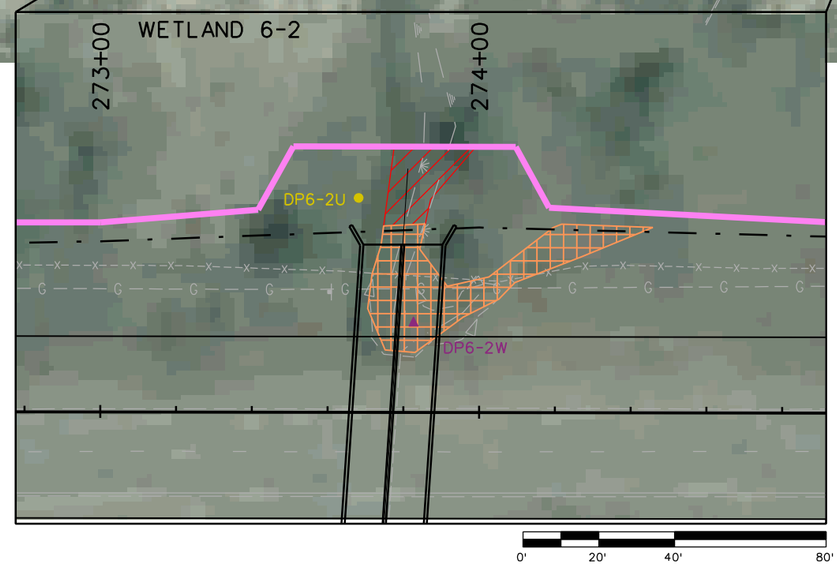

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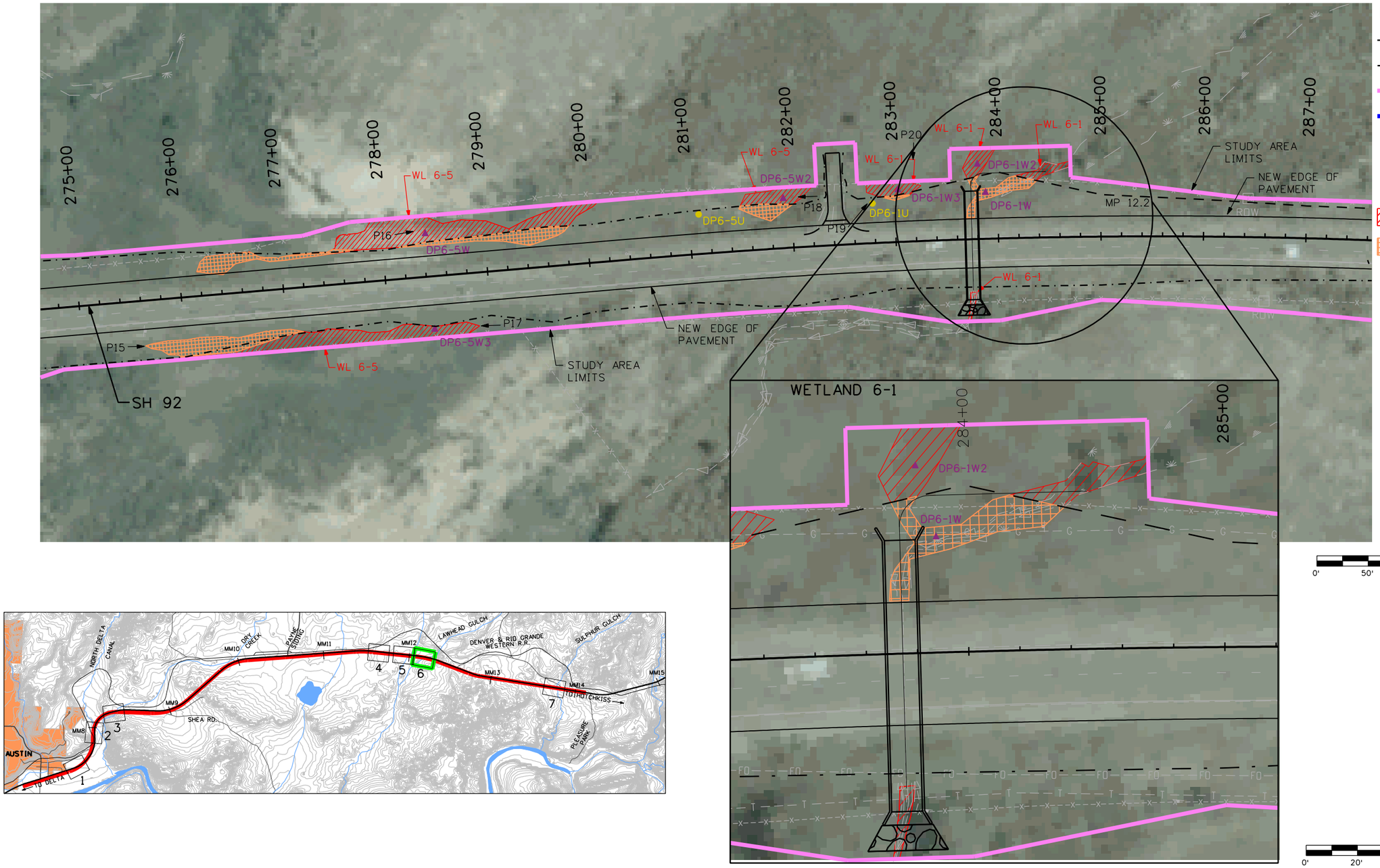

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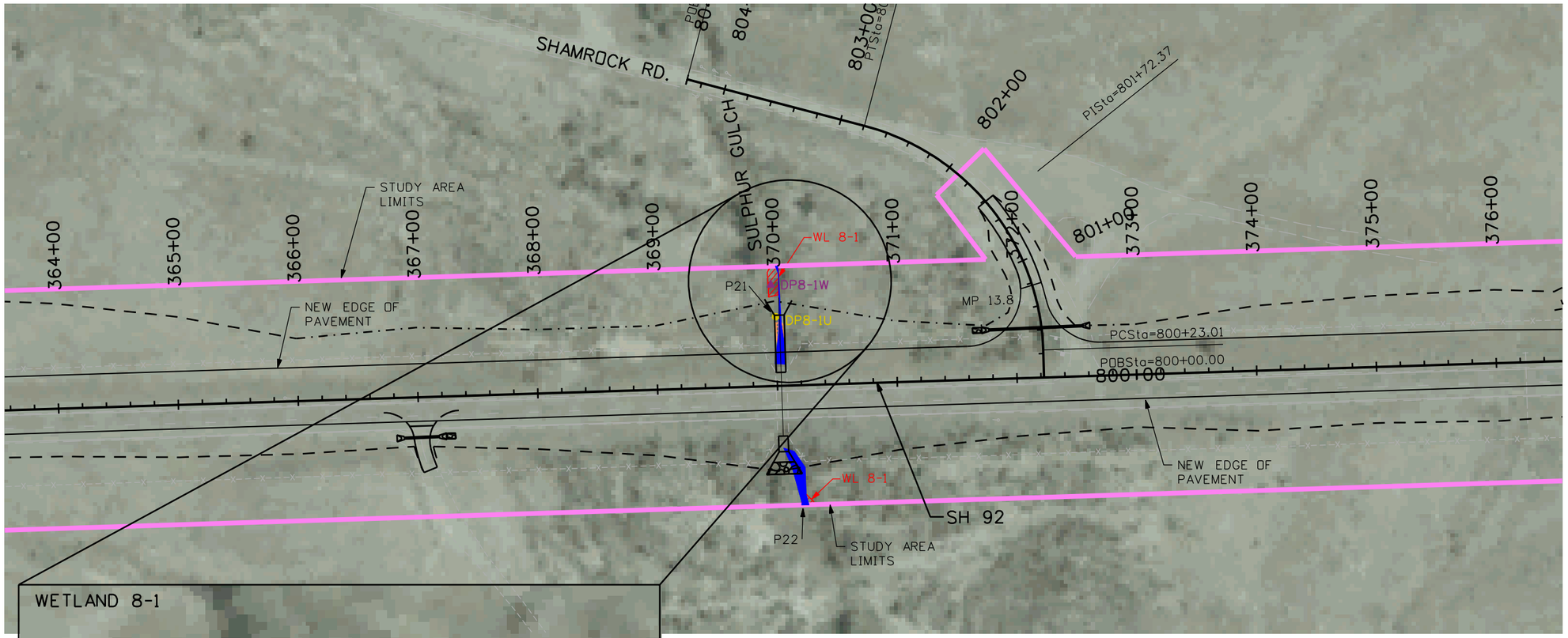

