

RQ-2019-06-03-52

Field Personnel processing steps

- ☒ New Field IDs created (when using a new station) Date: 6/6/19 initials: mm ☐ NA
- ☒ Create entry in SMPStationCreationFile if new station is used
- \\Fidep1\wqap\NW ROC\TMDL\WIN_Station Creation
- ☒ Date sampled Date: 6/3 initials: mm
- ☒ Update MAT Date: 6/4 initials: mm
- ☒ Update "SMP Tracker" Date: 6/4 initials: mm
- ☐ Photos put into archive Date: _____ initials: _____ ☐ NA LATER
- ☒ RQ Sheet – from LIMS (display/print request)
- ☒ Field Sheets initialed/dated @ "Scan/Save Field Sheets" then scanned and saved into:
- Scans_ToBeProcessed Date: 6/6/19 initials: mm
- ☒ Update "Data Tracker"
- \\publicfiles\pubfds\DEAR\WQAPmonitoring\StrategicMonitoring\2019\21FLPNS
- Ready for folder system (top)

LIMS processing (to be completed by LIMS data personnel) (MC)

- ☐ Field parameters entered into LIMS Date: _____ initials: _____
- ☐ Digital RQ packet put into
- SMP 2019/Data/Scanned Field Sheets Date: _____ initials: _____
- ☐ Digital field Sheets put into archive Date: _____ initials: _____
- ☐ Date submitted for QA/QC Date: _____ initials: _____
- ☐ Update "Data Tracker"

Database processing (Cheryl)

- ☐ Field parameters QA/QC in LIMS Date: _____ initials: _____
- ☐ Lab results put into archive (CB) Date: _____ initials: _____
- ☐ Data migrated to WINS Date: _____ initials: _____
- ☐ Update "Data Tracker"

Notes:

Site Name Gaenier creek upstream of Lewis turner Blvd

Date: 6/3/19

Field ID G3NW0205 Storet G3NW0205

Project: SMP

Visit ID 79809

RQ: 2019-06-03-52

RPS ID 9368

LIMS ID: 2091077

Macro ID 11371

WBID: 655

HA ID 16058

☒ SCI

☐ RPS/LVS Only

☒ Sample Site Created in SBIO

☒ Phys/Chem entered in SBIO

☒ HA entered in SBIO Initial FB 06/13/19 ☐ Date and Initial QA: _____

☒ RPS entered in SBIO Initial FB 06/13/19 ☐ Date and Initial QA: _____

☒ LVS entered in SBIO Initial FB 06/13/19 ☐ Date and Initial QA: _____

☐ < 2 m² vegetation

☐ Plants getting verified Date submitted: _____

☐ Plants verified Date returned: _____

☐ RPS authorized in SBIO ☐ Date and Initial: _____

☐ RPS score: _____

☐ Macro authorized in SBIO ☐ Date and Initial: _____

☐ LVS Score: _____

☐ SCI complete: _____ SCI Score: _____

☒ Add SBIO-ID, HA-ID, RPS-ID, MACROPHYTE-ID and LIMS# to field sheet in database

Date of Request: 20-MAY-2019
 Created By: KING_M On: 20-MAY-2019
 Modified By: JASROTIA_P On: 21-MAY-2019
 Customer: NW-DIST
 Project: SMP
 Division: Division of Environmental Assessment and Restoration
 District: Northwest District NWROC
 Sampling Event: SMP Bioassessment

Send Coolers To:

Phone: 850-595-0605
 160 Government Center
 Suite 208
 Pensacola, FL 32502-5794
 Attn: Michael King

Program Module Number:

Priority: 3
 Event Status: R
 Criminal Investigation: NO
 Chemistry Request Reviewed By: WATTS_J On: 21-MAY-2019
 Biology Request Reviewed By: JASROTIA_P On: 21-MAY-2019
 Sampling Kit Required: NO Ship on:
 Sampling Kit Shipped:
 Sampling Kit Packed By:
 Preservatives Needed: NO
 Date to Receive Samples: 03-JUN-2019
 Received By: KLUG_K On: 04-JUN-2019

Send Final Report To:

160 Government Center
 Suite 208
 Pensacola, FL 32502-5794
 Attn: Cheryl Bunch

Report Type: Final Only
 FTP Data: NO
 QC Report: YES
 Date Log: NO
 Authorization Log: NO

Comments: Group A: Nutrients, Metals, Tracers, Q-PSNP-TQ
 Group B: SCI, Algae_ID
 Packing notes:
 Please send labels

Bottle Group A (Water) With 3 Samples:

Bottle Type: P-1L	Number of Bottles: 3	Preserved With: ICE
ALKALINITY	Template: DEFAULT	(SM 2320 B-97) Alkalinity in aqueous matrices as mg CaCO3/L
Total Alkalinity		
TURBIDITY	Template: DEFAULT	(EPA 180.1 Rev. 2.0) Turbidity in aqueous matrices
Turbidity		
W-CL-IC	Template: DEFAULT	(EPA 300.0 Rev. 2.1) Chloride in aqueous matrices
Chloride		
W-COLOR	Template: DEFAULT	(SM 2120 B) True Color measured at 450 nm
Color (true)		
W-F	Template: DEFAULT	(SM 4500 F-C-97) Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)
Fluoride		
W-SO4-IC	Template: DEFAULT	(EPA 300.0 Rev. 2.1) Sulfate in aqueous matrices
Sulfate		
W-TDS	Template: DEFAULT	(SM 2540 C-97) Total Dissolved Solids in aqueous matrices
TDS		
W-TSS	Template: DEFAULT	(SM 2540 D-97) Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample
TSS		
Bottle Type: BP-1L	Number of Bottles: 3	Preserved With: ICE
CHLSUITE-W	Template: DEFAULT	(SM 10200 H (mod.)) Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry
Chlorophyll-a, Corrected		
Chlorophyll-a, Uncorrected		
Phaeophytin-a		

Bottle Group A (Water) With 3 Samples:

