United States Department of the Interior
Fish and Wildlife Service

Southwest Florida Refuges Complex
Florida Panther National Wildlife Refuge
12411 State Road 29S.
Immokalee, Florida 34142
PH: 239-657-8001

October 23, 2024

Memorandum

To: Kevin Godsea and Erin Myers

Cc: John Galvez, Edward Perri and Mitchell Barazowski

From: Mark Danaher, Supervisory Wildlife Biologist

Subject: Mercury Concentrations in Fishes Collected from Pistol Pond

Because the 2021 Florida Panther National Wildlife Refuge (FPNWR) Visitor Service's Plan identified Pistol Pond as a location that could be opened to public fishing, it was determined that a more recent analysis of mercury concentrations in Pistol Pond fishes was needed. During 2023 and 2024, eighteen fishes were collected from Pistol Pond on FPNWR (Figures 1, and 3-20) to analyze their muscle tissue for mercury. Fishes were collected by electrofishing and hook-and-line. Fishes were bagged in Ziploc freezer bags and placed on ice until they could be stored in the Refuge's chest freezer. These fish specimens were kept in the Refuge's chest freezer without thawing until they were sent overnight in a styrofoam cooler (with frozen cold packs) to Pace Analytical's laboratory in Green Bay, Wisconsin on September 10, 2024. Fishes sampled (N=18) included 3 largemouth bass, 2 bluegill, 1 redear sunfish, 6 Mayan cichlids, and 6 oscar. All 18 samples were analyzed for EPA 7473 by Pace Analytical Services Green Bay (Table 1). As noted on the attached report from Pace Analytical, all samples were received in acceptable condition, and all criteria were within method requirements for analysis.

The first FPNWR mercury analyses conducted by Brim et al. 1994 were conducted from fish samples obtained during 1990 (Brim et al. 1994). Of the largemouth bass that Brim et al. 1994 sampled, 43% exceeded the Florida limited-consumption concentration of .5 ppm. However, all of these largemouth bass were collected in the Barron River Canal, I-75 Canal, and a small pond that they called "Bullet Pond." Brim et al. 1994 sampled seven largemouth bass from Pistol Pond, and all of them had mercury concentrations below the Florida limited-consumption concentration of .5 mg/kg wet weight occurring at the time of their report. For individuals other than women of childbearing age and young children, the 2021 Florida Health Department's Guide to Eating Fish Caught in Florida recommends limiting consumption of largemouth bass out of the I-75 Canal (Broward County) to one meal per month, and Mayan cichlid, Oscar, redear sunfish, spotted sunfish, and warmouth to two per week. The 2021 Florida Health Department's Guide to Eating Fish Caught in Florida recommends women of childbearing age and young children to limit consumption of largemouth bass from the Barron River Canal to one meal per month, and the rest of the population to two meals per week. On the adjacent Big Cypress National Preserve, the 2021 Florida Health Department's Guide to Eating Fish Caught in Florida recommends that

women of childbearing age and young children not consume largemouth bass from Big Cypress National Preserve, and all other individuals to limit consumption to one per month.

To follow-up to the 1990 sampling and analyses conducted by Brim et al. 1994, another sampling was conducted in 1993 by Richards and Morrison (Richards and Morrison 1994). Richards and Morrison sampled nine largemouth bass, ten gar, and ten bluegill from Pistol Pond, and ten bluegill from Bullet Pond during 1993. Richards and Morrison discovered that mercury concentrations ranged from 1.6-4.68 mg/kg in Pistol Pond largemouth bass, .97-1.74 mg/kg in Pistol Pond Florida gar, .43-2.19 mg/kg in Pistol Pond bluegill, and .53-1.39 in Bullet Pond bluegill. The geometric mean mercury concentration for Pistol Pond largemouth bass that Richards and Morrison 1994 reported was 1.08 mg/kg.

Of the 18 samples that were analyzed during 2024, only one, a Mayan cichlid, exceeded the .46 mg/kg mercury concentration that the EPA recommends for women of childbearing age (about 16-49 years old), pregnant and breastfeeding women, and young children to avoid eating (Figure 2 and Table 1). Two other Mayan cichlids and one largemouth bass were fairly close to the highest allowable average mercury concentration in fish per serving when eating 1 serving per week, which is 0.46 mg/kg for women of childbearing age, pregnant and breastfeeding women, and young children (Table 1). These are promising results when compared to those that were documented by Richards and Morrison when they sampled FPNWR fishes during 1993, and the 2024 results are similar or lower than those documented by Brim et al. 1994. However, it should be noted that all three mercury studies consisted of small sample sizes. As such, it is recommended that the Refuge continue long-term mercury sampling/analysis to obtain a better approximation of the normal distribution with regards to mercury concentrations in fishes. Should Pistol Pond be opened for public fishing and/or public fishing events in the future, it is recommended that public health advisory signage be posted in a highly visible location at Pistol Pond (e.g., at the entrance/parking area).

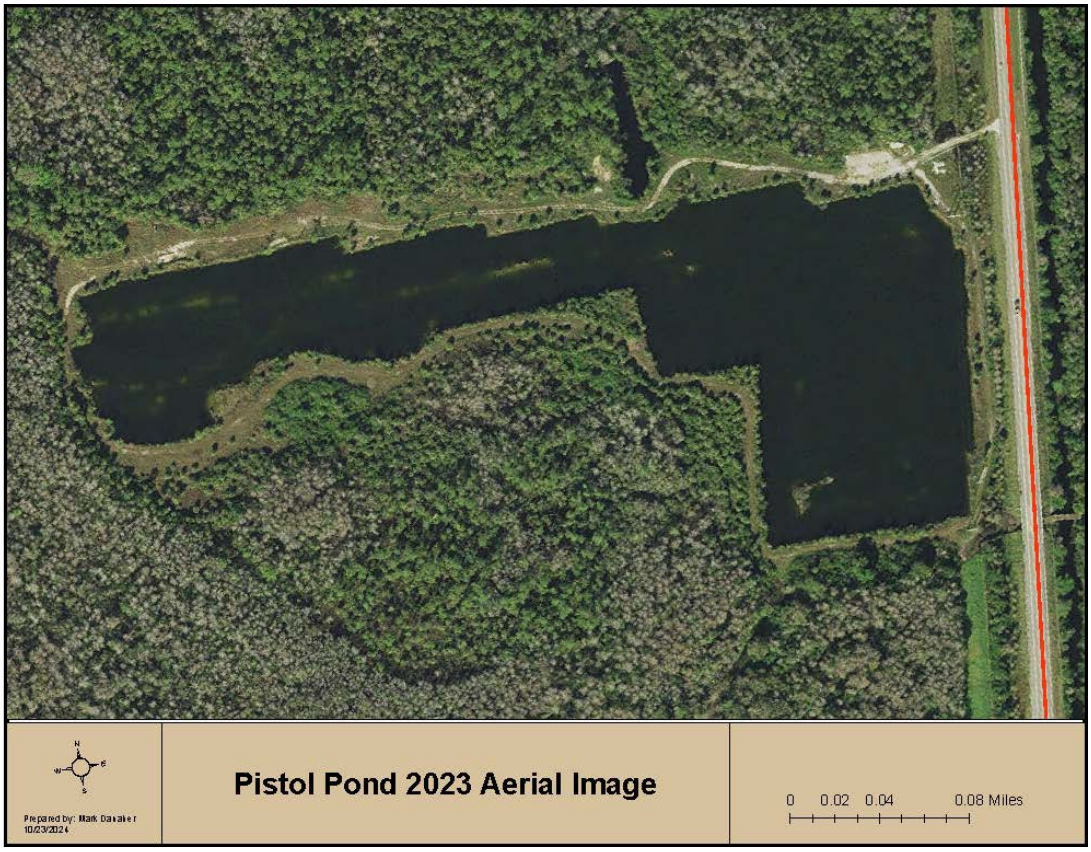

Figure 1. Aerial map of Pistol Pond.

Weekly fish servings	Screening value (µg/g)	Chart category
0	> 0.46	Choices to Avoid
1	≤ 0.46	Good Choices
2	≤ 0.23	
3	≤ 0.15	Best Choices

The screening value is the highest allowable average amount of mercury in fish at a given consumption rate. Therefore:

Highest allowable average mercury concentration in fish per serving when eating 3 servings per week = 0.15 µg/g. Any fish with an average mercury concentration less than or equal to 0.15 µg/g was placed in the "best choices – eat 2-3 servings a week" category.

Highest allowable average mercury concentration in fish per serving when eating 2 servings per week = 0.23 µg/g. In order to be protective, any fish with an average mercury concentration greater than 0.15 µg/g up to 0.23 µg/g was placed in the "good choices – eat 1 serving a week" category because it could not be eaten 3 times a week without exceeding the reference dose.

Highest allowable average mercury concentration in fish per serving when eating 1 serving per week = 0.46 µg/g. Any fish with an average mercury concentration greater than 0.23 µg/g up to 0.46 µg/g was placed in the "good choices – eat 1 serving a week" category. Any fish with an average mercury concentration greater than 0.46 µg/g was placed in the "choices to avoid" category.

Figure 2. EPA-FDA mercury screening values and recommendations for human fish consumption by women of childbearing age (about 16-49 years old), pregnant and breastfeeding women, and young children.

