



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PLAN FIELD SHEET

January 2020

Meter Passed End

of Day CCV

Yes / No

WIN Station Name: Big Horse Creek upstream of Old River Road

Date: 11/15/2021

WIN/Field ID: G4NW0298

WBID: 28

ENR:

Latitude: 30.914408

County: OKALOOSA

Org ID: 21FLPNS

Longitude: -86.579745

Receiving Body of Water: -

RQ- 2021-08-23-10

Sampling Team Members		WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
☒	Christopher Stopher Slade			x		
☒	Nathan Mulkey	x	x		x	x
☐						
☐						

Sampling Equipment	
☒ Sample Container	☐ Carboy
☐ Dipper	☐ Van Dorn
☒ Syringe	☐ Pole
Depth measured with: Meter	
Secchi Equipment ID:	
Collection Method	
☒ Wading	☐ Canoe/Kayak
☐ From Shore	☐ Electric Motor
☐ Other _____	☐ Gasoline Motor

Water Level: ☒ Normal ☐ Low ☐ High ☐ Dry ☐ Pooled ☐ Flooded						Meter ID# 154179 (PRODSS)							
Photos: YES		Flow: FLOW		Tide:		Tide Times: High: Low:							
Biological Samples Collected: ☐ None ☒ HA ☒ SCI ☒ RPS ☐ Algae ID ☒ LVS ☐ LVI Other:													
SBIO ID Numbers: SBIO ID 83466. HA ID 17094. RPS ID 98044 BenthID 45410													
Notes: COLD SUNNY DAY													

Duplicate Sample

Time Zone: CEN	Time: _____	Field ID: _____ (WIN ID_DUP)
WIN DMT Activity ID: _____		

Blank

Time Zone: _____	Time: _____	Field ID: _____ (Blank Type_DDDMMYYY)
DI Source: _____	Location: _____	
DI Type: _____	Equipment ID: _____	
DI Container (Name/ID):		DI Container Type:

LIMS EVENT ID: 2289872

WIN Import ID: _____

Enter Field Parameters, Verify Station ID In LIMS DMT: _____

(Initials/Date)

QC Station ID, Field Parameters In LIMS DMT: _____

(Initials/Date)

Scan/Save Field Sheets _____

(Initials/Date)

Migrate Data to WIN: _____

(Initials/Date)

Verify Data In WIN: _____

(Initials/Date)



RQ-2021-08-23-10

Customer: WQAP

Project ID: SMP

Collected By: Christopher Stopher Slade, Nathan Mulkey

Field Report Prepared By: Christopher Stopher Slade

Sampling Agency: FDEP

Place Label Here

WIN ID/Field ID:



G4NW0298

Location: Big Horse Creek upstream of Old River Road

Comments:

Matrix: Fresh

(Check one)