Bottle Type: TEST HAS NO	Number of Bottles: 3	Preserved With: ICE
NW-UWF-ECQ	Template: DEFAULT	(SM 9223 B Quanti-Tray) E. coli by Colilert-18/QT by UWF in Pensacola
Escherichia Coli-Quanti-Tray		
Bottle Type: BG-500ML	Number of Bottles: 3	Preserved With: ICE
W-E8321-DI	Template: DEFAULT	(EPA 8321B) Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS
*Acesulfame K		
*AMPA		
*Endothall		
*Glufosinate		
*Glyphosate		
*Sucralose		
W-E8321-MS	Template:	(EPA 8321B) Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS
*Acetaminophen		
*Carbamazepine		
*Fluridone		
*Hydrocodone		
*Ibuprofen		
*Imazapyr		
*Naproxen		
*Primidone		
*Pyraclostrobin		
*Triclopyr		
2,4-D		
Bentazon		
Diuron		
Fenuron		
Imidacloprid		
Linuron		
MCP		
Bottle Type: P-500ML	Number of Bottles: 3	Preserved With: HNO3
W-ICP	Template:	(EPA 200.7 Rev. 4.4) Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects
Barium		
Calcium		
Iron		
Magnesium		
Potassium		
Sodium		
Zinc		
W-ICPMS	Template:	(EPA 200.8 Rev. 5.4) Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects
*Boron		
Aluminum		
Antimony		
Arsenic		
Cadmium		
Chromium		
Copper		
Lead		
Nickel		
Selenium		
Silver		
Thallium		
Bottle Type: P-500ML	Number of Bottles: 3	Preserved With: ICE And H2SO4
W-NH3	Template: DEFAULT	(EPA 350.1 Rev. 2.0) Ammonia in aqueous matrices as mg N/L
Ammonia-N		
W-NO2NO3	Template: DEFAULT	(EPA 353.2 Rev. 2.0) Nitrite/Nitrate in aqueous matrices as mg N/L
NO2NO3-N		
W-S-A-TP	Template: DEFAULT	(EPA 365.1 Rev. 2.0) Total Phosphorus in aqueous matrices as mg P/L
Total-P		
W-TKN	Template: DEFAULT	(EPA 351.2 Rev. 2.0) Total Kjeldahl Nitrogen in aqueous matrices

Bottle Group A (Water) With 3 Samples:

Bottle Type: P-500ML Number of Bottles: 3 Preserved With: ICE And H2SO4
 W-TKN Template: DEFAULT (EPA 351.2 Rev. 2.0) Total Kjeldahl Nitrogen in aqueous matrices
 Kjeldahl Nitrogen
 W-TOC Template: DEFAULT (SM 5310 B-00) Nonpurgeable Organic Carbon in aqueous matrices
 Organic Carbon
 Bottle Type: P-125ML Number of Bottles: 3 Preserved With: FILTER-ICE
 W-PO4-F Template: DEFAULT (EPA 365.1 Rev. 2.0) Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L
 O-Phosphate-P
 Bottle Type: BG-1L Number of Bottles: 8 Preserved With: ICE
 W-PSNP-TQ Template: DEFAULT (EPA 8270E) Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS
 *Dimethenamid
 *Dithiopyr
 *Fipronil Desulfinyl
 *Oxadiazon
 *Prodiamine
 *Tebuconazole
 Acetochlor
 Alachlor
 Ametryn
 Atrazine
 Atrazine Desethyl
 Azinphos Methyl
 Bromacil
 Butylate
 Chlorpyrifos Ethyl
 Chlorpyrifos Methyl
 Cyanazine
 Demeton
 Diazinon
 Disulfoton
 EPTC
 Ethion
 Ethoprop
 Fenamiphos
 Fipronil
 Fipronil Sulfide
 Fipronil Sulfone
 Fonofos
 Hexazinone
 Malathion
 Metalaxyl
 Metolachlor
 Metribuzin
 Mevinphos
 Molinate
 Norflurazon
 Parathion Ethyl
 Parathion Methyl
 Pendimethalin
 Phorate
 Prometon
 Prometryn
 Simazine
 Terbufos
 Terbutylazine

Bottle Group B (Biological) With 3 Samples:

Bottle Type: PJ-2L Number of Bottles: 6 Preserved With: Formalin
 MI-FW-QLDC Template: DEFAULT (SOP-IZ06) No. Taxa of FW macroinverts, qual samp, 20 dipnets.
 *Macroinvert-FW-Qual-DipnetX20-#Taxa-Rep2
 *Stream Condition Index (SCI)
 Bottle Type: PT-50ML Number of Bottles: 3 Preserved With: ICE

Bottle Group B (Biological) With 3 Samples:

Bottle Type: PT-50ML

Number of Bottles: 3

Preserved With: ICE

ALGAL_ID

Template: DEFAULT

(SOP-AB05) Qualitative assessment of algal taxa present without counts

*Dominant sample taxon

* - The laboratory is not NELAP certified for this analyte/method, or certification is not applicable.



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified?

Yes No

WIN Station Name: GARNIER CREEK UPSTREAM OF LEWIS TURNER BLVD

Date: 6/3/19
(mm/dd/yyyy)

WIN/ Field ID: G3NW0205

WBID: 655

Latitude: 30.48072

County: Okaloosa

ORG ID: 21FLPNS

Longitude: 86.58548

Receiving Body of Water: Garnier Bayou

RQ-2019- 2019-06-03-52

Sampling Team Members

Michael King

Nathan Mulkey

Sampling Equipment

☒ Sample Container ☐ Van Dorn ☐ Pole
☐ Carboy ☒ Syringe
☐ Dipper ☐ Other

Depth Measured with
Equipment ID

Collection Method

☒ Wading ☐ Canoe/Kayak
☐ From Shore ☐ Electric Motor
☐ Other ☐ Gasoline Motor

Water Level: Dry/ Pooled/ Low / Normal / High / Flooded

Meter ID# 154179

Matrix: Fresh / Marine / DI

Photos: Yes No

Flow: No Flow / Intertidal / Flowing / NA

Tide: Rising/ Falling/ Slack/ NA

Tide Times: High Low

Time Zone	Time	Total Depth (m)	Sample Depth (m)	Secchi Disk (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (PPT)	Sp COND (µmhos/cm)	Temp. (C°)
EST	1230	0.8	0.3	0.8 (S) V08	7.24	82.0	5.84	0.02	37.4	22.0
CEN										

Biological Samples Collected: None HA SCI RPS Algae ID LVS LVI Other:

SBIO ID Numbers: SBIO-ID: 79809 HA-ID: 16058 RPS-ID: 9368 Macrophyte-ID: 11371 LIMS#: 2091077