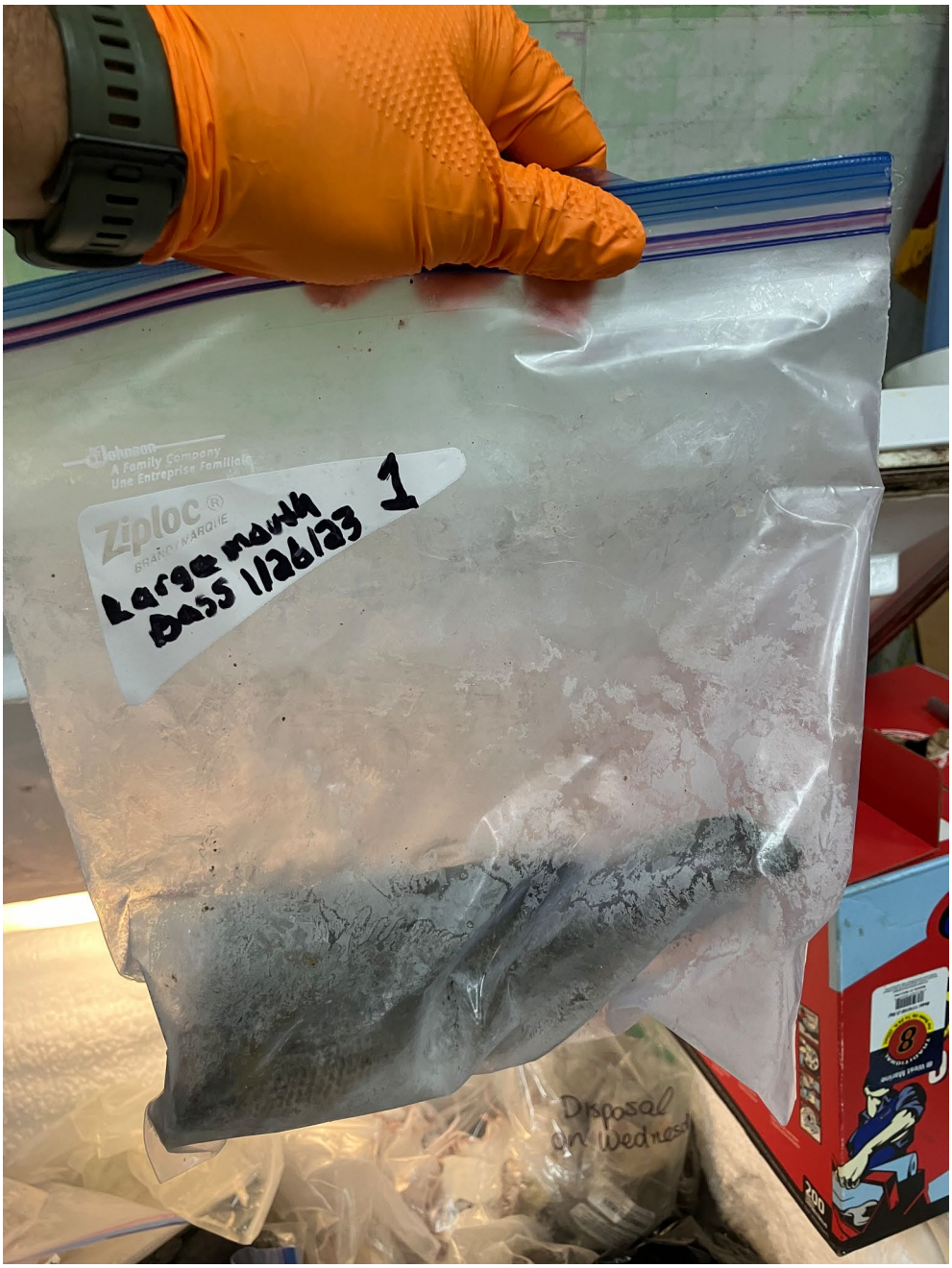

Figure3. Sample 1

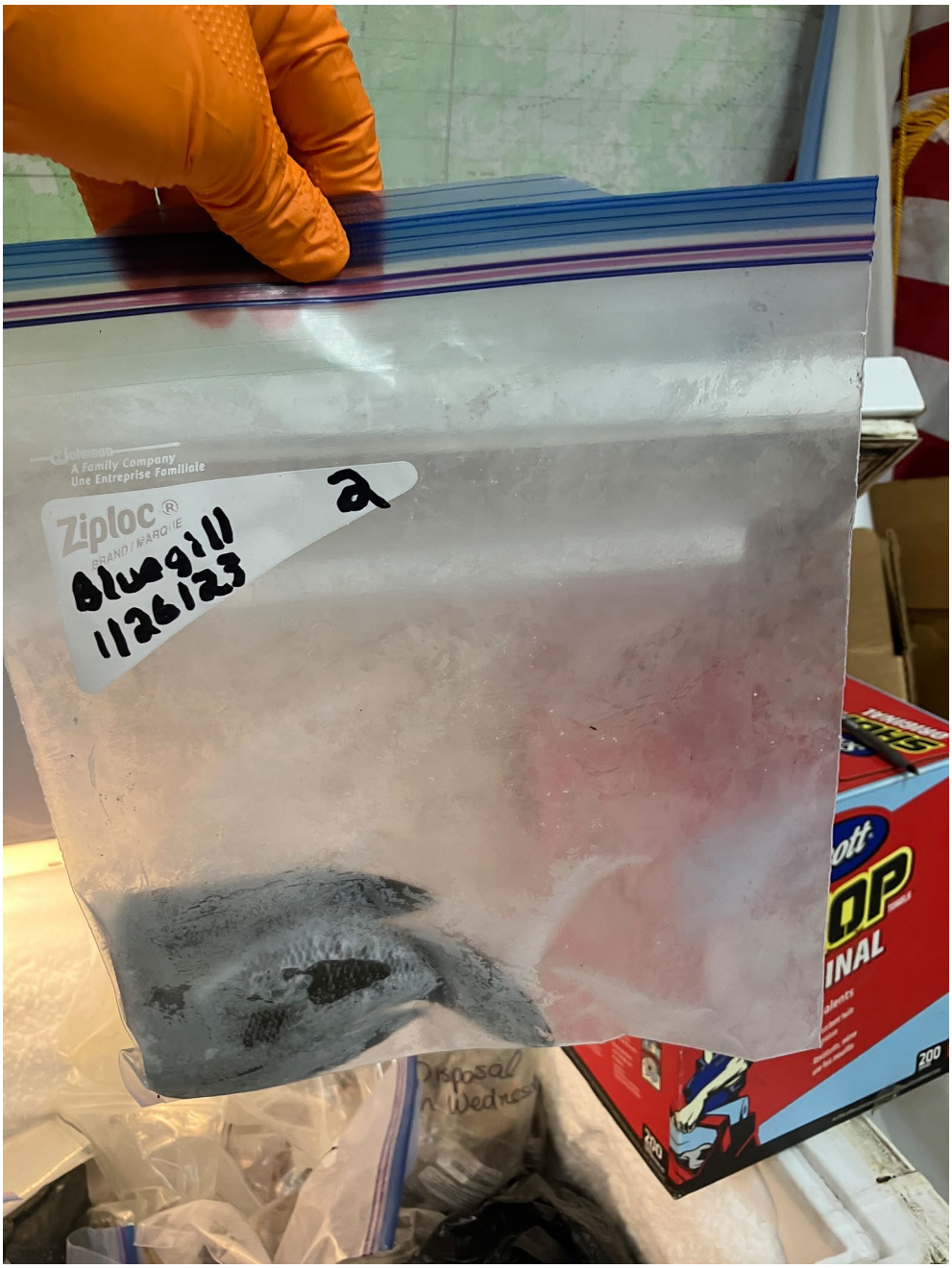

Figure 4. Sample 2

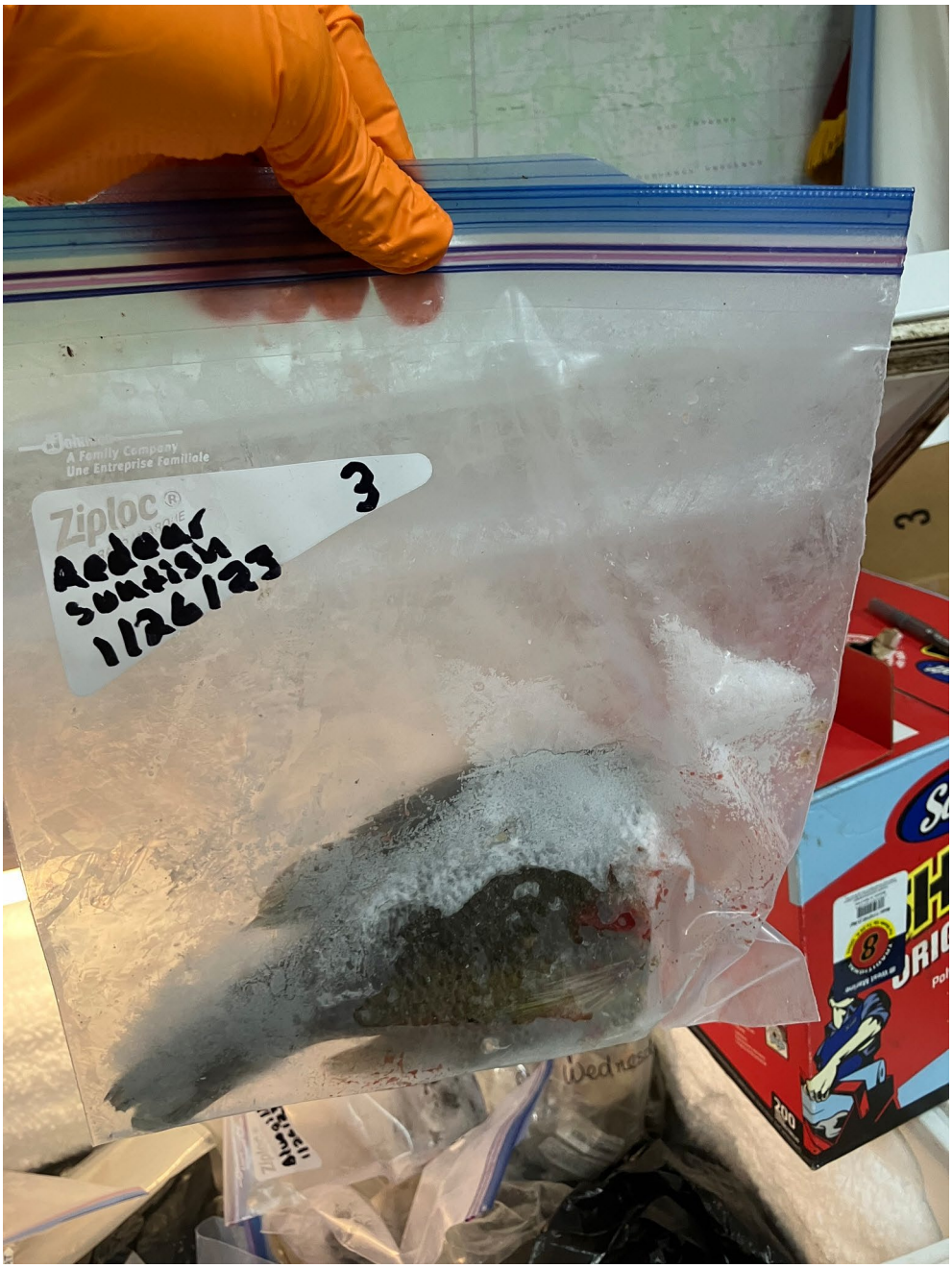

Figure 5. Sample 3

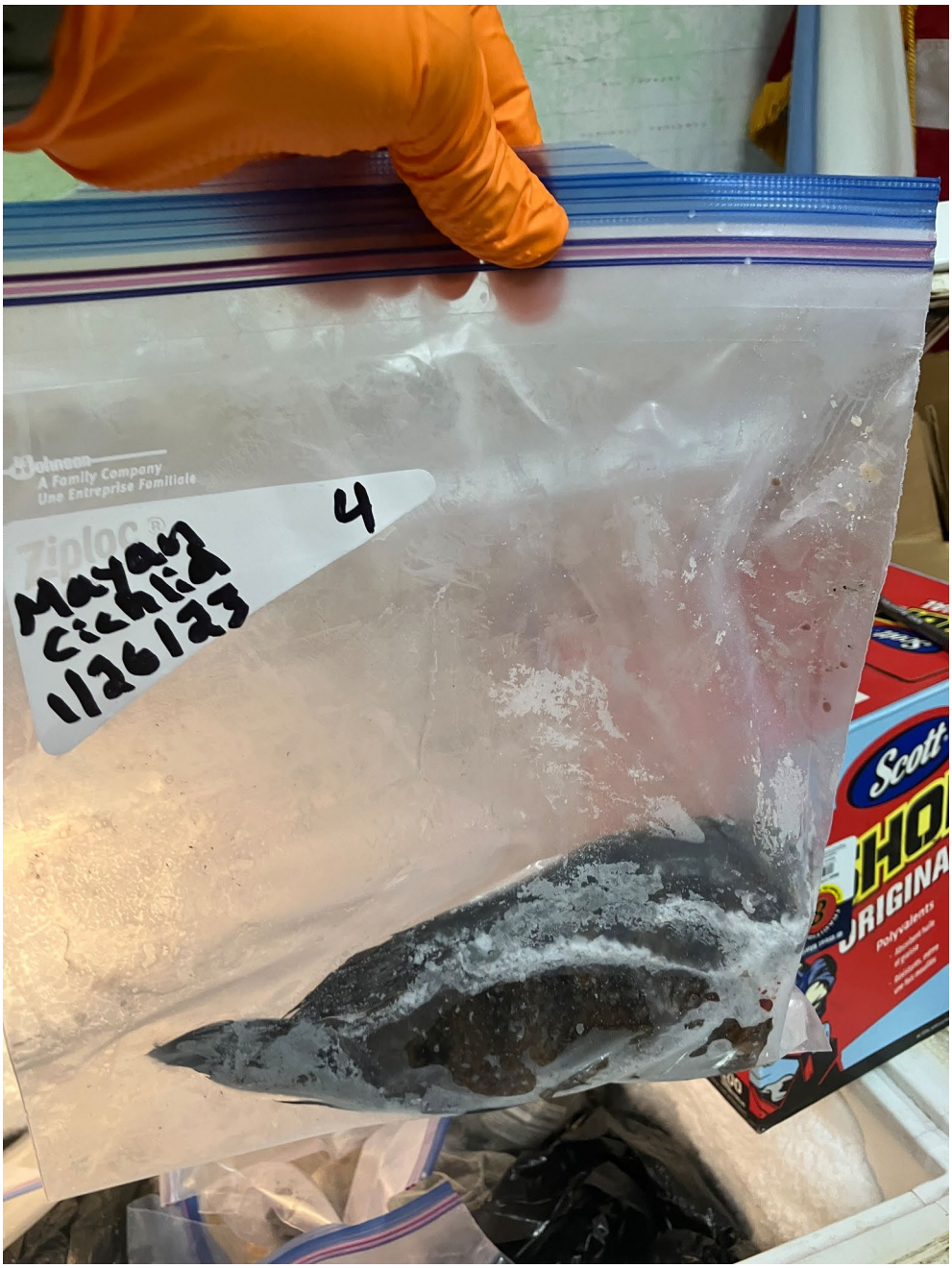

Figure 6. Sample 4

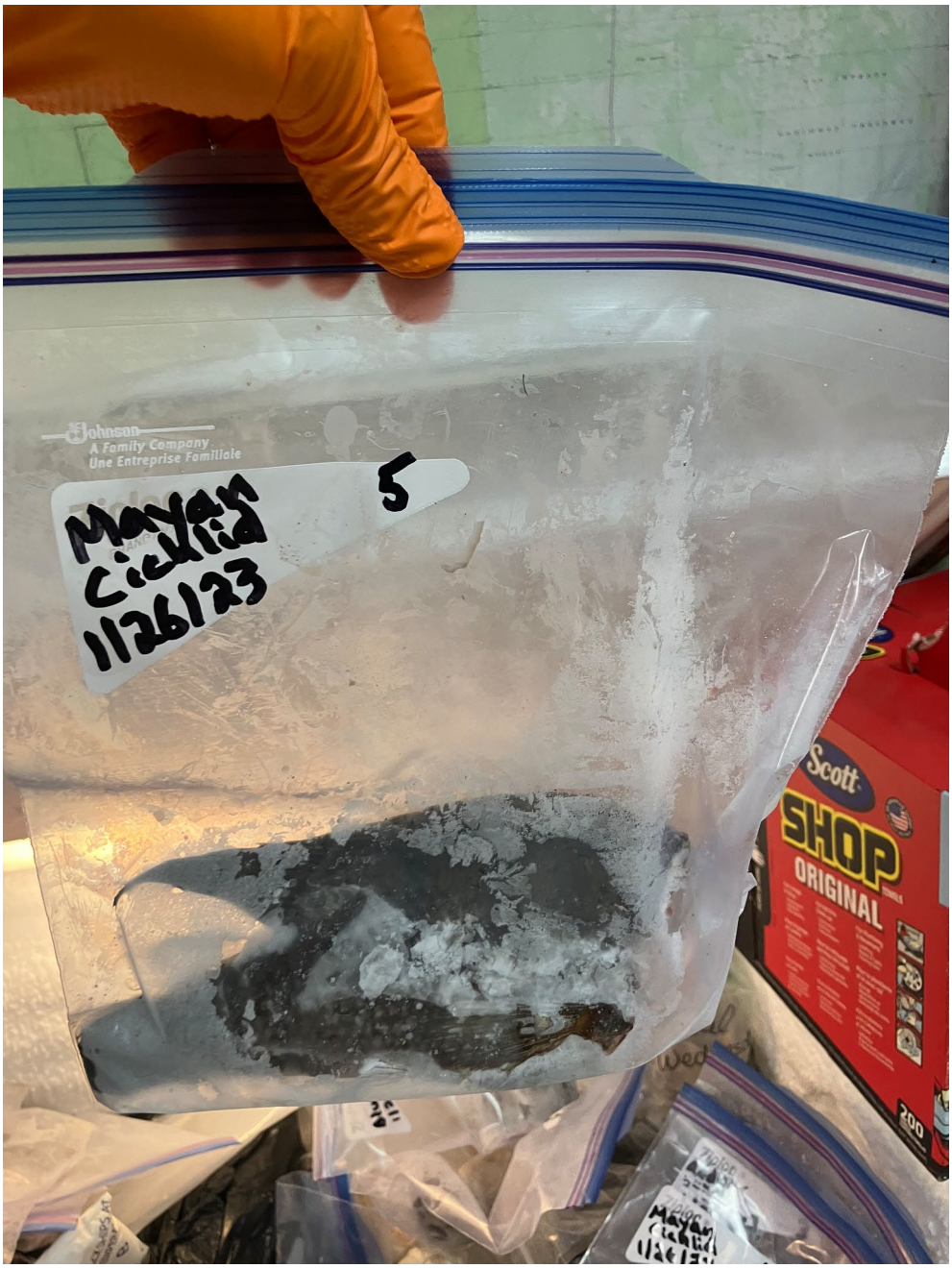

Figure 7. Sample 5

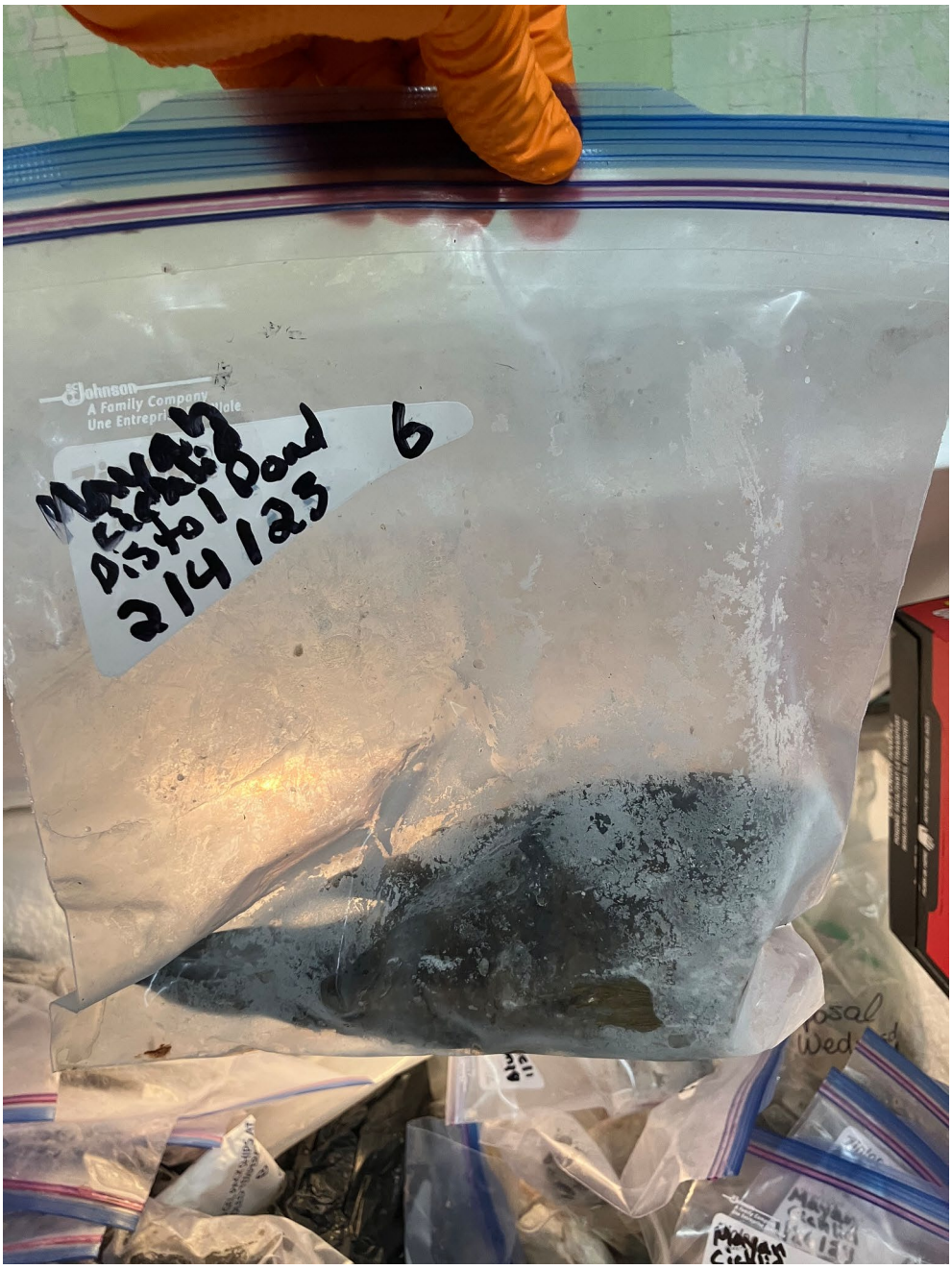

Figure 8. Sample 6

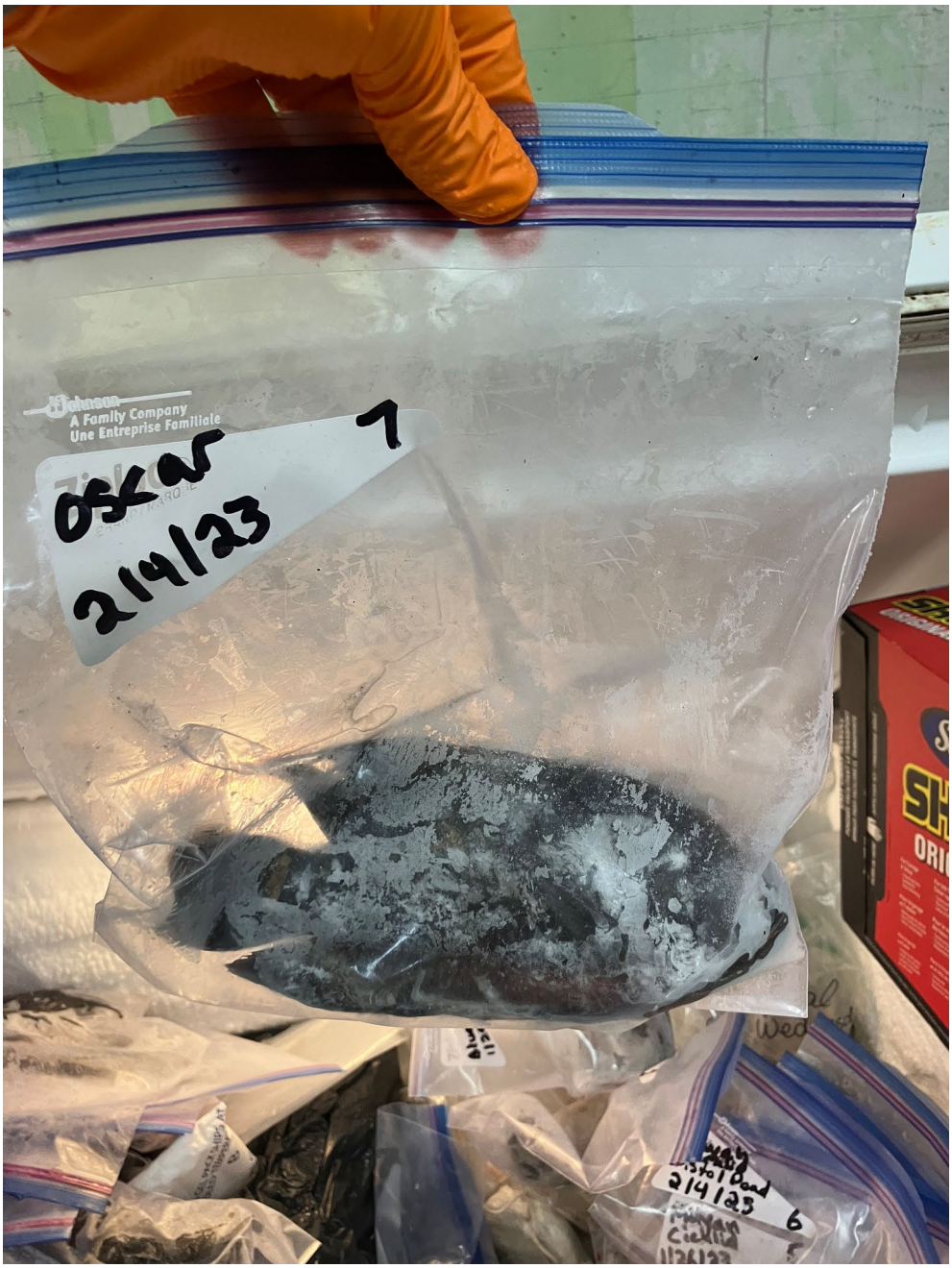

Figure 9. Sample 7

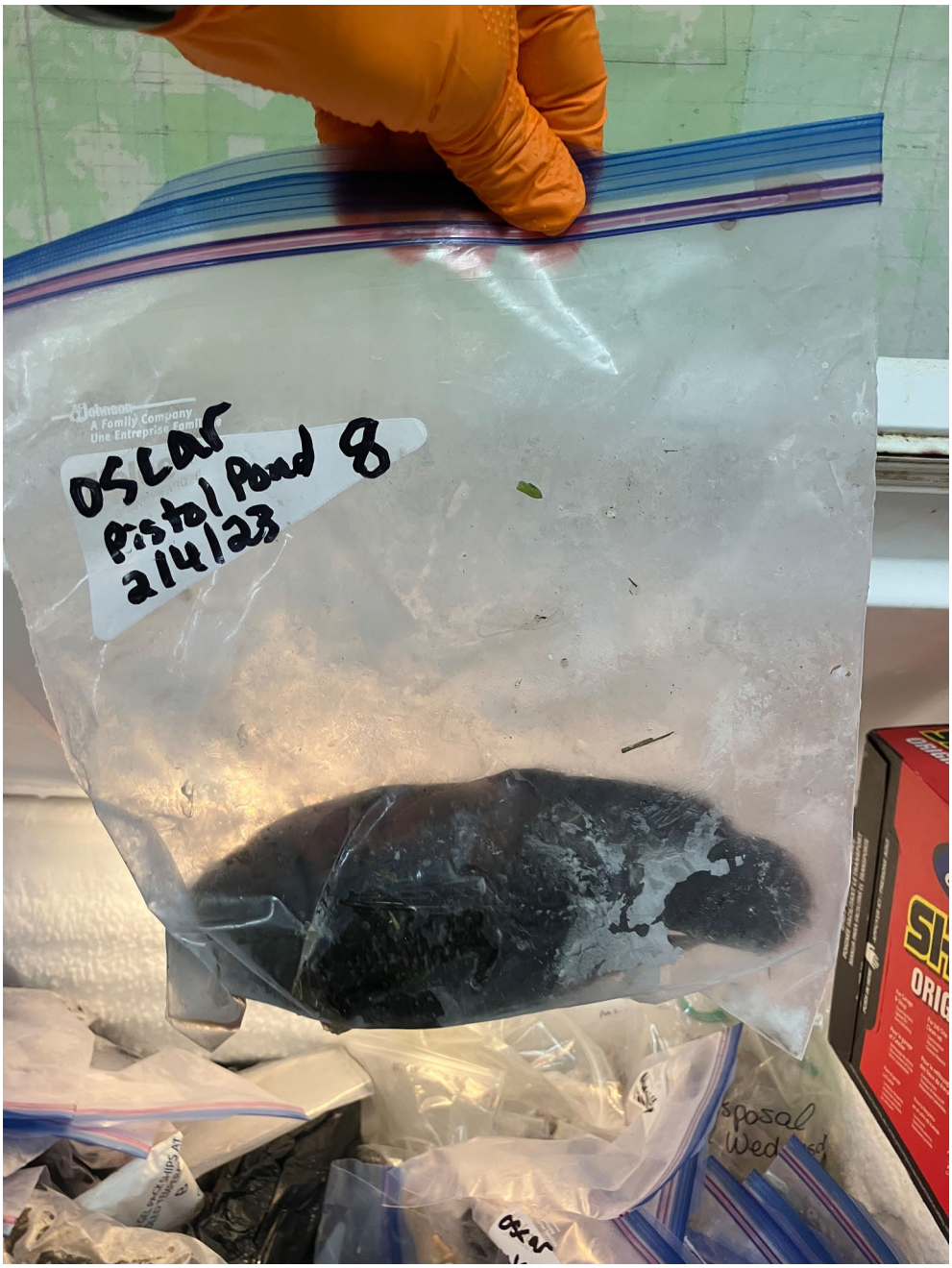

Figure 10. Sample 8

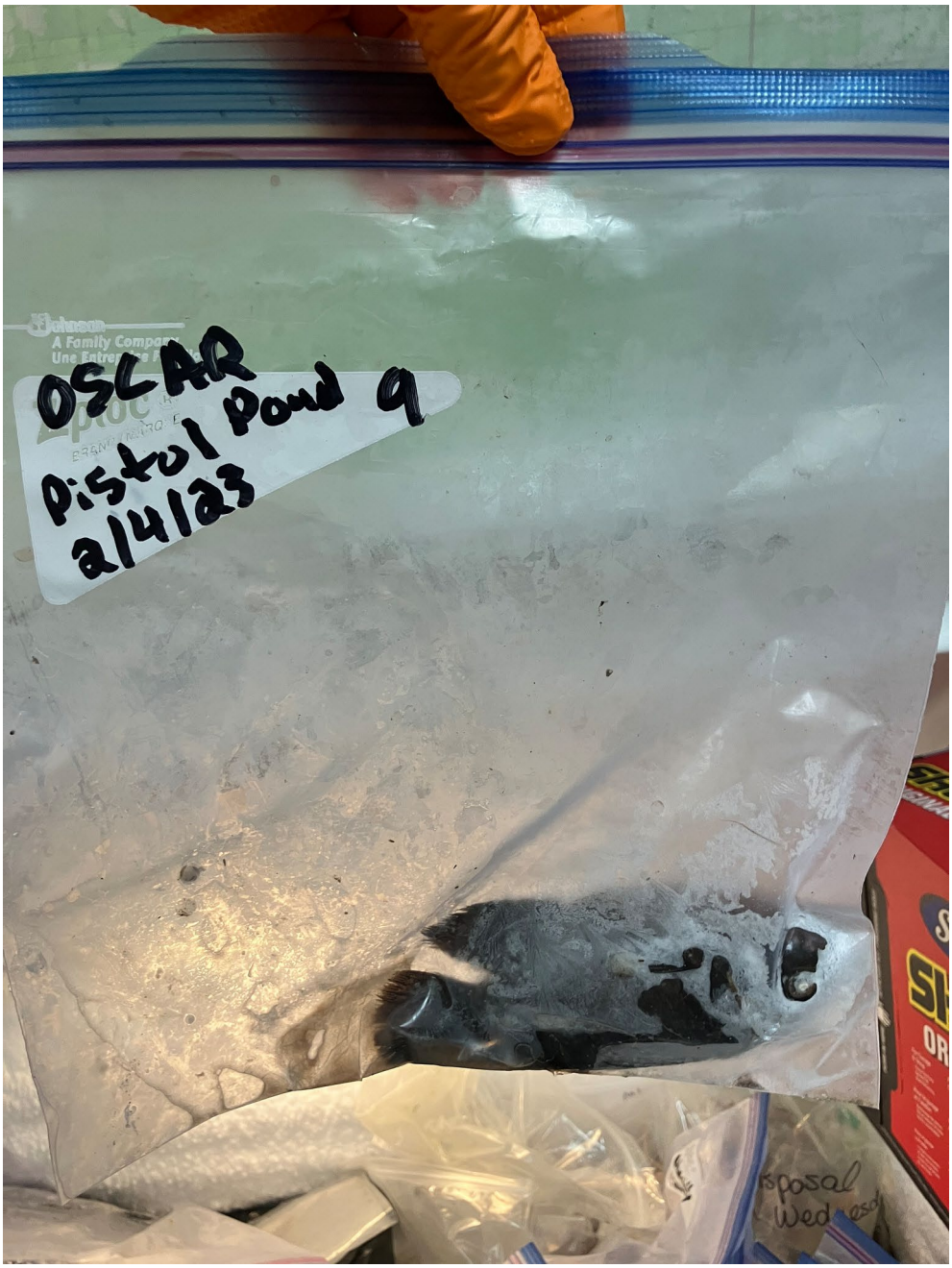

Figure 11. Sample 9

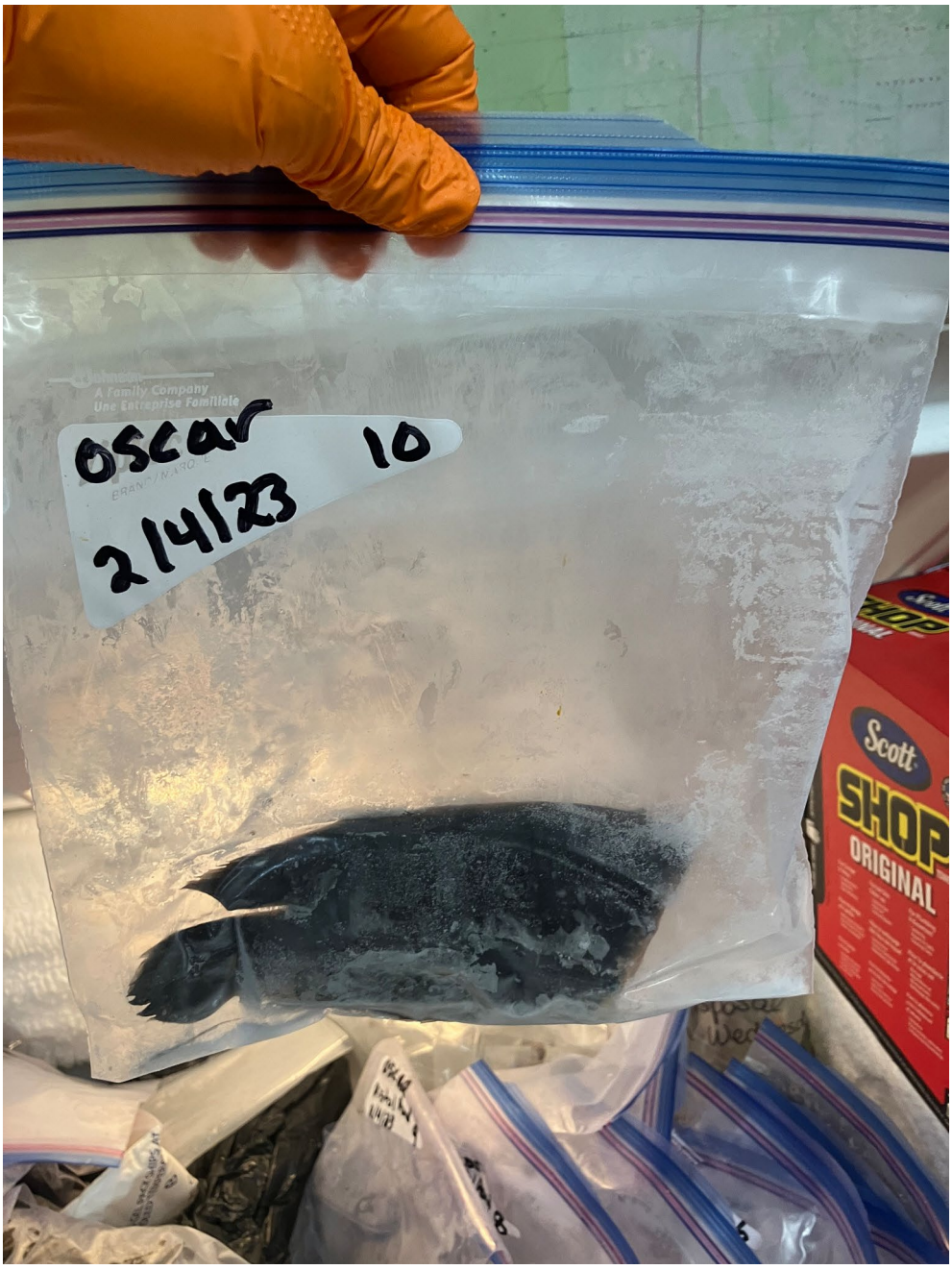

Figure 12. Sample 10

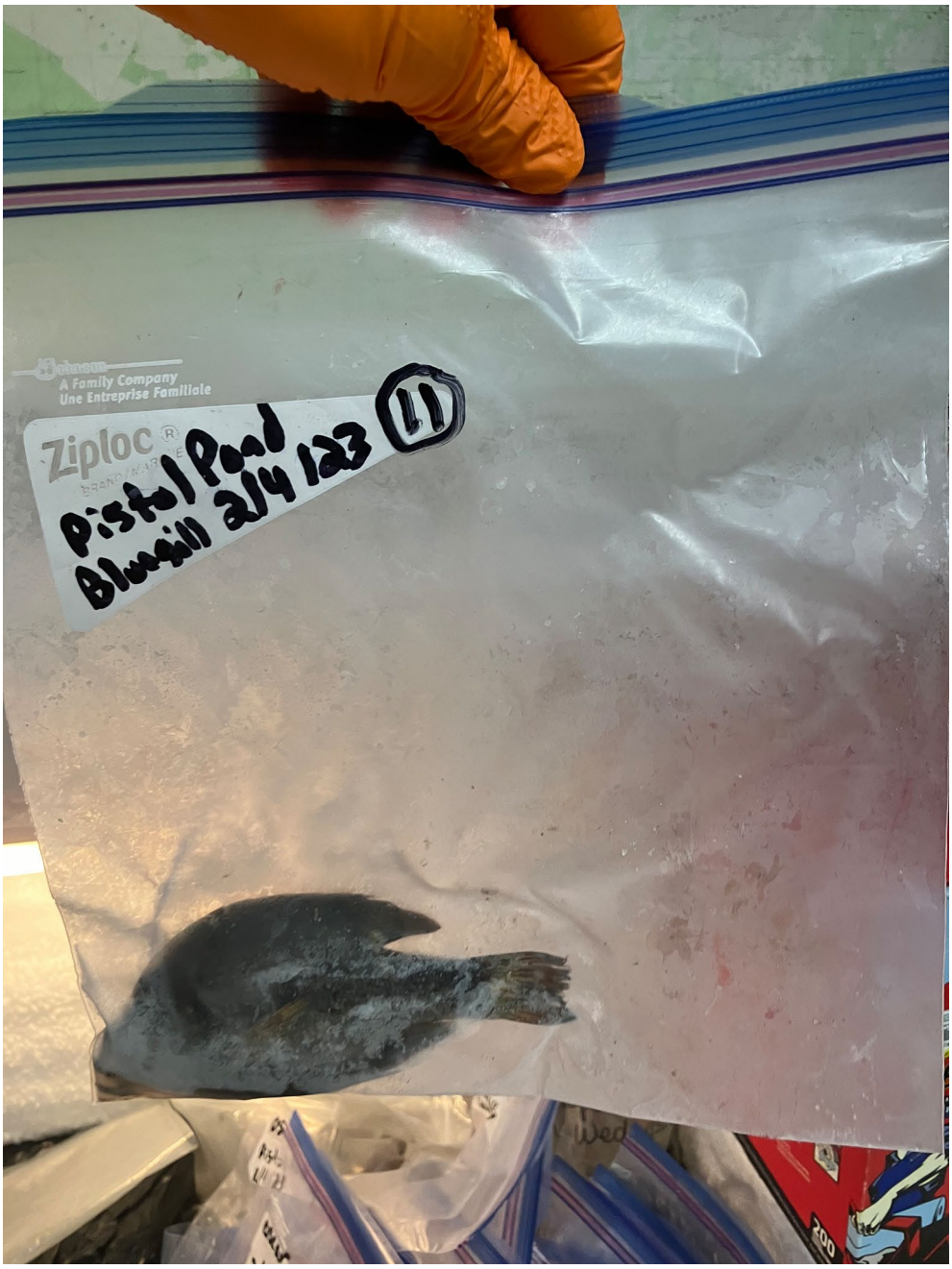

Figure 13. Sample 11

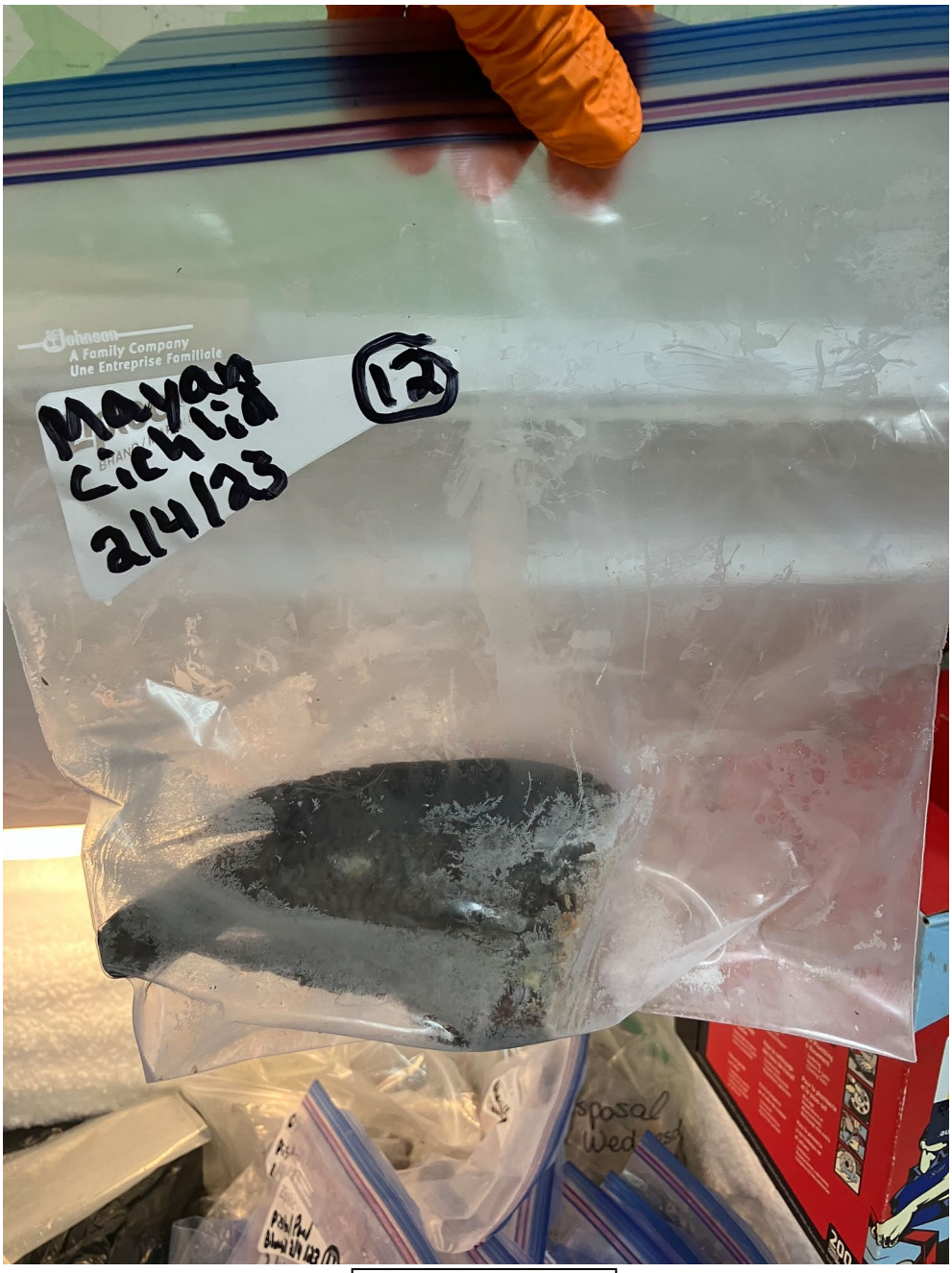

Figure 14. Sample 12

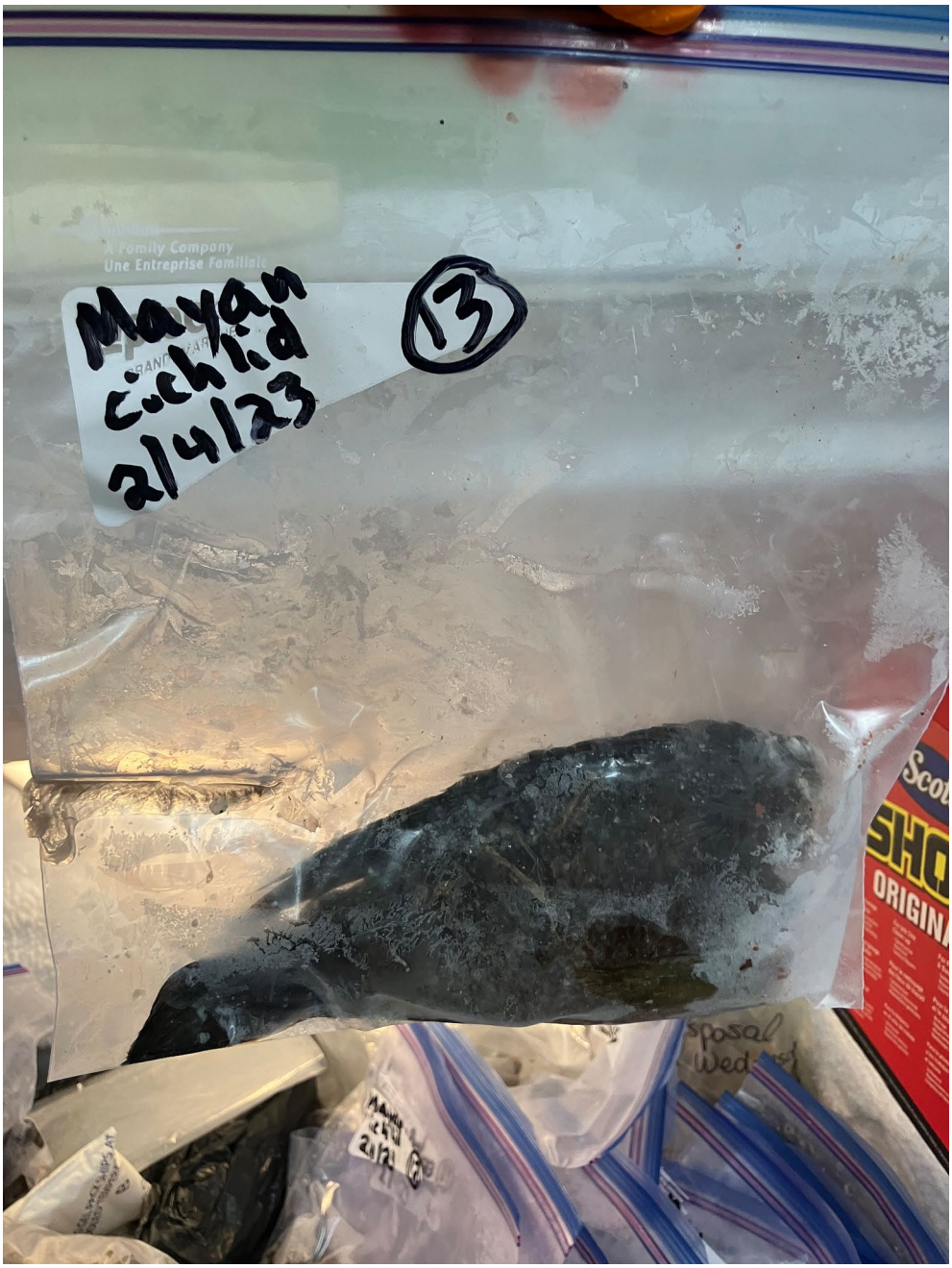

Figure 15. Sample 13

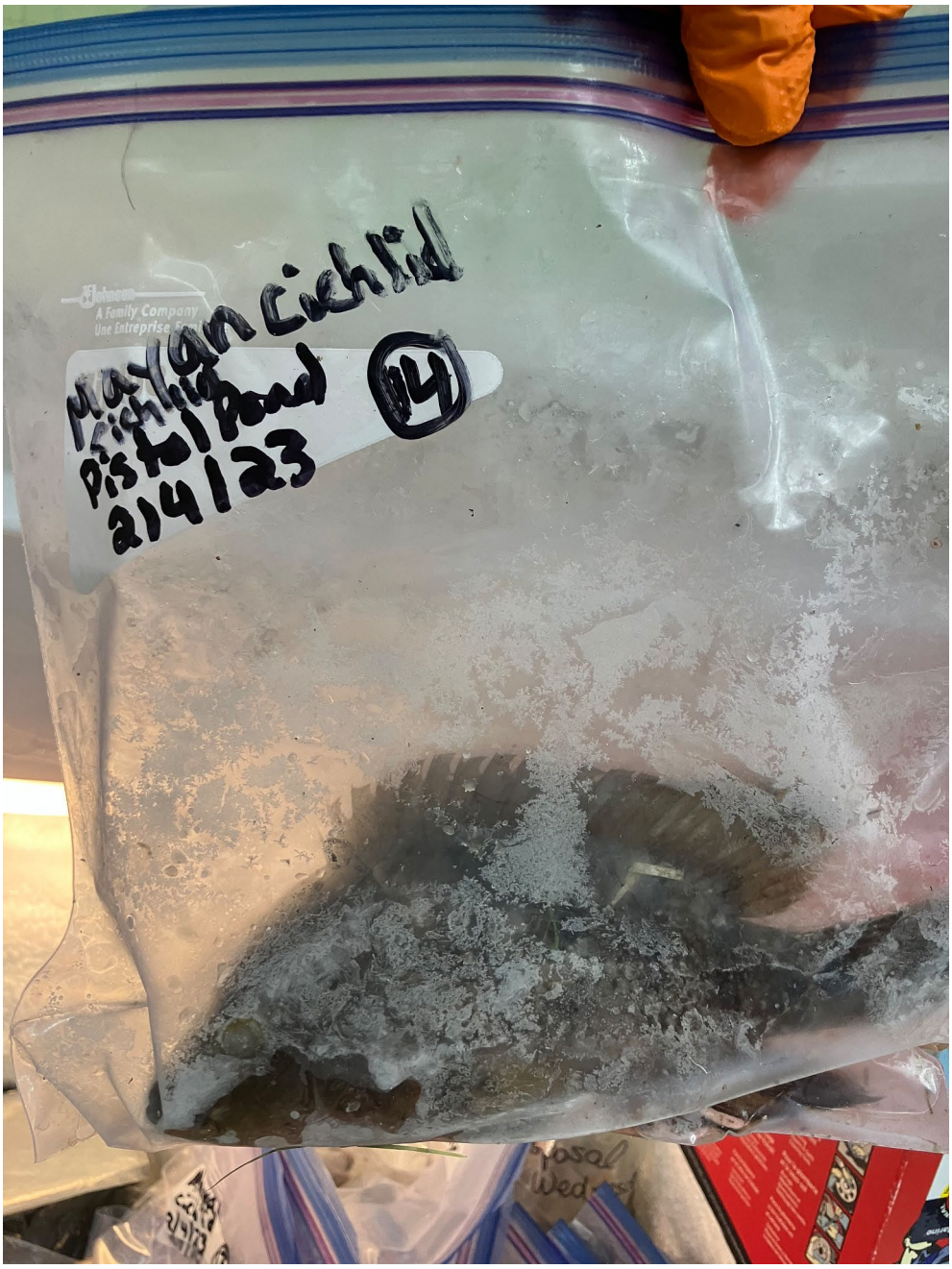

Figure 16. Sample 14

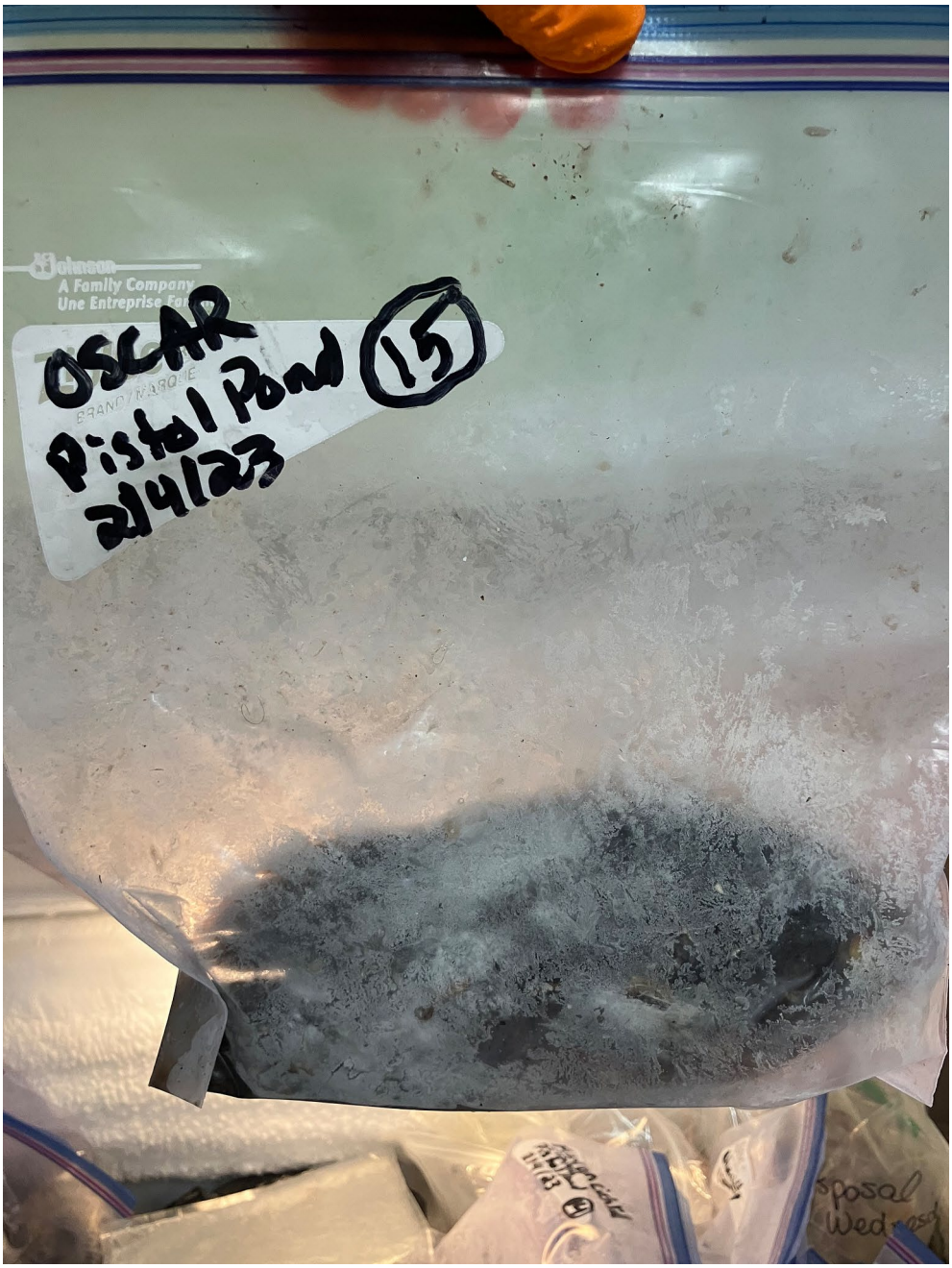

Figure 17. Sample 15

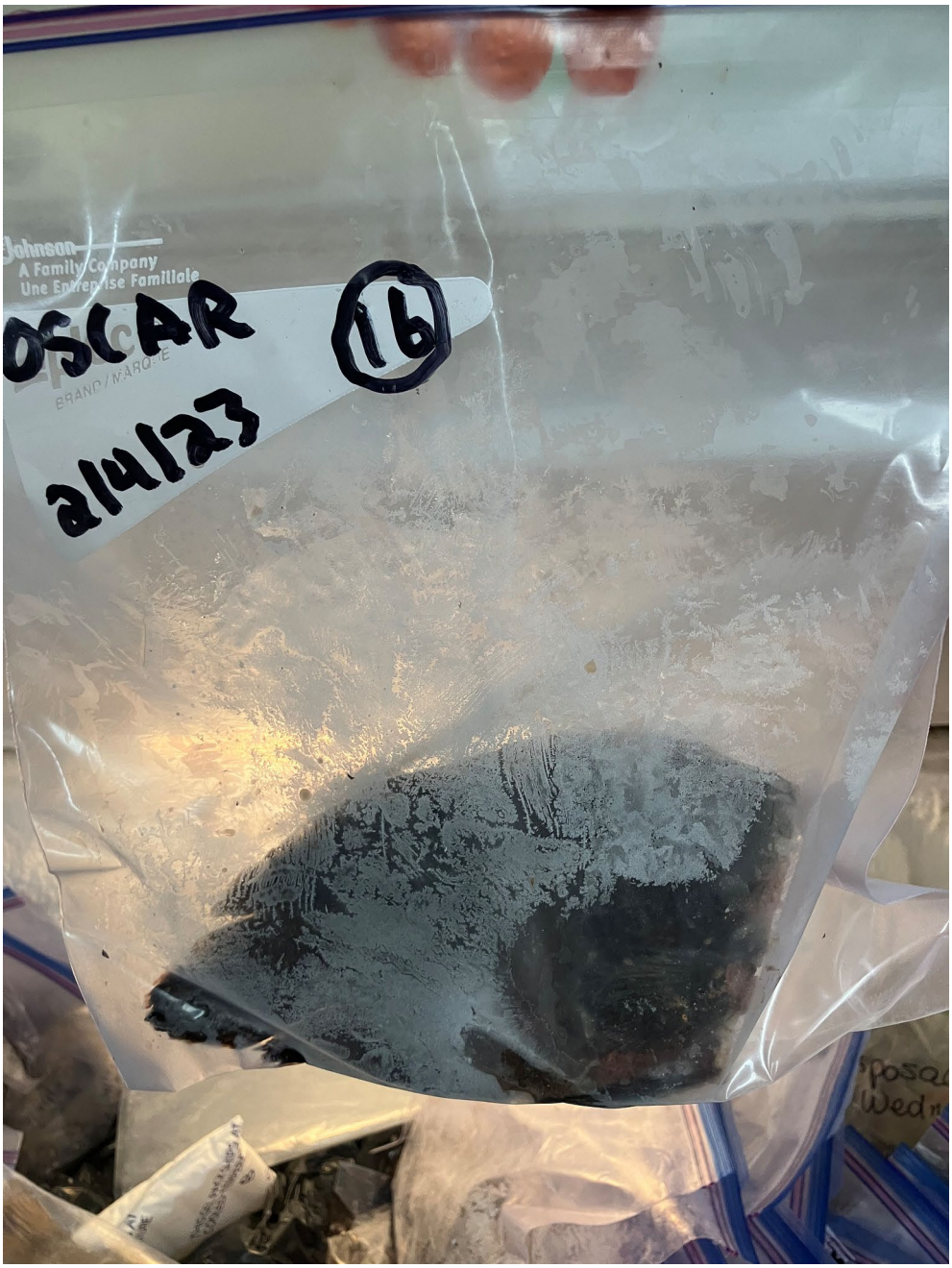

Figure 18. Sample 16

