



Microbac Laboratories, Inc. - Chicagoland

CERTIFICATE OF ANALYSIS

C4A1214

Project Description

JOS - Willowbrook

For:

Al Schilling

Tierra Environmental & Industrial Services

3821 Indianapolis Blvd

East Chicago, IN 46312

Customer Relationship Specialist

Sarah Anderson

Tuesday, January 30, 2024

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc. - Chicagoland. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc.

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Microbac Laboratories, Inc. - Chicagoland

CERTIFICATE OF ANALYSIS

C4A1214

Tierra Environmental & Industrial Services

Project Name: JOS - Willowbrook

Al Schilling
3821 Indianapolis Blvd
East Chicago, IN 46312

Project / PO Number: N/A
Received: 01/24/2024
Reported: 01/30/2024

Sample Summary Report

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
JOS Waste Water	C4A1214-01	Aqueous	Grab		01/21/24 14:00	01/24/24 16:55



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Analytical Testing Parameters

Client Sample ID:	JOS Waste Water	Collection Date:	01/21/2024 14:00
Sample Matrix:	Aqueous		
Lab Sample ID:	C4A1214-01		

	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Metals Total by CVAA								
SW-846 7470/EPA 7470A								
Mercury	<0.00020	0.00020	mg/L	1		01/25/24 0612	01/25/24 1334	MCW

	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Metals Total by ICP								
SW846 3005A/EPA 6010C								
Arsenic	<0.010	0.010	mg/L	1		01/25/24 0558	01/25/24 1547	MCW
Barium	0.049	0.0020	mg/L	1		01/25/24 0558	01/25/24 1547	MCW
Cadmium	<0.0020	0.0020	mg/L	1		01/25/24 0558	01/25/24 1547	MCW
Chromium	0.0059	0.0030	mg/L	1		01/25/24 0558	01/25/24 1547	MCW
Lead	0.080	0.0075	mg/L	1		01/25/24 0558	01/25/24 1547	MCW
Selenium	<0.030	0.030	mg/L	1		01/25/24 0558	01/25/24 1547	MCW
Silver	<0.010	0.010	mg/L	1		01/25/24 0558	01/26/24 1633	MCW

	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Volatile Organic Compounds by GCMS								
SW-846 8260B/EPA 8260B								
Acetone	<50	50	ug/L	1			01/25/24 1424	JBS
Acrolein	<100	100	ug/L	1	Q10		01/25/24 1424	JBS
Acrylonitrile	<100	100	ug/L	1	Q10		01/25/24 1424	JBS
Benzene	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
Bromodichloromethane	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
Bromoform	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
2-Butanone	<10	10	ug/L	1			01/25/24 1424	JBS
Carbon Disulfide	<10	10	ug/L	1			01/25/24 1424	JBS
Carbon tetrachloride	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
Chlorobenzene	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
Chlorodibromomethane	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
Chloroethane	<10	10	ug/L	1			01/25/24 1424	JBS
Chloroform	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
1,1-Dichloroethane	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
1,2-Dichloroethane	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
1,1-Dichloroethene	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
cis-1,2-Dichloroethylene	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
trans-1,2-Dichloroethylene	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
cis & trans-1,2-Dichloroethylene	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
1,2-Dichloropropane	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
cis-1,3-Dichloropropylene	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
trans-1,3-Dichloropropylene	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
Ethylbenzene	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
2-Hexanone	<10	10	ug/L	1			01/25/24 1424	JBS
Methyl bromide	<10	10	ug/L	1			01/25/24 1424	JBS
Methyl chloride	<10	10	ug/L	1			01/25/24 1424	JBS



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Client Sample ID:	JOS Waste Water	Collection Date:	01/21/2024 14:00
Sample Matrix:	Aqueous		
Lab Sample ID:	C4A1214-01		

Volatile Organic Compounds by GCMS	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Methyl tert-butyl ether	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
4-Methyl-2-pentanone	<10	10	ug/L	1			01/25/24 1424	JBS
Methylene chloride	<10	10	ug/L	1			01/25/24 1424	JBS
Styrene	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
1,1,1,2-Tetrachloroethane	<10	10	ug/L	1			01/25/24 1424	JBS
1,1,2,2-Tetrachloroethane	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
Tetrachloroethylene	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
Toluene	11	5.0	ug/L	1			01/25/24 1424	JBS
1,1,1-Trichloroethane	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
1,1,2-Trichloroethane	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
Trichloroethene	<5.0	5.0	ug/L	1			01/25/24 1424	JBS
Trichlorofluoromethane	<10	10	ug/L	1			01/25/24 1424	JBS
Vinyl Acetate	<10	10	ug/L	1			01/25/24 1424	JBS
Vinyl chloride	<1.0	1.0	ug/L	1			01/25/24 1424	JBS
m&p-xylene	8.6	5.0	ug/L	1			01/25/24 1424	JBS
o-Xylene	7.6	5.0	ug/L	1			01/25/24 1424	JBS
Xylenes (total)	16	5.0	ug/L	1			01/25/24 1424	JBS
Surrogate: 4-Bromofluorobenzene	91.2	Limit: 80-120	% Rec	1			01/25/24 1424	JBS
Surrogate: Dibromofluoromethane	101	Limit: 80-120	% Rec	1			01/25/24 1424	JBS
Surrogate: 1,2-Dichloroethane-d4	97.9	Limit: 74.5-132	% Rec	1			01/25/24 1424	JBS
Surrogate: Toluene-d8	103	Limit: 80-120	% Rec	1			01/25/24 1424	JBS