Parameter Suite	Parameter Methods	Preservation	Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☐ H2SO4	SA 8344070	12/10/19	☒ <2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO3	NA 8344050	12/10/19	☒ <2
Filtered Nutrients	☐ W-PO4-F ☐ Field Filtered 0.45 µm Filter	☒ Ice	15159049		
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY	☐ Ice			
Macroinvertebrates	☒ ML-FW-QLDC	☒ Formalin			
Periphyton	☒ ALGAE-ID	☒ Ice			
Microbiology	☒ E Coli ☐ F Coli ☐ Enterococci	☐ Ice			
Molecular	☐ PCR-FILTER ☐ PCR-BacR ☐ PCR-GULL2 ☐ PCR-HF183 ☐ PCR-DG3 ☐ PCR-GFD	☐ Ice			
Tracers	☒ W-E8321-DI ☐ W-E8321-MS	☒ Ice			
Pesticides	☒ W-PSNP-TQ	☒ Ice			
Phytoplankton	☐ DTY-QN-C ☐ PKD-QN-C	☐ Ice			

Place Preservative Sticker(s) Here
(If Available)

Notes:

Place Label Here

Signature: [Signature]

Date: 6/3/19

LIMS EVENT ID: WIN Import ID:

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

Scan/Save Field Sheets (Initials/Date) Migrate Data to WIN: (Initials/Date) Verify Data In WIN: (Initials/Date)

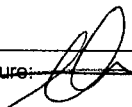
DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY: <u>FDEP NW ROC</u>		STORET STATION NUMBER: <u>G3NW0205</u>	DATE (MM/DD/YY): <u>06/3/19</u>	RECEIVING BODY OF WATER: <u>GARNIER BAYOU</u>
REMARKS:	COUNTY: <u>OKALOOSA</u>	LOCATION: <u>GARNIER CREEK ABOVE LEWIS TURN</u>	FIELD ID/NAME: <u>G3NW 0205</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>16</u>	20 19 18 17 <u>16</u>	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>16</u>	Greater than 30% major productive habitat present at site 20 19 18 17 <u>16</u>	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>14</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 <u>14</u> 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>5</u> ----- Primary Score <u>51</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. <u>1-3 ft of silt/muck</u> <u>5</u> 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 or straightening 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>18</u>	20 19 <u>18</u> 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 woody 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 woody root zone with raw, eroded areas.
Right Bank <u>9</u> Left Bank <u>9</u>	10 <u>9</u>	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>9</u> Left Bank <u>9</u>	10 <u>9</u>	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>5</u> Left Bank <u>5</u> ----- Secondary Score <u>64</u>	10 9	8 7 6	<u>5</u> 4	3 2 1

115

TOTAL SCORE

Date: <u>6/3/2019</u>	Analyst: <u>MIKE KING</u>	Signature: 
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DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID 79809 ORG ID 21FLPNS LATITUDE 30.48072
 COUNTY OKALDOGA STORET # G3NW0205 LONGITUDE 86.58548
 DATE 6/3/19 TIME 1230 SAMPLING AGENCY DEP NW ROC
 SITE NAME Garnier Creek WBID 655
 FIELD ID/NAME G3NW0205 RECEIVING BODY OF WATER GARNIER BAYO
 RQ-2019-06-03-52

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural ☒ Silviculture ☐ Field/Pasture ☐ Agricultural ☐ Residential ☐ Commercial ☐ Industry ☐ Other (Specify) <u>EGLIN AFB</u>							Landscape Development Intensity Index (LDI) ☐
Local Watershed Erosion (select one): ☐ None ☐ Slight ☒ Moderate ☐ Heavy Local Watershed NPS Pollution: ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy							Typical Width (m) <u>9</u> m wide Depth (m)/Velocity (m/sec) Transect <u>0.25</u> m/s <u>0.2</u> m/s <u>0.1</u> m/s <u>0.6</u> m deep <u>1.0</u> m deep <u>0.7</u> m deep
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>>18</u> Right Bank: <u>>18</u> (above present water level) (present depth) (above bed)				Hydrologic Modification Score (per FT 3101) ☐			
High Water Mark: <u>1.0</u> + <u>1.0</u> = <u>2.0</u> (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%)			

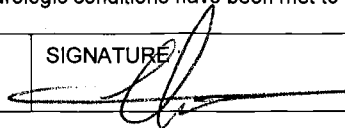
SEDIMENT / SUBSTRATE

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>0.3</u> <u>22.0</u> <u>5.84</u> <u>7.24</u> <u>82.0</u> <u>37.4</u> <u>0.02</u> <u>0.8</u> Mid: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☒ VOB Bottom: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Meter ID: <u>154179</u> TOTAL DEPTH <u>0.8</u>		
Woody Debris (Snags) <u>4</u> <u>4</u> ☐ Undercut Banks / Roots <u>2</u> <u>4</u> ☐ Leaf Packs or Mat <u>5</u> <u>4</u> ☐ Aquatic Vegetation <u>21</u> <u>4</u> ☐ Rock or Shell Rubble.. ☐ ☐ ☐ Sand..... <u>19</u> <u>4</u> ☐ Mud / Muck / Silt <u>50</u> ☐ ☐ Other ☐ ☐ ☐ Other ☐ ☐ ☐			Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>SA 8344070</u> Exp: <u>12/10/19</u> 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 ☐ Globbs ☐ 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

Mike King / Nathan Murray

SIGNATURE



DATE:

6/3/19

A3NW0205

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: GARNIER CREEK					County: OKLAHOMA		Date: 6/3/19		Investigators: MIKE KMS	
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	N		60	1	X	Y		
	2					2				
	3					3				
	4	3				4				
	5	3		20		5				60
	6	3				6				
	7	N				7				
	8					8				
	9					9				
10	1	N	N		70	1	X			
	2	X	Y			2				
	3	X	Y			3				
	4					4				
	5			24		5				80
	6					6				
	7					7				
	8					8				
	9	N	N			9				
20	1	N	N		80	1	X			
	2					2				
	3					3				
	4					4				
	5			42		5				72
	6					6				
	7					7				
	8					8				
	9					9				
30	1	N	N		90	1	X			
	2					2				
	3					3				
	4					4				
	5			18		5				64
	6					6				
	7					7				
	8					8				
	9					9				
40	1	N			100	1	X			
	2					2				
	3					3				
	4					4				
	5			68.24		5				72
	6					6				
	7					7				
	8					8				
	9					9				
50	1	N			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 densimeter 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%.					
	2	3								
	3	4								
	4	4								
	5	3		24						
	6	3								
	7									
	8	N								
	9	N								

