

404 Permit Process

Jared Bechtol

Samantha Porec

404 Permit Liaisons

Jared and I process 404 applications- we determine what type of 404 a project will require and take the necessary steps to get that permit. Most of you are probably familiar with Jared and I hope to meet more of you, I'm rounding out my first year with ODOT. I attended OKLA State Univ and earned a degree in natural resources ecology & management I also have a masters of science with an emphasis in environmental & ecological protection- I started doing field research as a technician in College and have never been able to get away from it! – In addition I have taken the Wetland Delineation class and was fortunate to have Bob Pierce as my instructor who is one of the original authors of the 1987 USACE Wetland Delineation Manual and extremely knowledgeable.

Wetlands

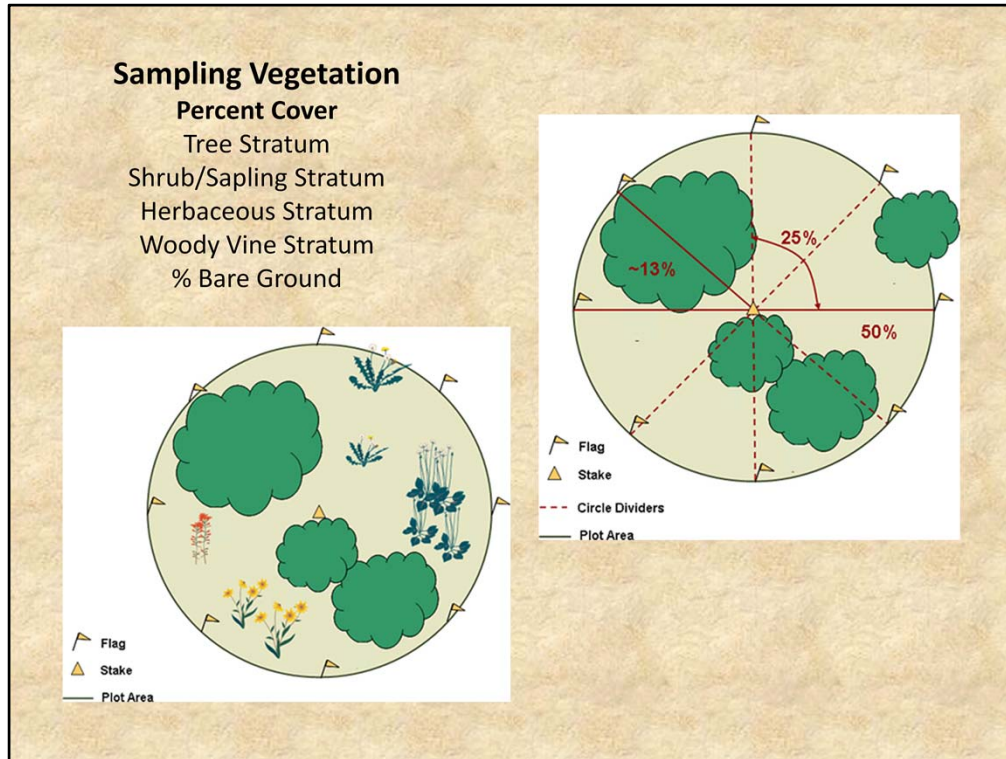
- What is a wetland?
- How do delineators make that determination?
- Are you sure this is a wetland?

Shane mentioned the definition of a wetland but what really makes an area a wetland? One of the things I hear most often is “there was no water there, it’s not a wetland”. Unfortunately, it is not that simple. Wetlands are complex systems and making the determination is a somewhat complex process.

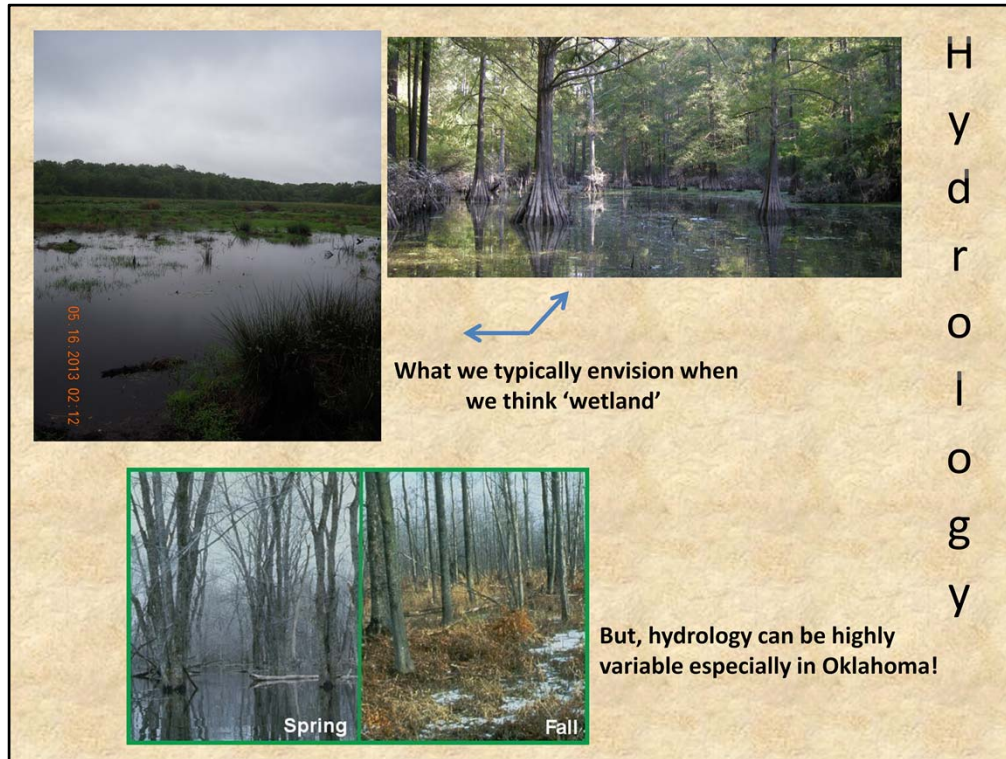
Field Work

- For an area to be deemed a wetland it must meet 3 criteria:
 - Vegetation
 - **Hydrology**
 - Soils
- Criteria and procedure as described in the **1987 Corps of Engineers Wetland Delineation Manual** and the **applicable Regional Supplement**
- Not only are biologists identifying the vegetation and considering their ecology we must also read the soils and understand where the hydrology in an area is coming from

Wetland delineators rely on 3 positive findings of vegetation, hydrology and soils to call an area a wetland. For the corps the 7.5 min quads are the “bible” but for delineators the 1987 COE manual and the applicable supplements are the “bible”.

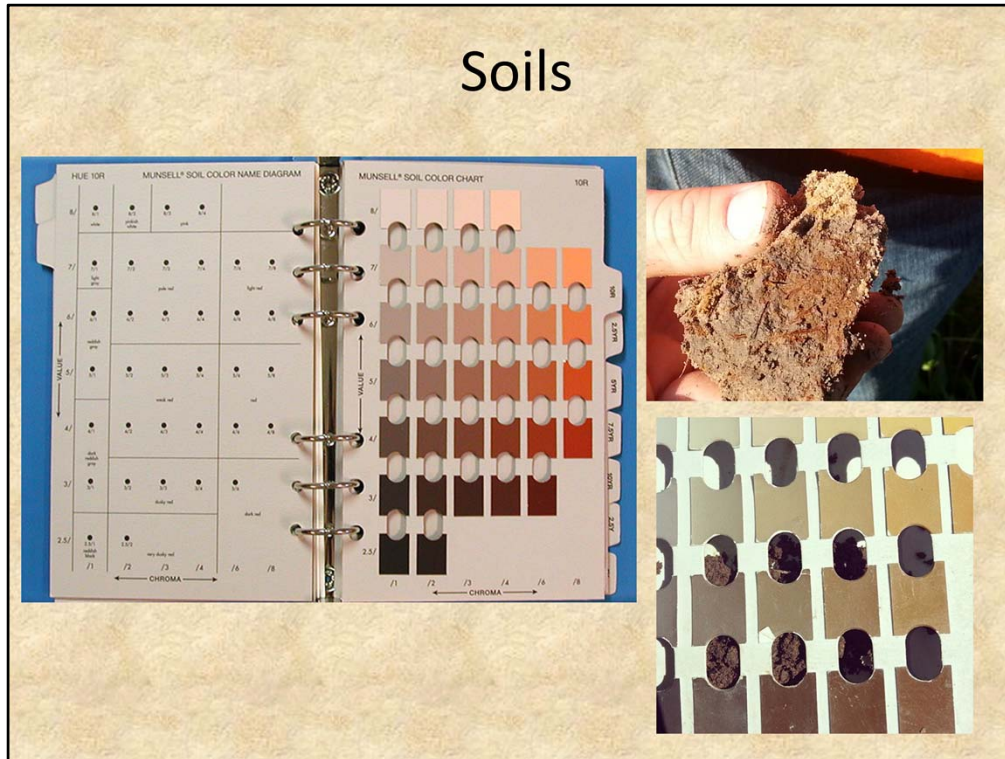


We'll start with vegetation. The USACE has a National Wetland Plant List – this list assigns each species an indicator status which is regionally dependent because a plant may be indicative of a moisture regime in one ecoregion and be totally different in another- so you look for the indicator within the region you are sampling. The indicator status' are: OBL, FAWC, FAC, & FACU- So- for example our process is to identify all of the plants within our sample plot first to know if the vegetation will be considered wetland vegetation. In order for the vegetation in an area to be positively identified as wetland vegetation 50% of the Dominant Species within our sampling plot (which is typically a 30 M plot) must be FAC or Wetter. (FAC, FACW, or OBL). This is an example of a sample plot- you can see the different layers identified. Important to remember that Oklahoma is extremely variable from E > W so the vegetation can give delineators a really good idea of what is going on in an area OR it could totally throw you off!! ☺



Both of these photos are wetlands in Oklahoma- on the left is a photo taken by Joan at Boehler Seeps on the right is a photo of a Cypress marsh in the Little River NWR and for most of us this is what we envision when we think 'wetland'. Hydrology is key and sometimes it is blatantly obvious where the water in an area is coming from- topographically speaking much of the time wetlands will be found in low spots but this is not always the case. Jared and I recently delineated a wetland on I-40 that is on the side of a hill- the water is seeping from underground and the area is a strong wetland (called a groundwater slope wetland)- but initially we just couldn't wrap our heads around why there was a wetland on this hill! Without hydrology an area cannot be a wetland but hydrology is highly variable and seasonal. As you can see the photo at the bottom reflects how seasonal inundation can be and as Shane mentioned the water only needs to be perched a short amount of time during the growing season so the likelihood of encountering inundation at a wetland, especially in Oklahoma, is highly variable!

Soils



How do we know that the soils in an area are “wetland soils” – The soil color is what tell us whether there is water in an area. This is an example of a nice grey soil matrix with iron concentrations very indicative of hydric soils HOWEVER there are different indicators of hydric soils and we won’t get too technical for the most part we are looking for concentrations and depletions' of iron because the anaerobic conditions created by water are what create those soil indicators.