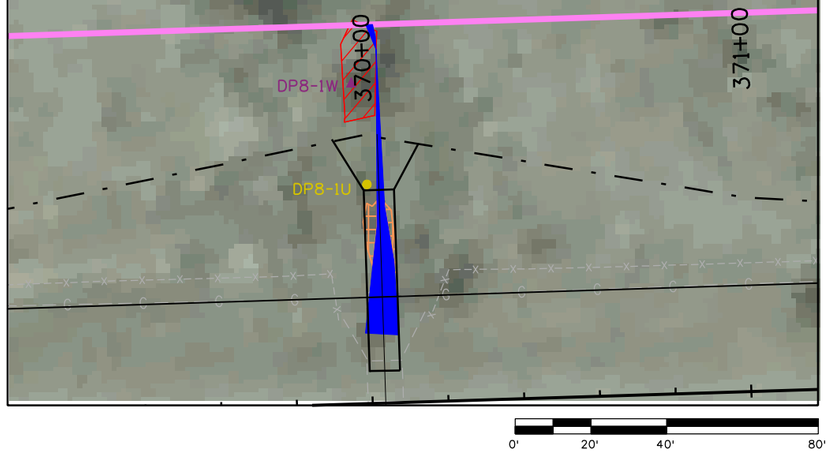

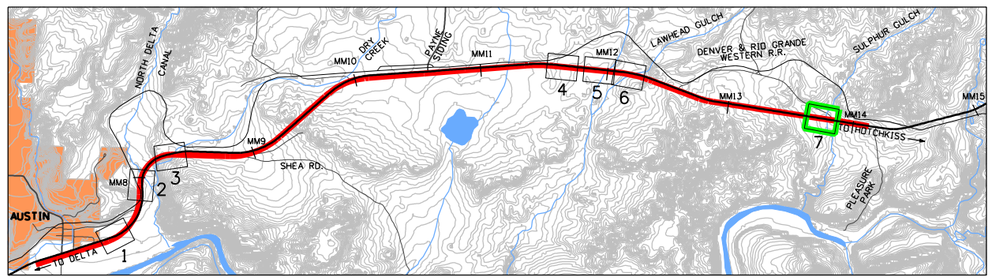

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Appendix B
Site Photographs

Photo 1—Wetland 1-1, looking south at wetland data point (1-1W) and culvert under SH 92

Photo 2—Wetland 1-2, looking west at wetland data point (1-2W)

Photo 3—Wetland and Other Water 1-3 (North Delta Canal), looking east at wetland data point (1-3W)

Photo 4—Wetland 1-4, looking south at wetland data point (1-4W)

Photo 5—Wetland and Other Water 2-1 (Currant Creek), looking west

Photo 6—Other Water 2-2 (Dry Creek), looking north

Photo 7—Wetland and Other Water 6-3 (Oasis Ditch), looking north at wetland data point (6-3W)

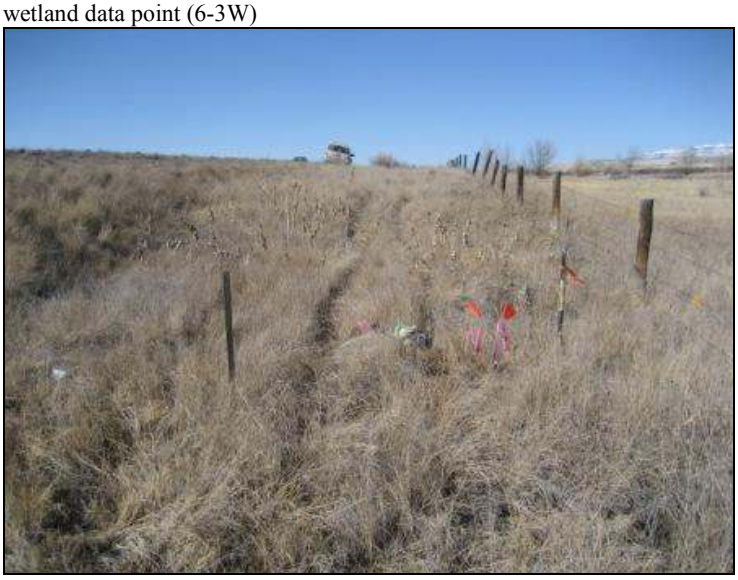

Photo 8—Wetland 6-6, looking west at wetland data point (6-6W)

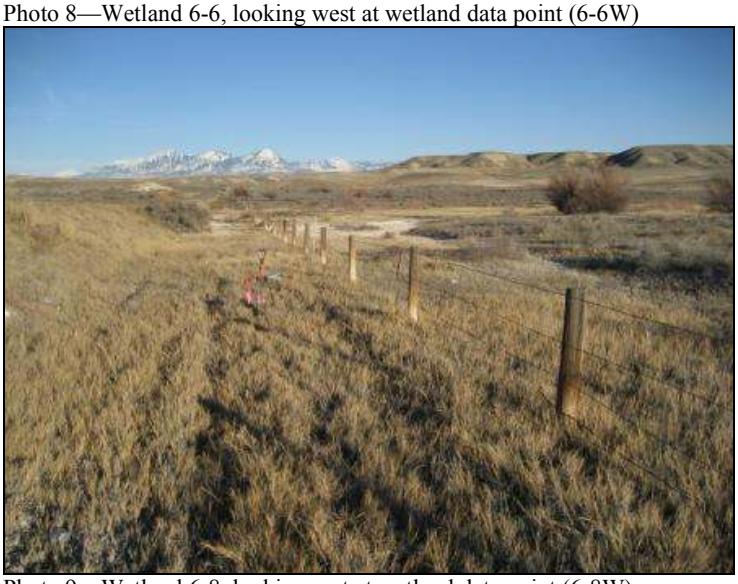

Photo 9—Wetland 6-8, looking east at wetland data point (6-8W)

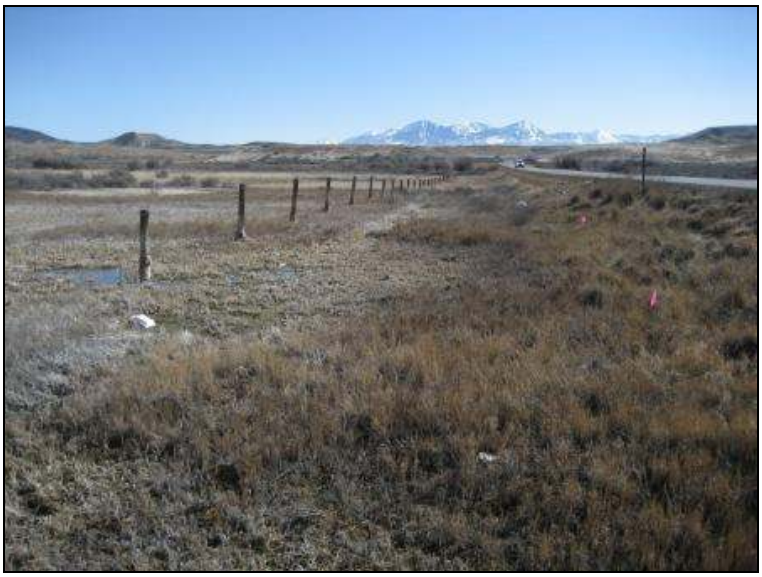

Photo 10—Wetland 6-9, looking east

Photo 11—Wetland 6-4, looking east

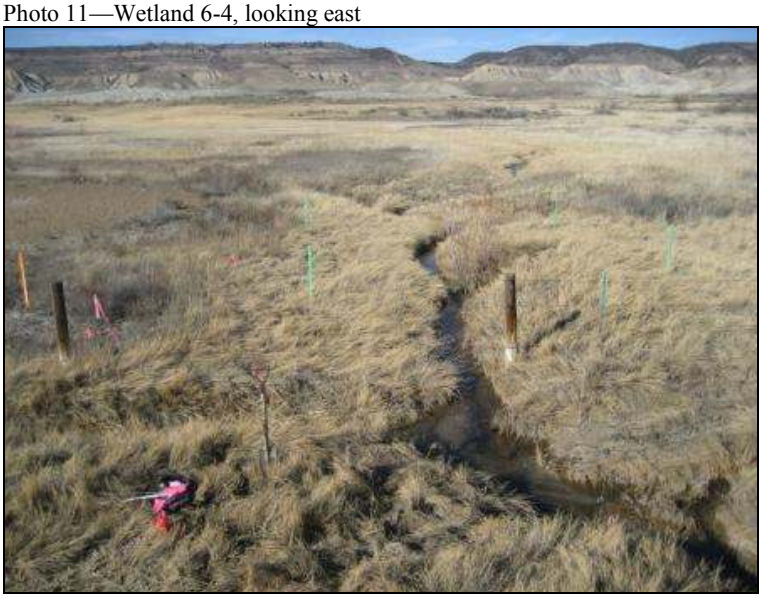

Photo 12—Wetland and Other Water 6-4, looking north

Photo 13—Wetland 6-4, looking west at salt flat area

Photo 14—Wetland 6-2 (Lawhead Gulch), looking north at wetland data point (6-2W)