STORET Station Number:
63NW0205

Secchi depth	0.9
Estimated?	Y

# points ranked 4-6	2
total points assessed	54
% points ranked 4-6	4

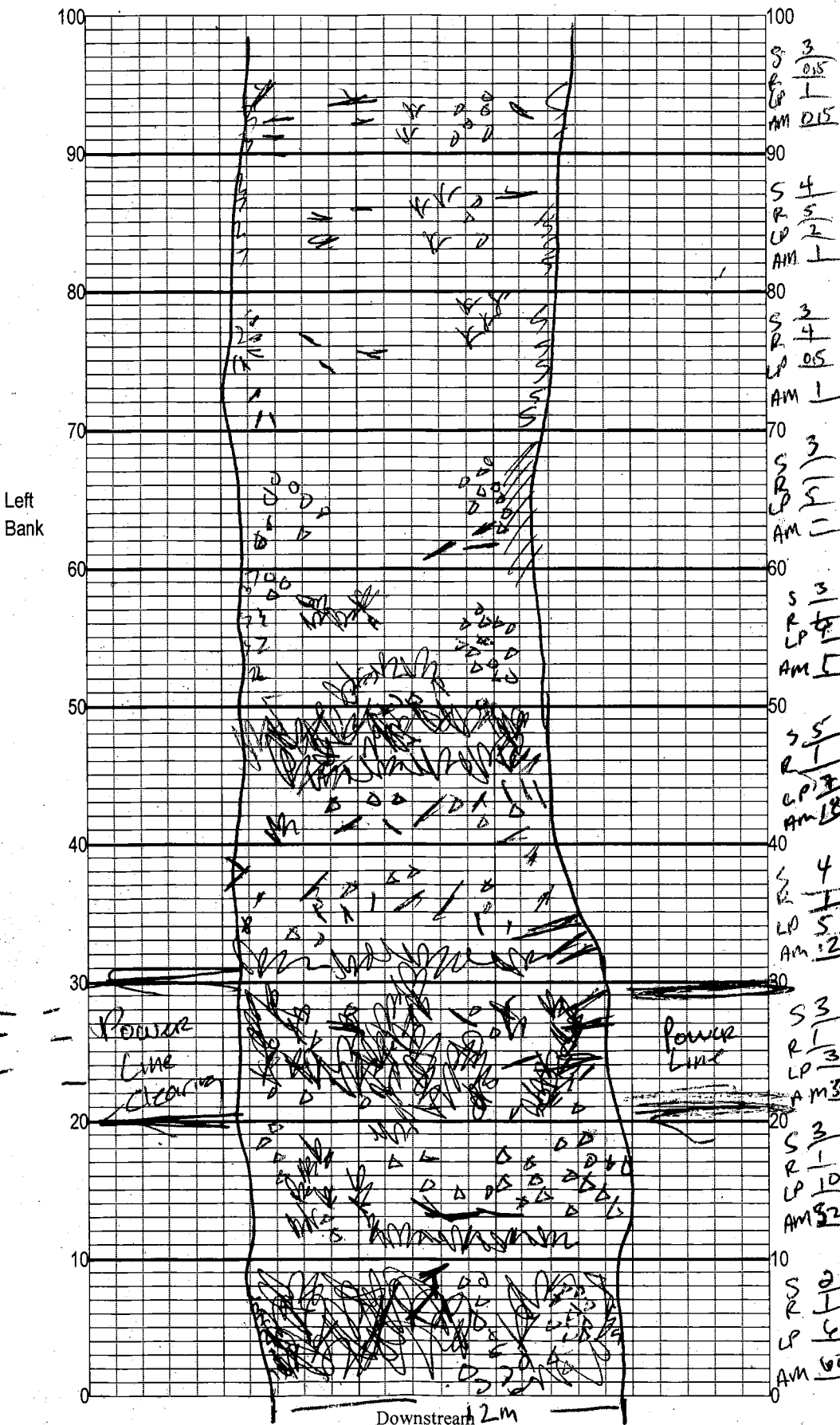
Check accompanying data collected at same site/date.	
Algal mat sample	
Linear Veg Survey	✓
Habitat Assessment	✓
SCI/Biorecon	✓
Water sample	✓
RQ- 2019-06 03-S2	

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

Visit ID 79809

RPS ID 9368

DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



Location: Garnier Creek
 Date: 6/3/19
 Sampler: NIKE KIM

100 m: Latitude 30.481353
 Longitude 86.584878
 0 m: Latitude 30.48072
 Longitude 86.58548

Substrates: Code key, draw proportionate habitat abundance. 30.5%

	Snags	<u>33/9</u>	<u>3.6</u>
	Roots/undercut banks	<u>15.5/9</u>	<u>1.7</u>
	Leaf Packs (or mats)	<u>40.5/9</u>	<u>4.5</u>
	Aquatic Macrophytes	<u>186.5/9</u>	<u>20.7</u>
	Pools	total # observed = <u>0</u> # range expected = <u>1</u>	

Average width 9 m
 Average depth 0.9 m

Velocity measured at 40 meter mark.

WQ & chemistry taken at 0 meter mark.

Habitat Smothering:
 Note areas (on map) where sand or silt is smothering substrates, limiting habitability.

Bank Stability:
 Note areas (on map) with unstable, eroding banks.