Data Form- Great Plains Region

WETLAND DETERMINATION DATA FORM - Great Plains Region																																																																																																																																																																																			
Project/Client: _____		City/County: _____		Sampling Date: _____																																																																																																																																																																															
Applicant/Owner: _____		State: _____		OK		Sampling Point: _____																																																																																																																																																																													
Investigator(s): _____		Date: _____		Section, Township, Range: _____																																																																																																																																																																															
Landform (ridge, terrace, etc.): _____		Local relief (concave, convex, none): _____		Slope (%): _____																																																																																																																																																																															
Subregion (LRR): _____		Lat: _____		Long: _____		Datum: _____		NA03																																																																																																																																																																											
Soil Map Unit Name: _____		MWI Classification: _____																																																																																																																																																																																	
Are climatic/hydrologic conditions on the site typical for this time of year? Yes <input type="checkbox"/> No <input type="checkbox"/> (If no, explain in Remarks.)																																																																																																																																																																																			
Are vegetation, soil, or hydrology significantly disturbed? Yes <input type="checkbox"/> No <input type="checkbox"/> (If no, explain in Remarks.)																																																																																																																																																																																			
Are vegetation, soil, or hydrology naturally preserved? Yes <input type="checkbox"/> No <input type="checkbox"/> (If needed, explain any answers in Remarks.)																																																																																																																																																																																			
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.																																																																																																																																																																																			
<table border="1"> <tr> <td>Hydrophytic Vegetation Present?</td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> <td>In the Sampled Area</td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> </tr> <tr> <td>Hydroic Soil Present?</td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> <td>within a wetland?</td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> </tr> <tr> <td>Wetland Hydrology Present?</td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> <td></td> <td></td> </tr> </table>										Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	In the Sampled Area	Yes <input type="checkbox"/> No <input type="checkbox"/>	Hydroic Soil Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	within a wetland?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>																																																																																																																																																																
Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	In the Sampled Area	Yes <input type="checkbox"/> No <input type="checkbox"/>																																																																																																																																																																																
Hydroic Soil Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	within a wetland?	Yes <input type="checkbox"/> No <input type="checkbox"/>																																																																																																																																																																																
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>																																																																																																																																																																																		
Remarks: _____																																																																																																																																																																																			
VEGETATION - Use scientific names of plants.																																																																																																																																																																																			
<table border="1"> <tr> <th>Tree Stratum (Plot size: 30')</th> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> <th>Dominance Test Worksheet:</th> </tr> <tr> <td>1. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>Number of Dominant Species That Are OBL, FACW, or FAC _____ (A)</td> </tr> <tr> <td>2. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>Total Number of Dominant Species Across All Strata _____ (B)</td> </tr> <tr> <td>3. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>Percent of Dominant Species That Are OBL, FACW, or FAC _____ (A/B)</td> </tr> <tr> <td>4. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td></td> </tr> <tr> <td colspan="5">Shrub/Grass Stratum (Plot size: 30')</td> </tr> <tr> <td>1. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>Prevalence Index Worksheet:</td> </tr> <tr> <td>2. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>Total % Cover of _____</td> </tr> <tr> <td>3. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>Multiplier by _____</td> </tr> <tr> <td>4. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>OBL species _____ x 1 = _____</td> </tr> <tr> <td colspan="5"></td> </tr> <tr> <td colspan="5">FACW species _____ x 2 = _____</td> </tr> <tr> <td colspan="5">FAC species _____ x 3 = _____</td> </tr> <tr> <td colspan="5">FACU species _____ x 4 = _____</td> </tr> <tr> <td colspan="5">UPL species _____ x 5 = _____</td> </tr> <tr> <td colspan="5">Column Total: _____ (A) _____ (B)</td> </tr> <tr> <td colspan="5">Herb Stratum (Plot size: 5')</td> </tr> <tr> <td>1. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>Prevalence Index = B/A = _____</td> </tr> <tr> <td>2. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>Hydrophytic Vegetation Indicators:</td> </tr> <tr> <td>3. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>1 - Presence Test for hydrophytic vegetation</td> </tr> <tr> <td>4. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>2 - Dominance Test is > 10%</td> </tr> <tr> <td>5. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>3 - Prevalence Test is > 3.0</td> </tr> <tr> <td>6. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>4 - Morphological Adaptations (provide supporting data in Remarks or on a separate sheet)</td> </tr> <tr> <td>7. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>Probable hydrophytic vegetation? (Explain)</td> </tr> <tr> <td>8. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td></td> </tr> <tr> <td>9. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td></td> </tr> <tr> <td>10. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td></td> </tr> <tr> <td colspan="5">Woody Vine Stratum (Plot size: 30')</td> </tr> <tr> <td>1. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input type="checkbox"/></td> </tr> <tr> <td>2. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td></td> </tr> <tr> <td>3. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td></td> </tr> <tr> <td>4. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td></td> </tr> <tr> <td colspan="5">% Bare Ground in Herb Stratum _____</td> </tr> <tr> <td colspan="5">Remarks: (include photo numbers here or on a separate sheet.)</td> </tr> </table>										Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC _____ (A)	2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata _____ (B)	3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC _____ (A/B)	4. _____	_____	_____	_____		Shrub/Grass Stratum (Plot size: 30')					1. _____	_____	_____	_____	Prevalence Index Worksheet:	2. _____	_____	_____	_____	Total % Cover of _____	3. _____	_____	_____	_____	Multiplier by _____	4. _____	_____	_____	_____	OBL species _____ x 1 = _____						FACW species _____ x 2 = _____					FAC species _____ x 3 = _____					FACU species _____ x 4 = _____					UPL species _____ x 5 = _____					Column Total: _____ (A) _____ (B)					Herb Stratum (Plot size: 5')					1. _____	_____	_____	_____	Prevalence Index = B/A = _____	2. _____	_____	_____	_____	Hydrophytic Vegetation Indicators:	3. _____	_____	_____	_____	1 - Presence Test for hydrophytic vegetation	4. _____	_____	_____	_____	2 - Dominance Test is > 10%	5. _____	_____	_____	_____	3 - Prevalence Test is > 3.0	6. _____	_____	_____	_____	4 - Morphological Adaptations (provide supporting data in Remarks or on a separate sheet)	7. _____	_____	_____	_____	Probable hydrophytic vegetation? (Explain)	8. _____	_____	_____	_____		9. _____	_____	_____	_____		10. _____	_____	_____	_____		Woody Vine Stratum (Plot size: 30')					1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input type="checkbox"/>	2. _____	_____	_____	_____		3. _____	_____	_____	_____		4. _____	_____	_____	_____		% Bare Ground in Herb Stratum _____					Remarks: (include photo numbers here or on a separate sheet.)				
Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																																																																																																																																																																															
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC _____ (A)																																																																																																																																																																															
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata _____ (B)																																																																																																																																																																															
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC _____ (A/B)																																																																																																																																																																															
4. _____	_____	_____	_____																																																																																																																																																																																
Shrub/Grass Stratum (Plot size: 30')																																																																																																																																																																																			
1. _____	_____	_____	_____	Prevalence Index Worksheet:																																																																																																																																																																															
2. _____	_____	_____	_____	Total % Cover of _____																																																																																																																																																																															
3. _____	_____	_____	_____	Multiplier by _____																																																																																																																																																																															
4. _____	_____	_____	_____	OBL species _____ x 1 = _____																																																																																																																																																																															
FACW species _____ x 2 = _____																																																																																																																																																																																			
FAC species _____ x 3 = _____																																																																																																																																																																																			
FACU species _____ x 4 = _____																																																																																																																																																																																			
UPL species _____ x 5 = _____																																																																																																																																																																																			
Column Total: _____ (A) _____ (B)																																																																																																																																																																																			
Herb Stratum (Plot size: 5')																																																																																																																																																																																			
1. _____	_____	_____	_____	Prevalence Index = B/A = _____																																																																																																																																																																															
2. _____	_____	_____	_____	Hydrophytic Vegetation Indicators:																																																																																																																																																																															
3. _____	_____	_____	_____	1 - Presence Test for hydrophytic vegetation																																																																																																																																																																															
4. _____	_____	_____	_____	2 - Dominance Test is > 10%																																																																																																																																																																															
5. _____	_____	_____	_____	3 - Prevalence Test is > 3.0																																																																																																																																																																															
6. _____	_____	_____	_____	4 - Morphological Adaptations (provide supporting data in Remarks or on a separate sheet)																																																																																																																																																																															
7. _____	_____	_____	_____	Probable hydrophytic vegetation? (Explain)																																																																																																																																																																															
8. _____	_____	_____	_____																																																																																																																																																																																
9. _____	_____	_____	_____																																																																																																																																																																																
10. _____	_____	_____	_____																																																																																																																																																																																
Woody Vine Stratum (Plot size: 30')																																																																																																																																																																																			
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input type="checkbox"/>																																																																																																																																																																															
2. _____	_____	_____	_____																																																																																																																																																																																
3. _____	_____	_____	_____																																																																																																																																																																																
4. _____	_____	_____	_____																																																																																																																																																																																
% Bare Ground in Herb Stratum _____																																																																																																																																																																																			
Remarks: (include photo numbers here or on a separate sheet.)																																																																																																																																																																																			