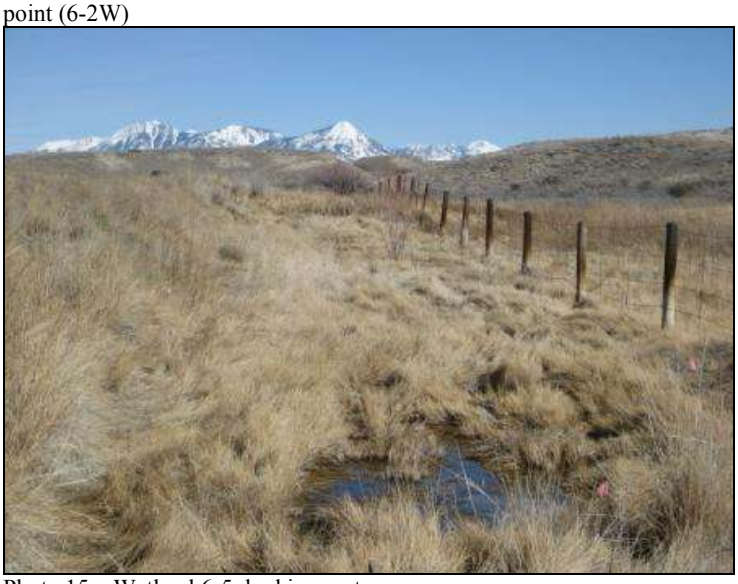

Photo 15—Wetland 6-5, looking east

Photo 16—Wetland 6-5, looking east at wetland data point (6-5W)

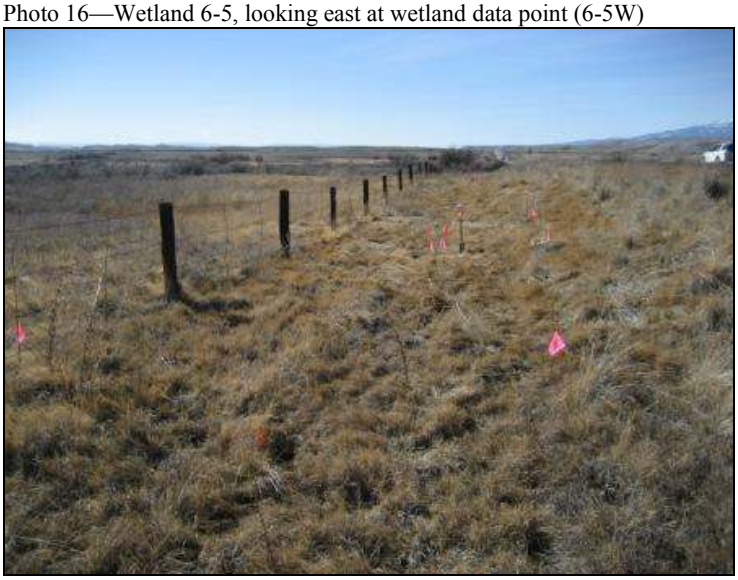

Photo 17—Wetland 6-5, looking west at wetland data point (6-5W3)

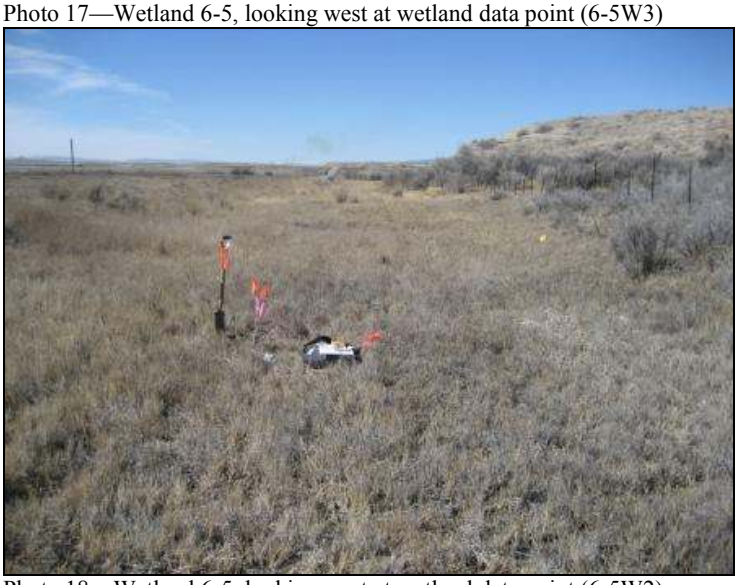

Photo 18—Wetland 6-5, looking west at wetland data point (6-5W2)

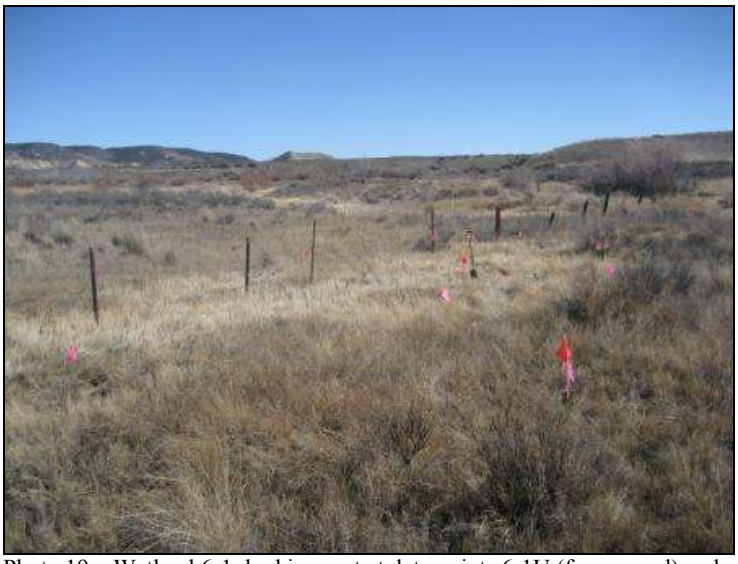

Photo 19—Wetland 6-1, looking east at data points 6-1U (foreground) and 6-1W3 (near fence line in background)

Photo 20—Wetland 6-1, looking south at wetland data point (6-1W2)

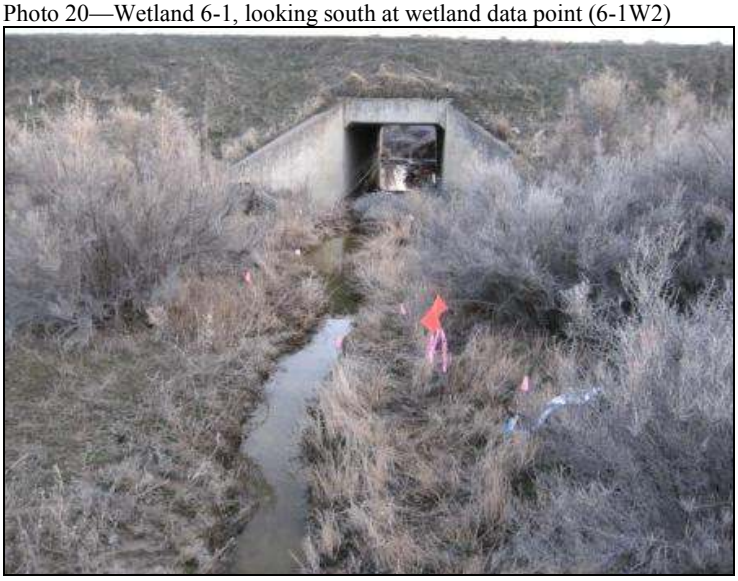

Photo 21—Wetland and Other Water 8-1 (Sulphur Gulch), looking south at SH 92 culvert and wetland data point (8-1W)

Photo 22-Wetland and Other Water 8-1 (Sulphur Gulch), looking north at SH 92 culvert

Appendix C
Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/27/08
Applicant/Owner: CDOT State: CO Sampling Point: 1-1W
Investigator(s): Andy Herb Section, Township, Range: 6, 15S, 94W
Landform (hillslope, terrace, etc.): Roadside depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 46' 52" Long: 107 56 45 Datum: NAD 83
Soil Map Unit Name: Daiser silty clay loam NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____
Hydric Soil Present? Yes ✓ No ____
Wetland Hydrology Present? Yes ✓ No ____
Is the Sampled Area within a Wetland? Yes ✓ No ____

Remarks: WL in swale that crosses SH92; appears to carry irrigation over/return flows; WL continued to lowest portion of swale; see DP1-2U for upland data

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Polygonum monspeliensis	40	✓	FACW
2. Phalaris arundinacea	20	✓	OBL
3. Eleocharis palustris	15		OBL
4. Muhlenbergia asperifolia	5		FACW
5. Typha latifolia	5		OBL
6. Polygonum persicaria	5		FACW
7. Bidens frondosa	5		FACW
8. Distichlis spicata	2		FAC
Total Cover:	99%	50/20	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum <1 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Dense herbaceous veg community in bottom of swale — weedy perimeter. WL continues on south side of road — same veg + hydro. — ~5' diam. culvert under SH92.