Riparian Buffer Width:
 Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes:

Storet G3NW0205

Sbio Visit ID 79809

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

RQ-2019-06-03-52

Field Personnel processing steps

☐ New Field IDs created (when using a new station) Date: _____ initials: _____ ☒ NA

☐ Create entry in SMPStationCreationFile if new station is used

\\Fidep1\wqap\NW ROC\TMDL\WIN_Station Creation

☒ Date sampled Date: 6/3 initials: mn

☒ Update MAT Date: 6/4 initials: mn

☒ Update "SMP Tracker" Date: 6/4 initials: mn

☐ Photos put into archive Date: _____ initials: _____ ☐ NA

☒ RQ Sheet – from LIMS (display/print request)

☒ Field Sheets initialed/dated @ "Scan/Save Field Sheets" then scanned and saved into:

Scans_ToBeProcessed Date: 6/10 initials: mn

☒ Update "Data Tracker"

\\publicfiles\pubfds\DEAR\WQAPmonitoring\StrategicMonitoring\2019\21FLPNS

Ready for folder system (top)

LIMS processing (to be completed by LIMS data personnel) (MC)

☐ Field parameters entered into LIMS Date: _____ initials: _____

☐ Digital RQ packet put into

SMP 2019/Data/Scanned Field Sheets Date: _____ initials: _____

☐ Digital field Sheets put into archive Date: _____ initials: _____

☐ Date submitted for QA/QC Date: _____ initials: _____

☐ Update "Data Tracker"

Database processing (Cheryl)

☐ Field parameters QA/QC in LIMS Date: _____ initials: _____

☐ Lab results put into archive (CB) Date: _____ initials: _____

☐ Data migrated to WINS Date: _____ initials: _____

☐ Update "Data Tracker"

Notes:

Site Name Juniper Creek above Hwy 85

Date: 6/3/19

Field ID G3NW0095 Storet 1'

Project: SMP

Visit ID 79799

RQ: 2019-06-03-52

RPS ID 9367

LIMS ID: 2091076

Macro ID 11370

WBID: 468A

HA ID 16040

☒ SCI

☐ RPS/LVS Only

☐ Sample Site Created in SBIO

☐ Phys/Chem entered in SBIO

☐ HA entered in SBIO Initial FB 6/11/19 ☐ Date and Initial QA: _____

☐ RPS entered in SBIO Initial FB 6/11/19 ☐ Date and Initial QA: _____

☐ LVS entered in SBIO Initial FB 6/13/19 ☐ Date and Initial QA: _____

☐ < 2 m² vegetation

☐ Plants getting verified Date submitted: Lab Verified

☐ Plants verified Date returned: M. King

☐ RPS authorized in SBIO ☐ Date and Initial: _____

☐ RPS score: _____

☐ Macro authorized in SBIO ☐ Date and Initial: _____

☐ LVS Score: _____

☐ SCI complete: _____ SCI Score: _____

☐ Add SBIO-ID, HA-ID, RPS-ID, MACROPHYTE-ID and LIMS# to field sheet in database

Date of Request: 20-MAY-2019
 Created By: KING_M On: 20-MAY-2019
 Modified By: JASROTIA_P On: 21-MAY-2019
 Customer: NW-DIST
 Project: SMP
 Division: Division of Environmental Assessment and Restoration
 District: Northwest District NWROC
 Sampling Event: SMP Bioassessment

Send Coolers To:

Phone: 850-595-0605
 160 Government Center
 Suite 208
 Pensacola, FL 32502-5794
 Attn: Michael King

Program Module Number:
 Priority: 3
 Event Status: R
 Criminal Investigation: NO
 Chemistry Request Reviewed By: WATTS_J On: 21-MAY-2019
 Biology Request Reviewed By: JASROTIA_P On: 21-MAY-2019
 Sampling Kit Required: NO Ship on:
 Sampling Kit Shipped:
 Sampling Kit Packed By:
 Preservatives Needed: NO
 Date to Receive Samples: 03-JUN-2019
 Received By: KLUG_K On: 04-JUN-2019

Send Final Report To:

160 Government Center
 Suite 208
 Pensacola, FL 32502-5794
 Attn: Cheryl Bunch

Report Type: Final Only
 FTP Data: NO
 QC Report: YES
 Date Log: NO
 Authorization Log: NO

Comments: Group A: Nutrients, Metals, Tracers, Q-PSNP-TQ
 Group B: SCI, Algae_ID
 Packing notes:
 Please send labels

Bottle Group A (Water) With 3 Samples:

Bottle Type: P-1L	Number of Bottles: 3	Preserved With: ICE
ALKALINITY Template: DEFAULT	(SM 2320 B-97)	Alkalinity in aqueous matrices as mg CaCO ₃ /L
Total Alkalinity		
TURBIDITY Template: DEFAULT	(EPA 180.1 Rev. 2.0)	Turbidity in aqueous matrices
Turbidity		
W-CL-IC Template: DEFAULT	(EPA 300.0 Rev. 2.1)	Chloride in aqueous matrices
Chloride		
W-COLOR Template: DEFAULT	(SM 2120 B)	True Color measured at 450 nm
Color (true)		
W-F Template: DEFAULT	(SM 4500 F-C-97)	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)
Fluoride		
W-SO4-IC Template: DEFAULT	(EPA 300.0 Rev. 2.1)	Sulfate in aqueous matrices
Sulfate		
W-TDS Template: DEFAULT	(SM 2540 C-97)	Total Dissolved Solids in aqueous matrices
TDS		
W-TSS Template: DEFAULT	(SM 2540 D-97)	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample
TSS		
Bottle Type: BP-1L	Number of Bottles: 3	Preserved With: ICE
CHLSUITE-W Template: DEFAULT	(SM 10200 H (mod.))	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry
Chlorophyll-a, Corrected		
Chlorophyll-a, Uncorrected		
Phaeophytin-a		

Bottle Group A (Water) With 3 Samples:

Bottle Type: TEST HAS NO	Number of Bottles: 3	Preserved With: ICE
NW-UWF-ECQ	Template: DEFAULT	(SM 9223 B Quanti-Tray) E. coli by Colilert-18/QT by UWF in Pensacola
Escherichia Coli-Quanti-Tray		
Bottle Type: BG-500ML	Number of Bottles: 3	Preserved With: ICE
W-E8321-DI	Template: DEFAULT	(EPA 8321B) Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS
*Acesulfame K		
*AMPA		
*Endothall		
*Glufosinate		
*Glyphosate		
*Sucralose		
W-E8321-MS	Template:	(EPA 8321B) Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS
*Acetaminophen		
*Carbamazepine		
*Fluridone		
*Hydrocodone		
*Ibuprofen		
*Imazapyr		
*Naproxen		
*Primidone		
*Pyraclostrobin		
*Triclopyr		
2,4-D		
Bentazon		
Diuron		
Fenuron		
Imidacloprid		
Linuron		
MCPP		
Bottle Type: P-500ML	Number of Bottles: 3	Preserved With: HNO3
W-ICP	Template:	(EPA 200.7 Rev. 4.4) Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects
Barium		
Calcium		
Iron		
Magnesium		
Potassium		
Sodium		
Zinc		
W-ICPMS	Template:	(EPA 200.8 Rev. 5.4) Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects
*Boron		
Aluminum		
Antimony		
Arsenic		
Cadmium		
Chromium		
Copper		
Lead		
Nickel		
Selenium		
Silver		
Thallium		
Bottle Type: P-500ML	Number of Bottles: 3	Preserved With: ICE And H2SO4
W-NH3	Template: DEFAULT	(EPA 350.1 Rev. 2.0) Ammonia in aqueous matrices as mg N/L
Ammonia-N		
W-NO2NO3	Template: DEFAULT	(EPA 353.2 Rev. 2.0) Nitrite/Nitrate in aqueous matrices as mg N/L
NO2NO3-N		
W-S-A-TP	Template: DEFAULT	(EPA 365.1 Rev. 2.0) Total Phosphorus in aqueous matrices as mg P/L
Total-P		
W-TKN	Template: DEFAULT	(EPA 351.2 Rev. 2.0) Total Kjeldahl Nitrogen in aqueous matrices