☒ GRAB☐ COMPOSITE

Date	Time	DO (mg/L)	DO (%SAT)	Temp. (C°)	pH	Sample Depth (m)	Secchi Disk (m)	Total Depth (m)	Sp COND (µmhos/cm)	Salinity (PPT)		
	845 CEN	10.55	95	11	5.65	0.25	0.5 ☒ VOB (S)	0.5	23.5	0.01		
11/15/2021												
	CEN											
Parameter Suite		Parameter Methods				Preservation		pH Check	# Bottles sent to Lab	Bottle Group		
Preserved Nutrients (P-500ML)		☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP				☒ Ice ☒ H2SO4*		☒ <2	1	A		
		Lot #	0353110	Exp:	1/11/22							
Metals (P-500ML)		☒ W-ICPMS ☒ W-ICP ☒ W-HARD				☒ Ice ☒ HNO3*		☐ <2	1	A		
		Lot #	0344060	Exp:	1/4/22							
Filtered Nutrients (P125ML)		☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter				☒ Ice			1	A		
		Filter Lot #	17236199									
		Syringe Lot #	1005533									
Chlorophyll (BP-1L)		☒ CHLSUITE-W				☒ Ice			1	A		
Physical/Aggregate (Fresh) (P-1L)		☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CL-IC / W-COLOR / W-SO4-IC / W-TDS				☒ Ice			1	A		
Physical/Aggregate (Marine) (P-1L)		☐ Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY				☐ Ice						
Macroinvertebrates (PJ-2L)		☐ MI-FW-QLDC	Formalin Lot #		-	☒ Formalin			2	B		
Periphyton (PT-50ML)		☐ ALGAE-ID				☐ Ice						
Microbiology (Contract Lab Bottle)		☐ E Coli ☐ F Coli ☐ Enterococci				☐ Ice						
Molecular (QPCR-P-500ML)		☐ PCR-HF183 ☐ PCR-BacR ☐ PCR-DG3				☐ Ice						
		☐ PCR-GULL2 ☐ PCR-GFD ☐				☐ Ice						
Tracers (BG-500ML)		☐ W-E8321-DI ☐ W-E8321-MS				☐ Ice						
Pesticides (BG-500ML) (BG-1L)		☒ W-E8321-DI	☒ WE8321-MS	☒ W-PSNP-TQ	W-CT-CL-R	☒ Ice			3	A		
Phytoplankton/Periphyton		W-PCL-TQ-R										
		W-CARB-AA (5 ml of MCAA** Buffer Solution)										
						DTY-QN-C						
						PKD-QN-BV		☐ Ice				
Name: Christopher Stopher Slade Nathan Mulkey					Signature:				Date: 11/15/2021			

*2.0 ml of Preservative used unless noted otherwise.

**MCAA: Monochloroacetic acid buffer solution

Site Name Big Horse Creek upstream of Old River Road Date: 11/15/21
Field ID 64NW0298 Storet 64NW0298 Project: SMP
Visit ID 83466 RQ: 2021-08-23-10
RPS ID 9804 LIMS ID: N/A
Macro ID N/A WBID 28
HA ID 17092

~~☒ LVI~~

~~☒ RPS/LVS Only~~

☒ Sample Site Created in SBIO

☒ Phys/Chem entered in SBIO

☒ HA entered in SBIO

Initial

FB

☒ Date and Initial QA: 11/18/2021, FB

☒ RPS entered in SBIO

Initial

FB

☒ Date and Initial QA: 11/15/2021 FB

☐ LVI entered in SBIO

Initial

☐ Date and Initial QA: _____

☒ < 2 m² vegetation

☐ Plants getting verified

Date submitted: _____

☐ Plants verified

Date returned: _____

☒ RPS authorized in SBIO

☒ Date and Initial: 11/18/2021, FB

☒ RPS score: 0.0

☐ VPDB authorized in SBIO

☐ Date and Initial: _____

☐ VPDB score: _____

☒ SCI complete: 01/27/2022, L.Homann

SCI Score: 87

DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID 83466 ORG ID 21FLPKS LATITUDE 30.9144
 COUNTY Opaloca STORET # 64NW0298 LONGITUDE 86.5797
 DATE 11/15/21 TIME 0845 SAMPLING AGENCY NWROC
 SITE NAME Big Horse Creek upstream of Old River Road
 FIELD ID/NAME 64NW0298 RECEIVING BODY OF WATER Yellow River