SOIL

Sampling Point: 1-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-14	2.5Y 3/1	40	–	–	–	–	clay	
	2.5Y 3/2	50	–	–	–	–	clay	
	2.5Y 2.5/1	10%	–	–	–	–	clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: oxidized rhizospheres, + sulfidic odor throughout; some gravel/cobble mixed in; pit very heterogeneous — no distinct layers; saturated to surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ✓ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Saturated to surface — appears to be irrigation over/return flow — flows south; crayfish observed; 2'(V) cut banks to uplands — grazed by cattle

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 1/8/08
Applicant/Owner: CDOT State: CO Sampling Point: 1-2W
Investigator(s): Andy Herb Section, Township, Range: 6, 15S, 94W
Landform (hillslope, terrace, etc.): Roadside depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 46 52 Long: 107 56 43 Datum: NAD 83
Soil Map Unit Name: Daiser Silty clay loam NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Roadside ditch wetland at edge of irrigated pasture; collects irrigation return/over flow; culverts under SH92 carry water to other side of road — same veg + hydro.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Carex emoryi	40	✓	OBL
2. Schedonorus (Festuca) pratensis	30	✓	FACU
3. Thinopyrum intermedium	10		UPL
4. Muhlenbergia asperifolia	5		FACW
5. Agrostis alba	5		FACW
6. Apocynum cannabinum	5		FAC
7. Typha latifolia	1		OBL
8.			
Total Cover:	96	48/19	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 4 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	41	x 1 =	41
FACW species	10	x 2 =	20
FAC species	5	x 3 =	15
FACU species	30	x 4 =	120
UPL species	10	x 5 =	50
Column Totals:	96 (A)		246 (B)

Prevalence Index = B/A = 2.56

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
✓ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Mixed herbaceous community w/ lots of fescue; some Ulmus pumila + Eleagnus angustifolia on WL perimeter (along fenceline) w/ Bromus inermis understory; high density of A. cannabinum at east end of WL (on north side of road); South side of road has same veg community

Sampling Point: 1-2W

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100	—	—	—	—	clayey	silty clay; sat to surf
4-15	10YR 3/2	100	—	—	—	—	clayey	silty clay; saturated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: No redox features observed; pit in lowest portion of roadside ditch

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Roadside ditch that collects irrigation return/over flow — flows appear to move through + under SR 92 since WL is found on both sides; small culverts present

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 1/8/08
Applicant/Owner: CDOT State: CO Sampling Point: 1-2U
Investigator(s): Andy Herb Section, Township, Range: 6, 15S, 94W
Landform (hillslope, terrace, etc.): Roadside depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 46 52 Long: 107 56 43 Datum: NAD 83
Soil Map Unit Name: Daiser silty clay loam NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of 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 ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Roadside ditch – along fenceline w/some small trees; no wetland

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Elaeagnus angustifolia	25	✓	FAC
2.			
3.			
4.			
Total Cover:	25		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Bromus inermis	90	✓	UPL
2. Thinopyrum intermedium	5		UPL
3. Asclepias speciosa	1		FACW
4. Carex emoryi	1		OBL
5. Asparagus officinalis	1		FACU
6.			
7.			
8.			
Total Cover:	98		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 2 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Edge of wetland along Row fence; data point under Elaeagnus w/ dense Bromus.

Sampling Point: 1-2U

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR 2/2	100	—				Clayey	Silty clay - damp
4-14	10YR 4/2	100	—				clayey	Silty clay - damp

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: No redox features; no indicators

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data point ~ 0.5-1.0'(V) above wetland edge; no indicators; dry

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/27/08
Applicant/Owner: CDOT State: CO Sampling Point: 1-3W
Investigator(s): Andy Herb Section, Township, Range: 6, 15S, 94W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): convex Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 46 56 Long: 107 56 34 Datum: NAD 83
Soil Map Unit Name: Daiser Silty clay loam NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	**Is the Sampled Area within a Wetland?**	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Narrow fringe wetlands along North Delta Canal; extends to both sides of SH92 & culvert under road

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Phalaris arundinacea	90	✓	OBL
2. Distichlis spicata	5		FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	95	47/19	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Narrow fringe wetland along canal; almost exclusively Phalaris; fringe 3-5' wide

Sampling Point: 1-3W

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-14	10YR 3/2	100	—				clayey	silty clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Saturated to surface; lots of fine roots throughout profile

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology provided by capillary action from flows in canal; banks of canal ~ 3' (V) and canal is ~ 15' wide; no flows obs; current saturation likely supplemented by recent snowmelt

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/27/08
Applicant/Owner: CDOT State: CO Sampling Point: 1-3U
Investigator(s): Andy Herb Section, Township, Range: 16, 15S, 94W
Landform (hillslope, terrace, etc.): Roadside depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 46 56 Long: 107 56 34 Datum: NAD83
Soil Map Unit Name: Daisser silty clay loam NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of 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 ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Weedy roadside ditch adjacent to North Delta Canal

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Bromus tectorum	30	✓	UPL
2. Distichlis spicata	20	✓	FAC
3. Bassia scoparia	20	✓	FACU
4. Thinopyrum intermedium	10		UPL
5.			
6.			
7.			
8.			
Total Cover:	80	40/16	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Weedy upland area along roadside; no wetlands

Sampling Point: 1-3U

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/3	95	—				clayey	silty clay loam
	10YR 2/2	5	—				"	"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks: Pit dry – no indicators

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/27/08
Applicant/Owner: CDOT State: CO Sampling Point: 1-4W
Investigator(s): Andy Herb Section, Township, Range: 31, 14S, 94W
Landform (hillslope, terrace, etc.): Roadside depression Local relief (concave, convex, none): concave Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 47 12 Long: 107 56 28 Datum: NAD 83
Soil Map Unit Name: Billings silty clay loam NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Large roadside ditch at toe of natural slope – receives water from breached irrigation ditch to west; wetlands are 80% PEM, 20% PSS

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Muhlenbergia asperifolia	30	✓	FACW
2. Eleocharis palustris	30	✓	OBL
3. Phalaris arundinacea	20	✓	OBL
4. Distichlis spicata	2		FAC
5. Juncus balticus	2		FACW
6.			
7.			
8.			
Total Cover: 84	42/17		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 16 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Roadside ditch w/dense vegetation – mostly herbaceous, but w/ large pockets of Tamarix ramosissima w/Muhlenbergia/Phalaris understory – accounts for ~20% of WL – i.e. 80% PEM, 20% PSS

Sampling Point: 1-4W

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y4/2	100	—				clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Saturated to surface w/1-2" of water on surface in some areas

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 1-2

Water Table Present? Yes ✓ No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Free water at 0"; roadside ditch receives flows from small irrig. ditch to west. Ditch is breached + leaks into wetland; water up to 6" deep in some areas — lots of ice present; no outlet

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/27/08
Applicant/Owner: CDOT State: CO Sampling Point: 1-4U
Investigator(s): Andy Herb Section, Township, Range: 31, 14S, 94W
Landform (hillslope, terrace, etc.): Roadside depression Local relief (concave, convex, none): concave Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 47 13 Long: 107 56 28 Datum: NAD 83
Soil Map Unit Name: Billings silty clay loam NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of 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 ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Roadside ditch that appears to flood occaisionally; some hydrophytes present, but not enough to meet veg criteria; wetland hydrology indicator likely due to recent snowmelt

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Tamarix ramosissima	5	✓	FACW
2.			
3.			
4.			
5.			
Total Cover: 5			
Herb Stratum			
1. Thinopyrum intermedium	15	✓	UPL
2. Melilotus alba	10	✓	FACU
3. Acroptilon repens	10	✓	UPL
4. Distichlis spicata	10	✓	FAC
5. Unknown aster	10	✓	—
6. Elymus trachycaulus	5		FACU
7. Poa pratensis	5		FACU
8.			
Total Cover: 65	33/13		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 35 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Roadside ditch area – very weedy w/ scattered Tamarix; some widely scattered Populus deltoides nearby

Sampling Point: 1-4U

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y4/3	100	—				clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks: No hydric soil indicators

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ____ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Site currently saturated, but likely due to recent snowmelt combined w/ clay soils. No other evidence of water being present at a duration needed to create wetlands

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 1/8/08
State: CO Sampling Point: 2-1W
Applicant/Owner: CDOT
Investigator(s): Andy Herb Section, Township, Range: 31, 14S, 94W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 47 19 Long: 107 56 27 Datum: NAD83
Soil Map Unit Name: Billings silty clay loam NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____
Hydric Soil Present? Yes ✓ No ____
Wetland Hydrology Present? Yes ✓ No ____
Is the Sampled Area within a Wetland? Yes ✓ No ____

Remarks: Current Creek wetlands; narrow fringe wetland in several small pockets immediately adjacent to the channel. Pockets of wood vegetation along creek, but most have no herbaceous layer; wetlands on both sides of SH 92

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	75	✓	FAC
2. Schoenoplectus pungens	10		OBL
3. Xanthium strumarium	1		FAC
4. Eriphamia occidentalis	1		OBL
5. Bassia scoparia	1		FACU
6.			
7.			
8.			
Total Cover:	88	44/18	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 12 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	11	x 1 =	11
FACW species	0	x 2 =	0
FAC species	76	x 3 =	228
FACU species	1	x 4 =	4
UPL species	0	x 5 =	0
Column Totals:	88 (A)		243 (B)