Bottle Group A (Water) With 3 Samples:

Bottle Type: P-500ML	Number of Bottles: 3	Preserved With: ICE And H2SO4
W-TKN	Template: DEFAULT	(EPA 351.2 Rev. 2.0) Total Kjeldahl Nitrogen in aqueous matrices
Kjeldahl Nitrogen		
W-TOC	Template: DEFAULT	(SM 5310 B-00) Nonpurgeable Organic Carbon in aqueous matrices
Organic Carbon		
Bottle Type: P-125ML	Number of Bottles: 3	Preserved With: FILTER-ICE
W-PO4-F	Template: DEFAULT	(EPA 365.1 Rev. 2.0) Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L
O-Phosphate-P		
Bottle Type: BG-1L	Number of Bottles: 8	Preserved With: ICE
W-PSNP-TQ	Template: DEFAULT	(EPA 8270E) Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS
*Dimethenamid		
*Dithiopyr		
*Fipronil Desulfinyl		
*Oxadiazon		
*Prodiamine		
*Tebuconazole		
Acetochlor		
Alachlor		
Ametryn		
Atrazine		
Atrazine Desethyl		
Azinphos Methyl		
Bromacil		
Butylate		
Chlorpyrifos Ethyl		
Chlorpyrifos Methyl		
Cyanazine		
Demeton		
Diazinon		
Disulfoton		
EPTC		
Ethion		
Ethoprop		
Fenamiphos		
Fipronil		
Fipronil Sulfide		
Fipronil Sulfone		
Fonofos		
Hexazinone		
Malathion		
Metalaxyl		
Metolachlor		
Metribuzin		
Mevinphos		
Molinate		
Norflurazon		
Parathion Ethyl		
Parathion Methyl		
Pendimethalin		
Phorate		
Prometon		
Prometryn		
Simazine		
Terbufos		
Terbutylazine		

Bottle Group B (Biological) With 3 Samples:

Bottle Type: PJ-2L	Number of Bottles: 6	Preserved With: Formalin
MI-FW-QLDC	Template: DEFAULT	(SOP-IZ06) No. Taxa of FW macroinverts, qual samp, 20 dipnets.
*Macroinvert-FW-Qual-DipnetX20-#Taxa-Rep2		
*Stream Condition Index (SCI)		
Bottle Type: PT-50ML	Number of Bottles: 3	Preserved With: ICE

Bottle Group B (Biological) With 3 Samples:

Bottle Type: PT-50ML

Number of Bottles: 3

Preserved With: ICE

ALGAL_ID

Template: DEFAULT

(SOP-AB05) Qualitative assessment of algal taxa present without counts

*Dominant sample taxon

* - The laboratory is not NELAP certified for this analyte/method, or certification is not applicable.



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified?

Yes ☒ No ☐

WIN Station Name: Juniper Creek above Hwy 85

Date: 4/3/19
(mm/dd/yyyy)

WIN/ Field ID: G3NW0095

WBID: 468A

Latitude: 30.558377

(Decimal Degrees)

County: Okaloosa

ORG ID: 21FLPNS

Longitude: -86.519150

(Decimal Degrees)

Receiving Body of Water: Rocky Creek

RQ-2019- 2019-06-03-52

Sampling Team Members					WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Michael King					☒	☒	☒	☒	☒
Nathan Mulkey					☒	☒	☒	☒	☒

Sampling Equipment		
☒ Sample Container	☐ Van Dorn	☐ Pole
☐ Carboy	☒ Syringe	
☐ Dipper	☐ Other	
Depth Measured with _____		
Equipment ID _____		

Collection Method		
☒ Wading	☐ Canoe/Kayak	
☐ From Shore	☐ Electric Motor	
☐ Other	☐ Gasoline Motor	

Water Level: Dry/ Pooled/ Low / Normal / High / Flooded
Photos: Yes No Flow: No Flow / Intestinal / Flowing / NA
Meter ID# 154179 Matrix: Fresh Marine / DI
Tide: Rising/ Falling/ Slack/ NA Tide Times: High Low

Time Zone	Time	Total Depth (m)	Sample Depth (m)	Secchi Disk (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (PPT)	Sp COND (µmhos/cm)	Temp. (C°)
EST	1000	1.2	0.3	1.2(5)	8.49	95.5	4.79	0.00	12.8	21.5
CEN										

Biological Samples Collected: None HA SCI RPS Algae ID LVS LVI Other:
SBIO ID Numbers: SBIO-ID: 79799 HA-ID: 16040 RPS-ID: 9367 Macrophyte-ID: 11370 LIMS#: 2091076

Parameter Suite	Parameter Methods	Preservation	Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☒ H2SO4	SA8344070	12/10/19	☐ <2
Metals	☒ W-ICPMS ☒ W-ICP	☒ Ice ☐ HNO3	NA8344050	12/10/19	☐ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice	15159049		
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY	☐ Ice			
Macroinvertebrates	☒ MI-FW-QLDC	☒ Formalin			
Periphyton	☒ ALGAE-ID	☐ Ice			
Microbiology	☒ E Coli ☐ F Coli ☐ Enterococci	☒ Ice			
Molecular	☐ PCR-FILTER ☐ PCR-BacR ☐ PCR-GULL2 ☐ PCR-HF183 ☐ PCR-DG3 ☐ PCR-GFD	☐ Ice			
Tracers	☒ W-E8321-DI ☒ W-E8321-MS	☒ Ice			
Pesticides	☐ W-PSNP-TQ	☐ Ice			
Phytoplankton	☐ DTY-QN-C ☐ PKD-QN-C	☐ Ice			