SOIL																																																																																																																																																																																																																																																																																																																																																																																																																																	
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicator.)								Sampling Point																																																																																																																																																																																																																																																																																																																																																																																																																									
Depth (meters)	Color (Munsell)	%	Color (Munsell)	Texture	Structure	Remarks																																																																																																																																																																																																																																																																																																																																																																																																																											
_____	_____	_____	_____	_____	_____	_____																																																																																																																																																																																																																																																																																																																																																																																																																											
_____	_____	_____	_____	_____	_____	_____																																																																																																																																																																																																																																																																																																																																																																																																																											
_____	_____	_____	_____	_____	_____	_____																																																																																																																																																																																																																																																																																																																																																																																																																											
_____	_____	_____	_____	_____	_____	_____																																																																																																																																																																																																																																																																																																																																																																																																																											
_____	_____	_____	_____	_____	_____	_____																																																																																																																																																																																																																																																																																																																																																																																																																											
_____	_____	_____	_____	_____	_____	_____																																																																																																																																																																																																																																																																																																																																																																																																																											
_____	_____	_____	_____	_____	_____	_____																																																																																																																																																																																																																																																																																																																																																																																																																											
_____	_____	_____	_____	_____	_____	_____																																																																																																																																																																																																																																																																																																																																																																																																																											
Type: C=Concretion, D=Cementation, R=Reduced Matrix, CO=Covered or Coated Sand Grains, Location: PL=Post Lining, M=Matrix																																																																																																																																																																																																																																																																																																																																																																																																																																	
<table border="1"> <tr> <td>Hydroic Soil Indicators:</td> <td>Sandy Clayey Matrix (S4)</td> <td>Indicators for Probable Hydroic Soils:</td> </tr> <tr> <td>Recessed (A1)</td> <td>Sandy Retic (S5)</td> <td>1 on Munsell (A1) (B&R 1)</td> </tr> <tr> <td>Moist Epitaxial (A2)</td> <td>Clayey Retic (S6)</td> <td>Coastal Profile Retic (A11) (B&R F, G, H)</td> </tr> <tr> <td>Block Matrix (A3)</td> <td>Clayey Matrix (S8)</td> <td>Dark Surface (D7) (B&R G)</td> </tr> <tr> <td>Hydrogen Sulfide (A4)</td> <td>Loamy Mucky Mineral (F1)</td> <td>High Plains Depressions (F16)</td> </tr> <tr> <td>Stratified Layers (A5) (B&R F)</td> <td>Loamy Clayey Matrix (F2)</td> <td>(B&R in outline of MURA 72 & 73)</td> </tr> <tr> <td>1 on Munsell (A5) (B&R F, G, H)</td> <td>Depressed Matrix (F3)</td> <td>Reduced Voids (F10)</td> </tr> <tr> <td>Depressed Retic Dark Surface (A11)</td> <td>Retic Dark Surface (F6)</td> <td>Retic Parent Material (F21)</td> </tr> <tr> <td>Thick Dark Surface (A12)</td> <td>Depressed Dark Surface (F7)</td> <td>Very Shallow Dark Surface (F12)</td> </tr> <tr> <td>Sandy Mucky Mineral (S1)</td> <td>Retic Depressions (F8)</td> <td>Other (Explain in Remarks)</td> </tr> <tr> <td>2.5 on Munsell (S1) or (S2) (B&R G, H)</td> <td>High Plains Depressions (F16)</td> <td>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</td> </tr> <tr> <td>5 on Munsell (S1) or (S2) (B&R F)</td> <td>MURA 72 & 73 of B&R H</td> <td></td> </tr> </table>										Hydroic Soil Indicators:	Sandy Clayey Matrix (S4)	Indicators for Probable Hydroic Soils:	Recessed (A1)	Sandy Retic (S5)	1 on Munsell (A1) (B&R 1)	Moist Epitaxial (A2)	Clayey Retic (S6)	Coastal Profile Retic (A11) (B&R F, G, H)	Block Matrix (A3)	Clayey Matrix (S8)	Dark Surface (D7) (B&R G)	Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	High Plains Depressions (F16)	Stratified Layers (A5) (B&R F)	Loamy Clayey Matrix (F2)	(B&R in outline of MURA 72 & 73)	1 on Munsell (A5) (B&R F, G, H)	Depressed Matrix (F3)	Reduced Voids (F10)	Depressed Retic Dark Surface (A11)	Retic Dark Surface (F6)	Retic Parent Material (F21)	Thick Dark Surface (A12)	Depressed Dark Surface (F7)	Very Shallow Dark Surface (F12)	Sandy Mucky Mineral (S1)	Retic Depressions (F8)	Other (Explain in Remarks)	2.5 on Munsell (S1) or (S2) (B&R G, H)	High Plains Depressions (F16)	Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	5 on Munsell (S1) or (S2) (B&R F)	MURA 72 & 73 of B&R H																																																																																																																																																																																																																																																																																																																																																																																					
Hydroic Soil Indicators:	Sandy Clayey Matrix (S4)	Indicators for Probable Hydroic Soils:																																																																																																																																																																																																																																																																																																																																																																																																																															
Recessed (A1)	Sandy Retic (S5)	1 on Munsell (A1) (B&R 1)																																																																																																																																																																																																																																																																																																																																																																																																																															
Moist Epitaxial (A2)	Clayey Retic (S6)	Coastal Profile Retic (A11) (B&R F, G, H)																																																																																																																																																																																																																																																																																																																																																																																																																															
Block Matrix (A3)	Clayey Matrix (S8)	Dark Surface (D7) (B&R G)																																																																																																																																																																																																																																																																																																																																																																																																																															
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	High Plains Depressions (F16)																																																																																																																																																																																																																																																																																																																																																																																																																															
Stratified Layers (A5) (B&R F)	Loamy Clayey Matrix (F2)	(B&R in outline of MURA 72 & 73)																																																																																																																																																																																																																																																																																																																																																																																																																															
1 on Munsell (A5) (B&R F, G, H)	Depressed Matrix (F3)	Reduced Voids (F10)																																																																																																																																																																																																																																																																																																																																																																																																																															
Depressed Retic Dark Surface (A11)	Retic Dark Surface (F6)	Retic Parent Material (F21)																																																																																																																																																																																																																																																																																																																																																																																																																															
Thick Dark Surface (A12)	Depressed Dark Surface (F7)	Very Shallow Dark Surface (F12)																																																																																																																																																																																																																																																																																																																																																																																																																															
Sandy Mucky Mineral (S1)	Retic Depressions (F8)	Other (Explain in Remarks)																																																																																																																																																																																																																																																																																																																																																																																																																															
2.5 on Munsell (S1) or (S2) (B&R G, H)	High Plains Depressions (F16)	Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.																																																																																																																																																																																																																																																																																																																																																																																																																															
5 on Munsell (S1) or (S2) (B&R F)	MURA 72 & 73 of B&R H																																																																																																																																																																																																																																																																																																																																																																																																																																
<table border="1"> <tr> <td>Reductive Layer (if observed):</td> <td>Hydroic Soil Present?</td> </tr> <tr> <td>Type _____</td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> </tr> <tr> <td>Depth (inches) _____</td> <td></td> </tr> </table>										Reductive Layer (if observed):	Hydroic Soil Present?	Type _____	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches) _____																																																																																																																																																																																																																																																																																																																																																																																																																			
Reductive Layer (if observed):	Hydroic Soil Present?																																																																																																																																																																																																																																																																																																																																																																																																																																
Type _____	Yes <input type="checkbox"/> No <input type="checkbox"/>																																																																																																																																																																																																																																																																																																																																																																																																																																
Depth (inches) _____																																																																																																																																																																																																																																																																																																																																																																																																																																	
Remarks: _____																																																																																																																																																																																																																																																																																																																																																																																																																																	
HYDROLOGY																																																																																																																																																																																																																																																																																																																																																																																																																																	
<table border="1"> <tr> <td>Wetland Hydrology Indicators:</td> <td>Secondary Indicators (minimum of two required):</td> </tr> <tr> <td>Surface Water (A1)</td> <td>Surface Soil Cracks (B6)</td> </tr> <tr> <td>High Water Table (A2)</td> <td>Sparsely Vegetated Concave Surface (B8)</td> </tr> <tr> <td>Saturation (A3)</td> <td>Orange Patterns (B10)</td> </tr> <tr> <td>Water Marks (B1)</td> <td>Clayey Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td>Clay-Retic Water Table (C1)</td> <td>Yellow Stems</td> </tr> <tr> <td>Clay-Retic Water Table (C2)</td> <td>Crustlike Structures (C5)</td> </tr> <tr> <td>Clay-Retic Water Table (C3)</td> <td>Saturation Visible on Aerial Imagery (C9)</td> </tr> <tr> <td>Clay-Retic Water Table (C4)</td> <td>Geomorphic Position (C10)</td> </tr> <tr> <td>Clay-Retic Water Table (C5)</td> <td>Fluvial-Hydroic Test (D1)</td> </tr> <tr> <td>Clay-Retic Water Table (C6)</td> <td>Fluvial-Hydroic Test (D2)</td> </tr> <tr> <td>Clay-Retic Water Table (C7)</td> <td>Fluvial-Hydroic Test (D3)</td> </tr> <tr> <td>Clay-Retic Water Table (C8)</td> <td>Fluvial-Hydroic Test (D4)</td> </tr> <tr> <td>Clay-Retic Water Table (C9)</td> <td>Fluvial-Hydroic Test (D5)</td> </tr> <tr> <td>Clay-Retic Water Table (C10)</td> <td>Fluvial-Hydroic Test (D6)</td> </tr> <tr> <td>Clay-Retic Water Table (C11)</td> <td>Fluvial-Hydroic Test (D7)</td> </tr> <tr> <td>Clay-Retic Water Table (C12)</td> <td>Fluvial-Hydroic Test (D8)</td> </tr> <tr> <td>Clay-Retic Water Table (C13)</td> <td>Fluvial-Hydroic Test (D9)</td> </tr> <tr> <td>Clay-Retic Water Table (C14)</td> <td>Fluvial-Hydroic Test (D10)</td> </tr> <tr> <td>Clay-Retic Water Table (C15)</td> <td>Fluvial-Hydroic Test (D11)</td> </tr> <tr> <td>Clay-Retic Water Table (C16)</td> <td>Fluvial-Hydroic Test (D12)</td> </tr> <tr> <td>Clay-Retic Water Table (C17)</td> <td>Fluvial-Hydroic Test (D13)</td> </tr> <tr> <td>Clay-Retic Water Table (C18)</td> <td>Fluvial-Hydroic Test (D14)</td> </tr> <tr> <td>Clay-Retic Water Table (C19)</td> <td>Fluvial-Hydroic Test (D15)</td> </tr> <tr> <td>Clay-Retic Water Table (C20)</td> <td>Fluvial-Hydroic Test (D16)</td> </tr> <tr> <td>Clay-Retic Water Table (C21)</td> <td>Fluvial-Hydroic Test (D17)</td> </tr> <tr> <td>Clay-Retic Water Table (C22)</td> <td>Fluvial-Hydroic Test (D18)</td> </tr> <tr> <td>Clay-Retic Water Table (C23)</td> <td>Fluvial-Hydroic Test (D19)</td> </tr> <tr> <td>Clay-Retic Water Table (C24)</td> <td>Fluvial-Hydroic Test (D20)</td> </tr> <tr> <td>Clay-Retic Water Table (C25)</td> <td>Fluvial-Hydroic Test (D21)</td> </tr> <tr> <td>Clay-Retic Water Table (C26)</td> <td>Fluvial-Hydroic Test (D22)</td> </tr> <tr> <td>Clay-Retic Water Table (C27)</td> <td>Fluvial-Hydroic Test (D23)</td> </tr> <tr> <td>Clay-Retic Water Table (C28)</td> <td>Fluvial-Hydroic Test (D24)</td> </tr> <tr> <td>Clay-Retic Water Table (C29)</td> <td>Fluvial-Hydroic Test (D25)</td> </tr> <tr> <td>Clay-Retic Water Table (C30)</td> <td>Fluvial-Hydroic Test (D26)</td> </tr> <tr> <td>Clay-Retic Water Table (C31)</td> <td>Fluvial-Hydroic Test (D27)</td> </tr> <tr> <td>Clay-Retic Water Table (C32)</td> <td>Fluvial-Hydroic Test (D28)</td> </tr> <tr> <td>Clay-Retic Water Table (C33)</td> <td>Fluvial-Hydroic Test (D29)</td> </tr> <tr> <td>Clay-Retic Water Table (C34)</td> <td>Fluvial-Hydroic Test (D30)</td> </tr> <tr> <td>Clay-Retic Water Table (C35)</td> <td>Fluvial-Hydroic Test (D31)</td> </tr> <tr> <td>Clay-Retic Water Table (C36)</td> <td>Fluvial-Hydroic Test (D32)</td> </tr> <tr> <td>Clay-Retic Water Table (C37)</td> <td>Fluvial-Hydroic Test (D33)</td> </tr> <tr> <td>Clay-Retic Water Table (C38)</td> <td>Fluvial-Hydroic Test (D34)</td> </tr> <tr> <td>Clay-Retic Water Table (C39)</td> <td>Fluvial-Hydroic Test (D35)</td> </tr> <tr> <td>Clay-Retic Water Table (C40)</td> <td>Fluvial-Hydroic Test (D36)</td> </tr> <tr> <td>Clay-Retic Water Table (C41)</td> <td>Fluvial-Hydroic Test (D37)</td> </tr> <tr> <td>Clay-Retic Water Table (C42)</td> <td>Fluvial-Hydroic Test (D38)</td> </tr> <tr> <td>Clay-Retic Water Table (C43)</td> <td>Fluvial-Hydroic Test (D39)</td> </tr> <tr> <td>Clay-Retic Water Table (C44)</td> <td>Fluvial-Hydroic Test (D40)</td> </tr> <tr> <td>Clay-Retic Water Table (C45)</td> <td>Fluvial-Hydroic Test (D41)</td> </tr> <tr> <td>Clay-Retic Water Table (C46)</td> <td>Fluvial-Hydroic Test (D42)</td> </tr> <tr> <td>Clay-Retic Water Table (C47)</td> <td>Fluvial-Hydroic Test (D43)</td> </tr> <tr> <td>Clay-Retic Water Table (C48)</td> <td>Fluvial-Hydroic Test (D44)</td> </tr> <tr> <td>Clay-Retic Water Table (C49)</td> <td>Fluvial-Hydroic Test (D45)</td> </tr> <tr> <td>Clay-Retic Water Table (C50)</td> <td>Fluvial-Hydroic Test (D46)</td> </tr> <tr> <td>Clay-Retic