Prevalence Index = B/A = 2.76

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
✓ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Data point on small terrace ~ 1' above OHWM; wetlands have weedy perimeter; pockets of WL veg along channel — not continuous

Sampling Point: 2-1W

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y 3/2	98	7.5YR 4/6	2	C	M	clayey	Sandy clay loam
4-14	2.5Y 3/2	90	7.5YR 4/6	10	C	M	clayey	" " "

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Some gravel in lower layer; saturated to surface; pit on terrace ~1'(V) above OHWM

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Saturated to surface — flows from Current Creek provide hydro — overbank flows + capillary action; channel flows south w/water ~1' deep; 4' wide; 1-3' cut banks in most areas; channel = cobble/gravel; south of SR 92 much more eroded banks

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 1/8/08
Applicant/Owner: CDOT State: CO Sampling Point: 2-1 u
Investigator(s): Andy Herb Section, Township, Range: 31, 14S, 94W
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 5
Subregion (LRR): Interior Deserts Lat: 38 47 19 Long: 107 56 27 Datum: NAD 83
Soil Map Unit Name: Billings silty clay loam NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of 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 ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Upland area above Currant Creek floodplain; mostly Atriplex w/ Distichlis; dry

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	60	✓	FAC
2. Atriplex canescens	15	✓	UPL
3. Thinopyrum intermedium	2		UPL
4. Bassia scoparia	2		FACU
5. Descurainia pinnata	1		UPL
6. Lactuca serriola	1		FACU
7. Eremopyrum triticeum	1		UPL
8.			
Total Cover:	82	40/16	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 19 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Mixed floodplain vegetation – pockets of Atriplex w/upland grasses; data point on edge of dense Atriplex (above floodplain)

Sampling Point: 2-14

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 4/3	95	2.5Y 4/6	5	C	M	clayey	silty clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Some gravel mixed into profile; no distinct layers; No hydric soil indicators

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/29/08

Applicant/Owner: CDOT State: CO Sampling Point: 6-3W

Investigator(s): Andy Herb Section, Township, Range: 27, 14S, 94W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): Interior Deserts Lat: 38 48 10 Long: 107 52 47 Datum: NAD83

Soil Map Unit Name: Chipeta Silty clay NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Narrow fringe wetland along Dash 3 Ditch – extends to both sides of SH 92

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Phalaris arundinacea	65	✓	OBL
2. Distichlis spicata	15		FAC
3. Eleocharis palustris	15		OBL
4. Lactuca Serriola	1		FACU
5.			
6.			
7.			
8.			
Total Cover:	96	48/19	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 4 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Narrow fringe wetland along Dash 3 Ditch; Mostly Phalaris; Mostly weedy perimeter w/ Acroptilon, Bassia, Thinopyrum + Atriplex.

Sampling Point: 6-3W

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	2.5y 4/2	100	—				clayey	silty clay
5-9	2.5y 4/2	98	2.5y 5/6	2	C	M	clayey	" "
9-16	2.5y 3/1	100	—				clayey	" "

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Lowest layers saturated; lowest layer has sulfidic odor; pit on small terrace ~1'(V) above channel

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No ___ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 5

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Free water at 12" after 5 minutes; capillary action from Oasis Ditch; Ditch recently dredged; flows south; currently water flowing ~4' wide and 1-2' deep

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/29/08
Applicant/Owner: CDOT State: CO Sampling Point: 6-3 u
Investigator(s): Andy Herb Section, Township, Range: 27, 14S, 94W
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR): Interior Deserts Lat: 38 48 9 Long: 107 52 47 Datum: NAD83
Soil Map Unit Name: Chipeta Silty clay NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of 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 ✓	No ____	Is the Sampled Area within a Wetland?	Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓		
Wetland Hydrology Present?	Yes ____	No ✓		

Remarks: Small pocket of hydrophytic veg below Oasis Ditch; No wetland, but area likely receives flows when culvert under SH92 clogs.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Bromus inermis	20	✓	UPL
2. Phalaris arundinacea	10	✓	OBL
3. Thinopyrum intermedium	10	✓	UPL
4. Muhlenbergia asperifolia	10	✓	FACW
5. Juncus balticus	10	✓	OBL
6. Bromus tectorum	5		UPL
7. Distichlis spicata	5		FAC
8. Asclepias speciosa	1		FACW
Total Cover:	71	35/14	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 29 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Small pocket of Mostly hydrophytic vegetation at toe of slope below Oasis Ditch; very diversly vegetated

SOIL

Sampling Point: L6-3U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	2.5Y 4/2	100	—				clayey	heavy clay
12-16	2.5Y 4/2	98	5Y 5/4	2	C	M	clayey	" "

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: No redox features – required for 4/2; profile damp

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators – area likely receives water when culvert under SH92 becomes clogged

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/29/08
Applicant/Owner: CDOT State: CO Sampling Point: 6-6W
Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR): Interior Deserts Lat: 38 48 10 Long: 107 52 42 Datum: NAD 83
Soil Map Unit Name: Aquic Natrargids NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	**Is the Sampled Area within a Wetland?**	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Large PEM wetland that extends north of SH 92; part of greater Lawhead Gulch floodplain wetlands; wetland has been interrupted by SH 92; Use Data Point 6-9W for uplands info.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Juncus balticus	80	✓	FACW
2. Distichlis spicata	10		FAC
3. Cirsium arvense	5		FACU
4. Asclepias speciosa	1		FACW
5.			
6.			
7.			
8.			
Total Cover:	96	48/19	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 4 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Large wetland intercepted by SH 92 – continues to north out of study area – weedy perimeter – Bromus tectorum, Descurainia pinnata, Bassia scoparia, Eremopyrum triticeum

Sampling Point: 6-6W

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5y 4/2	100	—				clay	
6-16	2.5 y 4/2	40	—				clay	
	2.5 y 4/1	60	—				clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Pit in lowest part of roadside ditch area; saturated to surface; no redox features obs.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No ___ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Free water at 12" after 5 minutes; hydrology provided by high groundwater associated with the greater Lawhead Gulch floodplain —

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08
Applicant/Owner: CDOT State: CO Sampling Point: 6-8W
Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 48 8 Long: 107 52 36 Datum: NAD 83
Soil Map Unit Name: Aquic Natrargids NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Soil is naturally problematic due to high pH preventing hydric soil indicators from forming – no redox features. Large wetland assoc. w/ Lakewood Gulch floodplain – contains pockets of alkali/mud flats that are devoid of veg.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	25	✓	FAC
2. Suaeda torreyana	25	✓	FAC
3. Suaeda calceoliformis	5		FACW
4.			
5.			
6.			
7.			
8.			
Total Cover:	55	2/3	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 45 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Large salt/clay flat wetland w/pockets lacking vegetation; most of S. torreyana is around wetland edge + in distinct pockets; Distichlis is general sparse and low-growing; Other wetland plants obs, but not at DP: Puccinellia airoides, Muhlenbergia asperifolia, Juncus balticus, Hordeum jubatum, Tamarix ramosissima, Cirsium vulgare

Sampling Point: 6-8W

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5y 4/2	100	—				clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ✓ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Soil w/ value + chroma of 4/2 requires 2% redox features — since this area has high pH (salt on surface - not "crust" - but due to capillary action) - the redox features are likely not formed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology provided by combination of high groundwater and surface ponding associated w/ Lawhead Gulch floodplain.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08

Applicant/Owner: CDOT State: CO Sampling Point: 6-8 U

Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Interior Deserts Lat: 38 48 9 Long: 107 52 39 Datum: NAD 83

Soil Map Unit Name: Aquic Natrargids NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of 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 ____	No ✓	**Is the Sampled Area within a Wetland?**	Yes ____	No ✓
Hydric Soil Present?	Yes ____	No ✓			
Wetland Hydrology Present?	Yes ____	No ✓			

Remarks: Upland roadside ditch area adjacent to WL 6-8; lots of weedy veg cover w/minimal salt on surface.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	35	✓	FAC
2. Bromus tectorum	20	✓	UPL
3. Lactuca serriola	10		FAC
4. Descurainia pinnata	10		UPL
5.			
6.			
7.			
8.			
Total Cover:	75	3/8	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	10	x 4 =	40
UPL species	30	x 5 =	150
Column Totals:	75 (A)		295 (B)

Prevalence Index = B/A = 3.93

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Upland roadside ditch adjacent to wetland 6-8; cover of Bromus tectorum helps define wetland edge; Descurainia present, but not robust

Sampling Point: 6-8U

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y 5/2	100	—				clay	No redox features

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: No redox features, very little salt on surface; no hydric soil indicators; pit on edge of wetland 6-8; pit damp

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators; pit damp; very little salt on ground surface compared w/adjacent wetland (Not crust)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/29/08

Applicant/Owner: CDOT State: CO Sampling Point: 6-9W

Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): Interior Deserts Lat: 38 48 9 Long: 107 52 32 Datum: NAD 83

Soil Map Unit Name: Aquic Natrargids NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	**Is the Sampled Area within a Wetland?**	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Large PEM wetland bisected by SH 92 – South side of road is wetland 6-8; some pockets of salt flat w/5-20% veg cover; associated w/Lawhead Gulch floodplain