Notes:

Place Label Here

Signature: _____ Date: 4/5/19

LIMS EVENT ID: _____ WIN Import ID: _____
Enter Field Parameters, Verify Station ID In LIMS DMT: _____ QC Station ID, Field Parameters In LIMS DMT: _____
Scan/Save Field Sheets _____ Migrate Data to WIN: _____ Verify Data In WIN: _____
(Initials/Date) (Initials/Date) (Initials/Date)

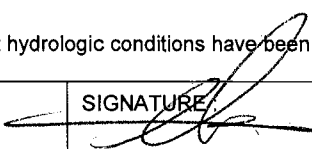
DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID 79799 ORG ID 21FLPNS LATITUDE 30.55865
 COUNTY OKALOOSA STORET # 63NW0095 LONGITUDE 86.51944
 DATE 6/3/19 TIME 1000 SAMPLING AGENCY FDEP NW ROC
 SITE NAME JUNIPER CREEK above Hwy 85
 FIELD ID/NAME 63NW0095 RECEIVING BODY OF WATER Rocky Creek

RIPARIAN ZONE / STREAM FEATURES WBID 468A RQ-2019-06-03-52 LIMS ID 2091076

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural ☒ Silviculture ☒ Field/Pasture ☐ Agricultural ☐ Residential ☒ Commercial ☐ Industry ☐ Other (Specify) <u>AFB</u>						Landscape Development Intensity Index (LDI) <u>N/A</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>8</u> m wide <u>0.33</u> m/s <u>0.33</u> m/s <u>0.25</u> m/s <u>0.4</u> m deep <u>0.8</u> m deep <u>1.0</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: <u>1.2</u> + <u>1.2</u> = <u>2.4</u> (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 <table border="1"> <thead> <tr> <th></th> <th>Depth (M)</th> <th>Temp. (°C)</th> <th>pH (SU)</th> <th>D.O. (MG/L)</th> <th>D.O. Sat (%)</th> <th>Cond. (UMHO/CM)</th> <th>Salinity (PPT)</th> <th>SECCHI (M)</th> </tr> </thead> <tbody> <tr> <td>Top:</td> <td><u>0.3</u></td> <td><u>21.5</u></td> <td><u>4.79</u></td> <td><u>8.49</u></td> <td><u>95.5</u></td> <td><u>12.8</u></td> <td><u>0.00</u></td> <td><u>100</u></td> </tr> <tr> <td>Mid:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>☒ VOB</td> </tr> <tr> <td>Bottom:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)	Top:	<u>0.3</u>	<u>21.5</u>	<u>4.79</u>	<u>8.49</u>	<u>95.5</u>	<u>12.8</u>	<u>0.00</u>	<u>100</u>	Mid:								☒ VOB	Bottom:								
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Mid:								☒ VOB																																	
Bottom:																																									
Woody Debris (Snags) <u>19.5</u> <u>4</u> Undercut Banks / Roots <u>5.5</u> <u>4</u> Leaf Packs or Mat <u>2.5</u> <u>4</u> Aquatic Vegetation <u>7.1</u> <u>4</u> Rock or Shell Rubble..... Sand..... <u>65</u> <u>4</u> Mud / Muck / Silt Other Other		Meter ID: <u>154179</u> Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>SA 8344070</u> Exp: <u>12/10/19</u> <u>NA 0344050</u> <u>12/10/19</u> Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: _____ Exp: _____																																							
ABUNDANCE <table border="1"> <thead> <tr> <th></th> <th>Not Obs.</th> <th>Rare</th> <th>Common</th> <th>Abundant</th> </tr> </thead> <tbody> <tr> <td>Periphyton:</td> <td>☐</td> <td>☐</td> <td>☒</td> <td>☐</td> </tr> <tr> <td>Fish:</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☒</td> </tr> <tr> <td>Aquatic Plants:</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☒</td> </tr> <tr> <td>Iron/Sulfur Bacteria:</td> <td>☐</td> <td>☒</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>			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 ☐														
	Not Obs.	Rare	Common	Abundant																																					
Periphyton:	☐	☐	☒	☐																																					
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Iron/Sulfur Bacteria:	☐	☒	☐	☐																																					
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>M. King / N. Muirhey</u>		SIGNATURE 		DATE: <u>6/3/19</u>																																					

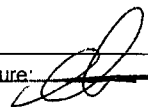
DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY: FDEP NW 20 ^c		STORET STATION NUMBER: G3NW0095	DATE (MM/DD/YY): 6/3/19	RECEIVING BODY OF WATER: Rocky Creek
REMARKS:	COUNTY: OKLAHOMA	LOCATION: Juniper Creek abv Hwy 85		FIELD ID/NAME: G3NW0095

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>16</u>	20 19 18 17 <u>16</u>	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>16</u>	Greater than 30% major productive habitat present at site 20 19 18 17 <u>16</u>	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>20</u>	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 <u>20</u> 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>16</u> ----- Primary Score <u>68</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 <u>16</u>	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 or straightening 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>19</u>	20 <u>19</u> 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 woody 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 woody root zone with raw, eroded areas.
Right Bank <u>10</u> Left Bank <u>10</u>	<u>10</u> 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>	<u>10</u> 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>10</u> Left Bank <u>10</u> ----- Secondary Score <u>79</u>	<u>10</u> 9	8 7 6	5 4	3 2 1