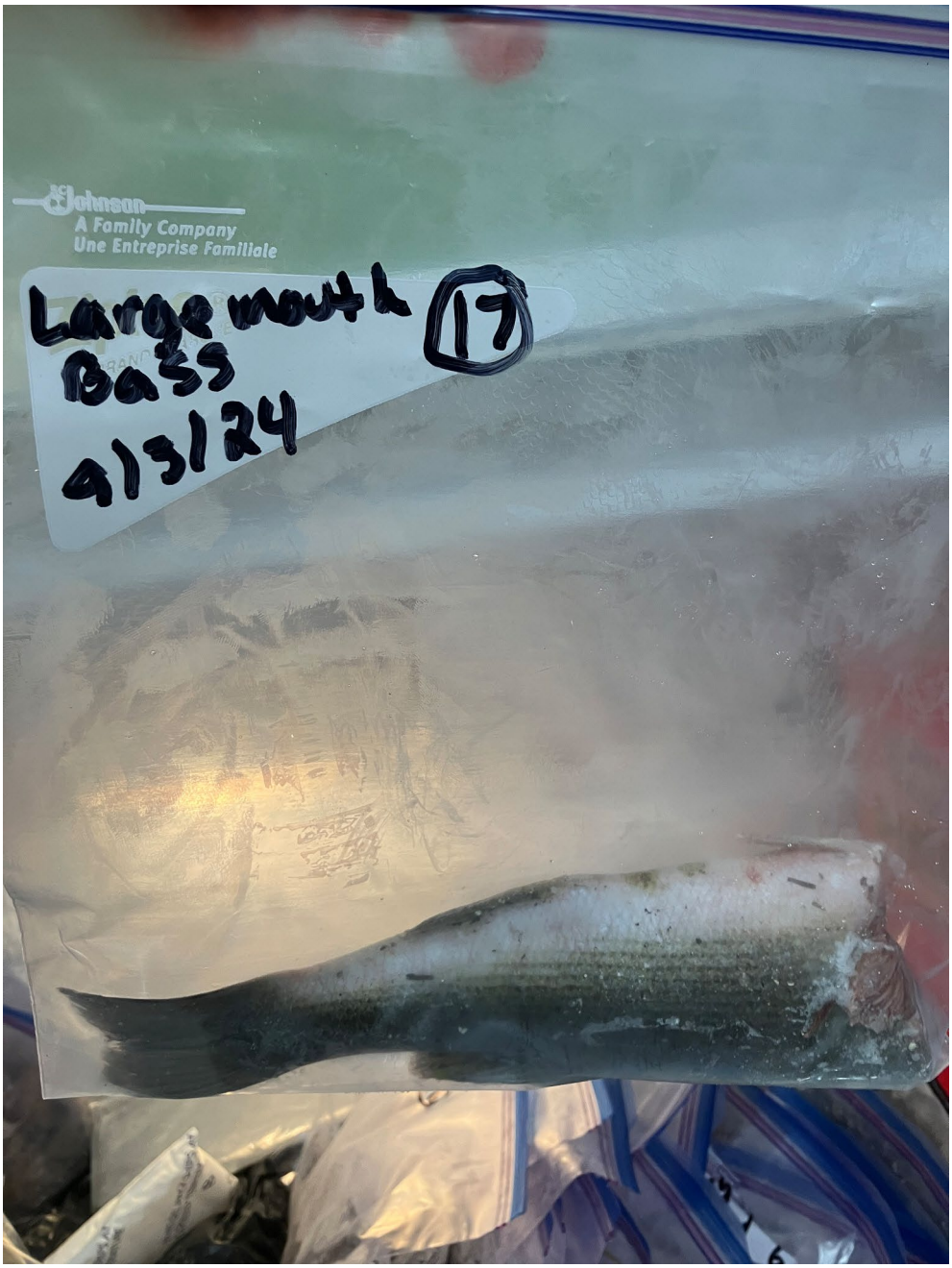

Figure 19. Sample 17

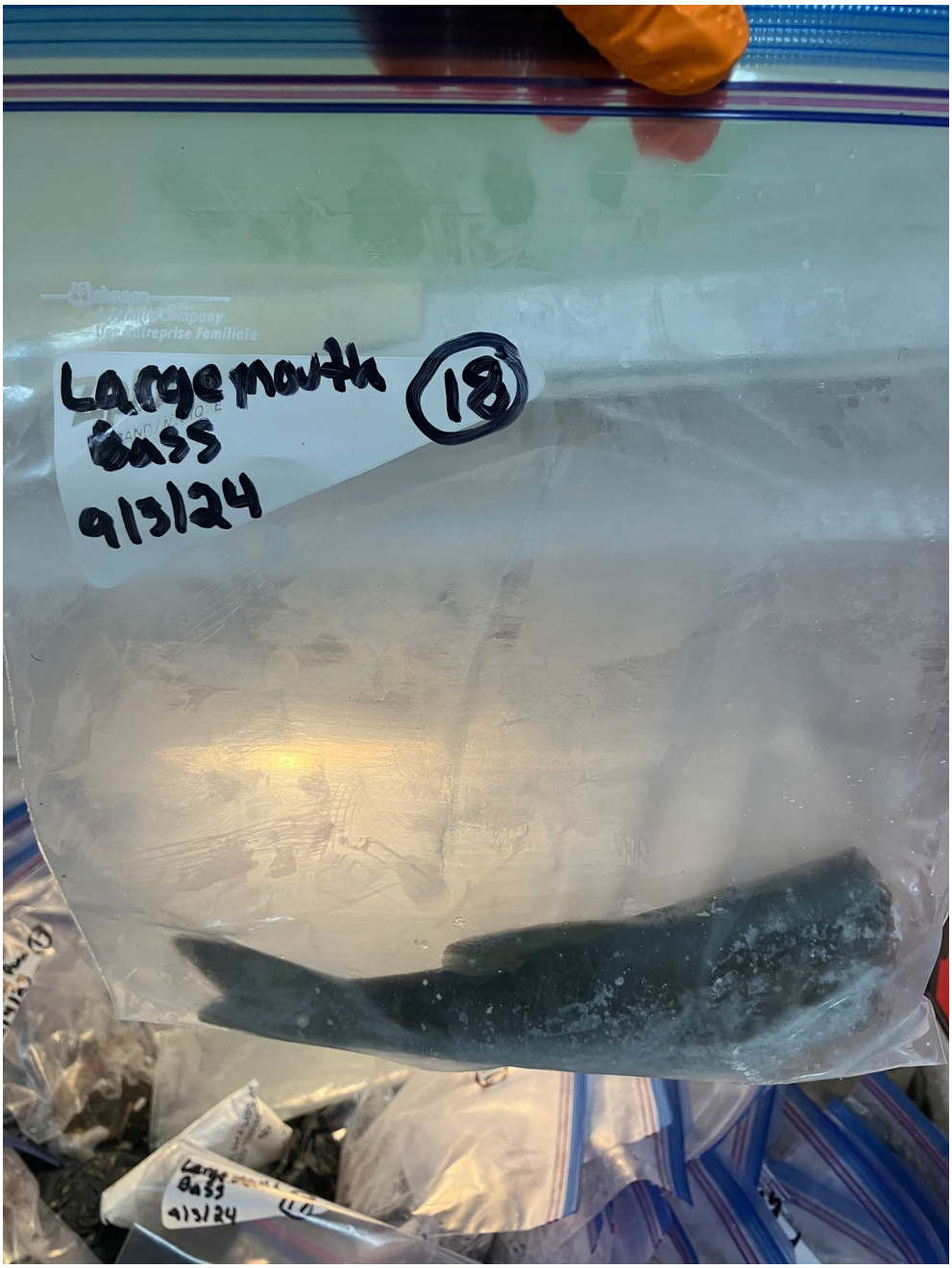

Figure 20. Sample 18

Table 1. Mercury concentrations documented in fishes collected from Pistol Pond on the Florida Panther National Wildlife Refuge.

Lab Sample Number	Field ID (species)	Analysis Method	Parameter	Mercury Concentration (mg/kg)	MDL	EQL	Dilution	Collection Date	Analysis Date
40283840001	LARGEMOUTH	EPA 7473	Mercury	0.17	0.018	0.054	1	01/26/23	09/30/24
40283840002	BLUEGILL	EPA 7473	Mercury	0.12	0.018	0.053	1	01/26/23	09/30/24
40283840003	REDEAR SUNFISH	EPA 7473	Mercury	0.066	0.018	0.055	1	01/26/23	09/30/24
40283840004	MAYAN CICHLID	EPA 7473	Mercury	0.40	0.017	0.052	1	01/26/23	09/30/24
40283840005	MAYAN CICHLID	EPA 7473	Mercury	0.16	0.018	0.054	1	01/26/23	09/30/24
40283840006	MAYAN CICHLID	EPA 7473	Mercury	0.37	0.018	0.053	1	02/04/23	09/30/24
40283840007	OSCAR	EPA 7473	Mercury	0.34	0.017	0.052	1	02/04/23	09/30/24
40283840008	OSCAR	EPA 7473	Mercury	0.15	0.018	0.054	1	02/04/23	09/30/24