RIPARIAN ZONE / STREAM FEATURES RQ-2021-08-23-10 WBID 28

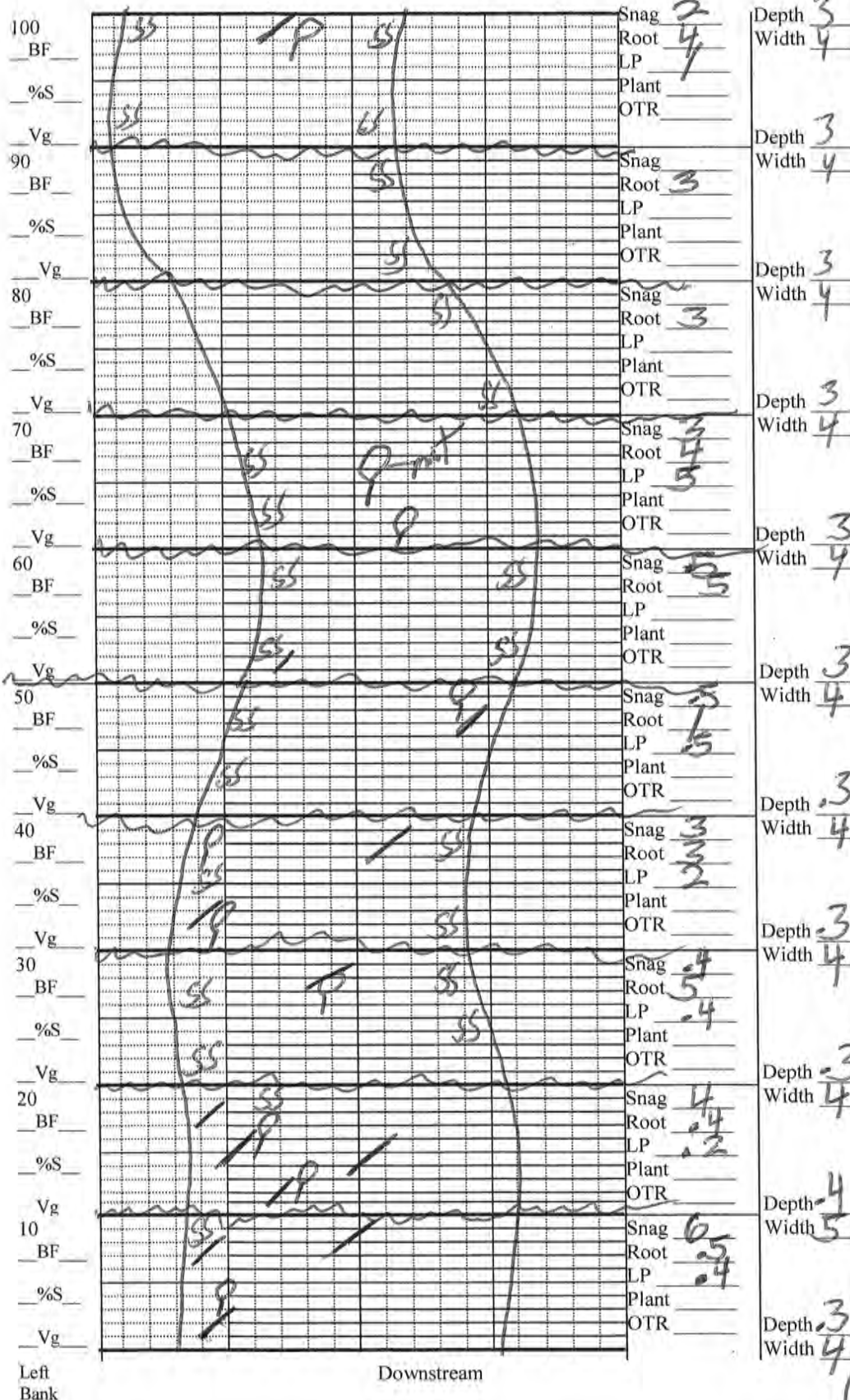
PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural ☐ Silviculture ☐ Field/Pasture ☐ Agricultural ☐ Residential ☐ Commercial ☐ Industry ☐ Other (Specify) ☐							Landscape Development Intensity Index (LDI) <u>1.6</u>
Local Watershed Erosion (select one): ☐ None ☐ Slight ☒ Moderate ☐ Heavy Local Watershed NPS Pollution: ☒ No evidence ☐ Slight ☐ Moderate ☐ Heavy							Typical Width (m) Depth (m)/Velocity (m/sec) Transect <u>4</u> m wide <u>25</u> m/s <u>25</u> m/s <u>25</u> m/s <u>3</u> m deep <u>3</u> m deep <u>3</u> m deep
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>>18</u> Right Bank: <u>>18</u>				Hydrologic Modification Score (per FT 3101) <u>1-2</u>			
High Water Mark: ☐ + ☐ = ☐ (m) (above present water level) (present depth) (above bed)				Artificially Impounded ☐ Yes ☒ No			
Artificially ☐ No ☐ Mostly recovered, more sinuous Channelized: ☒ Some recovery ☐ Recent, severe				Canopy Cover % ☐ Open ☐ Lightly Shaded (11-45%) ☐ Heavily Shaded ☒ Moderate Shaded (46-80%)			