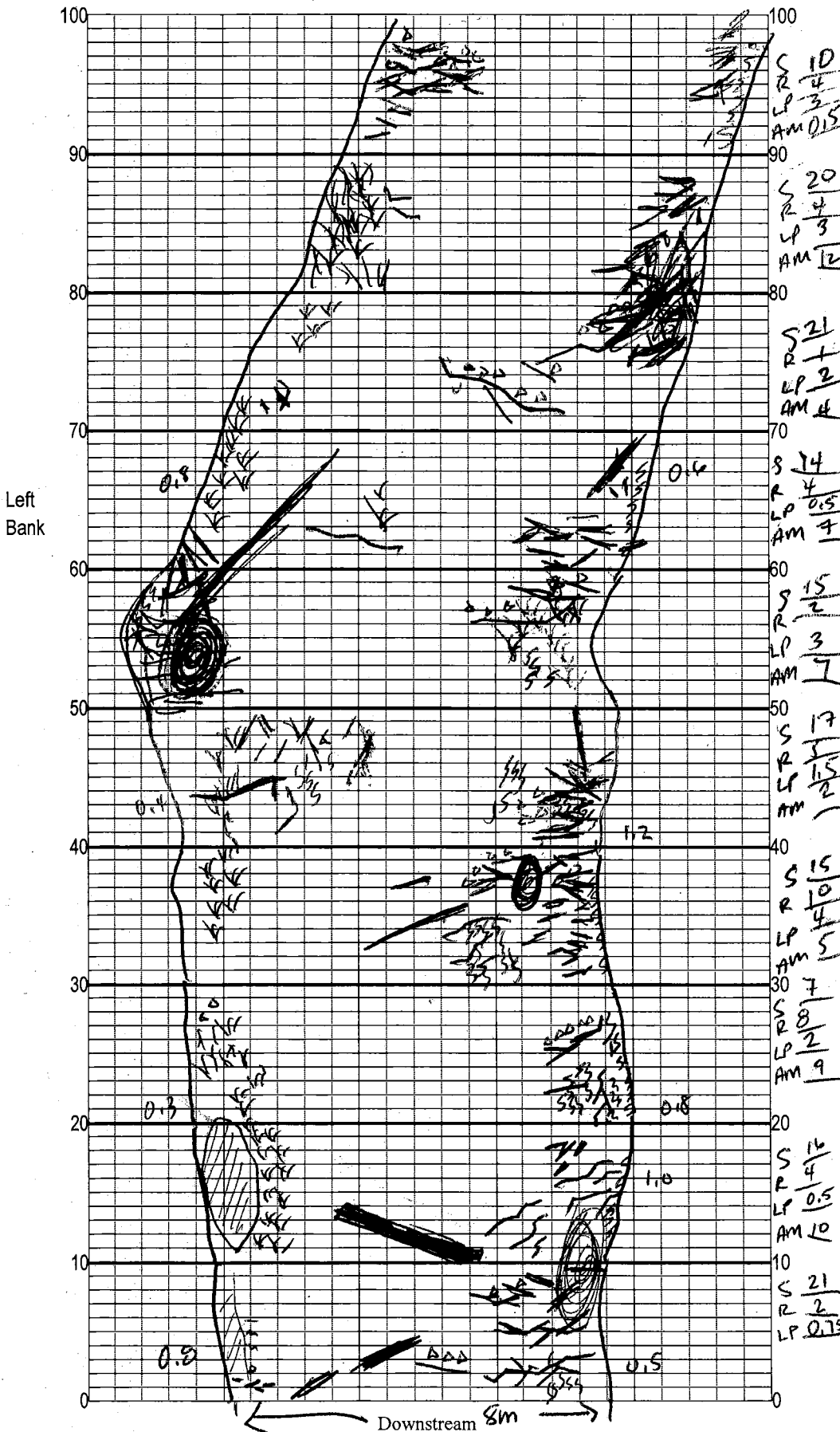
147

TOTAL SCORE

Date: 6/3/19	Analyst: MIKE KING	Signature: 
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet

G3NW 0095



Location: Juniper Creek
 Date: 4/3/19
 Sampler: M. King / N. Murren

100 m: Latitude 30.55913
 Longitude 86.51911
 0 m: Latitude 30.55865
 Longitude 86.51944

Substrates: Code key, draw proportionate habitat abundance. 35 %

	Snags	<u>156</u>	<u>19.5</u>
	Roots/undercut banks	<u>44/8</u>	<u>5.5</u>
	Leaf Packs (or mats)	<u>20.25</u>	<u>2.5</u>
	Aquatic Macrophytes	<u>56.5</u>	<u>7.1</u>
	gravel		
	Pools	total # observed = <u>17</u> # range expected = <u> </u>	

Average width 8 m
 Average depth 0.8 m
 Velocity measured at 30 meter mark.
 WQ & chemistry taken at 0 meter mark.
 Habitat Smothering:
 Note areas (on map) where sand or silt is smothering substrates, limiting habitability.
 Bank Stability:
 Note areas (on map) with unstable, eroding banks.
 Riparian Buffer Width:
 Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes:

Red titi
 Black titi
 AWC
 myrica
 Lyonia

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

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Juniper Creek</u>					County: <u>OKA100SM</u>		Date: <u>6/3/19</u>		Investigators: <u>MIKE KNG</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	STORET Station Number: <u>G3NW0095</u>	
0	1	N	N		60	1	N	N		Secchi depth <u>1.2</u>	
	2					2					Estimated? <u>Y</u>
	3					3					
	4					4					
	5					5				24	# points ranked 4-6 <u>3</u>
	6					6					total points assessed <u>99</u>
	7					7					% points ranked 4-6 <u>3</u>
	8					8					
	9					9					
10	1	N			70	1	N			Check accompanying data collected at same site/date.	
	2					2					Algal mat sample
	3					3					Linear Veg Survey ☒
	4					4					Habitat Assessment ☒
	5					5				30	SC/Biorecon
	6					6					Water sample ☒
	7					7					
	8					8					
	9					9					
20	1	N			80	1	N			RQ- <u>2019-06-03-52</u>	
	2					2					
	3					3					
	4					4					
	5					5	3			48	
	6					6	4				
	7					7	4				
	8					8	3				
	9					9	N				
30	1	N			90	1	N				
	2					2					
	3					3					
	4					4					
	5					5				80	
	6					6					
	7					7					
	8					8					
	9					9					
40	1	N			100	1	N				
	2					2					
	3					3					
	4					4					
	5					5				72	
	6	4				6					
	7	3				7					
	8	3				8					
	9	N				9					
50	1	N			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 densimeter 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%.						
	2										
	3										
	4										
	5										
	6										
	7										
	8										
	9										

Secchi depth 1.2
Estimated? Y

points ranked 4-6 3
total points assessed 99
% points ranked 4-6 3

Check accompanying data collected at same site/date.

Algal mat sample	
Linear Veg Survey	☒
Habitat Assessment	☒
SC/Biorecon	
Water sample	☒

RQ- 2019-06-03-52

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 79799

RPS ID 9367

DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET

Waterbody: Juniper Creek	Date: 6/3/11	County: Olatosha	Store Number: G3N/wav91
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Analyst: MIKE KIM Signature: [Signature]

Comments:

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1m² of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names.

[illegible]