Sankofa Wetland Park Monitoring Report

January - March 2023

By: Robert R. Lane, PhD
John W. Day, PhD
Rachael G. Hunter, PhD
Comite Resources
21245 Smith Rd.
Covington, LA 70435

For: Rashida Ferdinand
Executive Director
Sankofa Community Dev. Corp.
5200 Dauphine St.
New Orleans, LA 70117

March 31, 2023

WWW.COMITERES.COM

Comite Resources, Inc.
21245 Smith Road
Covington, LA 70435

John W. Day, Ph.D.
jwday@comiteres.com

Robert R. Lane, Ph.D. 225-247-3917
rlane@comiteres.com

Rachael G. Hunter, Ph.D. 225-439-3931
rhunter@comiteres.com

Sankofa Wetland Park Monitoring Report
Summary of Activities: January-March 2023

Sampling Design

A preliminary sampling design was developed, shown below, consisting of five monitoring sites (S1 through S5) set approximately equidistant and in the planned path of the linear pond of the Sankofa Wetland Park (Figure 1). The St. Bernard drainage ditch at the bridge to the Viola wastewater treatment plant is also being monitored (site SB). The wetland triangle was being monitored at the platform during 2022, however, the expansion of the wetland park has cut off access. Attempts were made to a find another sampling location, but the southeast corner of the triangle is clogged with floating aquatic vegetation as is the southwest corner, which is also guarded.

Figure 1. Location of sampling sites at the Sankofa Wetland Park (S1-S5) and the St. Bernard drainage ditch (SB).

Site visits

January 27, 2023: Comite Resources field technicians visited the Sankofa Wetland Park to carry out monthly monitoring. Dissolved oxygen, conductivity, temperature, salinity and pH were measured at monitoring sites S1, S2, ST and SB using a handheld probe. The staff gauge was 41.0 cm at 10:00 am. There was newly dumped garbage on Florida Avenue as well as on the edge of the wetland park (Figure 2). A hole has been cut in the fence surrounding the vacant lot at the east end of the park (Figure 3). The water level recorder in the wetland park was accessed by canoe and downloaded (Figure 4).

Figure 2. Garbage dumped at the wetland park – found on January 27th.

Dissolved oxygen (DO) concentrations were 2.4 and 2.9 at sites S1 and S2, respectively, 1.8 mg/L at site SB, and 2.1 mg/L at the wetland triangle (ST; Table 1). Conductivity was 1079.7 mS at site #4 and 899.7 mS at site #5. Salinity was 0.56 ppt at site S1, 0.52 ppt at site S2, 0.45 ppt at SB, and 0.38 ppt at site ST. Temperature was 11.7˚C at the wetland park sites (S1 & S2), 11.6˚C at the ditch (SB), and 9.14˚C at the wetland triangle (ST). pH was 7.9 at site S1, 7.7 at site S2, 7.5 at site SB, and 7.1 at site ST. Total dissolved solids (TDS) concentrations were 0.73 and 0.69 mg/L at sites S1 and S2, respectively, 0.59 mg/L at site SB, and 0.51 mg/L at site ST (Table 1).

Figure 3. Hole cut in fence at vacant lot to the east of the wetland park.

Table 1. Discrete water quality data from January 27, 2023.

Site	Date	DO (mg/l)	Cond. (mS)	Salinity (ppt)	Temp. (˚C)	pH	TDS (mg/L)
#4	1/27/2023	2.4	843.7	0.56	11.7	7.9	0.73
#5	1/27/2023	2.9	788.6	0.52	11.7	7.7	0.69
SB	1/27/2023	1.9	681.7	0.45	11.6	7.5	0.59
ST	1/27/2023	2.1	543.5	0.38	9.14	7.1	0.51

The wetland park on January 27, 2023.