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse		Sediment Odors ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify):		Smothering of Substrates Sand Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐ Silt Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐ Algae Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐			
SUBSTRATE TYPE Assessment Tool: ☒ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon			WATER QUALITY Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top: <u>0.25</u> <u>11.0</u> <u>5.47</u> <u>10.55</u> <u>94.9</u> <u>235</u> <u>0.01</u> <u>0.5</u> Mid: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☒ VOB Bottom: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ TOTAL DEPTH <u>0.5</u> Meter ID: <u>153179</u>				
Woody Debris (Snags) <u>485</u> <u>5</u> Undercut Banks / Roots <u>725</u> <u>5</u> Leaf Packs or Mat <u>2.4</u> <u>5</u> Aquatic Vegetation ☐ ☐ Rock or Shell Rubble ☐ ☐ Sand <u>85.5</u> <u>5</u> Mud / Muck / Silt ☐ ☐ Other ☐ ☐ Other ☐ ☐			Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: Exp: Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: Exp:				
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☒ ☐ ☐ Fish: ☐ ☐ ☒ ☐ Aquatic Plants: ☒ ☐ ☐ ☐ Iron/Sulfur Bacteria: ☐ ☒ ☐ ☐			Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐ Color Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify) ☐ Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐				
System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐			AMBIENT FIELD CONDITIONS / NOTES: ☒ The antecedent hydrologic conditions have been met to my best knowledge.				
SAMPLING TEAM <u>Nathan Mulkey / Stephen Slade</u>			SIGNATURE: <u>Nathan Mulkey</u>		DATE: <u>11/15/21</u>		

Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).

* perpendicular limb to stream bed



DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY: <u>FDEP NWROC</u>		STORET STATION NUMBER: <u>CHAN0298</u>	DATE (MM/DD/YY): <u>11/15/21</u>	RECEIVING BODY OF WATER: <u>Yellow River</u>
REMARKS: <u>Fall Ex Late Spring Oklahoma</u>	COUNTY: <u>Oklahoma</u>	LOCATION: <u>Big Horse Creek</u>	FIELD ID/NAME: <u>CHAN0298</u>	

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock)	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags)	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered
Substrate Diversity <u>12</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>10</u>	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity <u>15</u>	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering <u>10</u> ----- Primary Score <u>47</u>	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks.	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered.	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area.	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks.
Artificial Channelization <u>12</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull to top of bank. Bankfull is within or above the root zone with few raw, eroded areas.	Only meets 2 of the 3 requirements for optimal bank stability.	Only meets 1 of the 3 requirements for optimal bank stability.	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas.
Right Bank <u>10</u> Left Bank <u>6</u>	10 9	8 7 6	5 4	3 2 1
Riparian Buffer Zone Width	Width of vegetation greater than 18 m	Width of vegetation >12 to 18m	Width of vegetation 6 to 12 m. human activities close to system	Less than 6 m of buffer zone due to intensive human activities
Right Bank <u>10</u> Left Bank <u>10</u>	10 9	8 7 6	5 4	3 2 1
Riparian Zone Vegetation Quality	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance.	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed.	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious.	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions).
Right Bank <u>9</u> Left Bank <u>9</u> ----- Secondary Score <u>66</u>	10 9	8 7 6	5 4	3 2 1

113 TOTAL SCORE

Date: <u>11/15/21</u>	Analyst: <u>Nathan Malyk</u>	Signature: <u>Nathan Malyk</u>
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HA 17092