Water Table (C51)</td> <td>Fluvial-Hydroic Test (D47)</td> </tr> <tr> <td>Clay-Retic Water Table (C52)</td> <td>Fluvial-Hydroic Test (D48)</td> </tr> <tr> <td>Clay-Retic Water Table (C53)</td> <td>Fluvial-Hydroic Test (D49)</td> </tr> <tr> <td>Clay-Retic Water Table (C54)</td> <td>Fluvial-Hydroic Test (D50)</td> </tr> <tr> <td>Clay-Retic Water Table (C55)</td> <td>Fluvial-Hydroic Test (D51)</td> </tr> <tr> <td>Clay-Retic Water Table (C56)</td> <td>Fluvial-Hydroic Test (D52)</td> </tr> <tr> <td>Clay-Retic Water Table (C57)</td> <td>Fluvial-Hydroic Test (D53)</td> </tr> <tr> <td>Clay-Retic Water Table (C58)</td> <td>Fluvial-Hydroic Test (D54)</td> </tr> <tr> <td>Clay-Retic Water Table (C59)</td> <td>Fluvial-Hydroic Test (D55)</td> </tr> <tr> <td>Clay-Retic Water Table (C60)</td> <td>Fluvial-Hydroic Test (D56)</td> </tr> <tr> <td>Clay-Retic Water Table (C61)</td> <td>Fluvial-Hydroic Test (D57)</td> </tr> <tr> <td>Clay-Retic Water Table (C62)</td> <td>Fluvial-Hydroic Test (D58)</td> </tr> <tr> <td>Clay-Retic Water Table (C63)</td> <td>Fluvial-Hydroic Test (D59)</td> </tr> <tr> <td>Clay-Retic Water Table (C64)</td> <td>Fluvial-Hydroic Test (D60)</td> </tr> <tr> <td>Clay-Retic Water Table (C65)</td> <td>Fluvial-Hydroic Test (D61)</td> </tr> <tr> <td>Clay-Retic Water Table (C66)</td> <td>Fluvial-Hydroic Test (D62)</td> </tr> <tr> <td>Clay-Retic Water Table (C67)</td> <td>Fluvial-Hydroic Test (D63)</td> </tr> <tr> <td>Clay-Retic Water Table (C68)</td> <td>Fluvial-Hydroic Test (D64)</td> </tr> <tr> <td>Clay-Retic Water Table (C69)</td> <td>Fluvial-Hydroic Test (D65)</td> </tr> <tr> <td>Clay-Retic Water Table (C70)</td> <td>Fluvial-Hydroic Test (D66)</td> </tr> <tr> <td>Clay-Retic Water Table (C71)</td> <td>Fluvial-Hydroic Test (D67)</td> </tr> <tr> <td>Clay-Retic Water Table (C72)</td> <td>Fluvial-Hydroic Test (D68)</td> </tr> <tr> <td>Clay-Retic Water Table (C73)</td> <td>Fluvial-Hydroic Test (D69)</td> </tr> <tr> <td>Clay-Retic Water Table (C74)</td> <td>Fluvial-Hydroic Test (D70)</td> </tr> <tr> <td>Clay-Retic Water Table (C75)</td> <td>Fluvial-Hydroic Test (D71)</td> </tr> <tr> <td>Clay-Retic Water Table (C76)</td> <td>Fluvial-Hydroic Test (D72)</td> </tr> <tr> <td>Clay-Retic Water Table (C77)</td> <td>Fluvial-Hydroic Test (D73)</td> </tr> <tr> <td>Clay-Retic Water Table (C78)</td> <td>Fluvial-Hydroic Test (D74)</td> </tr> <tr> <td>Clay-Retic Water Table (C79)</td> <td>Fluvial-Hydroic Test (D75)</td> </tr> <tr> <td>Clay-Retic Water Table (C80)</td> <td>Fluvial-Hydroic Test (D76)</td> </tr> <tr> <td>Clay-Retic Water Table (C81)</td> <td>Fluvial-Hydroic Test (D77)</td> </tr> <tr> <td>Clay-Retic Water Table (C82)</td> <td>Fluvial-Hydroic Test (D78)</td> </tr> <tr> <td>Clay-Retic Water Table (C83)</td> <td>Fluvial-Hydroic Test (D79)</td> </tr> <tr> <td>Clay-Retic Water Table (C84)</td> <td>Fluvial-Hydroic Test (D80)</td> </tr> <tr> <td>Clay-Retic Water Table (C85)</td> <td>Fluvial-Hydroic Test (D81)</td> </tr> <tr> <td>Clay-Retic Water Table (C86)</td> <td>Fluvial-Hydroic Test (D82)</td> </tr> <tr> <td>Clay-Retic Water Table (C87)</td> <td>Fluvial-Hydroic Test (D83)</td> </tr> <tr> <td>Clay-Retic Water Table (C88)</td> <td>Fluvial-Hydroic Test (D84)</td> </tr> <tr> <td>Clay-Retic Water Table (C89)</td> <td>Fluvial-Hydroic Test (D85)</td> </tr> <tr> <td>Clay-Retic Water Table (C90)</td> <td>Fluvial-Hydroic Test (D86)</td> </tr> <tr> <td>Clay-Retic Water Table (C91)</td> <td>Fluvial-Hydroic Test (D87)</td> </tr> <tr> <td>Clay-Retic Water Table (C92)</td> <td>Fluvial-Hydroic Test (D88)</td> </tr> <tr> <td>Clay-Retic Water Table (C93)</td> <td>Fluvial-Hydroic Test (D89)</td> </tr> <tr> <td>Clay-Retic Water Table (C94)</td> <td>Fluvial-Hydroic Test (D90)</td> </tr> <tr> <td>Clay-Retic Water Table (C95)</td> <td>Fluvial-Hydroic Test (D91)</td> </tr> <tr> <td>Clay-Retic Water Table (C96)</td> <td>Fluvial-Hydroic Test (D92)</td> </tr> <tr> <td>Clay-Retic Water Table (C97)</td> <td>Fluvial-Hydroic Test (D93)</td> </tr> <tr> <td>Clay-Retic Water Table (C98)</td> <td>Fluvial-Hydroic Test (D94)</td> </tr> <tr> <td>Clay-Retic Water Table (C99)</td> <td>Fluvial-Hydroic Test (D95)</td> </tr> <tr> <td>Clay-Retic Water Table (C100)</td> <td>Fluvial-Hydroic Test (D96)</td> </tr> <tr> <td>Clay-Retic Water Table (C101)</td> <td>Fluvial-Hydroic Test (D97)</td> </tr> <tr> <td>Clay-Retic Water Table (C102)</td> <td>Fluvial-Hydroic Test (D98)</td> </tr> <tr> <td>Clay-Retic Water Table (C103)</td> <td>Fluvial-Hydroic Test (D99)</td> </tr> <tr> <td>Clay-Retic Water Table (C104)</td> <td>Fluvial-Hydroic Test (D100)</td> </tr> <tr> <td>Clay-Retic Water Table (C105)</td> <td>Fluvial-Hydroic Test (D101)</td> </tr> <tr> <td>Clay-Retic Water Table (C106)</td> <td>Fluvial-Hydroic Test (D102)</td> </tr> <tr> <td>Clay-Retic Water Table (C107)</td> <td>Fluvial-Hydroic Test (D103)</td> </tr> <tr> <td>Clay-Retic Water Table (C108)</td> <td>Fluvial-Hydroic Test (D104)</td> </tr> <tr> <td>Clay-Retic Water Table (C109)</td> <td>Fluvial-Hydroic Test (D105)</td> </tr> <tr> <td>Clay-Retic Water Table (C110)</td> <td>Fluvial-Hydroic Test (D106)</td> </tr> <tr> <td>Clay-Retic Water Table (C111)</td> <td>Fluvial-Hydroic Test (D107)</td> </tr> <tr> <td>Clay-Retic Water Table (C112)</td> <td>Fluvial-Hydroic Test (D108)</td> </tr> <tr> <td>Clay-Retic Water Table (C113)</td> <td>Fluvial-Hydroic Test (D109)</td> </tr> <tr> <td>Clay-Retic Water Table (C114)</td> <td>Fluvial-Hydroic Test (D110)</td> </tr> <tr> <td>Clay-Retic Water Table (C115)</td> <td>Fluvial-Hydroic Test (D111)</td> </tr> <tr> <td>Clay-Retic Water Table (C116)</td> <td>Fluvial-Hydroic Test (D112)</td> </tr> <tr> <td>Clay-Retic Water Table (C117)</td> <td>Fluvial-Hydroic Test (D113)</td> </tr> <tr> <td>Clay-Retic Water Table (C118)</td> <td>Fluvial-Hydroic Test (D114)</td> </tr> <tr> <td>Clay-Retic Water Table (C119)</td> <td>Fluvial-Hydroic Test (D115)</td> </tr> <tr> <td>Clay-Retic Water Table (C120)</td> <td>Fluvial-Hydroic Test (D116)</td> </tr> <tr> <td>Clay-Retic Water Table (C121)</td> <td>Fluvial-Hydroic Test (D117)</td> </tr> <tr> <td>Clay-Retic Water Table (C122)</td> <td>Fluvial-Hydroic Test (D118)</td> </tr> <tr> <td>Clay-Retic Water Table (C123)</td> <td>Fluvial-Hydroic Test (D119)</td> </tr> <tr> <td>Clay-Retic Water Table (C124)</td> <td>Fluvial-Hydroic Test (D120)</td> </tr> <tr> <td>Clay-Retic Water Table (C125)</td> <td>Fluvial-Hydroic Test (D121)</td> </tr> <tr> <td>Clay-Retic Water Table (C126)</td> <td>Fluvial-Hydroic Test (D122)</td> </tr> <tr> <td>Clay-Retic Water Table (C127)</td> <td>Fluvial-Hydroic Test (D123)</td> </tr> <tr> <td>Clay-Retic Water Table (C128)</td> <td>Fluvial-Hydroic Test (D124)</td> </tr> <tr> <td>Clay-Retic Water Table (C129)</td> <td>Fluvial-Hydroic Test (D125)</td> </tr> <tr> <td>Clay-Retic Water Table (C130)</td> <td>Fluvial-Hydroic Test (D126)</td> </tr> <tr> <td>Clay-Retic Water Table (C131)</td> <td>Fluvial-Hydroic Test (D127)</td> </tr> <tr> <td>Clay-Retic Water Table (C132)</td> <td>Fluvial-Hydroic Test (D128)</td> </tr> <tr> <td>Clay-Retic Water Table (C133)</td> <td>Fluvial-Hydroic Test (D129)</td> </tr> <tr> <td>Clay-Retic Water Table (C134)</td> <td>Fluvial-Hydroic Test (D130)</td> </tr> <tr> <td>Clay-Retic Water Table (C135)</td> <td>Fluvial-Hydroic Test (D131)</td> </tr> <tr> <td>Clay-Retic Water Table (C136)</td> <td>Fluvial-Hydroic Test (D132)</td> </tr> <tr> <td>Clay-Retic Water Table (C137)</td> <td>Fluvial-Hydroic Test (D133)</td> </tr> <tr> <td>Clay-Retic Water Table (C138)</td> <td>Fluvial-Hydroic Test (D134)</td> </tr> <tr> <td>Clay-Retic Water Table (C139)</td> <td>Fluvial-Hydroic Test (D135)</td> </tr> <tr> <td>Clay-Retic Water Table (C140)</td> <td>Fluvial-Hydroic Test (D136)</td> </tr> <tr> <td>Clay-Retic Water Table (C141)</td> <td>Fluvial-Hydroic Test (D137)</td> </tr> <tr> <td>Clay-Retic Water Table (C142)</td> <td>Fluvial-Hydroic Test (D138)</td> </tr> <tr> <td>Clay-Retic Water Table (C143)</td> <td>Fluvial-Hydroic Test (D139)</td> </tr> <tr> <td>Clay-Retic Water Table (C144)</td> <td>Fluvial-Hydroic Test (D140)</td> </tr> <tr> <td>Clay-Retic Water Table (C145)</td> <td>Fluvial-Hydroic Test (D141)</td> </tr> <tr> <td>Clay-Retic Water Table (C146)</td> <td>Fluvial-Hydroic Test (D142)</td> </tr> <tr> <td>Clay-Retic Water Table (C147)</td> <td>Fluvial-Hydroic Test (D143)</td> </tr> <tr> <td>Clay-Retic Water Table (C148)</td> <td>Fluvial-Hydroic Test (D144)</td> </tr> <tr> <td>Clay-Retic Water Table (C149)</td> <td>Fluvial-Hydroic Test (D145)</td> </tr> <tr> <td>Clay-Retic Water Table (C150)</td> <td>Fluvial-Hydroic Test (D146)</td> </tr> <tr> <td>Clay-Retic Water Table (C151)</td> <td>Fluvial-Hydroic Test (D147)</td> </tr> <tr> <td>Clay-Retic Water Table (C152)</td> <td>Fluvial-Hydroic Test (D148)</td> </tr> <tr> <td>Clay-Retic Water Table (C153)</td> <td>Fluvial-Hydroic Test (D149)</td> </tr> <tr> <td>Clay-Retic Water Table (C154)</td> <td>Fluvial-Hydroic Test (D150)</td> </tr> <tr> <td>Clay-Retic Water Table (C155)</td> <td>Fluvial-Hydroic Test (D151)</td> </tr> <tr> <td>Clay-Retic Water Table (C156)</td> <td>Fluvial-Hydroic Test (D152)</td> </tr> <tr> <td>Clay-Retic Water Table (C157)</td> <td>Fluvial-Hydroic Test (D153)</td> </tr> <tr> <td>Clay-Retic Water Table (C158)</td> <td>Fluvial-Hydroic Test (D154)</td> </tr> <tr> <td>Clay-Retic Water Table (C159)</td> <td>Fluvial-Hydroic Test (D155)</td> </tr> <tr> <td>Clay-Retic Water Table (C160)</td> <td>Fluvial-Hydroic Test (D156)</td> </tr> <tr> <td>Clay-Retic Water Table (C161)</td> <td>Fluvial-Hydroic Test (D157)</td> </tr> <tr> <td>Clay-Retic Water Table (C162)</td> <td>Fluvial-Hydroic Test (D158)</td> </tr> <tr> <td>Clay-Retic Water Table (C163)</td> <td>Fluvial-Hydroic Test (D159)</td> </tr> <tr> <td>Clay-Retic Water Table (C164)</td> <td>Fluvial-Hydroic Test (D160)</td> </tr> <tr> <td>Clay-Retic Water Table (C165)</td> <td>Fluvial-Hydroic Test (D161)</td> </tr> <tr> <td>Clay-Retic Water Table (C166)</td> <td>Fluvial-Hydroic Test (D162)</td> </tr> <tr> <td>Clay-Retic Water Table (C167)</td> <td>Fluvial-Hydroic Test (D163)</td> </tr> <tr> <td>Clay-Retic Water Table (C168)</td> <td>Fluvial-Hydroic Test (D164)</td> </tr> <tr> <td>Clay-Retic Water Table (C169)</td> <td>Fluvial-Hydroic Test (D165)</td> </tr> <tr> <td>Clay-Retic Water Table (C170)</td> <td>Fluvial-Hydroic Test (D166)</td> </tr> <tr> <td>Clay-Retic Water Table (C171)</td> <td>Fluvial-Hydroic Test (D167)</td> </tr> <tr> <td>Clay-Retic Water Table (C172)</td> <td>Fluvial-Hydroic Test (D168)</td> </tr> <tr> <td>Clay-Retic Water Table (C173)</td> <td>Fluvial-Hydroic Test (D169)</td> </tr> <tr> <td>Clay-Retic Water Table (C174)</td> <td>Fluvial-Hydroic Test (D170)</td> </tr> <tr> <td>Clay-Retic Water Table (C175)</td> <td>Fluvial-Hydroic Test (D171)</td> </tr> <tr> <td>Clay-Retic Water Table (C176)</td> <td>Fluvial-Hydroic Test (D172)</td> </tr> <tr> <td>Clay-Retic Water Table (C177)</td> <td>Fluvial-Hydroic Test (D173)</td> </tr> <tr> <td>Clay-Retic Water Table (C178)</td> <td>Fluvial-Hydroic Test (D174)</td> </tr> <tr> <td>Clay-Retic Water Table (C179)</td> <td>Fluvial-Hydroic Test (D175)</td> </tr> <tr> <td>Clay-Retic Water Table (C180)</td> <td>Fluvial-Hydroic Test (D176)</td> </tr> <tr> <td>Clay-Retic Water Table (C181)</td> <td>Fluvial-Hydroic Test (D177)</td> </tr> <tr> <td>Clay-Retic Water Table (C182)</td> <td>Fluvial-Hydroic Test (D178)</td> </tr> <tr> <td>Clay-Retic Water Table (C183)</td> <td>Fluvial-Hydroic Test (D179)</td> </tr> <tr> <td>Clay-Retic Water Table (C184)</td> <td>Fluvial-Hydroic Test (D180)</td> </tr> <tr> <td>Clay-Retic Water Table (C185)</td> <td>Fluvial-Hydroic Test (D181)</td> </tr> <tr> <td>Clay-Retic Water Table (C186)</td> <td>Fluvial-Hydroic Test (D182)</td> </tr> <tr> <td>Clay-Retic Water Table (C187)</td> <td>Fluvial-Hydroic Test (D183)</td> </tr> <tr> <td>Clay-Retic Water Table (C188)</td> <td>Fluvial-Hydroic Test (D184)</td> </tr> <tr> <td>Clay-Retic Water Table (C189)</td> <td>Fluvial-Hydroic Test (D185)</td> </tr> <tr> <td>Clay-Retic Water Table (C190)</td> <td>Fluvial-Hydroic Test (D186)</td> </tr> <tr> <td>Clay-Retic Water Table (C191)</td> <td>Fluvial-Hydroic Test (D187)</td> </tr> <tr> <td>Clay-Retic Water Table (C192)</td> <td>Fluvial-Hydroic Test (D188)</td> </tr> <tr> <td>Clay-Retic Water Table (C193)</td> <td>Fluvial-Hydroic Test (D189)</td> </tr> <tr> <td>Clay-Retic Water Table (C194)</td> <td>Fluvial-Hydroic Test (D190)</td> </tr> <tr> <td>Clay-Retic Water Table (C195)</td> <td>Fluvial-Hydroic Test (D191)</td> </tr> <tr> <td>Clay-Retic Water Table (C196)</td> <td>Fluvial-Hydroic Test (D192)</td> </tr> <tr> <td>Clay-Retic Water Table (C197)</td> <td>Fluvial-Hydroic Test (D193)</td> </tr> <tr> <td>Clay-Retic Water Table (C198)</td> <td>Fluvial-Hydroic Test (D194)</td> </tr> <tr> <td>Clay-Retic Water Table (C199)</td> <td>Fluvial-H</td></tr></table>										Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required):	Surface Water (A1)	Surface Soil Cracks (B6)	High Water Table (A2)	Sparsely Vegetated Concave Surface (B8)	Saturation (A3)	Orange Patterns (B10)	Water Marks (B1)	Clayey Rhizospheres on Living Roots (C3)	Clay-Retic Water Table (C1)	Yellow Stems	Clay-Retic Water Table (C2)	Crustlike Structures (C5)	Clay-Retic Water Table (C3)	Saturation Visible on Aerial Imagery (C9)	Clay-Retic Water Table (C4)	Geomorphic Position (C10)	Clay-Retic Water Table (C5)	Fluvial-Hydroic Test (D1)	Clay-Retic Water Table (C6)	Fluvial-Hydroic Test (D2)	Clay-Retic Water Table (C7)	Fluvial-Hydroic Test (D3)	Clay-Retic Water Table (C8)	Fluvial-Hydroic Test (D4)	Clay-Retic Water Table (C9)	Fluvial-Hydroic Test (D5)	Clay-Retic Water Table (C10)	Fluvial-Hydroic Test (D6)	Clay-Retic Water Table (C11)	Fluvial-Hydroic Test (D7)	Clay-Retic Water Table (C12)	Fluvial-Hydroic Test (D8)	Clay-Retic Water Table (C13)	Fluvial-Hydroic Test (D9)	Clay-Retic Water Table (C14)	Fluvial-Hydroic Test (D10)	Clay-Retic Water Table (C15)	Fluvial-Hydroic Test (D11)	Clay-Retic Water Table (C16)	Fluvial-Hydroic Test (D12)	Clay-Retic Water Table (C17)	Fluvial-Hydroic Test (D13)	Clay-Retic Water Table (C18)	Fluvial-Hydroic Test (D14)	Clay-Retic Water Table (C19)	Fluvial-Hydroic Test (D15)	Clay-Retic Water Table (C20)	Fluvial-Hydroic Test (D16)	Clay-Retic Water Table (C21)	Fluvial-Hydroic Test (D17)	Clay-Retic Water Table (C22)	Fluvial-Hydroic Test (D18)	Clay-Retic Water Table (C23)	Fluvial-Hydroic Test (D19)	Clay-Retic Water Table (C24)	Fluvial-Hydroic Test (D20)	Clay-Retic Water Table (C25)	Fluvial-Hydroic Test (D21)	Clay-Retic Water Table (C26)	Fluvial-Hydroic Test (D22)	Clay-Retic Water Table (C27)	Fluvial-Hydroic Test (D23)	Clay-Retic Water Table (C28)	Fluvial-Hydroic Test (D24)	Clay-Retic Water Table (C29)	Fluvial-Hydroic Test (D25)	Clay-Retic Water Table (C30)	Fluvial-Hydroic Test (D26)	Clay-Retic Water Table (C31)	Fluvial-Hydroic Test (D27)	Clay-Retic Water Table (C32)	Fluvial-Hydroic Test (D28)	Clay-Retic Water Table (C33)	Fluvial-Hydroic Test (D29)	Clay-Retic Water Table (C34)	Fluvial-Hydroic Test (D30)	Clay-Retic Water Table (C35)	Fluvial-Hydroic Test (D31)	Clay-Retic Water Table (C36)	Fluvial-Hydroic Test (D32)	Clay-Retic Water Table (C37)	Fluvial-Hydroic Test (D33)	Clay-Retic Water Table (C38)	Fluvial-Hydroic Test (D34)	Clay-Retic Water Table (C39)	Fluvial-Hydroic Test (D35)	Clay-Retic Water Table (C40)	Fluvial-Hydroic Test (D36)	Clay-Retic Water Table (C41)	Fluvial-Hydroic Test (D37)	Clay-Retic Water Table (C42)	Fluvial-Hydroic Test (D38)	Clay-Retic Water Table (C43)	Fluvial-Hydroic Test (D39)	Clay-Retic Water Table (C44)	Fluvial-Hydroic Test (D40)	Clay-Retic Water Table (C45)	Fluvial-Hydroic Test (D41)	Clay-Retic Water Table (C46)	Fluvial-Hydroic Test (D42)	Clay-Retic Water Table (C47)	Fluvial-Hydroic Test (D43)	Clay-Retic Water Table (C48)	Fluvial-Hydroic Test (D44)	Clay-Retic Water Table (C49)	Fluvial-Hydroic Test (D45)	Clay-Retic Water Table (C50)	Fluvial-Hydroic Test (D46)	Clay-Retic Water Table (C51)	Fluvial-Hydroic Test (D47)	Clay-Retic Water Table (C52)	Fluvial-Hydroic Test (D48)	Clay-Retic Water Table (C53)	Fluvial-Hydroic Test (D49)	Clay-Retic Water Table (C54)	Fluvial-Hydroic Test (D50)	Clay-Retic Water Table (C55)	Fluvial-Hydroic Test (D51)	Clay-Retic Water Table (C56)	Fluvial-Hydroic Test (D52)	Clay-Retic Water Table (C57)	Fluvial-Hydroic Test (D53)	Clay-Retic Water Table (C58)	Fluvial-Hydroic Test (D54)	Clay-Retic Water Table (C59)	Fluvial-Hydroic Test (D55)	Clay-Retic Water Table (C60)	Fluvial-Hydroic Test (D56)	Clay-Retic Water Table (C61)	Fluvial-Hydroic Test (D57)	Clay-Retic Water Table (C62)	Fluvial-Hydroic Test (D58)	Clay-Retic Water Table (C63)	Fluvial-Hydroic Test (D59)	Clay-Retic Water Table (C64)	Fluvial-Hydroic Test (D60)	Clay-Retic Water Table (C65)	Fluvial-Hydroic Test (D61)	Clay-Retic Water Table (C66)	Fluvial-Hydroic Test (D62)	Clay-Retic Water Table (C67)	Fluvial-Hydroic Test (D63)	Clay-Retic Water Table (C68)	Fluvial-Hydroic Test (D64)	Clay-Retic Water Table (C69)	Fluvial-Hydroic Test (D65)	Clay-Retic Water Table (C70)	Fluvial-Hydroic Test (D66)	Clay-Retic Water Table (C71)	Fluvial-Hydroic Test (D67)	Clay-Retic Water Table (C72)	Fluvial-Hydroic Test (D68)	Clay-Retic Water Table (C73)	Fluvial-Hydroic Test (D69)	Clay-Retic Water Table (C74)	Fluvial-Hydroic Test (D70)	Clay-Retic Water Table (C75)	Fluvial-Hydroic Test (D71)	Clay-Retic Water Table (C76)	Fluvial-Hydroic Test (D72)	Clay-Retic Water Table (C77)	Fluvial-Hydroic Test (D73)	Clay-Retic Water Table (C78)	Fluvial-Hydroic Test (D74)	Clay-Retic Water Table (C79)	Fluvial-Hydroic Test (D75)	Clay-Retic Water Table (C80)	Fluvial-Hydroic Test (D76)	Clay-Retic Water Table (C81)	Fluvial-Hydroic Test (D77)	Clay-Retic Water Table (C82)	Fluvial-Hydroic Test (D78)	Clay-Retic Water Table (C83)	Fluvial-Hydroic Test (D79)	Clay-Retic Water Table (C84)	Fluvial-Hydroic Test (D80)	Clay-Retic Water Table (C85)	Fluvial-Hydroic Test (D81)	Clay-Retic Water Table (C86)	Fluvial-Hydroic Test (D82)	Clay-Retic Water Table (C87)	Fluvial-Hydroic Test (D83)	Clay-Retic Water Table (C88)	Fluvial-Hydroic Test (D84)	Clay-Retic Water Table (C89)	Fluvial-Hydroic Test (D85)	Clay-Retic Water Table (C90)	Fluvial-Hydroic Test (D86)	Clay-Retic Water Table (C91)	Fluvial-Hydroic Test (D87)	Clay-Retic Water Table (C92)	Fluvial-Hydroic Test (D88)	Clay-Retic Water Table (C93)	Fluvial-Hydroic Test (D89)	Clay-Retic Water Table (C94)	Fluvial-Hydroic Test (D90)	Clay-Retic Water Table (C95)	Fluvial-Hydroic Test (D91)	Clay-Retic Water Table (C96)	Fluvial-Hydroic Test (D92)	Clay-Retic Water Table (C97)	Fluvial-Hydroic Test (D93)	Clay-Retic Water Table (C98)	Fluvial-Hydroic Test (D94)	Clay-Retic Water Table (C99)	Fluvial-Hydroic Test (D95)	Clay-Retic Water Table (C100)	Fluvial-Hydroic Test (D96)	Clay-Retic Water Table (C101)	Fluvial-Hydroic Test (D97)	Clay-Retic Water Table (C102)	Fluvial-Hydroic Test (D98)	Clay-Retic Water Table (C103)	Fluvial-Hydroic Test (D99)	Clay-Retic Water Table (C104)	Fluvial-Hydroic Test (D100)	Clay-Retic Water Table (C105)	Fluvial-Hydroic Test (D101)	Clay-Retic Water Table (C106)	Fluvial-Hydroic Test (D102)	Clay-Retic Water Table (C107)	Fluvial-Hydroic Test (D103)	Clay-Retic Water Table (C108)	Fluvial-Hydroic Test (D104)	Clay-Retic Water Table (C109)	Fluvial-Hydroic Test (D105)	Clay-Retic Water Table (C110)	Fluvial-Hydroic Test (D106)	Clay-Retic Water Table (C111)	Fluvial-Hydroic Test (D107)	Clay-Retic Water Table (C112)	Fluvial-Hydroic Test (D108)	Clay-Retic Water Table (C113)	Fluvial-Hydroic Test (D109)	Clay-Retic Water Table (C114)	Fluvial-Hydroic Test (D110)	Clay-Retic Water Table (C115)	Fluvial-Hydroic Test (D111)	Clay-Retic Water Table (C116)	Fluvial-Hydroic Test (D112)	Clay-Retic Water Table (C117)	Fluvial-Hydroic Test (D113)	Clay-Retic Water Table (C118)	Fluvial-Hydroic Test (D114)	Clay-Retic Water Table (C119)	Fluvial-Hydroic Test (D115)	Clay-Retic Water Table (C120)	Fluvial-Hydroic Test (D116)	Clay-Retic Water Table (C121)	Fluvial-Hydroic Test (D117)	Clay-Retic Water Table (C122)	Fluvial-Hydroic Test (D118)	Clay-Retic Water Table (C123)	Fluvial-Hydroic Test (D119)	Clay-Retic Water Table (C124)	Fluvial-Hydroic Test (D120)	Clay-Retic Water Table (C125)	Fluvial-Hydroic Test (D121)	Clay-Retic Water Table (C126)	Fluvial-Hydroic Test (D122)	Clay-Retic Water Table (C127)	Fluvial-Hydroic Test (D123)	Clay-Retic Water Table (C128)	Fluvial-Hydroic Test (D124)	Clay-Retic Water Table (C129)	Fluvial-Hydroic Test (D125)	Clay-Retic Water Table (C130)	Fluvial-Hydroic Test (D126)	Clay-Retic Water Table (C131)	Fluvial-Hydroic Test (D127)	Clay-Retic Water Table (C132)	Fluvial-Hydroic Test (D128)	Clay-Retic Water Table (C133)	Fluvial-Hydroic Test (D129)	Clay-Retic Water Table (C134)	Fluvial-Hydroic Test (D130)	Clay-Retic Water Table (C135)	Fluvial-Hydroic Test (D131)	Clay-Retic Water Table (C136)	Fluvial-Hydroic Test (D132)	Clay-Retic Water Table (C137)	Fluvial-Hydroic Test (D133)	Clay-Retic Water Table (C138)	Fluvial-Hydroic Test (D134)	Clay-Retic Water Table (C139)	Fluvial-Hydroic Test (D135)	Clay-Retic Water Table (C140)	Fluvial-Hydroic Test (D136)	Clay-Retic Water Table (C141)	Fluvial-Hydroic Test (D137)	Clay-Retic Water Table (C142)	Fluvial-Hydroic Test (D138)	Clay-Retic Water Table (C143)	Fluvial-Hydroic Test (D139)	Clay-Retic Water Table (C144)	Fluvial-Hydroic Test (D140)	Clay-Retic Water Table (C145)	Fluvial-Hydroic Test (D141)	Clay-Retic Water Table (C146)	Fluvial-Hydroic Test (D142)	Clay-Retic Water Table (C147)	Fluvial-Hydroic Test (D143)	Clay-Retic Water Table (C148)	Fluvial-Hydroic Test (D144)	Clay-Retic Water Table (C149)	Fluvial-Hydroic Test (D145)	Clay-Retic Water Table (C150)	Fluvial-Hydroic Test (D146)	Clay-Retic Water Table (C151)	Fluvial-Hydroic Test (D147)	Clay-Retic Water Table (C152)	Fluvial-Hydroic Test (D148)	Clay-Retic Water Table (C153)	Fluvial-Hydroic Test (D149)	Clay-Retic Water Table (C154)	Fluvial-Hydroic Test (D150)	Clay-Retic Water Table (C155)	Fluvial-Hydroic Test (D151)	Clay-Retic Water Table (C156)	Fluvial-Hydroic Test (D152)	Clay-Retic Water Table (C157)	Fluvial-Hydroic Test (D153)	Clay-Retic Water Table (C158)	Fluvial-Hydroic Test (D154)	Clay-Retic Water Table (C159)	Fluvial-Hydroic Test (D155)	Clay-Retic Water Table (C160)	Fluvial-Hydroic Test (D156)	Clay-Retic Water Table (C161)	Fluvial-Hydroic Test (D157)	Clay-Retic Water Table (C162)	Fluvial-Hydroic Test (D158)	Clay-Retic Water Table (C163)	Fluvial-Hydroic Test (D159)	Clay-Retic Water Table (C164)	Fluvial-Hydroic Test (D160)	Clay-Retic Water Table (C165)	Fluvial-Hydroic Test (D161)	Clay-Retic Water Table (C166)	Fluvial-Hydroic Test (D162)	Clay-Retic Water Table (C167)	Fluvial-Hydroic Test (D163)	Clay-Retic Water Table (C168)	Fluvial-Hydroic Test (D164)	Clay-Retic Water Table (C169)	Fluvial-Hydroic Test (D165)	Clay-Retic Water Table (C170)	Fluvial-Hydroic Test (D166)	Clay-Retic Water Table (C171)	Fluvial-Hydroic Test (D167)	Clay-Retic Water Table (C172)	Fluvial-Hydroic Test (D168)	Clay-Retic Water Table (C173)	Fluvial-Hydroic Test (D169)	Clay-Retic Water Table (C174)	Fluvial-Hydroic Test (D170)	Clay-Retic Water Table (C175)	Fluvial-Hydroic Test (D171)	Clay-Retic Water Table (C176)	Fluvial-Hydroic Test (D172)	Clay-Retic Water Table (C177)	Fluvial-Hydroic Test (D173)	Clay-Retic Water Table (C178)	Fluvial-Hydroic Test (D174)	Clay-Retic Water Table (C179)	Fluvial-Hydroic Test (D175)	Clay-Retic Water Table (C180)	Fluvial-Hydroic Test (D176)	Clay-Retic Water Table (C181)	Fluvial-Hydroic Test (D177)	Clay-Retic Water Table (C182)	Fluvial-Hydroic Test (D178)	Clay-Retic Water Table (C183)	Fluvial-Hydroic Test (D179)	Clay-Retic Water Table (C184)	Fluvial-Hydroic Test (D180)	Clay-Retic Water Table (C185)	Fluvial-Hydroic Test (D181)	Clay-Retic Water Table (C186)	Fluvial-Hydroic Test (D182)	Clay-Retic Water Table (C187)	Fluvial-Hydroic Test (D183)	Clay-Retic Water Table (C188)	Fluvial-Hydroic Test (D184)	Clay-Retic Water Table (C189)	Fluvial-Hydroic Test (D185)	Clay-Retic Water Table (C190)	Fluvial-Hydroic Test (D186)	Clay-Retic Water Table (C191)	Fluvial-Hydroic Test (D187)	Clay-Retic Water Table (C192)	Fluvial-Hydroic Test (D188)	Clay-Retic Water Table (C193)	Fluvial-Hydroic Test (D189)	Clay-Retic Water Table (C194)	Fluvial-Hydroic Test (D190)	Clay-Retic Water Table (C195)	Fluvial-Hydroic Test (D191)	Clay-Retic Water Table (C196)	Fluvial-Hydroic Test (D192)	Clay-Retic Water Table (C197)	Fluvial-Hydroic Test (D193)	Clay-Retic Water Table (C198)	Fluvial-Hydroic Test (D194)	Clay-Retic Water Table (C199)	Fluvial-H