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	20	✓	FAC
2. Puccinellia airoides	20	✓	OBL
3. Suaeda calceoliformis	10		FACW
4. Suaeda torreyana	10		FAC
5. Bassia scoparia	10		FACU
6.			
7.			
8.			
Total Cover:	70	3 5/14	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 30 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Large PEM wetland assoc. w/Lawhead Gulch floodplain; pockets of salt flat that have 5-20% total vegetation cover; other plants observed in the wetland (not at DP) include Tamarix ramosissima + Erodium cicutarium; weedy perimeter w/lots of Bromus tectorum, Eremopyrum + Lepidium perfoliatum

SOIL

Sampling Point: 6-9W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5y 4/2	95	2.5y 5/6	5	C	M	clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Some minor salt on surface – not crust - from evap. Many acorn

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology provided by high groundwater and surface ponding associated w/ the Lawhead Gulch floodplain

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/29/08

Applicant/Owner: CDOT State: CO Sampling Point: 6-94

Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): Interior Deserts Lat: 38 48 10 Long: 107 52 35 Datum: NAD 83

Soil Map Unit Name: Aquic Natrargids NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of 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 ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Bassia scoparia	25	✓	FACU
2. Distichlis spicata	15	✓	FAC
3. Lepidium perfoliatum	15	✓	FACU
4. Bromus tectorum	15	✓	UPL
5. Descurainia pinnata	5		UPL
6. Helianthus annuus	1		FACU
7.			
8.			
Total Cover:	76	3 of 15	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 24 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Upland roadside ditch adjacent to large PEM wetland; some old Typha latifolia stems on ground — appears to have been some change in hydrology — no living Typha obs.

SOIL

Sampling Point: 6-94

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5y 4/2	100	—				clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Very few oxidized rhizospheres below 9"; no other redox features; pit damp

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators other than a few oxidized rhizospheres below 9" — may not be living roots — Hydrology must have been altered based on presence of old Typha stems — possible breaching or clogging of Oasis Ditch may have caused formation of Typha stand at one point.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08

Applicant/Owner: CDOT State: CO Sampling Point: 6-4W

Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): Interior Deserts Lat: 38 48 9 Long: 107 52 29 Datum: NAD 83

Soil Map Unit Name: Aquic Natrargids NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	**Is the Sampled Area within a Wetland?**	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Large PEM wetland associated w/ Lambert Gulch floodplain; large salt flats included; some areas inundated w/ >12" of water

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	70	✓	FAC
2. Muhlenbergia asperifolia	15		FACW
3. Cirsium arvense	5		FACU
4. Helianthus annuus	1		FACU
5.			
6.			
7.			
8.			
Total Cover:	91	45/18	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 9 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Large PEM wetland on Lambert Gulch floodplain; large pockets of salt flat that are devoid of vegetation or have < 20% cover; pockets of Suaeda in and around wetland; some recent vehicle disturbance has reduced veg cover close to road

SOIL

Sampling Point: 6-4W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5y4/2	98	2.5y5/6	2	C	M	clayey	- silty clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Most redox features are below 4"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No ___ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Free water at 10" after 10 minutes; pockets of inundation (not at DP) where water is >12" deep (salt flat areas); hydrology associated w/ high groundwater + surface ponding from lowland Gulch floodplain

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08
Applicant/Owner: CDOT State: CO Sampling Point: 6-4U
Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 48 9 Long: 107 52 29 Datum: NAD 83
Soil Map Unit Name: Aquic Natrargids NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of 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 ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Upland area adjacent to large PEM wetland (WL 6-4); recent snowmelt may be cause for saturation.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Bromus tectorum	30	✓	UPL
2. Eremopyrum triticeum	25	✓	UPL
3. Distichlis spicata	15		FAC
4. Bassia scoparia	10		FACU
5. Lactuca Serriola	5		FACU
6. Cirsium arvense	2		FACU
7. Helianthus annuus	1		FACU
8.			
Total Cover:	88	4+/18	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 12 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Upland roadside ditch adjacent to large PEM assoc. w/Lambert Gulch Floodplain (Wetland 6-4); very weedy

SOIL

Sampling Point: 6-44

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	2.5y 4/3	100	—				clayey	Sandy clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No ✓

Remarks: No hydric soil indicators

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Saturated to surface — w/in ~ 6"(V) of wetland - source of saturation may be recent snowmelt

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08
Applicant/Owner: CDOT State: CO Sampling Point: 6-7W
Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 48 8 Long: 107 52 25 Datum: NAD 83
Soil Map Unit Name: Aquic Natrargids NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Small portion of a large PEM wetland associated w/Lawhead Gulch

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	70	✓	FAC
2. Muhlenbergia asperifolia	15		FACW
3. Hordeum jubatum	10		FAC
4.			
5.			
6.			
7.			
8.			
Total Cover:	95	48/19	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Large PEM wetland on edge of study area; lots of Atriplex on perimeter; very close to mainstem of Lawhead Gulch

Sampling Point: 6-7W

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 4/2	95	2.5Y 5/6	5	C	M	clayey	- clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Pit saturated throughout

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No ___ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Free water in pit at 10" after 5 minutes; source of hydrology is likely high groundwater associated w/Lawhead Gulch — apparently groundwater flows from roadway embankment

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08
Applicant/Owner: CDOT State: CO Sampling Point: 6-7U
Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 48 8 Long: 107 52 24 Datum: NAD 83
Soil Map Unit Name: Aquic Natrargids NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of 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 ____	No ✓	Is the Sampled Area within a Wetland?	Yes ____	No ✓
Hydric Soil Present?	Yes ____	No ✓			
Wetland Hydrology Present?	Yes ____	No ✓			

Remarks: Upland roadside ditch near Lawhead Gulch mainstem and wetland 6-7; no wetland.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	40	✓	FAC
2. Bromus tectorum	20	✓	UPL
3. Eremopyrum triticeum	10		UPL
4. Hordeum jubatum	5		FAC
5. Descurainia pinnata	5		UPL
6. Acroptilon repens	5		UPL
7.			
8.			
Total Cover:	85	43/17	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	45	x 3 = 135
FACU species	0	x 4 = 0
UPL species	40	x 5 = 200
Column Totals:	85 (A)	335 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Upland area in roadside ditch near wetland 3-7 and Lawhead Gulch mainstem; some saltgrass, but no wetland; weedy w/ significant areas of Acroptilon.

Sampling Point: 6-7U

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5y4/3	100	—				clayey	- clay
12-16	2.5y4/3	98	2.5y5/6	2	C	M	clayey	- clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Soil damp throughout profile

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Pit damp, but no indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08

Applicant/Owner: CDOT State: CO Sampling Point: 6-2W

Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): Interior Deserts Lat: 38 48 9 Long: 107 52 23 Datum: NAD83

Soil Map Unit Name: Aquic Natrargids NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	**Is the Sampled Area within a Wetland?**	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Lawhead Gulch wetlands – no defined channel for Gulch; part of a large PEM wetland; pockets of very weedy vegetation adjacent to wetland

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	50	✓	FAC
2. Muhlenbergia asperifolia	20	✓	FACW
3. Schoenoplectus maritimus	10		OBL
4. Phalaris arundinacea	10		OBL
5. Juncus balticus	2		FACW
6. Lactuca serriola	2		FACU
7. Asclepias speciosa	1		FACW
8.			
Total Cover:	95	48/19	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Large PEM wetland w/scattered Tamarix along + near mainstem of Lawhead Gulch; pockets of very weedy vegetation adjacent to wetlands — Mostly Acroptilon, Tamarix, and Cirsium arvense.

Sampling Point: 6-2W

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-1	2.5y 3/1	100	—				clayey	loose, roots, silty clay
1-15	2.5y 5/2	95	10yr 4/6	5	C	M	clayey	silty clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Pit w/in 1'(N) of lowhead channel

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 1-4

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No defined channel for Lowhead — filled w/vegetation. Water in lowest areas is flowing south ~ 1-4" deep; hydrology is from high groundwater + surface flows associated w/Gulch itself

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08

Applicant/Owner: CDOT State: CO Sampling Point: 6-2U

Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): Interior Deserts Lat: 38 48 9 Long: 107 52 23 Datum: NAD 83

Soil Map Unit Name: Aquic Natrargids NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of 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 ____	No ✓	**Is the Sampled Area within a Wetland?**	Yes ____	No ✓
Hydric Soil Present?	Yes ____	No ✓			
Wetland Hydrology Present?	Yes ____	No ✓			

Remarks: Upland terrace on Lawhead Floodplain – very weedy – No WL

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	40	✓	FAC
2. Agropyron repens	30	✓	UPL
3. Muhlenbergia asperifolia	10		FACW
4. Cardaria draba	5		UPL
5.			
6.			
7.			
8.			
Total Cover:	85	4/3/17	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

__ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Upland terrace on Lawhead Gulch floodplain – some large Tamarix nearby, but not at DP; very weedy

SOIL

Sampling Point: 6-2U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	2.5y 3/1	100	—				clayey	loose, roots, silty clay
1-14	2.5y 4/2	100	—				clayey	silty clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks: Some calcareous material below 12"; pit damp throughout profile