40283840009	OSCAR	EPA 7473	Mercury	0.18	0.018	0.054	1	02/04/23	09/30/24
40283840010	OSCAR	EPA 7473	Mercury	0.14	0.017	0.052	1	02/04/23	09/30/24
40283840011	BLUEGILL	EPA 7473	Mercury	0.15	0.018	0.055	1	02/04/23	09/30/24
40283840012	MAYAN CICHLID	EPA 7473	Mercury	0.44	0.019	0.056	1	02/04/23	09/30/24
40283840013	MAYAN CICHLID	EPA 7473	Mercury	0.44	0.018	0.055	1	02/04/23	09/30/24
40283840014	MAYAN CICHLID	EPA 7473	Mercury	0.49	0.018	0.054	1	02/04/23	09/30/24
40283840015	OSCAR	EPA 7473	Mercury	0.15	0.018	0.054	1	02/04/23	09/30/24
40283840016	OSCAR	EPA 7473	Mercury	0.15	0.018	0.055	1	02/04/23	09/30/24
40283840017	LARGEMOUTH	EPA 7473	Mercury	0.44	0.019	0.056	1	09/03/24	09/30/24
40283840018	LARGEMOUTH	EPA 7473	Mercury	0.33	0.018	0.055	1	09/03/24	09/30/24

References

Brim, M.S. D. Bateman, R. Jarvis, and G. Carmody. 1994. Mercury in largemouth bass and spotted gar of the Florida Panther National Wildlife Refuge. U.S. Fish and Wildlife Service (PCFO-EC 94-04), Panama City, Florida, 28 pp.