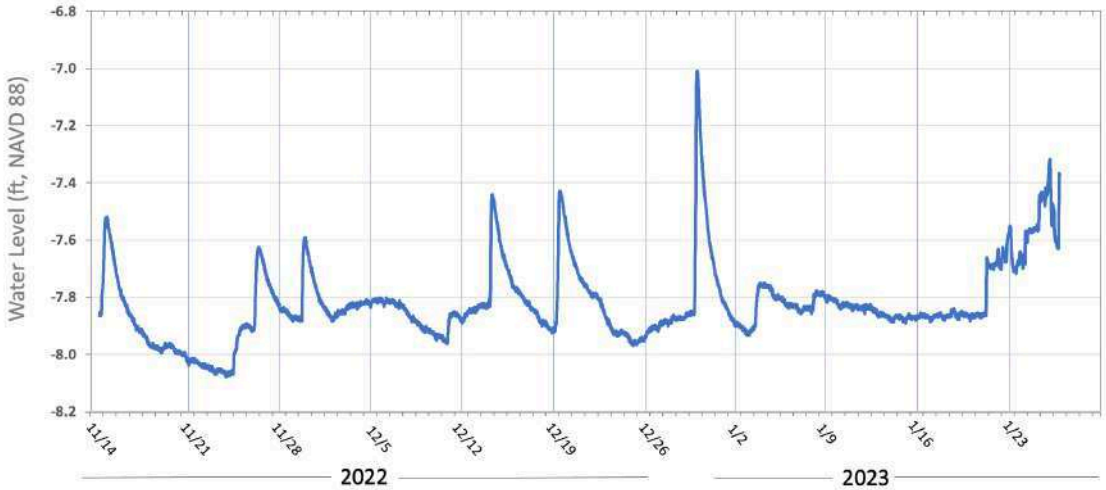


Figure 4. Water level data at the Sankofa Wetland Park.

February 7, 2023: Rob Lane met virtually with Rashida Ferdinand and Scott Tabary to discuss connecting the two ponds currently at the project site by a shallow area with -8.0 ft elevation. The shallow area is mandated by the City due to a sand deposit located near the railroad. They asked Rob Lane if a shallow area at -8.0 would be acceptable. Dr. Lane replied that the pond water elevation rarely went below -8.0 ft and that a shallow area would simply colonize with wetland vegetation and would be an asset to the park by providing additional varied habitat.

March 1, 2023: Comite Resources personnel visited the Sankofa Wetland Park to carry out monthly monitoring. This will count as the February monitoring trip. Dissolved oxygen, conductivity, temperature, salinity and pH were measured at monitoring sites S1, S2 and SB using a handheld probe. The wetland triangle site (ST) was not accessible since the ponds had been connected. Water samples for nutrient (NOx, NH_3, TN, PO4, TP), BOD_5 and sediment analysis were collected at sites S1, S2 and SB, and put on ice for transport to Pace Analytical in Baton Rouge for analysis.

It appears that the water level in the newly constructed ponds in about 2 ft higher than the water in the park (see photo below). Where is this water coming from? This may be a good question for Tom Willis.

The newly constructed pond (left) and the Sankofa Park (right) on March 1, 2023. Notice the difference in water level of about 2 ft.

Dissolved oxygen (DO) was 1.8 mg/L at site S1 and 3.5 mg/L at site S2. Conductivity was 1020.2 mS at site S1 and 1037.9 mS at site S2. Salinity was 0.54 ppt at both sites S1 and S2. Temperature was 22.1˚C and 22.6˚C at sites S1 and S4, respectively, while pH was 7.8 and 8.0, respectively. Total dissolved solids (TDS) concentrations were 0.70 and 0.71 ppt at sites S1 and S2, respectively. Overall, these measurements are within expected normal ranges and there are no issues of concern.

Discrete water quality data from March 1, 2023.

Site	Date	DO (mg/l)	Cond. (mS)	Salinity (ppt)	Temp. (˚C)	pH	TDS (mg/L)
S1	3/1/23	1.8	1020.2	0.54	22.1	7.8	0.70
S2	3/1/23	3.5	1037.9	0.54	22.6	8.0	0.71
SB	3/1/23	2.0	1029.8	0.55	21.8	7.5	0.71

Taking probe measurements at site S1 on March 1, 2023.

Nitrate+nitrite (NO_x) concentrations were 0.13 mg/L at site S1 and below detection (0.01 mg/L) at site S1 and SB. Ammonia (NH_3) concentrations were 0.12 mg/L at site S1, 0.33 mg/L at site S2, and 8.3 mg/L at site SB. Total nitrogen (TN) concentration, which was calculated as the sum of NO_x and TKN, was 0.03 and 1.3 mg/L at sites S1 and S2, respectively and 10.6 mg/L at site SB. Phosphate (PO_4) concentrations were 0.461 mg/L at site S1, below detection (<0.01 mg/L) at site S2, and 2.09 mg/L at site SB. Total phosphorus (TP) was 0.88 mg/L at site S1, below detection (<0.10 mg/L) at site S2, and 2.6 mg/L at site SB. Total suspended solids (TSS) concentrations were 14 and below detection (<5 mg/L) at sites S1 and S2, respectively, and 100 mg/L at site SB. Five-day biological oxygen demand (BOD_5) was 4 mg/L at site S1, and below detection (<3.0 mg/L) at both S2 and SB. In general, there were much higher concentrations in the St. Bernard drainage ditch compared to the wetland ponds. This difference was most likely caused by the wetland park decreasing concentrations of nutrients entering from the drainage ditch.