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required):																																																																																																																																																																																																																																																																																																																																																																																																																																
Surface Water (A1)	Surface Soil Cracks (B6)																																																																																																																																																																																																																																																																																																																																																																																																																																
High Water Table (A2)	Sparsely Vegetated Concave Surface (B8)																																																																																																																																																																																																																																																																																																																																																																																																																																
Saturation (A3)	Orange Patterns (B10)																																																																																																																																																																																																																																																																																																																																																																																																																																
Water Marks (B1)	Clayey Rhizospheres on Living Roots (C3)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C1)	Yellow Stems																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C2)	Crustlike Structures (C5)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C3)	Saturation Visible on Aerial Imagery (C9)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C4)	Geomorphic Position (C10)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C5)	Fluvial-Hydroic Test (D1)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C6)	Fluvial-Hydroic Test (D2)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C7)	Fluvial-Hydroic Test (D3)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C8)	Fluvial-Hydroic Test (D4)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C9)	Fluvial-Hydroic Test (D5)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C10)	Fluvial-Hydroic Test (D6)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C11)	Fluvial-Hydroic Test (D7)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C12)	Fluvial-Hydroic Test (D8)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C13)	Fluvial-Hydroic Test (D9)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C14)	Fluvial-Hydroic Test (D10)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C15)	Fluvial-Hydroic Test (D11)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C16)	Fluvial-Hydroic Test (D12)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C17)	Fluvial-Hydroic Test (D13)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C18)	Fluvial-Hydroic Test (D14)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C19)	Fluvial-Hydroic Test (D15)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C20)	Fluvial-Hydroic Test (D16)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C21)	Fluvial-Hydroic Test (D17)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C22)	Fluvial-Hydroic Test (D18)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C23)	Fluvial-Hydroic Test (D19)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C24)	Fluvial-Hydroic Test (D20)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C25)	Fluvial-Hydroic Test (D21)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C26)	Fluvial-Hydroic Test (D22)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C27)	Fluvial-Hydroic Test (D23)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C28)	Fluvial-Hydroic Test (D24)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C29)	Fluvial-Hydroic Test (D25)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C30)	Fluvial-Hydroic Test (D26)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C31)	Fluvial-Hydroic Test (D27)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C32)	Fluvial-Hydroic Test (D28)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C33)	Fluvial-Hydroic Test (D29)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C34)	Fluvial-Hydroic Test (D30)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C35)	Fluvial-Hydroic Test (D31)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C36)	Fluvial-Hydroic Test (D32)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C37)	Fluvial-Hydroic Test (D33)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C38)	Fluvial-Hydroic Test (D34)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C39)	Fluvial-Hydroic Test (D35)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C40)	Fluvial-Hydroic Test (D36)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C41)	Fluvial-Hydroic Test (D37)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C42)	Fluvial-Hydroic Test (D38)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C43)	Fluvial-Hydroic Test (D39)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C44)	Fluvial-Hydroic Test (D40)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C45)	Fluvial-Hydroic Test (D41)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C46)	Fluvial-Hydroic Test (D42)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C47)	Fluvial-Hydroic Test (D43)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C48)	Fluvial-Hydroic Test (D44)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C49)	Fluvial-Hydroic Test (D45)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C50)	Fluvial-Hydroic Test (D46)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C51)	Fluvial-Hydroic Test (D47)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C52)	Fluvial-Hydroic Test (D48)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C53)	Fluvial-Hydroic Test (D49)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C54)	Fluvial-Hydroic Test (D50)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C55)	Fluvial-Hydroic Test (D51)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C56)	Fluvial-Hydroic Test (D52)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C57)	Fluvial-Hydroic Test (D53)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C58)	Fluvial-Hydroic Test (D54)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C59)	Fluvial-Hydroic Test (D55)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C60)	Fluvial-Hydroic Test (D56)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C61)	Fluvial-Hydroic Test (D57)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C62)	Fluvial-Hydroic Test (D58)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C63)	Fluvial-Hydroic Test (D59)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C64)	Fluvial-Hydroic Test (D60)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C65)	Fluvial-Hydroic Test (D61)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C66)	Fluvial-Hydroic Test (D62)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C67)	Fluvial-Hydroic Test (D63)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C68)	Fluvial-Hydroic Test (D64)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C69)	Fluvial-Hydroic Test (D65)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C70)	Fluvial-Hydroic Test (D66)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C71)	Fluvial-Hydroic Test (D67)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C72)	Fluvial-Hydroic Test (D68)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C73)	Fluvial-Hydroic Test (D69)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C74)	Fluvial-Hydroic Test (D70)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C75)	Fluvial-Hydroic Test (D71)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C76)	Fluvial-Hydroic Test (D72)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C77)	Fluvial-Hydroic Test (D73)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C78)	Fluvial-Hydroic Test (D74)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C79)	Fluvial-Hydroic Test (D75)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C80)	Fluvial-Hydroic Test (D76)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C81)	Fluvial-Hydroic Test (D77)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C82)	Fluvial-Hydroic Test (D78)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C83)	Fluvial-Hydroic Test (D79)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C84)	Fluvial-Hydroic Test (D80)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C85)	Fluvial-Hydroic Test (D81)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C86)	Fluvial-Hydroic Test (D82)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C87)	Fluvial-Hydroic Test (D83)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C88)	Fluvial-Hydroic Test (D84)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C89)	Fluvial-Hydroic Test (D85)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C90)	Fluvial-Hydroic Test (D86)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C91)	Fluvial-Hydroic Test (D87)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C92)	Fluvial-Hydroic Test (D88)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C93)	Fluvial-Hydroic Test (D89)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C94)	Fluvial-Hydroic Test (D90)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C95)	Fluvial-Hydroic Test (D91)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C96)	Fluvial-Hydroic Test (D92)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C97)	Fluvial-Hydroic Test (D93)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C98)	Fluvial-Hydroic Test (D94)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C99)	Fluvial-Hydroic Test (D95)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C100)	Fluvial-Hydroic Test (D96)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C101)	Fluvial-Hydroic Test (D97)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C102)	Fluvial-Hydroic Test (D98)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C103)	Fluvial-Hydroic Test (D99)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C104)	Fluvial-Hydroic Test (D100)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C105)	Fluvial-Hydroic Test (D101)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C106)	Fluvial-Hydroic Test (D102)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C107)	Fluvial-Hydroic Test (D103)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C108)	Fluvial-Hydroic Test (D104)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C109)	Fluvial-Hydroic Test (D105)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C110)	Fluvial-Hydroic Test (D106)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C111)	Fluvial-Hydroic Test (D107)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C112)	Fluvial-Hydroic Test (D108)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C113)	Fluvial-Hydroic Test (D109)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C114)	Fluvial-Hydroic Test (D110)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C115)	Fluvial-Hydroic Test (D111)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C116)	Fluvial-Hydroic Test (D112)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C117)	Fluvial-Hydroic Test (D113)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C118)	Fluvial-Hydroic Test (D114)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C119)	Fluvial-Hydroic Test (D115)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C120)	Fluvial-Hydroic Test (D116)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C121)	Fluvial-Hydroic Test (D117)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C122)	Fluvial-Hydroic Test (D118)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C123)	Fluvial-Hydroic Test (D119)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C124)	Fluvial-Hydroic Test (D120)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C125)	Fluvial-Hydroic Test (D121)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C126)	Fluvial-Hydroic Test (D122)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C127)	Fluvial-Hydroic Test (D123)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C128)	Fluvial-Hydroic Test (D124)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C129)	Fluvial-Hydroic Test (D125)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C130)	Fluvial-Hydroic Test (D126)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C131)	Fluvial-Hydroic Test (D127)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C132)	Fluvial-Hydroic Test (D128)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C133)	Fluvial-Hydroic Test (D129)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C134)	Fluvial-Hydroic Test (D130)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C135)	Fluvial-Hydroic Test (D131)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C136)	Fluvial-Hydroic Test (D132)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C137)	Fluvial-Hydroic Test (D133)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C138)	Fluvial-Hydroic Test (D134)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C139)	Fluvial-Hydroic Test (D135)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C140)	Fluvial-Hydroic Test (D136)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C141)	Fluvial-Hydroic Test (D137)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C142)	Fluvial-Hydroic Test (D138)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C143)	Fluvial-Hydroic Test (D139)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C144)	Fluvial-Hydroic Test (D140)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C145)	Fluvial-Hydroic Test (D141)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C146)	Fluvial-Hydroic Test (D142)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C147)	Fluvial-Hydroic Test (D143)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C148)	Fluvial-Hydroic Test (D144)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C149)	Fluvial-Hydroic Test (D145)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C150)	Fluvial-Hydroic Test (D146)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C151)	Fluvial-Hydroic Test (D147)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C152)	Fluvial-Hydroic Test (D148)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C153)	Fluvial-Hydroic Test (D149)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C154)	Fluvial-Hydroic Test (D150)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C155)	Fluvial-Hydroic Test (D151)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C156)	Fluvial-Hydroic Test (D152)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C157)	Fluvial-Hydroic Test (D153)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C158)	Fluvial-Hydroic Test (D154)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C159)	Fluvial-Hydroic Test (D155)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C160)	Fluvial-Hydroic Test (D156)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C161)	Fluvial-Hydroic Test (D157)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C162)	Fluvial-Hydroic Test (D158)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C163)	Fluvial-Hydroic Test (D159)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C164)	Fluvial-Hydroic Test (D160)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C165)	Fluvial-Hydroic Test (D161)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C166)	Fluvial-Hydroic Test (D162)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C167)	Fluvial-Hydroic Test (D163)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C168)	Fluvial-Hydroic Test (D164)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C169)	Fluvial-Hydroic Test (D165)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C170)	Fluvial-Hydroic Test (D166)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C171)	Fluvial-Hydroic Test (D167)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C172)	Fluvial-Hydroic Test (D168)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C173)	Fluvial-Hydroic Test (D169)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C174)	Fluvial-Hydroic Test (D170)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C175)	Fluvial-Hydroic Test (D171)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C176)	Fluvial-Hydroic Test (D172)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C177)	Fluvial-Hydroic Test (D173)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C178)	Fluvial-Hydroic Test (D174)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C179)	Fluvial-Hydroic Test (D175)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C180)	Fluvial-Hydroic Test (D176)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C181)	Fluvial-Hydroic Test (D177)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C182)	Fluvial-Hydroic Test (D178)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C183)	Fluvial-Hydroic Test (D179)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C184)	Fluvial-Hydroic Test (D180)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C185)	Fluvial-Hydroic Test (D181)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C186)	Fluvial-Hydroic Test (D182)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C187)	Fluvial-Hydroic Test (D183)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C188)	Fluvial-Hydroic Test (D184)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C189)	Fluvial-Hydroic Test (D185)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C190)	Fluvial-Hydroic Test (D186)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C191)	Fluvial-Hydroic Test (D187)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C192)	Fluvial-Hydroic Test (D188)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C193)	Fluvial-Hydroic Test (D189)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C194)	Fluvial-Hydroic Test (D190)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C195)	Fluvial-Hydroic Test (D191)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C196)	Fluvial-Hydroic Test (D192)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C197)	Fluvial-Hydroic Test (D193)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C198)	Fluvial-Hydroic Test (D194)																																																																																																																																																																																																																																																																																																																																																																																																																																
Clay-Retic Water Table (C199)	Fluvial-H																																																																																																																																																																																																																																																																																																																																																																																																																																