Richards, Patricia and D. Morrison. 1994. Mercury Concentrations in Fishes In Florida Panther National Wildlife Refuge. U.S. Fish and Wildlife Service (VBFO-EC 04-01), Vero Beach, Florida, 18 pp.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

October 08, 2024

Mark Danaher
US Fish & Wildlife Service
12411 State Road 29 S
Immokalee, FL 341425591

RE: Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Dear Mark Danaher:

Enclosed are the analytical results for sample(s) received by the laboratory on September 10, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tod Noltemeyer

Tod Noltemeyer
tod.noltemeyer@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: John Galvez, US Fish & Wildlife Service

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Pace Analytical Services Green Bay
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
Texas Certification #: T104704529-21-8
Virginia VELAP Certification ID: 11873
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-21-00008
Federal Fish & Wildlife Permit #: 51774A

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40283840001	**LARGEMOUTH BASS**	Tissue	01/26/23 00:00	09/10/24 09:30
40283840002	**BLUEGILL**	Tissue	01/26/23 00:00	09/10/24 09:30
40283840003	**REDEAR SUNFISH**	Tissue	01/26/23 00:00	09/10/24 09:30
40283840004	**MAYAN CICHLID**	Tissue	01/26/23 00:00	09/10/24 09:30
40283840005	**MAYAN CICHLID**	Tissue	01/26/23 00:00	09/10/24 09:30
40283840006	**MAYAN CICHLID**	Tissue	02/04/23 00:00	09/10/24 09:30
40283840007	**OSCAR**	Tissue	02/04/23 00:00	09/10/24 09:30
40283840008	**OSCAR**	Tissue	02/04/23 00:00	09/10/24 09:30
40283840009	**OSCAR**	Tissue	02/04/23 00:00	09/10/24 09:30
40283840010	**OSCAR**	Tissue	02/04/23 00:00	09/10/24 09:30
40283840011	**BLUEGILL**	Tissue	02/04/23 00:00	09/10/24 09:30
40283840012	**MAYAN CICHLID**	Tissue	02/04/23 00:00	09/10/24 09:30
40283840013	**MAYAN CICHLID**	Tissue	02/04/23 00:00	09/10/24 09:30
40283840014	**MAYAN CICHLID**	Tissue	02/04/23 00:00	09/10/24 09:30
40283840015	**OSCAR**	Tissue	02/04/23 00:00	09/10/24 09:30
40283840016	**OSCAR**	Tissue	02/04/23 00:00	09/10/24 09:30