Water quality results from March 1, 2023.

Site	Date	NO_x (mg/L)	NH_3 (mg/L)	TN (mg/L)	PO_4 (mg/L)	TP (mg/L)	TSS (mg/L)	BOD_5 (mg/L)
S1	3/1/2023	0.013	0.12	0.093	0.461	0.88	14	4
S2	3/1/2023	<0.01	0.33	1.3	<0.01	<0.10	<5	<3
SB	3/1/2023	<0.01	8.3	10.6	2.09	2.6	100	<3

March 6, 2023: Tom Willis called about a meeting Wednesday. During the call, the high water in the newly dug pond was mentioned, which made Mr. Willis very concerned. He immediately emailed Scott Tabery and recommended that the levee board be informed.

March 22, 2023: Comite Resources personnel visited the Sankofa Wetland Park to carry out monthly monitoring. Dissolved oxygen, conductivity, temperature, salinity and pH were measured at monitoring sites S1through S5 and SB using a handheld probe. Avian survey was carried out (see data at end of report). The staff gauge was 34.0 cm at 11:15am.

Irises blooming at the wetland park on March 22, 2023.

Dissolved oxygen (DO) was ranged from 3.2 to 6.4 mg/L in the wetland pond at sites S1 and S2, respectively, while the newly constructed section of the pond ranged from 4.7 to 4.8 mg/L, and site SB was 1.5 mg/L. Conductivity was highest (1072.6 mS) at site S1, followed by 854.4 mS at S2, and ranged from ~650 to ~750 at sites S3-S5, and 822.8 at site SB. Salinity was had a similar pattern with the highest concentration (0.62 ppt) at site S1, followed by 0.50 ppt at site S2, ranged from 0.36 to 0.43 at sites S3-S5, and 0.49 ppt at site SB. Temperature was lowest (16.8˚C) at site SB, followed by 17.9 and 17.6˚C at sites S1 and S2, and then increased going west into the newly constructed pond to a high of 19.6˚C at site S5. pH ranged from 7.9 to 8.2. Total dissolved solids (TDS) concentrations decreased going west with a high of 0.80 mg/L at site S1 and decreasing to 0.47 mg/L at site S5. TDS was 0.64 mg/L at site SB. Overall, these measurements are within expected normal ranges and there are no issues of concern.

Discrete water quality data from March 22, 2023.

Site	Date	DO (mg/l)	Cond. (mS)	Salinity (ppt)	Temp. (˚C)	pH	TDS (mg/L)
S1	3/22/23	3.2	1072.6	0.62	17.9	8.2	0.80
S2	3/22/23	6.4	854.4	0.50	17.6	8.0	0.64
S3	3/22/23	4.7	742.1	0.42	18.7	8.0	0.55
S4	3/22/23	4.8	770.0	0.43	19.1	7.9	0.56
S5	3/22/23	4.7	651.7	0.36	19.6	8.0	0.47
SB	3/22/23	1.5	822.8	0.49	16.8	8.2	0.64

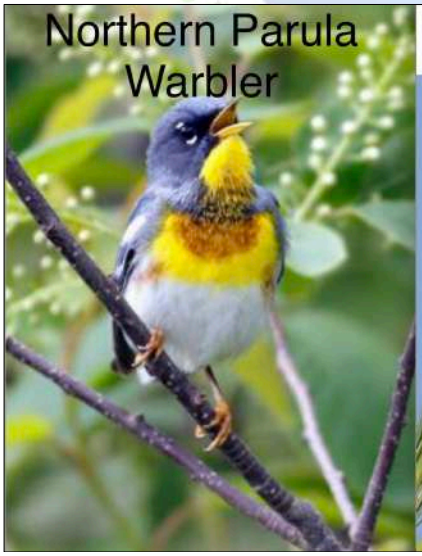
Sampling at site SB on March 22, 2023.

Avian Survey

A total of 17 bird species were observed in January, 27 species in February (taken 3/1), and 22 species in March.

Bird species observed at the Sankofa Wetland Park for Q1 2023.