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Big Horse Creek</u>					County: <u>Oklahoma</u>		Date: <u>11/5/12</u>		Investigators: <u>Nathan Mulka</u>	
Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	
0	1	N			60	1	N			
	2					2				
	3					3				
	4					4				
	5			60		5			80	
	6					6				
	7					7				
	8					8				
	9					9				
10	1	N			70	1	N			
	2					2				
	3					3				
	4					4				
	5			76		5			78	
	6					6				
	7					7				
	8					8				
	9					9				
20	1	N			80	1	N			
	2					2				
	3					3				
	4					4				
	5			66		5			72	
	6					6				
	7					7				
	8					8				
	9					9				
30	1	N			90	1	N			
	2					2				
	3					3				
	4					4				
	5			72		5			78	
	6					6				
	7					7				
	8					8				
	9					9				
40	1	N			100	1	N			
	2					2				
	3					3				
	4					4				
	5			70		5			80	
	6					6				
	7					7				
	8					8				
	9					9				
50	1	N				1	N			
	2					2				
	3					3				
	4					4				
	5			72		5				
	6					6				
	7					7				
	8					8				
	9					9				

Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.

Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.

Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6.

Collect algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.

STORET Station Number:

64NW0298

Secchi depth	0.5
Estimated?	

# points ranked 4-6	0
total points assessed	99
% points ranked 4-6	0

Check accompanying data collected at same site/date.	
Algal mat sample	
Linear Veg Survey	
Habitat Assessment	
SCI/Biorecon	
Water sample	
RQ-2021-08-23-10	

Algal Thickness Rank

N	rough, no algae, slimy, algae up to 1mm
3	>1mm - 6mm
4	>6mm - 20mm
5	>20mm - 10 cm
6	>10 cm

SBIO ID: 83466

RPS ID: 9804

Station: Big Horse Creek upstream of Old River Rd.
Sample Date: 11/15/2021
SBIO ID 83466
Project: SMP / TMDL Studies

Storet G4NW0298
GPS 30.9144 x 86.5797
RQ-2021-08-23-10
County: Okaloosa

LIMS ID 2289872
WBID 28
Benth ID 45410

Variable Name	Rep 1	Rep 2	Avg./Pooled
AmphipodPct	0	0	0
ChironPct	23.33	25.81	24.57
ChironTaxa	10	12	11
ClingerTaxa	13	14	13.5
ColeopteraPct	22.67	20	21.335
DecapodaPct	2	2.58	2.29
DipteraPct	29.33	34.19	31.76
DominantPct	9.33	10.32	9.825
Dominant Taxa	Cheumatopsyche	Cheumatopsyche	Cheumatopsyche
EPTTaxa	17	17	17
EphemPct	18	14.84	16.42
EphemTaxa	7	9	8
FFBrowGrazPct	0	0	0
FFEpiColDepPct	42	38.06	40.03
FFParasitePct	0	0	0
FFPIPiercePct	0	0	0
FFPredCarnPct	16.33	15.16	15.745
FFScavPct	1.67	1.29	1.48
FFScrapePct	10.33	11.94	11.135
FFShredPct	9.67	8.06	8.865
FFSubColDepPct	0	0	0
FFSuspFiltPct	20	25.48	22.74
FFUnknownPct	0	0	0
GastropodaPct	0	0	0
IsopodaPct	0	0	0
LongLivedTaxa	8	4	6
OdonataPct	3.33	2.58	2.955
OligocPct	0	0	0
OligocTaxa	0	0	0
PelecypodaPct	0	0	0
PlecopPct	6.67	7.1	6.885
PolychaetePct	0	0	0
PolychaeteTaxa	0	0	0
SCI_2012_Rep	87.10811674	86.33104189	87
SensitiveTaxa	21	21	21
TanytarsiniPct	2	1.29	1.645
TotalDBar	0	0	0
TotalDensity	0	0	0
TotalNind	150	155	305
TotalTaxa	46	44	45
TrichopPct	16.67	17.42	17.045
TrichopTaxa	5	4	4.5
TrombidPct	1.33	1.29	1.31
VeryTolerantPct	0.67	0	0.335

SCI 2012	87
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