Semivolatile Organic Compounds by GC/ECD	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
SW846 3510C/EPA 8082A								
Aroclor-1016	<0.91	0.91	ug/L	1		01/25/24 1234	01/29/24 0140	CLR
Aroclor-1221	<0.91	0.91	ug/L	1		01/25/24 1234	01/29/24 0140	CLR
Aroclor-1232	<0.91	0.91	ug/L	1		01/25/24 1234	01/29/24 0140	CLR
Aroclor-1242	<0.91	0.91	ug/L	1		01/25/24 1234	01/29/24 0140	CLR
Aroclor-1248	<0.91	0.91	ug/L	1		01/25/24 1234	01/29/24 0140	CLR
Aroclor-1260	<0.91	0.91	ug/L	1	Q	01/25/24 1234	01/29/24 0140	CLR
Aroclor-1262	<0.91	0.91	ug/L	1		01/25/24 1234	01/29/24 0140	CLR
Aroclor-1254	<0.91	0.91	ug/L	1		01/25/24 1234	01/29/24 0140	CLR
Aroclor-1268	<0.91	0.91	ug/L	1		01/25/24 1234	01/29/24 0140	CLR
Total PCBs	<0.91	0.91	ug/L	1		01/25/24 1234	01/29/24 0140	CLR
Surrogate: Tetrachloro-m-xylene	100	Limit: 10-121	% Rec	1		01/25/24 1234	01/29/24 0140	CLR
Surrogate: Decachlorobiphenyl	180	Limit: 10-137	% Rec	1	M, S1	01/25/24 1234	01/29/24 0140	CLR



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Definitions

M:	Matrix interference is present.
mg/L:	Milligrams per Liter
Q:	One or more quality control criteria failed.
Q10:	Analysis of acrolein and/or acrylonitrile was performed from a sample that was field preserved to pH < 2, which is less than the pH range of 4-5 specified in the test method and required for NPDES compliance per 40CFR Part 136.
RL:	Reporting Limit
S1:	Surrogate recovery is above acceptance limits.
ug/L:	Micrograms per Liter

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 12.9°C

Comments

Sample is aqueous 9not solid as marked on handwritten COC). Sample Split off and preserved for VOC and metals at lab

Cooler Inspection Checklist

Ice Present or not required?	No	Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes	Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes	Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	No	Sample type identified on COC?	No
Correct type of Containers Received	Yes	Correct number of containers listed on COC?	Yes
Containers Intact?	Yes	COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes	Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes	Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes	Preservation checks meet method requirements?	No
VOA vials have zero headspace, or not recd.?	Yes		

Report Comments

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.

Reviewed and Approved By:

Sarah Anderson
Customer Relationship Specialist
Reported: 01/30/2024 16:55

250 West 84th Drive
Merrillville, IN 46410
(219) 769-8378

CHAIN OF CUSTODY RECORD

Number
Instructions on back

TO BE COMPLETED BY MICROBAC

Temperature Upon Receipt (°C)

Therm ID

Holding Time

Samples Received on Ice? ☐ Yes ☒ No ☐ N/A

Custody Seals Intact? ☐ Yes ☒ No ☐ N/A

Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ EDD

Send Invoice via: ☐ Mail ☐ Fax ☐ e-mail (address)

Compliance Monitoring? ☐ Yes ☒ No

Agency/Program

Sampler Phone No.:

Sampler Signature:

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)

** Preservative Types: (1) HNO₃, (2) H₂SO₄, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

REQUESTED ANALYSIS



C 4 A 1 2 1 4
Tierra Environmental - East Chicago, IN

PM: Sarah Anderson

Client Sample ID: JOS Wastewater
Date Collected: 1/21/24 2pm
Time Collected: 1:50 PM
Matrix: Grab / Comp
Preservative Types: NONE
No. of Containers: 1

✓ Metals
✓ Solvents

C4A1214
Additional Notes
01

Invoice Address

Client Name:

Address:

City, State, Zip:

Contact:

Telephone No.:

Send Report via: ☐ Mail ☐ Fax ☐ e-mail (address)

Location: Winwoodbrook PO No.:

Sampled by (PRINT):

Turnaround Time

☒ Routine (5 to 7 business days)

☐ RUSH* (notify lab)

(needed by)

Report Type

☒ Results Only ☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ EDD

Send Invoice via: ☐ Mail ☐ Fax ☐ e-mail (address)

Compliance Monitoring? ☐ Yes ☒ No

Agency/Program

Sampler Phone No.:

Sampler Signature:

Sample Disposition ☐ Dispose as appropriate ☐ Return ☐ Archive

Date/Time

Received By (signature)

Date/Time

Relinquished By (signature)

Date/Time

Possible Hazard Identification

Comments

Relinquished By (signature)

Date/Time

Relinquished By (signature)

Date/Time

Date/Time

Received By (signature)

Date/Time

Relinquished By (signature)

Date/Time

Possible Hazard Identification

Comments

Relinquished By (signature)

Date/Time

Relinquished By (signature)

Date/Time

rev. 12/26/2017