Common Name	Scientific Name	1/28/23	3/1/23	3/22/23
American Coot	*Fulica americana*	X		X
American Crow	*Corvus brachyrhynchos*	X	X	X
Anhinga	*Anhinga anhinga*	X	X	
Bald Eagle	*Haliaeetus leucocephalus*	X		
Black Vulture	*Coragyps atratus*		X	X
Black-Bellied Whistling-Duck	*Dendrocygna autumnalis*		X	
Blue Jay	*Cyanocitta cristata*	X	X	X
Carolina Chicadee	*Poecile carolinensis*	X	X	X
Carolina Wren	*Thryothorus ludovicianus*		X	
Cedar Waxwing	*Bombycilla cerorum*		X	
Common Moorhen	*Gallinula chloropus*	X	X	X
Common Yellowthroat	*Geothlypis trichas*	X	X	
Eastern Phoebe	*Sayornis phoebe*		X	
Eurasian Collared Dove	*Streptopelia decaocto*		X	X
European Starling	*Sturnus Vulgaris*	X	X	X
Fish Crow	*Corvus ossifragus*	X		X
Great Crested Flycatcher	*Myiarchus crinitus*		X	
Great Erget	*Ardea alba*	X	X	X
Green Heron	*Butorides virescens*			X
Hairy Woodpecker	*Picoides pubescens*		X	
Laughing Gull	*Larus atricilla*	X		X
Limpkin	*Aramus guarauna*		X	X
Little Blue Heron	*Egretta caerlea*		X	X
Mockingbird	*Mimus polyglottos*	X	X	X
Northern Cardinal	*Cardinalis cardinalis*		X	X
Northern Parula Warbler	*Setophaga americana*			X
Osprey	*Pandion Haliaetus*	X		X
Pied-billed Grebe	*Podilymbus podiceps*	X		
Red Winged Blackbird	*Agelaius phoeniceus*		X	
Snowy Egret	*Egretta thula*			X
Song Sparrow	*Melospiza melodia*		X	
Swamp Sparrow	*Melospiza georgiana*	X		
Tree Swallow	*Tachycineta bicolor*			X
Tuffted Titmouse	*Baeolophus bicolor*		X	X
Turkey Vulture	*Cathartes aura*		X	
Winter Wren	*Troglodytes hiemalis*		x	
White Ibis	*Eudocimus albus*		X	
Yellow-Rumped Warbler	*Setophaga coronata*	X	X	X



Detect Summary

Results and Detection Limits are adjusted for dilution and moisture when applicable

EPA 353.2 Rev. 2

Lab ID	Client ID	Parameter	Units	Result	Dil.	%Moist
22303017502	S5	Nitrate/Nitrite	mg/L-N	0.013	1	NA

HACH 10242

Lab ID	Client ID	Parameter	Units	Result	Dil.	%Moist
22303017501	S4	Total Kjeldahl Nitrogen	mg/L-N	1.3	1	NA
22303017503	BBWT	Total Kjeldahl Nitrogen	mg/L-N	10.6	1	NA

SM 2540 D-2011

Lab ID	Client ID	Parameter	Units	Result	Dil.	%Moist
22303017502	S5	Total Suspended Solids	mg/L	14	1	NA
22303017503	BBWT	Total Suspended Solids	mg/L	100	1	NA

SM 4500-NH3 D 2011

Lab ID	Client ID	Parameter	Units	Result	Dil.	%Moist
22303017501	S4	Ammonia	mg/L-N	0.33	1	NA
22303017502	S5	Ammonia	mg/L-N	0.12	1	NA
22303017503	BBWT	Ammonia	mg/L-N	8.3	1	NA

SM 4500-P E-2011

Lab ID	Client ID	Parameter	Units	Result	Dil.	%Moist
22303017502	S5	Ortho Phosphate - P	mg/L-P	0.461	1	NA
22303017503	BBWT	Ortho Phosphate - P	mg/L-P	2.09	5	NA

SM 5210 B-2016

Lab ID	Client ID	Parameter	Units	Result	Dil.	%Moist
22303017502	S5	BOD	mg/L	4	1	NA
22303017503	BBWT	BOD	mg/L	11	1	NA

Sample Results

S4	Collect Date	03/01/2023 08:50	Lab ID	22303017501
	Receive Date	03/01/2023 14:45	Matrix	Water

EPA 353.2 Rev. 2

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	03/14/23 12:05	761701	LHM	NA

CAS#	Parameter	Result	LOQ	Units
C-005	Nitrate/Nitrite	ND	0.010	mg/L-N

HACH 10242

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	03/07/23 11:36	761166	RYC	NA

CAS#	Parameter	Result	LOQ	Units
C-021	**Total Kjeldahl Nitrogen**	**1.3**	**1.0**	mg/L-N

SM 2540 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	03/07/23 14:34	761212	LHM	NA

CAS#	Parameter	Result	LOQ	Units
C-009	Total Suspended Solids	ND	5	mg/L

SM 4500-NH3 D 2011

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	03/07/23 14:48	761231	RYC	NA