404 Permit Process

We are here ***to ensure*** projects have the necessary 404 permit to comply with the Clean Water Act

If we need cross sections we can ask for them later on.

ODOT 404 Submittal Process through Project Management (State Projects)

- Transmittal Memo
- PCN- *with calculations (if any)*
- Plans

These are submitted to PM who then provides us with a submittal package with everything.

Calculations

How do we make the determination

Ordinary High Water Mark & Q2

PCN Form

Impact Examples

What is your role as a designer

Calculations

Q2 or Ordinary High Water Mark

OHWM USACE Definition:

“The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.”

Q2

The average two year flooding event capacity

READ THE DEFINITION! – OHWM is a physical mark that is identified in the field. You are fine using Q2 even if it is a little conservative. If there are sizeable discrepancies amongst calculations, we use the field verified OHWM and may ask you to recalculate if necessary. Use what looks right!

Modified PCN Form

- Will be available online
- *Please- Do not add wetland impacts unless you are told to!*
- Changes
 - Program Construction Project Cost
 - Cubic Yards of Fill (only for impacts >0.1 acres)
 - Linear Feet of Impacts

**OKLAHOMA DEPARTMENT OF TRANSPORTATION
SECTION 404 PRE-CONSTRUCTION NOTIFICATION FORM FOR STATE PROJECTS**

DATE: _____

Project No.:	J/P:	Facility:	County:
Description:			
Let Date:	Division:	Programmed Construction Project Cost:	

Sta or Str. No.	Location			Waterbody Critical Resource Water?	Type	Description		Calculations			Notes
	Latitude	Longitude	Legal			Existing Structure/Condition	New Structure	Area acre	Cubic Yards of Fill*	Linear Feet of Impacts	
Structure name and Station from plans	Decimal Degrees	Decimal Degrees	Township, Range, Section	Name of Waterbody and if it is a Critical Resource Water	See below	Size, Type, and Condition of Structure	Size and Type of Structure	Area of Fill below OHWM	Cubic Yards of fill	Length of Impacts to Blue Line Stream	Number 1, 2, etc. List note description below

AVOIDANCE AND MINIMIZATION:
Provide a brief explanation describing how impacts to waters of the United States are being avoided and minimized on the project site. Also provide a brief description of how impacts to waters of the United States will be compensated for, or a brief statement explaining why compensatory mitigation should not be required for those impacts.

Types: BP—Bank Protection, CC—Channel Change, Chan—Channel Work, RCB—Reinforced Concrete Box, SB—Span Bridge, **Wet—Wetlands, Misc—Miscellaneous
*Only necessary if impacts are over 0.1 acres
**Wetland information will be added from the delineation report by ODOT

- Notes:
- Number 1, 2, etc. Describe note here
 - Note whether the impact is fill or excavation in existing channel
 - Note type of fill (rip rap, drilled shafts, dirt, etc.)
 - Note Ordinary High Water Mark (OHWM) elevation
 - Note any other important information pertaining to the calculations and impacts

FHWA Approved Clearance type: _____ CE: _____ FONSI/EA: _____ EIS: _____ Date: _____ Pending: _____ None: _____

Applicant: _____ Name: Oklahoma Department of Transportation Phone No: (405) 522-0734

Address: _____ 200 Northeast 21st Street, Oklahoma City, OK 73105-3204

Application Prepared By: _____ Name: ODOT Designer or Consultant Name Phone No: _____

Processing Agent: _____ Oklahoma Department of Transportation

Program Construction Cost can be found on ODOT's 8 year work plan and helps Shane for his annual reporting.

Cubic yards of fill only need to be included if our impacts (fill) is greater than 0.1 acres – this is for mitigation purposes

Linear Feet of Impacts- Linear feet should be measured from the center of the stream and include all bends and meanders- this is NOT just the length of your box!!

Please include LAT/LONG for each structure- decimal degrees – there should be different coordinates for each structure

A& M Statement is very important- please make this suitable for the amount of impact. If your project has a lot of impact and will require mitigation you should have a really solid A & M statement! You can find this information on the project initiation report and even the data recon can forewarn you of issues to come!

OKLAHOMA DEPARTMENT OF TRANSPORTATION
SECTION 404 PRE-CONSTRUCTION NOTIFICATION FORM FOR
COUNTY PROJECTS

DATE: _____

Project No.:	J/P:	Facility:	County:
Description:			
Let Date:	Division:	Programmed Construction Project Cost:	

Sta or Str. No.	Location			Waterbody	Type	Description		Calculations			Notes
	Latitude	Longitude	Legal			Existing Structure/Condition	New Structure	Area	Cubic	Linear Feet of	
	Degrees	Degrees	Township, Range, Section	Critical Resource Water?		Size, Type, and Condition of Structure	Size and Type of Structure	acre	Yards of Fill*	Impacts	
Structure name and Station from plans	Decimal	Decimal		Name of Waterbody and if it is a Critical Resource Water	See below			Area of Fill below OHWM	Cubic Yards of fill	Length of Impacts to Blue Line Stream	Number 1, 2, etc. List note description below

AVOIDANCE AND MINIMIZATION:
 Provide a brief explanation describing how impacts to waters of the United States are being avoided and minimized on the project site. Also provide a brief description of how impacts to waters of the United States will be compensated for, or a brief statement explaining why compensatory mitigation should not be required for those impacts.