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators - May flood occassionally when Lawhead flows are extremely high.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08
Applicant/Owner: CDOT State: CO Sampling Point: 6-SW
Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 48 9 Long: 107 52 17 Datum: NAD 83
Soil Map Unit Name: Aquic Natrargids NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	**Is the Sampled Area within a Wetland?**	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Large PEM at toe-of-slope (natural); Appears to be groundwater fed from Lawhead Gulch combined w/surface ponding on heavy clay soil. Extends thru SH 92 to south side (see DP6-SW3). No hydric soil indicators due to high pH.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	30	✓	FAC
2. Muhlenbergia asperifolia	15	✓	FACW
3. Thinopyrum intermedium	5		UPL
4.			
5.			
6.			
7.			
8.			
Total Cover:	50	25/10	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Relatively low veg cover; lots of Atriplex w/Thinopyrum and Distichlis on wetland perimeter;

Sampling Point: 6-5W

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5y 5/2	100	—				clayey	clay
12-16	2.5y 5/2	100	—				clayey	clay/silt stone

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ✓ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: No redox features obs — likely due to high ph't — salt on surface (not crust, but due to capillary action).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No ___ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Saturated from surface down to ~ 5" and below 12" (in lower layer); appears to be high groundwater from Lawtrey floodplain combined w/surface ponding. Salt deposits (from cap. action) on surface. Oxidized rhizos in upper 4".

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08
Applicant/Owner: CDOT State: CO Sampling Point: 6-5W3
Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 48 8 Long: 107 52 17 Datum: NAD 83
Soil Map Unit Name: Aquic Natrargids NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Continuation of wetland 6-5 — south side of SH92 – large PEM complex associated w/Lawhead Gulch floodplain

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	80	✓	FAC
2. Muhlenbergia asperifolia	10		FACW
3. Lactuca serriola	5		FACU
4. Unknown Chenopod	2		—
5.			
6.			
7.			
8.			
Total Cover: 97	47/19		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 3 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Part of PEM wetland complex on Lawhead Gulch floodplain; lots of Acroptilon and Cardaria on perimeter (w/other weeds); lots of other hydrophytic plants in other areas — Typha latifolia, Schoenoplectus pungens + maritima, & Tamarix.

Sampling Point: 6-SW3

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5y 3/1	100	—				clayey	loose, roots, silty clay
4-14	2.5y 5/2	98	2.5y 5/6	2			"	silty clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Pit saturated to surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 1-3

Water Table Present? Yes ✓ No ___ Depth (inches): 1

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: free water at 1"; wetland appears to be supported by high groundwater combined w/surface ponding; source is Lawhead Gulch floodplain high groundwater associated with

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08
Applicant/Owner: CDOT State: CO Sampling Point: 6-SW2
Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 · 48 9 Long: 107 52 13 Datum: NAD 83
Soil Map Unit Name: Aqua Natrargids NWI classification: PEMy
Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	**Is the Sampled Area within a Wetland?**	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Connected to wetland at DP6-5; Supported by high groundwater assoc. w/ Lowhead Gulch; (outside study area) in roadside depression

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	50	✓	FAC
2. Muhlenbergia asperifolia	30	✓	FACW
3. Juncus balticus	5		FACW
4. Hordeum jubatum	2		FAC
5. Cichorium intybus	2		UPL
6.			
7.			
8.			
Total Cover:	89	45/9	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 11 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Small lobe of large PEM that connects to portion of wetland at DP6-5. Located in roadside depression – perimeter area has lots of Thinopyrum, Atriplex, Distichlis + Ericameria nauseosa. Some dead Atriplex in wetland

Sampling Point: 6-SW2

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	2.5Y 2.5/1	100	—				clayey	loose, roots, silty clay
2-16	2.5Y 4/2	98	2.5Y 5/6	2	C	M	clayey	silty clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Oxidized rhizospheres in lower layer;

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 9

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Oxidized rhizos below 2"; high groundwater appears to support wetland (lowland bench floodplain) — may be supplemented w/surface ponding

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08
Applicant/Owner: CDOT State: CO Sampling Point: 6-5U
Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 48 8 Long: 107 52 14 Datum: NAD 83
Soil Map Unit Name: Aquic Natrargids NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of 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 ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Roadside ditch area w/some hydrophytic vegetation and hydric soils; but no hydrology. Area appears to pond surface water occasionally but not enough to create WL's; DP between two lobes of wetland 6-5.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	35	✓	FAC
2. Bromus tectorum	15	✓	UPL
3. Atriplex canescens	5		UPL
4. Unknown Chenopod 1	5		—
5. Unknown Chenopod 2	2		—
6.			
7.			
8.			
Total Cover: 62		31/2	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 38 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Low veg cover; Distichlis is somewhat sparse + low growing; Upland area in roadside ditch – between two parts of wetland 6-5.

Sampling Point: 6-54

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-9	2.5Y4/2	98	2.5Y5/6	2	C	M	clayey	Sandy clay
9-16	2.5Y5/3	100	—				clayey	Sandy clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Soils indicate surface ponding, as opposed to high groundwater; pit damp throughout; limited salt deposits on surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators; based on soils, site appears to pond surface water occasionally but not often enough to create wetlands

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/27/08

Applicant/Owner: CDOT State: CO Sampling Point: 6-1W

Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W

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

Subregion (LRR): Interior Deserts Lat: 38 48 8 Long: 107 52 10 Datum: NAD 83

Soil Map Unit Name: Aquic Natrargids NWI classification: PEMy

Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No _____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No _____**
Hydric Soil Present?	Yes ✓ No _____		
Wetland Hydrology Present?	Yes ✓ No _____		

Remarks: PEM wetland associated w/Lawhead Gulch tributary; continues to South side of SH 92

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	70	✓	FAC
2. Juncus balticus	10		FACW
3. Schoenoplectus maritimus	5		OBL
4. Muhlenbergia asperifolia	5		FACW
5. Phalaris arundinacea	2		OBL
6. Linaria vulgaris	2		UPL
7.			
8.			
Total Cover:	94	47/18	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 6 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: PEM wetland associated w/Lawhead Gulch tributary; very weedy perimeter; very small floodplain – wetlands encompass most of it

Sampling Point: 6-1W

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 4/2	70	—				clayey	- clay
	2.5Y 2.5/1	20	—				clayey	- clay
	—	10	—				gravel	
6-14	2.5Y 2.5/1	90	7.5Y 4/6	5	C	M	clayey	- clay
	—	10	—				gravel	- some cobble

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Pit 6-10" (V) above lowest part of wetland; some oxidized rhizos in upper layer

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 2-4

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Mostly vegetated "channel" in lowest part of wetland is flowing w/water 2-4" deep; hydrology from Lawhead Gulch tributary via high groundwater and surface flows

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08

Applicant/Owner: CDOT State: CO Sampling Point: 6-1W2

Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W

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

Subregion (LRR): Interior Deserts Lat: 38 48 9 Long: 107 52 10 Datum: NAD83

Soil Map Unit Name: Aquic Natrargids NWI classification: PEMJ

Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	**Is the Sampled Area within a Wetland?**	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Wetland arm of Lawhead Gulch Tributary – sustained by high groundwater and surface flows; some small upland areas have been included – very irregular topography on floodplain

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	60	✓	FAC
2. Muhlenbergia asperifolia	15		FACW
3. Unknown aster	10		–
4. Iva axillaris	5		FACW
5. Schoenoplectus maritimus	5		OBL
6. Cichorium intybus	2		UPL
7.			
8.			
Total Cover:	97	48/19	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 3 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Lobe of wetland associated w/ Lawhead Gulch Tributary; floodplain has very irregular topography w/ pockets of upland mixed w/ wetland; small upland pockets have been included (contain more Cichorium + Aster than other wetland areas)

Sampling Point: 6-1W2

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	2.5y2.5/1	100	—				clayey	-silty clay
2-14	2.5y4/2	40	2.5y5/6	20	C	M	"	" "
	2.5y3/1	40					"	" "

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Oxidized rhizospheres in lower layer; pit saturated to surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology provided by Landreard Tributary — via surface flows + high groundwater

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08
Applicant/Owner: CDOT State: CO Sampling Point: 6-1W3
Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 48 8 Long: 107 52 11 Datum: NAD 83
Soil Map Unit Name: Aquic Natrargids NWI classification: PEMA
Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Small, low-lying pocket of PEMA wetland associated w/ Lowland Tributary – separate, but hydrologically connected

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	60	✓	FAC
2. Hordeum jubatum	10		FAC
3. Muhlenbergia asperifolia	10		FACW
4. Bromus tectorum	2		UPL
5. Cirsium arvense	2		FACU
6. Lactuca serriola	2		FACU
7.			
8.			
Total Cover:	86	43/17	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 14 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Small pocket of PEMA wetland associated w/ Lowland tributary; robust Distichlis; some Chrysothamnus nauseosa + Atriplex along perimeter

Sampling Point: G-1W3

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	2.5Y 3/2	100					clayey	silty clay
2-16	2.5Y 4/2	98	2.5Y 5/6	2	C	M	"	" "

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Most redox features are faint

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No ___ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 4

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: free water at 12" after 15 minutes — source is high groundwater associated w/ Lawhead Tributary —

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08

Applicant/Owner: CDOT State: CO Sampling Point: 6-1 U

Investigator(s): Andy Herb Section, Township, Range: 26, 14S, 94W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): Interior Deserts Lat: 38 48 8 Long: 107 52 12 Datum: NAD83

Soil Map Unit Name: Aquic Natrargids NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of 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 ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Borderline wetland area – no hydrophytic veg – presence of UPL shrubs and other upland plants indicate non-wetlands. Hydric soils borderline.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	30	✓	FAC
2. Bromus tectorum	20	✓	UPL
3. Atriplex canescens	15		UPL
4. Juncus baltricus	10		FACW
5. Lactuca serriola	10		FACU
6. Hordeum jubatum	5		FAC
7. Ericameria nauseosa	5		UPL
8. Cirsium arvense	2		FACU
Total Cover:	97	48/19	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 3 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Upland roadside ditch area near wetland 6-1; vegetatively diverse, but no wetland. Distichlis is not robust + is well-mixed w/other upland species.