CAS#	Parameter	Result	LOQ	Units
7664-41-7	**Ammonia**	**0.33**	**0.10**	mg/L-N

SM 4500-P E-2011

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	03/01/23 16:11	760860	RYC	NA

CAS#	Parameter	Result	LOQ	Units
14265-44-2	Ortho Phosphate - P	ND	0.050	mg/L-P

Sample Results

S4	Collect Date	03/01/2023 08:50	Lab ID	22303017501
	Receive Date	03/01/2023 14:45	Matrix	Water

SM 5210 B-2016

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
03/02/23 08:00	760901	BOD PREP	1	03/02/23 08:00	761250	MLG	NA

CAS#	Parameter	Result	LOQ	Units
C-002	BOD	ND	3	mg/L

Subcontract Work

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	Subcontract Work	1	03/10/23 17:31	NA	CW	NA

CAS#	Parameter	Result	LOQ	Units
SHIP-001	Ship Result	*		mg/L

S5	Collect Date	03/01/2023 08:35	Lab ID	22303017502
	Receive Date	03/01/2023 14:45	Matrix	Water

EPA 353.2 Rev. 2

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	03/14/23 12:06	761701	LHM	NA

CAS#	Parameter	Result	LOQ	Units
C-005	**Nitrate/Nitrite**	**0.013**	**0.010**	mg/L-N

HACH 10242

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	03/07/23 11:37	761166	RYC	NA

CAS#	Parameter	Result	LOQ	Units
C-021	Total Kjeldahl Nitrogen	ND	1.0	mg/L-N

SM 2540 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	03/07/23 14:34	761212	LHM	NA

CAS#	Parameter	Result	LOQ	Units
C-009	**Total Suspended Solids**	**14**	**5**	mg/L

Sample Results

S5	Collect Date	03/01/2023 08:35	Lab ID	22303017502
	Receive Date	03/01/2023 14:45	Matrix	Water

SM 4500-NH3 D 2011

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	03/07/23 14:50	761231	RYC	NA

CAS#	Parameter	Result	LOQ	Units
7664-41-7	**Ammonia**	**0.12**	**0.10**	mg/L-N

SM 4500-P E-2011

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	03/01/23 16:11	760860	RYC	NA

CAS#	Parameter	Result	LOQ	Units
14265-44-2	**Ortho Phosphate - P**	**0.461**	**0.050**	mg/L-P

SM 5210 B-2016

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
03/02/23 08:00	760901	BOD PREP	1	03/02/23 08:00	761250	MLG	NA

CAS#	Parameter	Result	LOQ	Units
C-002	**BOD**	**4**	**3**	mg/L

Subcontract Work

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	Subcontract Work	1	03/10/23 17:31	NA	CW	NA

CAS#	Parameter	Result	LOQ	Units
SHIP-001	Ship Result	*		mg/L

BBWT	Collect Date	03/01/2023 08:20	Lab ID	22303017503
	Receive Date	03/01/2023 14:45	Matrix	Water

EPA 353.2 Rev. 2

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	03/14/23 12:07	761701	LHM	NA

CAS#	Parameter	Result	LOQ	Units
C-005	Nitrate/Nitrite	ND	0.010	mg/L-N

Sample Results

BBWT	Collect Date	03/01/2023 08:20	Lab ID	22303017503
	Receive Date	03/01/2023 14:45	Matrix	Water

HACH 10242

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	03/07/23 11:37	761166	RYC	NA

CAS#	Parameter	Result	LOQ	Units
C-021	**Total Kjeldahl Nitrogen**	**10.6**	**1.0**	mg/L-N

SM 2540 D-2011

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	03/07/23 14:34	761212	LHM	NA

CAS#	Parameter	Result	LOQ	Units
C-009	**Total Suspended Solids**	**100**	**5**	mg/L

SM 4500-NH3 D 2011

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	03/07/23 14:51	761231	RYC	NA

CAS#	Parameter	Result	LOQ	Units
7664-41-7	**Ammonia**	**8.3**	**0.10**	mg/L-N

SM 4500-P E-2011

*Results and limits are adjusted for dilution.

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	5	03/01/23 16:18	760860	RYC	NA

CAS#	Parameter	Result	LOQ	Units
14265-44-2	**Ortho Phosphate - P**	**2.09**	**0.250**	mg/L-P

SM 5210 B-2016

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
03/02/23 08:00	760901	BOD PREP	1	03/02/23 08:00	761250	MLG	NA

CAS#	Parameter	Result	LOQ	Units
C-002	**BOD**	**11**	**3**	mg/L