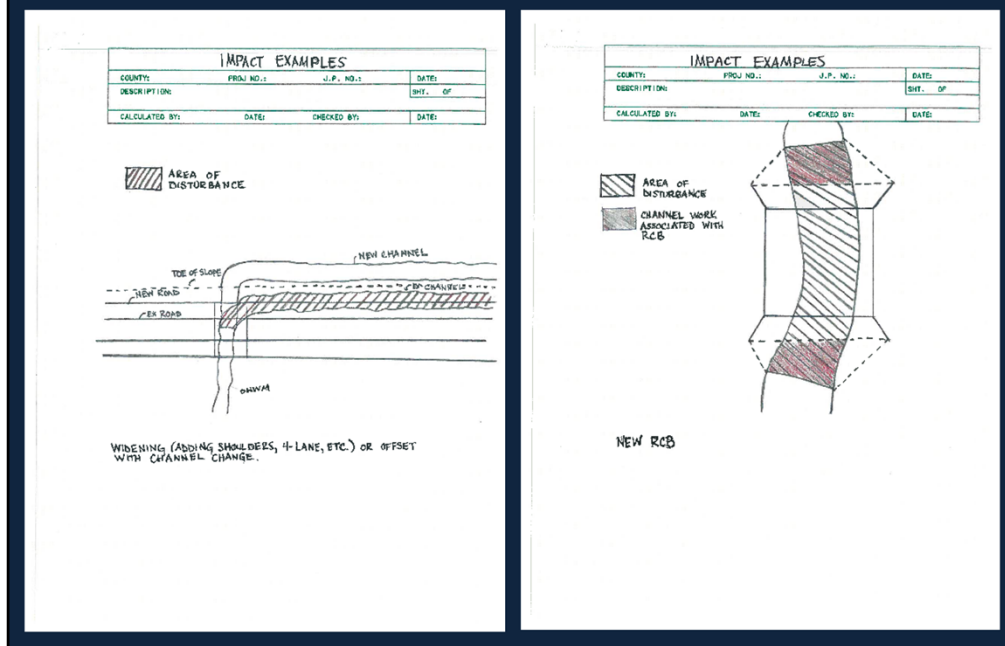
Types: BP—Bank Protection, CC—Channel Change, Chan—Channel Work, RCB—Reinforced Concrete Box, SB—Span Bridge, "Wet—Wetlands, Misc—Miscellaneous
 *Only necessary if impacts are over 0.1 acres
 **Wetland information will need to be added from the delineation report by the Consultant

Notes: Number 1, 2, etc. Describe note here
 • Note whether the impact is fill or excavation in existing channel
 • Note type of fill (rip rap, drilled shafts, dirt, etc.)
 • Note Ordinary High Water Mark (OHWM) elevation
 • Note any other important information pertaining to the calculations and impacts

FHWA Approved Clearance type: CE: _____ FONSI/EA: _____ EIS: _____ Date: _____ Pending: _____ None: _____
 Applicant: Name: County Commissioner Name Phone No: (405) 522-0734
 Address: County Address
 Application Prepared By: Name: Consultant Name or County Name Phone No: _____
 Processing Agent: Consultant or County Address

Local Government has it's own PCN form. We do not review County projects at ODOT but we can certainly answer questions- please don't hesitate to give us a call if you need help! The main difference with these forms is the process- these will be submitted by local government to the corps.

Impacts- RCBs

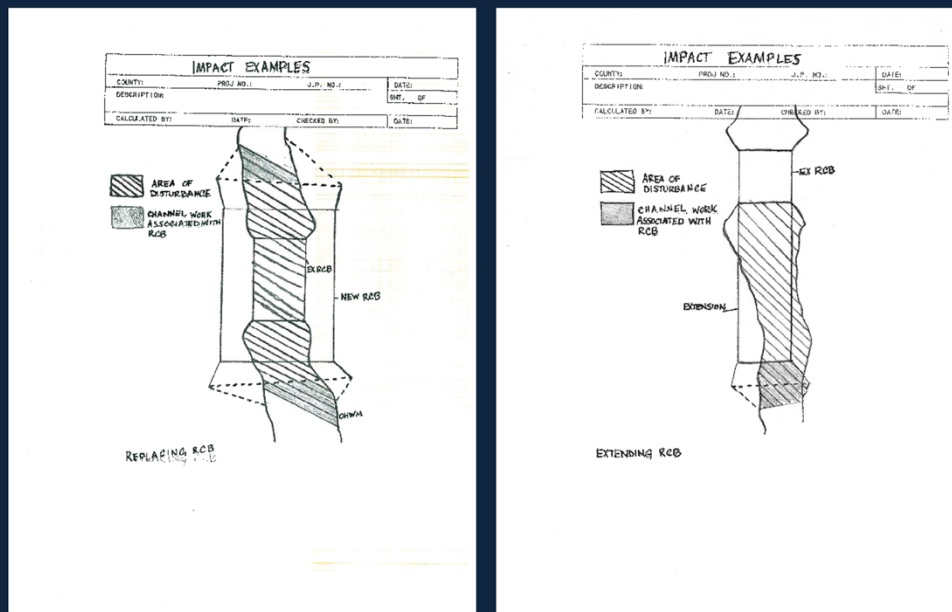


For starters the main thing I want to point out is that if it is fill within the channel it needs to be accounted for. Whether it is dirt, rip-rap, or concrete it is all considered fill.

On the left we have an example where the road is being widened and so the channel needs to be moved to accommodate this change. All of the shaded area is channel that is being impacted.

On the right is an example of a box completely taking the place of the stream so we count the fill for the entire length of the box up to the apron to include any dirt fill at the end.

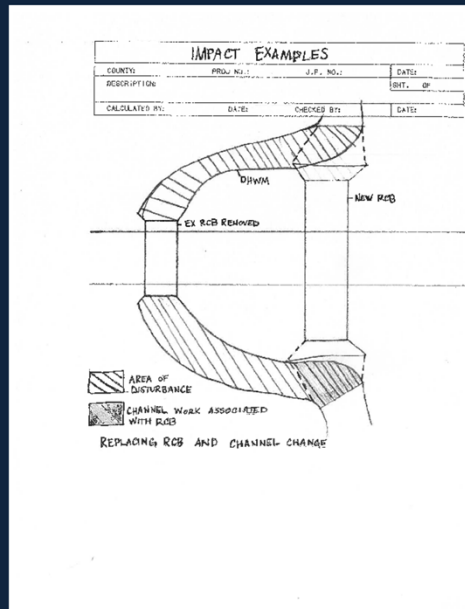
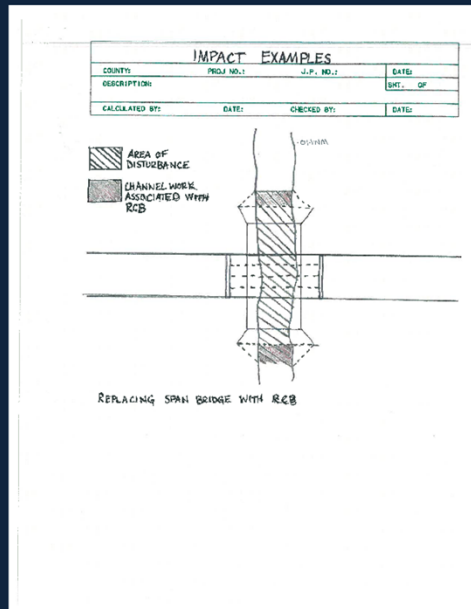
Impacts- RCBs



On the left we have an example of replacing an box- the center portion should also be shaded because the whole length up to the new apron is fill within the channel.

On the right we have a short box which is being extended. The new length should all be counted as fill within the channel.

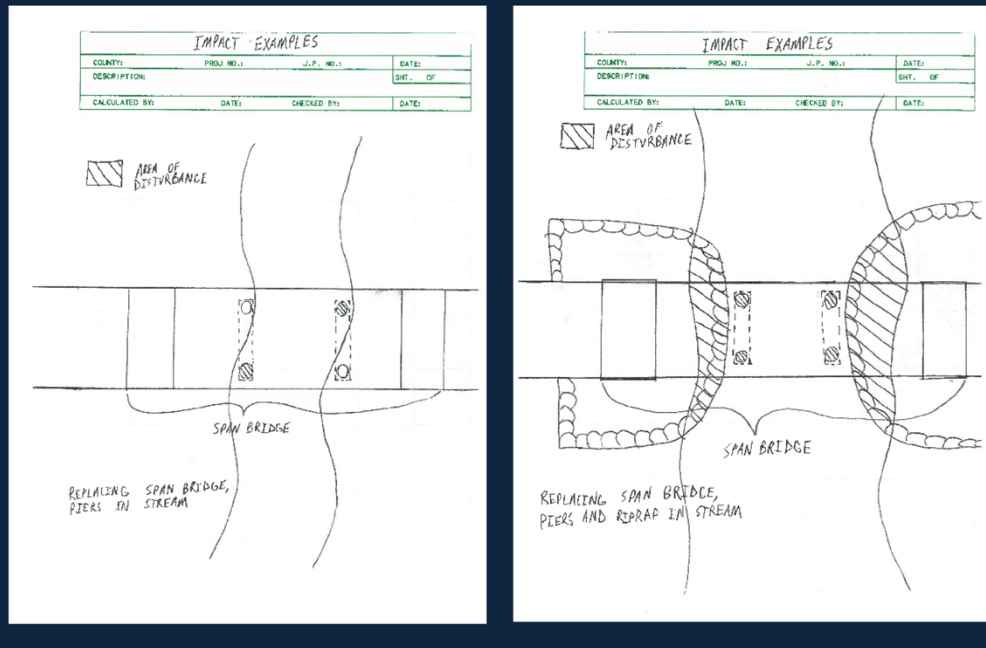
Impacts- RCBs



On the left we have an example of replacing a Span bridge with an RCB- the entire length of the new box needs to be counted as fill within the channel.

On the right we have an example of removing an old box and re-channelizing the length of stream- the shaded area is all being cut off. In this instance we not only give acres of fill AND linear feet of fill.

Impacts- Span Bridges

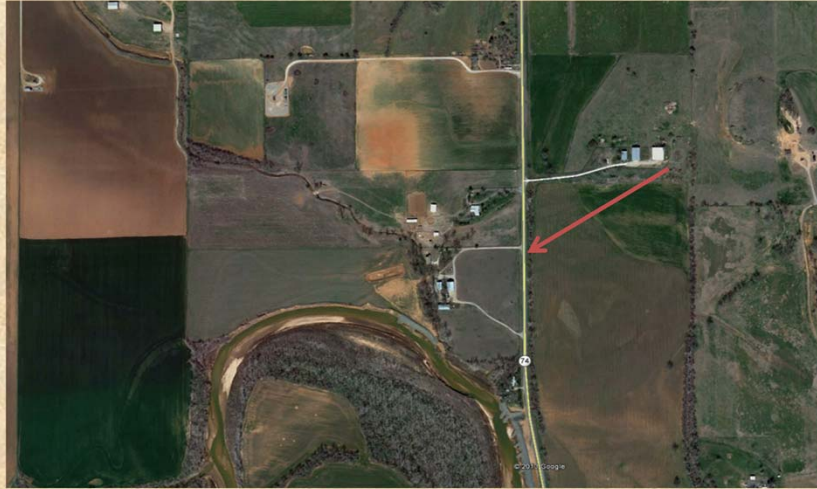


On the left is an example of replacing piers on a span bridge – as you can see only 2 piers are below the OHWM and therefore are the only two counted as fill.

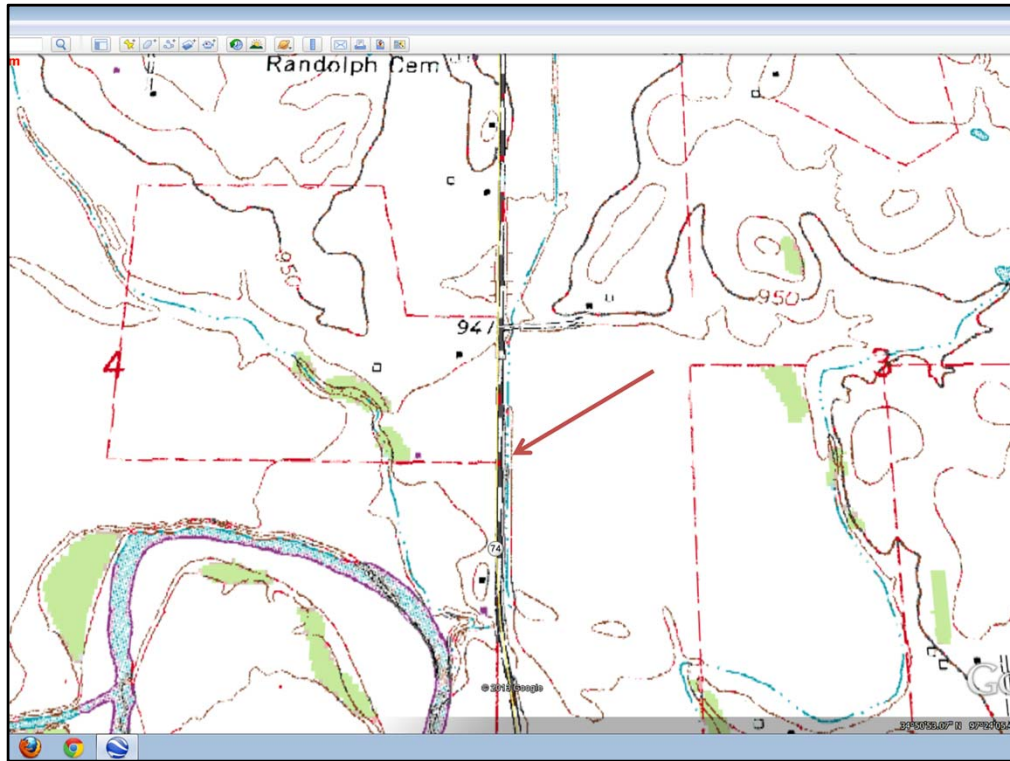
On the right is an example of replacing piers however as you can see we have rip rap below the OHWM which must be counted as fill.

Blue Line 'Ditches'

If a ditch is mapped as a 'Blue Line' on a USGS Topo Map, any impacts need to be included on the PCN form



Yes, it is functioning as a bar ditch but it is still mapped on the USGS Quad as a blue line and is therefore JURISDICTIONAL !



Calculations

What is your role as a designer?

- Think Creatively, Be Flexible
 - Pull in Toes of Slope
 - Modifying Alignment
- Consider the 404 permit early in the process

Pull in toes

Slopes behind Guardrail – rather than 6:1 go 3:1 if necessary > we have done this before

Can we align to the south to avoid wetlands on the north & vice versa

We rely on the designers to work with us to consider creative solutions so we can AVOID and MINIMIZE impacts as much as possible!