Sampling Point: 6-14

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	2.5y 2.5/1	100					clayey	loose, roots, silty clay
1-9	2.5y 4/3	100					"	silty clay
9-14	2.5y 4/3	98	2.5y 5/6	2			"	" "

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Meets F3 indicator, but barely. Some oxidized rhizos in lower layer

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 6

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Although site currently has hydrology — based on presence of Atriplex (UPL) + Ericameria (UPL), the site doesn't likely contain wetland hydrology for a duration to create wetlands. Oxidized rhizos do not appear to be associated w/ living roots

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/27/08
Applicant/Owner: CDOT State: CO Sampling Point: 8-1W
Investigator(s): Andy Herb Section, Township, Range: 36, 14S, 94W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR): Interior Deserts Lat: 38 47 52 Long: 107 50 24 Datum: NAD83
Soil Map Unit Name: Billings silty clay loam NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of 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 ✓ No ____	**Is the Sampled Area within a Wetland?**	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Narrow PEM fringe supported by Sulphur Gulch; soils + veg are somewhat borderline, but included as wetland based on setting + hydrology

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Distichlis spicata	50	✓	FAC
2. Hordeum jubatum	10	✓	FAC
3. Bassia scoparia	2		FACU
4.			
5.			
6.			
7.			
8.			
Total Cover:	62	3/6	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 38 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Narrow PEM fringe along Sulphur Gulch channel; very weedy perimeter w/ Acroptilon; lots of Atriplex on perimeter; some large Tamarix nearby. Fringe not continuous, but some on south side of SH92 also

SOIL

Sampling Point: 8-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	2.5Y 4/2	98					clayey	clay
	-	2	-					calcareous material

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ✓ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: High soil pH may preclude formation of redox features; based on setting + presence of other two indicators — include soils as hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 6

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Small Sulphur Gulch channel provides hydrology; flowing south w/water 1.5' wide + 6" deep — silty clay bottom

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SH 92 Austin City/County: Austin/Delta Sampling Date: 2/28/08

Applicant/Owner: CDOT State: CO Sampling Point: 8-14

Investigator(s): Andy Herb Section, Township, Range: 36, 14S, 94W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): Interior Deserts Lat: 38 47 52 Long: 107 50 24 Datum: NAD83

Soil Map Unit Name: Billings Silty clay loam NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of 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 ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Upland terrace ~ 1'(V) above Sulphur Gulch; dry + weedy

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Bromus tectorum	40	✓	UPL
2. Aeroptilon repens	20	✓	UPL
3. Bassia scoparia	5		FACU
4.			
5.			
6.			
7.			
8.			
Total Cover:	65	3 3/13	
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 35 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Upland terrace along Sulphur Gulch – DP w/in 1'(V) of channel

SOIL

Sampling Point: 8-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5y 4/2	98					clayey	clay
	—	2						calcareous material

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Redox features may not have formed due to high pH, but vegetation does not support that theory; some cobble below 12"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Saturated to surface, but may be result of recent snowmelt being held by heavy clay. Pit ~ 1'(V) above channel of Sulphur Gulch

Appendix D
Wetland Mitigation Site Selection Form

Wetland Mitigation Site Selection Form
Colorado Department of Transportation
Attachment to Wetland Finding

Project Name	**SH 92 Austin**
Project Number	**STA 092A-018**
Sub-account Number	**14934**
Author Name	**Andy Herb (AlpineEco)**
CDOT Region or Firm	**Region 3**
Date Submitted	**March 14, 2008**

Mitigation Options Available	**(1) Mitigation bank available?** (yes/no)	**Yes**
	(2) Project impacts in 1^{o}, 2^{o} service area?	**2^{o}**
	(3) HUC units	14020005 (Lower Gunnison)
	(4) On-site mitigation available? (yes/no)	**Yes**
	(5) Off-site mitigation available? (yes/no)	**Yes**
	(6) In-lieu fee arrangement available? (yes/no)	**No**
	(7) Mitigation ratio(s) used (mitigation : impact)	**1:1**

		Impact Site	**Mitigation Site**
Site Characteristics	**(8) Geographic location**	Between 13 354063.655N, 301486.881E (west end) and 13 359416.205N, 335150.424E (east end)	WetBank in Gunnison, Colorado; with some minor on-site willow planting at Currant Creek
	(9) Cowardin Classification, size of each type	PEM, 1.34 acres; 1.10 acres of "natural" wetlands and 0.24 acre of irrigation-related wetlands	100% PEM
	(10) Functions, values	Natural wetlands: high ratings for wildlife habitat, water storage, and sediment stabilization. Irrigation-related wetlands only have high ratings for sediment stabilization.	Primarily wildlife habitat
	(11) Size of impacts, % of total area	0.68 acre (29,677 sf)	NA
Wildlife/Habitat	**(12) T&E species/habitat present?**	No	No
	(13) Species? Status?	NA	NA
	(14) Migratory Bird Treaty Act?	Swallow nests observed on Currant Creek bridge; other potential nesting sites associated with woody vegetation in study area. Remove nests and nesting habitat only during non-nesting season (between September 15 and February 15).	If on-site mitigation work will involve clearing of woody vegetation or other nesting habitat, it should be done during the non-nesting season.

		Impact Site	Mitigation Site
	(15) Other wildlife issues?	Potential for wintering bald eagles (observed roosting near MP 11); protected by Bald and Golden Eagle Protection Act. If birds are seen regularly during construction, contact US Fish and Wildlife Service for guidance.	Potential for wintering bald eagles (observed roosting near MP 11); protected by Bald and Golden Eagle Protection Act. If birds are seen regularly during construction, contact US Fish and Wildlife Service for guidance.
	(16) Status of aquatic resource?	No special status	No special status
	(17) Special aquatic site?	Yes; wetlands	Small wetlands are present at Currant Creek. Avoid and minimize impacts to these wetlands during on-site mitigation work.
	(18) Unique? Quality? Ranking?	Lawhead Gulch floodplain wetlands moderately unique due to size, perennial water source, and salt flats.	No.
	(19) Watershed, ecosystem issues?	None known	Currant Creek likely receives some agricultural runoff
Other	(20) Likelihood of success?	NA	100% for mitigation bank; high success likely for willow plantings installed at Currant Creek if placed within 12 inches (vertical) of low-flow surface water elevation
Other	(21) Interagency agreement?	NA	No
Other	(22) Project logistics, size/scope?	NA	Minimal logistics since impacts will be officially mitigated at the bank; on-site work will be very small and will consist only of willow plantings.
Other	(23) Cost considerations?	NA	Costs of bank will be negotiated by CDOT personnel; costs for willow plantings are minimal
Other	(24) Buffer used?	No	No
Water Issues	(25) Individual 404 permit condition?	No	No
Water Issues	(26) 404 (b)(1) Guidelines?	No	No
Water Issues	(27) NWP gen. reg. conditions?	No	No
Water Issues	(28) Regulatory letters?	No	RGL 02-2
Water Issues	(29) S.B. 40?	Yes. Will need certification.	No. If needed, on-site work should be covered under the SB 40 for the roadway improvements.
Water Issues	(30) Water rights issues?	NA	No. No net gain in wetland area.
NEPA Issues	(31) Cumulative impact issues?	No	NA
NEPA Issues	(32) Agency policy, input?	No	NA
NEPA Issues	(33) Public involvement?	No	NA

(34) Basis for Decision (Describe factors that are instrumental in the selection of the chosen mitigation decision.)

A wetland mitigation bank will be utilized for the official mitigation of permanent impacts since one is available in the region. Using the bank will reduce costs and minimize logistics issues. Some on-site willow plantings will be done at Currant Creek where there is adequate water and existing ROW.

(35) Decision

Use mitigation bank: WetBank in Gunnison, Colorado for all permanent impacts, except those at Currant Creek which will be compensated for on-site.

(36) Contingency Plans

None.