40283840017	**LARGEMOUTH BASS**	Tissue	09/03/24 00:00	09/10/24 09:30
40283840018	**LARGEMOUTH BASS**	Tissue	09/03/24 00:00	09/10/24 09:30

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SAMPLE ANALYTE COUNT

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40283840001	**LARGEMOUTH BASS**	EPA 7473	AJT	1
40283840002	**BLUEGILL**	EPA 7473	AJT	1
40283840003	**REDEAR SUNFISH**	EPA 7473	AJT	1
40283840004	**MAYAN CICHLID**	EPA 7473	AJT	1
40283840005	**MAYAN CICHLID**	EPA 7473	AJT	1
40283840006	**MAYAN CICHLID**	EPA 7473	AJT	1
40283840007	**OSCAR**	EPA 7473	AJT	1
40283840008	**OSCAR**	EPA 7473	AJT	1
40283840009	**OSCAR**	EPA 7473	AJT	1
40283840010	**OSCAR**	EPA 7473	AJT	1
40283840011	**BLUEGILL**	EPA 7473	AJT	1
40283840012	**MAYAN CICHLID**	EPA 7473	AJT	1
40283840013	**MAYAN CICHLID**	EPA 7473	AJT	1
40283840014	**MAYAN CICHLID**	EPA 7473	AJT	1
40283840015	**OSCAR**	EPA 7473	AJT	1
40283840016	**OSCAR**	EPA 7473	AJT	1
40283840017	**LARGEMOUTH BASS**	EPA 7473	AJT	1
40283840018	**LARGEMOUTH BASS**	EPA 7473	AJT	1