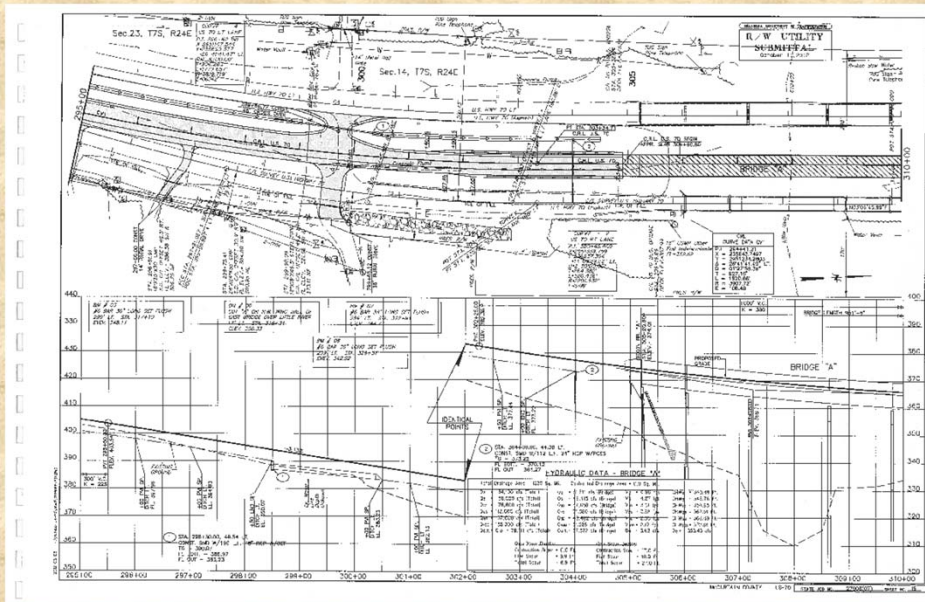
Avoidance, Minimization, Mitigation Examples

Avoidance → Minimization → Mitigation

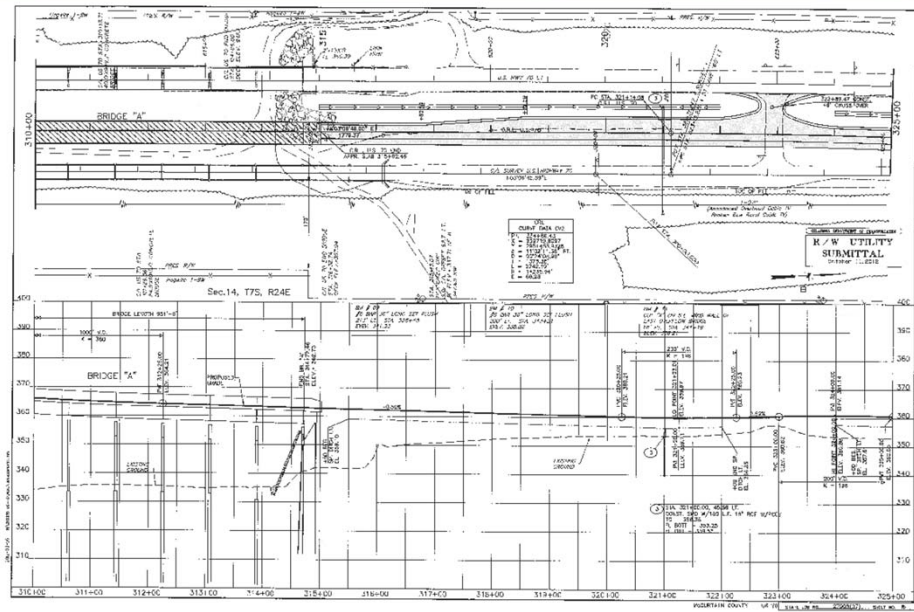
- McCurtain Co., J/P 27908(07), US-70
- Grady Co., J/P 28038(04), SH-19
- Kiowa Co., J/P 26477(04), SH-19

Jared is going to talk about real-world ODOT examples where we have successfully avoided & minimized.

McCurtain Co., US-70



McCurtain Co., US-70



McCurtain Co., US-70



Figure 5a. Site Map

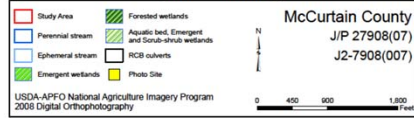
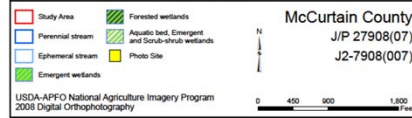
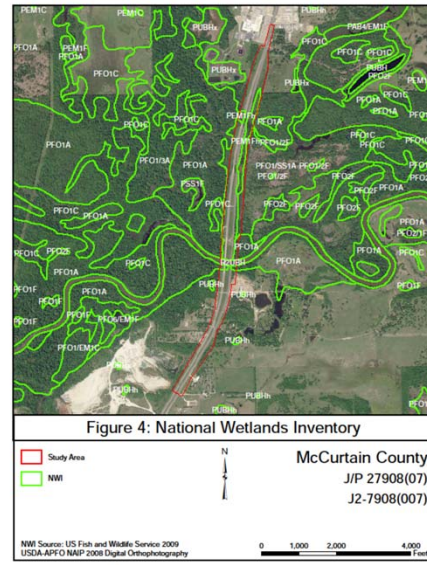
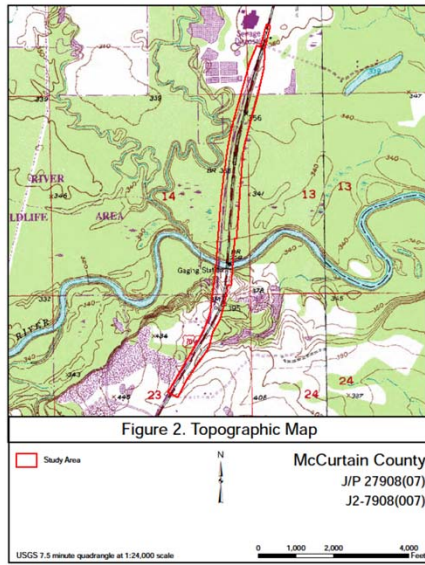


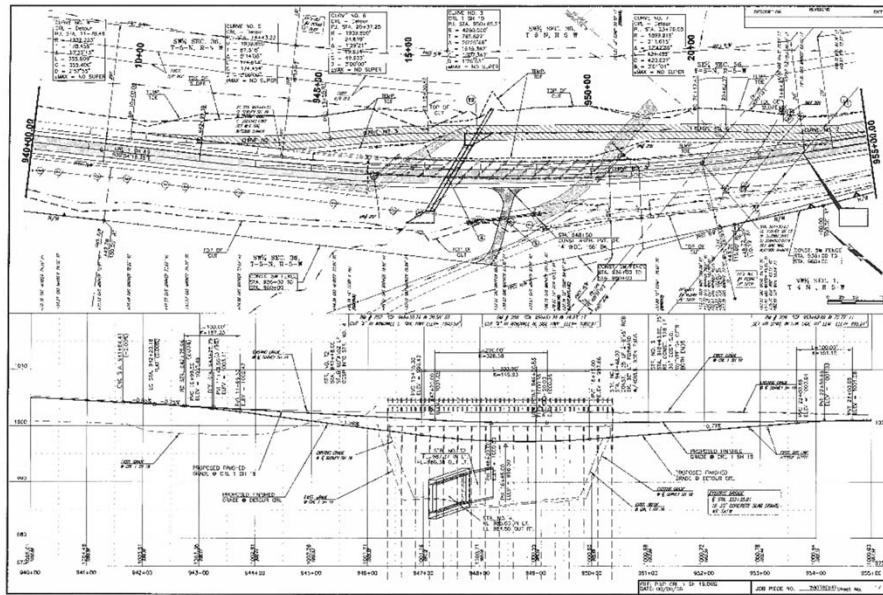
Figure 5b. Site Map



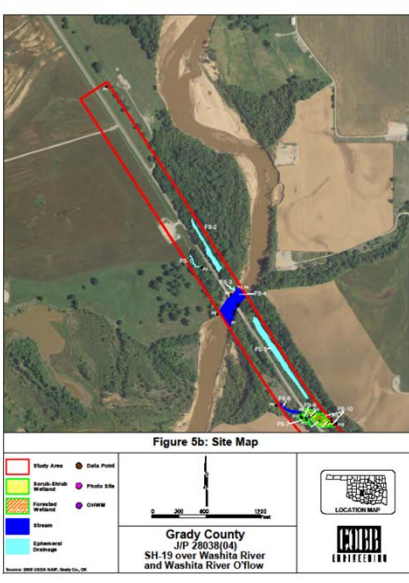
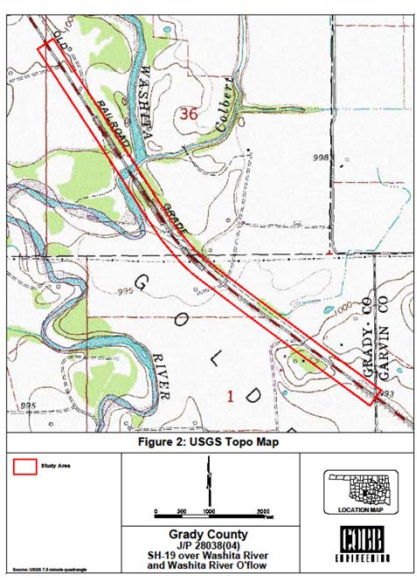
McCurtain Co., US-70



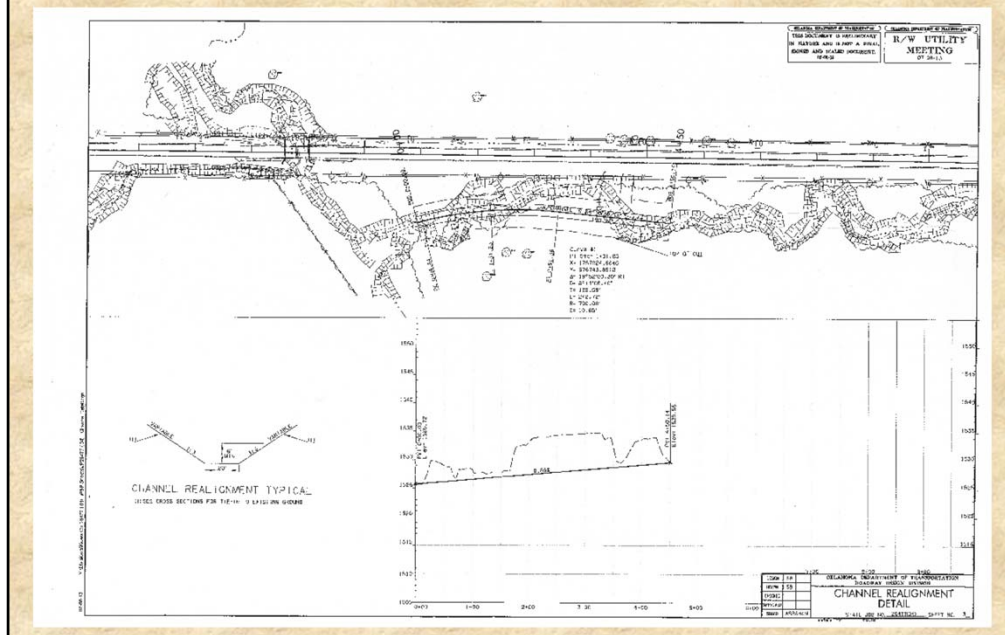
Grady Co., SH-19



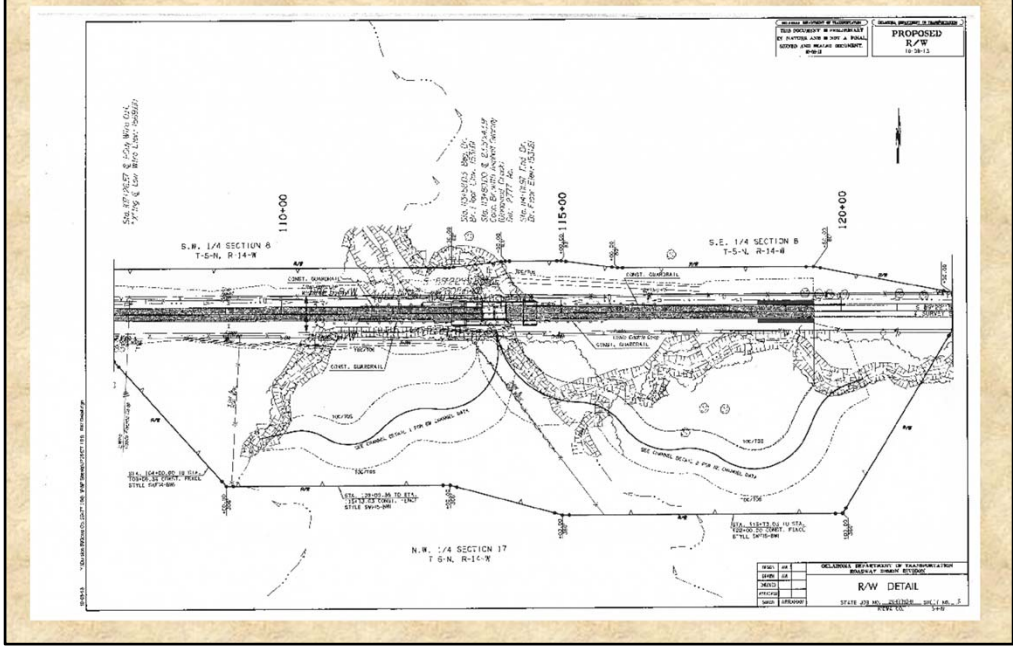
Grady Co., SH-19



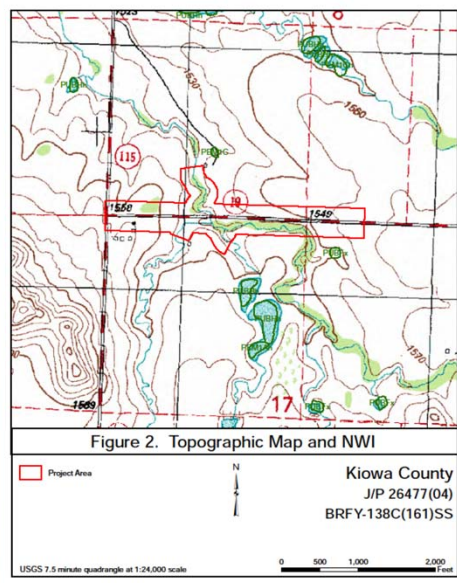
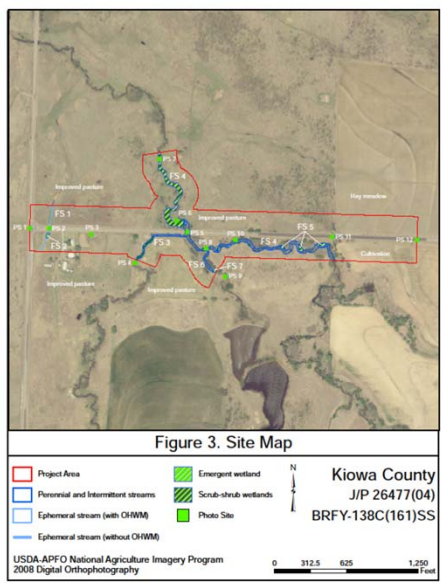
Kiowa Co., SH-19



Kiowa Co., SH-19



Kiowa Co., SH-19



Mitigation

- This is where early planning and communication can especially be helpful
- Replacing function for function
- Avoidance, Minimization then Mitigation

Thank You!

Questions?