PASI-G = Pace Analytical Services - Green Bay

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
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PROJECT NARRATIVE

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Method: **EPA 7473**
Description: 7473 Mercury, Tissue
Client: US Fish & Wildlife Service
Date: October 08, 2024

General Information:
18 samples were analyzed for EPA 7473 by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: LARGEMOUTH BASS **Lab ID: 40283840001** Collected: 01/26/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.17**	mg/kg	0.054	0.018	1		09/30/24 13:05	7439-97-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: BLUEGILL **Lab ID: 40283840002** Collected: 01/26/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.12**	mg/kg	0.053	0.018	1		09/30/24 14:16	7439-97-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: REDEAR SUNFISH **Lab ID: 40283840003** Collected: 01/26/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.066**	mg/kg	0.055	0.018	1		09/30/24 14:27	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: MAYAN CICHLID **Lab ID: 40283840004** Collected: 01/26/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.40**	mg/kg	0.052	0.017	1		09/30/24 14:39	7439-97-6	J

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: MAYAN CICHLID **Lab ID: 40283840005** Collected: 01/26/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.16**	mg/kg	0.054	0.018	1		09/30/24 14:51	7439-97-6	J

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: MAYAN CICHLID **Lab ID: 40283840006** Collected: 02/04/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.37**	mg/kg	0.053	0.018	1		09/30/24 15:02	7439-97-6	J

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: OSCAR **Lab ID: 40283840007** Collected: 02/04/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.34**	mg/kg	0.052	0.017	1		09/30/24 15:14	7439-97-6	J

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: OSCAR **Lab ID: 40283840008** Collected: 02/04/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.15**	mg/kg	0.054	0.018	1		09/30/24 15:26	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: OSCAR **Lab ID: 40283840009** Collected: 02/04/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.18**	mg/kg	0.054	0.018	1		09/30/24 15:38	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: OSCAR **Lab ID: 40283840010** Collected: 02/04/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.14**	mg/kg	0.052	0.017	1		09/30/24 16:27	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: BLUEGILL **Lab ID: 40283840011** Collected: 02/04/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.15**	mg/kg	0.055	0.018	1		09/30/24 16:39	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: MAYAN CICHLID **Lab ID: 40283840012** Collected: 02/04/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.44**	mg/kg	0.056	0.019	1		09/30/24 16:51	7439-97-6	J

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: MAYAN CICHLID **Lab ID: 40283840013** Collected: 02/04/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.44**	mg/kg	0.055	0.018	1		09/30/24 17:02	7439-97-6	J

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: MAYAN CICHLID **Lab ID: 40283840014** Collected: 02/04/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.49**	mg/kg	0.054	0.018	1		09/30/24 17:14	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: OSCAR **Lab ID: 40283840015** Collected: 02/04/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.15**	mg/kg	0.054	0.018	1		09/30/24 17:26	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: OSCAR **Lab ID: 40283840016** Collected: 02/04/23 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.15**	mg/kg	0.055	0.018	1		09/30/24 17:38	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: LARGEMOUTH BASS **Lab ID: 40283840017** Collected: 09/03/24 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.44**	mg/kg	0.056	0.019	1		09/30/24 17:49	7439-97-6	J

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Sample: LARGEMOUTH BASS **Lab ID: 40283840018** Collected: 09/03/24 00:00 Received: 09/10/24 09:30 Matrix: Tissue

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7473 Mercury, Tissue	Analytical Method: EPA 7473 Pace Analytical Services - Green Bay								
Mercury	**0.33**	mg/kg	0.055	0.018	1		09/30/24 18:01	7439-97-6	J

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

QC Batch: 485741
QC Batch Method: EPA 7473
Analysis Method: EPA 7473
Analysis Description: 7473 Mercury
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40283840001, 40283840002, 40283840003, 40283840004, 40283840005, 40283840006, 40283840007, 40283840008, 40283840009, 40283840010, 40283840011, 40283840012, 40283840013, 40283840014, 40283840015, 40283840016, 40283840017, 40283840018

METHOD BLANK: 2782064 Matrix: Tissue
Associated Lab Samples: 40283840001, 40283840002, 40283840003, 40283840004, 40283840005, 40283840006, 40283840007, 40283840008, 40283840009, 40283840010, 40283840011, 40283840012, 40283840013, 40283840014, 40283840015, 40283840016, 40283840017, 40283840018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/kg	<0.019	0.056	0.019	09/30/24 11:48	

LABORATORY CONTROL SAMPLE: 2782065

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.25	0.33	128	17-200	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2782066 2782067

Parameter	Units	40283840001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.17	0.15	0.14	0.33	0.35	115	129	17-200	6	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

J	Analyte detected below the reporting limit, therefore result is an estimate. This qualifier is also used for all TICs.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 2024 PISTOL POND MERCURY ANALY
Pace Project No.: 40283840

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40283840001	**LARGEMOUTH BASS**	EPA 7473	485741		
40283840002	**BLUEGILL**	EPA 7473	485741		
40283840003	**REDEAR SUNFISH**	EPA 7473	485741		
40283840004	**MAYAN CICHLID**	EPA 7473	485741		
40283840005	**MAYAN CICHLID**	EPA 7473	485741		
40283840006	**MAYAN CICHLID**	EPA 7473	485741		
40283840007	**OSCAR**	EPA 7473	485741		
40283840008	**OSCAR**	EPA 7473	485741		
40283840009	**OSCAR**	EPA 7473	485741		
40283840010	**OSCAR**	EPA 7473	485741		
40283840011	**BLUEGILL**	EPA 7473	485741		
40283840012	**MAYAN CICHLID**	EPA 7473	485741		
40283840013	**MAYAN CICHLID**	EPA 7473	485741		
40283840014	**MAYAN CICHLID**	EPA 7473	485741		
40283840015	**OSCAR**	EPA 7473	485741		
40283840016	**OSCAR**	EPA 7473	485741		
40283840017	**LARGEMOUTH BASS**	EPA 7473	485741		
40283840018	**LARGEMOUTH BASS**	EPA 7473	485741		

Pace Analytical™
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately

40283840

Section A Required Client Information		Section B Required Project Information		Section C Invoice Information	
Company	U.S. Fish&Wildlife Service/FL Panther	Report To	Mark Danaher (mark_danaher@fws gov)	Attention	Mark Danaher
Address	12411 SR29 South	Copy To	John Galvez (john_galvez@fws.gov)	Company Name	USFWS/FL Panther NWR
	Immokalee, FL 34142			Address	12411 SR29 South Immokalee, FL 341
Email To	mark_danaher@fws.gov	Purchase Order No		Pace Quote Reference	
Phone	239-986-6158 Fax	Project Name	2024 Pistol Pond Mercury Analysis	Pace Project Manager	
Requested Due Date/TAT:		Project Number		Pace Profile #	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: FL

Requested Analysis Filtered (Y/N)

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Analysis Test: Mercury EPA 7473	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Largemouth bass			1/26/23					1		NONE										001
2	Blue gill			1/26/23					1		NONE										002
3	Redear Sunfish			1/26/23					1		NONE										003
4	Mayan cichlid			1/26/23					1												004
5	Mayan Cichlid			1/26/23					1												005
6	Mayan cichlid			2/4/23					1												006
7	Oscar			2/4/23					1												007
8	Oscar			2/4/23					1												008
9	Oscar			2/4/23					1				✓								009
10	Oscar			2/4/23					1												010
11	Blue gill			2/4/23					1												011
12	Mayan Cichlid			2/4/23					1										✓		012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Mark Danaher/USFWS	9/3/24								
	FedEx	09/10/2024	09:30	Matt VanSomeren/Pace	09/10/2024	09:30	2.5	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Mark Danaher

SIGNATURE of SAMPLER: Mark Danaher DATE Signed (MM/DD/YY): 9/3/24

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1 5% per month for any invoices not paid within 30 days

F-ALL-Q-020rev 08, 12-Oct-2007

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately

40283840

Section A Required Client Information		Section B Required Project Information		Section C Invoice Information	
Company	U.S. Fish&Wildlife Service/FL Panther	Report To	Mark Danaher (mark_danaher@fws.gov)	Attention	Mark Danaher
Address	12411 SR29 South	Copy To	John Galvez (john_galvez@fws.gov)	Company Name	USFWS/FL Panther NWR
	Immokalee, FL 34142			Address	12411 SR29 S Immokalee, FL 34142
Email To	mark_danaher@fws.gov	Purchase Order No		Pace Quote Reference	
Phone	239-986-6158 Fax	Project Name	2024 Pistol Pond Mercury Analysis	Pace Project Manager	
Requested Due Date/TAT:		Project Number		Pace Profile #	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: FL

Requested Analysis Filtered (Y/N)

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test: Mercury EPA 7473	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	(13) Mayan Cichlid			2/4/23					1										Y		013
2	(14) Mayan Cichlid			2/4/23					1										Y		014
3	(15) OSCar			2/4/23					1										Y		015
4	(16) OSCar			2/4/23					1										Y		016
5	(17) Largemouth bass			9/3/24					1										Y		017
6	(18) Largemouth bass			9/3/24					1										V		018
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Mark Danaher/USFWS	9/3/24								
	FedEx	~~9/4/24~~ 9/3/24	09:30	Matt VanLandingham Pace	09/4/24	09:30	2.5	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Mark Danaher

SIGNATURE of SAMPLER: Mark Danaher DATE Signed (MM/DD/YY): 9/3/24

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1 5% per month for any invoices not paid within 30 days

Client Name: US Fish and Wildlife Service/FL Panther

Sample Preservation Receipt Form

Project # ✓ 40283840

All containers needing preservation have been checked and noted below. ☐Yes ☐No ☑N/A

Initial when completed: MVS Date/Time:

Lab Lot# of pH paper:

Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass							Plastic						Vials						Jars				General				VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN 1	GN 2							
001																									✓								2.5 / 5
002																									✓								2.5 / 5
003																									✓								2.5 / 5
004																									✓								2.5 / 5
005																									✓								2.5 / 5
006																									✓								2.5 / 5
007																									✓								2.5 / 5
008																									✓								2.5 / 5
009																									✓								2.5 / 5
010																									✓								2.5 / 5
011																									✓								2.5 / 5
012																									✓								2.5 / 5
013																									✓								2.5 / 5
014																									✓								2.5 / 5
015																									✓								2.5 / 5
016																									✓								2.5 / 5
017																									✓								2.5 / 5
018																									✓								2.5 / 5
019																	MVS																2.5 / 5
020	09/10/2014																												✓					2.5 / 5

Exceptions to preservation check VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other:

Headspace in VOA Vials (>6mm) : ☐Yes ☐No ☐N/A *If yes look in headspace column

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	VG9C	40 mL clear ascorbic w/ HCl	JGFU	4 oz amber jar unpres
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres
AG5U	100 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH + Zn	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres					GN 1	
						GN 2	

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Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40283840

40283840

Client Name: U.S. Fish and Wildlife Service/FL

Courier: ☐ CS Logistics ☑ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco ☐ Client ☐ Pace Other: Panther

Tracking #: 818626649O7

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Custody Seal on Samples Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

Thermometer Used SR - 140 **Type of Ice:** Wet (Blue) Dry None ☐ Meltwater Only

Cooler Temperature Uncorr: 2.5 /Corr: 2.5

Temp Blank Present: ☐ yes ☑ no **Biological Tissue is Frozen:** ☑ yes ☐ no

Person examining contents:
Date: 09/10/2024 Initials: MVS
Labeled By Initials: EA

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out: MVS 09/10/2024	☑Yes ☐No ☐N/A	2. No times of sampling listed on the provided COC. MVS 09/10/2024
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- DI VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☑No	6.
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume: For Analysis: ☑Yes ☐No MS/MSD: ☐Yes ☑No ☐N/A		8.
Correct Containers Used:	☑Yes ☐No	9.
Correct Type: Pace Green Bay, Pace IR, (Non-Pace)	☑Yes ☐No	
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: Biota	☐Yes ☐No ☐N/A	12. No times of sampling listed on provided sample containers MVS 09/10/2024
Trip Blank Present:	☐Yes ☐No ☑N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample login