2609 North River Road
Port Allen, Louisiana 70767
(225) 372-4748

ARS

Laboratory Analytical Report

ARS1-25-01803

State Of Michigan - EGLE- MMD
Jay Paquette
815 Filley St
Lansing, MI 48906
517-243-7197
RadioactiveMaterial@michigan.gov, paquettej3@michigan.gov

Job Location: **WPI NPDES Sampling Port**
Project Name: **Jay Paquette**

Questions regarding this analytical report should be addressed to ARS project manager, Jason Licciardi, who can be reached by email at projectmanagers@ars-analytical.com.

I certify that the test results presented in this report (in either hardcopy or electronic file (EDD)) meet the requirements of the laboratory's certifications and other applicable contract terms and conditions. A full list of the Port Allen, LA laboratory's certifications is provided with this report. Any exceptions to the certification or contract will be noted within the case narratives presented in the report. Any subcontracted sample results will be identified within the case narratives presented in the report. In the event this report is an amendment to a previously released report, the case narrative will clearly identify the original report as well as the reason(s) for reissuance. I authorize release and issuance of this report on the date signed below.

Susan D. Leese

Digitally signed by Susan Leese
DN: cn=Susan Leese, o=ARS , ou=Senior Program Manager, email=sleese@ars-analytical.com, c=US
Date: 2025.09.24 13:59:11 -05'00'

Signature	Date	Title
		Laboratory Management, ARS

This report provides analytical results of the requested analysis and does not include any opinions or interpretations. ARS assumes no liability for the use or interpretation of analytical results. Results relate only to items tested. A partial reproduction of this test report is prohibited. Reproduction of this report in full requires the written approval of the laboratory.

NELAP ACCREDITED TNI LABORATORY
LELAP Cert # 01949

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Certifications and Accreditations List

State or Accrediting Body (AB)	Certificate Number
AIHA LAP, LLC	209312
California	3085
ANAB DoD	ADE-1489
ANAB DOE	ADE-1489.01
Louisiana DEQ - NELAC	01949
Nevada	LA011312024-04
New Jersey	LA009
New York	68261 (NPW) / 68262 (SHW)
Texas	T104704447-23-19
Utah	LA011312023-14
Washington	C1010

For additional information related to the specific matrices, methods, and analytes recognized by each accrediting body, contact our Quality Assurance Department qa@ars-analytical.com for additional information.

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Case Narrative

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PROJECT SAMPLE IDENTIFICATION CROSS-REFERENCE
TO ARS SAMPLE LABORATORY IDs

Client Sample ID	ARS Sample ID
W-eff	ARS1-25-01803-001

Sample	Date Collected	Date Received	Analysis	Basis	Prep Date/Time	Analysis Date/Time
001	09/04/25 09:20	09/05/25	ASP-TH-AQ	As Received	09/16/25 09:19	09/22/25 19:36
001	09/04/25 09:20	09/05/25	ASP-U-AQ	As Received	09/17/25 10:00	09/22/25 19:35
001	09/04/25 09:20	09/05/25	GAM-A-AQ	As Received	09/05/25 11:40	09/06/25 13:17

SAMPLE RECEIPT/PREP

The samples arrived in good condition. The samples were screened for radioactive contamination as per procedure **PALA-SR-001-SOP Sample Receiving**. Sample date(s) and time(s) are listed as provided by the client. Turnaround time was set at 15 work days.

ANALYTICAL METHODS

Th-228, Th-230, Th-232 analyses were performed using **PALA-RAD-031, "Thorium in Water, Soil and Vegetation Matrices by Eichrom Resin Separation (Eichrom ACW-08 & Eichrom ACW-10)"**.

U-234, U-235, U-238 analyses were performed using **PALA-RAD-026, "Americium, Plutonium and Uranium in Water, Soil and Vegetation Matrices by Sequential Separation Using Eichrom Stabilized Chemistry Resin (with Vacuum Box System Option) (Eichrom ACW-02 & Eichrom ACW-03)"**.

Be-7, Bi-212, Bi-214, K-40, Pb-210, Pb-214, Ra-226, Ra-228, Sc-46, Th-228, Tl-208, Total NORM Activity, Total NORM Gamma, U-235, and U-238 analyses were performed using **PALA-RAD-006, "Gamma Emitting Radionuclides In Water (EPA 901.1, HASL-300 Ga-01-R, SM 7120B)"**.

ANALYTICAL RESULTS

GAM-AQ was a 5-day TAT and preliminary report was issued on 9/10/25.

Fraction 001 in batch ARS1-B25-01515 has elevated MDA for Pb-210 with ACT of -1.761E-8 uCi/mL, MDA of 5.320E-8 uCi/mL and CRDL of 5E-09 uCi/mL.

Fraction 001 in batch ARS1-B25-01515 has elevated MDA for Ra-226 with ACT of -1.663E-8 uCi/mL, MDA of 5.440E-8 uCi/mL and CRDL of 3E-08 uCi/mL.

ARS1-25-01803: The Method Blank for ARS1-B25-01537 had a detect for TH-230. All fractions were non-detects, therefore the activity in the Method Blank did not contribute to the concentration in client samples.

ARS1-B25-01537: ROI's adjusted to better fit the peaks of interest.

ARS1-B25-01544: ROI's adjusted to better fit the peaks of interest.

Notes (Case Narrative)

Definitions:

CRDL Contract Required Detection Limit
CSU Combined Standard Uncertainty
DLC Decision Level Concentration (ANSI N42.23)
DO Duplicate Original
DUP Sample Duplicate
LCS/LCSD Laboratory Control Sample/Laboratory Control Sample Duplicate
LOD Limit of Detection
LOQ Limit of Quantitation
MBL Method Blank
MCL Maximum Contaminant Level
MDA Minimum Detectable Activity
MDL Method Detection Limit
MS/MSD Matrix Spike/Matrix Spike Duplicate
N/A Not Applicable
NC Not Calculated
NP Not Provided
NR Not Referenced
PQL Practical Quantitation Limit
SDG Sample Deliverable Group

Data Qualifiers:

B The result of both the method blank and the target sample are above the MDL.
D Sample analysis accomplished through dilution.
J The reported result is an estimated value above the LOD but below the LOQ, or above the MDL but below the PQL.
Q One or more quality control criteria failed.
U Result is below the MDA, MDL, PQL, LOD, or LOQ
***** LCS/LCSD or Sample DUP fails all Duplicate criteria.
S Spike
SC Subcontracted out to another qualified laboratory.
H Holding time exceeded
E Exceeds MCL
****** Reporting Limit is higher than MCL; Target cannot be detected
ǂ Method/Matrix/Analyte not accredited for this certification

Radiochemistry Comments:

1.0) All MDA values are calculated on a sample specific basis.
2.0) Data in this report are within the limits of uncertainty specified in the reference method unless otherwise specified.
3.0) Total activity is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than the actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.
4.0) Ra-226 after a 21-day ingrowth period is determined via secular equilibrium with its daughter, Bismuth 214 (Gamma Spectroscopy only).
5.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228 (Gamma Spectroscopy only).
6.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234 (Gamma Spectroscopy only).
7.0) All gamma spectroscopy was performed utilizing high purity germanium detectors (**HPGe**).
8.0) ARS makes every attempt to match sample density to calibrated density; however, in some cases, it is not practical or possible to do so and data results may be affected (Gamma Spectroscopy only).
9.0) Gamma spectroscopy results are calculated values based on the **ORTEC®** GammaVision ENV32 Analysis Engine.
10.0) **DoD/DOE and ISO 17025 certifications through ANAB apply only to the following methods in <u>Non-Potable Water</u>**:
Gross Alpha and Gross Beta (EPA 900.0, EPA 9310); Radium 226 (EPA 903.0, EPA 903.1, EPA 9315); Radium 228 (EPA 904.0, EPA 9320); ICP/MS (EPA 6020B); ICP-OES (EPA 6010D); Mercury CVAA (EPA 7470A); Strontium-89 (EPA 905.0, Eichrom SRW01, HASL 300 Sr-01); Strontium-90 (EPA 905.0, Eichrom SRW01, HASL 300 Sr-02-RC); Tritium (EPA 906.0); Enriched Tritium (ARS-040), Gamma Emitters (EPA 901.1, SM 7120B, HASL 300 Ga-01-R); Americium-241 (Eichrom ACW03, Eichrom ACW16, HASL 300 Se-03, HASL 300 Am-03); Neptunium 237 (Eichrom ACW16); Plutonium 238, Plutonium 239/240, Plutonium-241 (Eichrom ACW03, Eichrom ACW16, HASL 300 Se-03, HASL 300 Pu-10); Thorium-228, Thorium 230, Thorium-232 (Eichrom ACW10); Uranium-234, Uranium-235, Uranium-238 (Eichrom ACW03, Eichrom ACW16, HASL 300 Se-03); Technetium-99 (Eichrom TCW02)
11.0) **DoD/DOE and ISO 17025 certifications through ANAB apply only to the following methods in <u>Solid and Chemical Materials</u>**:
Gross Alpha and Gross Beta (EPA 900.0 Mod, EPA 9310); ICP/MS (EPA 6020B); ICP-OES (EPA 6010D); Mercury CVAA (EPA 7471B); Strontium-89 (EPA 905.0 Mod, Eichrom SRW01, HASL 300 Sr-01); Strontium-90 (EPA 905.0 Mod, Eichrom SRW01, HASL 300 Sr-02); Tritium (EPA 906.0 Mod); Gamma Emitters (EPA 901.1, HASL 300 Ga-01-R); Americium-241 (Eichrom ACW03, HASL 300 Se-03, HASL 300 Am-01-RC); Neptunium 237 (Eichrom ACW16); Plutonium 238, Plutonium 239/240, Plutonium-241 (Eichrom ACW03, Eichrom ACW16, HASL 300 Se-03, HASL 300 Pu-02-RC, HASL 300 Pu-03-RC); Thorium-228, Thorium 230, Thorium-232 (Eichrom ACW10); Uranium-234, Uranium-235, Uranium-238 (Eichrom ACW03, Eichrom ACW16, HASL 300 Se-03, HASL 300 U-02, HASL 300 U-04); Technetium-99 (Eichrom TCS01)
12.0) **DoD/DOE and ISO 17025 certifications through ANAB apply only to the following methods in <u>Air and Emissions</u>**:
Gross Alpha and Gross Beta (EPA 900.0 Mod, EPA 9310); Strontium-89 (Eichrom SRW01, HASL 300 Sr-01-RC); Strontium-90 (Eichrom SRW01, HASL 300 Sr-02-RC); Gamma Emitters (EPA 901.1, HASL 300 Ga-01-R); Americium-241 (Eichrom ACW03, HASL 300 Se-03); Neptunium 237 (Eichrom ACW16); Plutonium 238, Plutonium 239/240, Plutonium-241 (Eichrom ACW03, Eichrom ACW16, HASL 300 Se-03); Thorium-228, Thorium 230, Thorium-232 (Eichrom ACW10); Uranium-234, Uranium-235, Uranium-238 (Eichrom ACW03, Eichrom ACW16, HASL 300 Se-03); Technetium-99 (Eichrom TCW02, Eichrom TCS01)

General Comments:

1.0 Modified analysis procedures are procedures that are modified to meet certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix. Modified analyses are indicated by the subsequent addition of “M” or “Mod” to the procedure number (i.e. 901.1M, 901.1 Mod).
2.0 All NIOSH method results are reported without blank corrections applied.
3.0 Basis: “As Received” = analyzed as received from client; “Dry” = dried prior to being analyzed; “Dry Weight Corrected” = analyzed as received; result corrected for percent moisture.

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Analytical Results

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ARS Sample Delivery Group: ARS1-25-01803
Client Sample ID: W-eff
Sample Collection Date: 09/04/25 9:20
Sample Matrix: Aqueous
Percent Solids: N/A

Request or PO Number: CC
ARS Sample ID: ARS1-25-01803-001
Date Received: 09/05/25
Report Date: 09/24/25

Radiochemistry

Analysis Method: Eichrom ACW10 **ABatch Sample ID:** ARS1-B25-01537-04

Analysis Description	Analysis Results	CSU +/- 2 s	MDA	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Th-228	1.758E-9	2.134E-9	3.406E-9	1.227E-9	1E-07	U	uCi/mL	09/22/25 19:36	DWILLIAMS	73.4%
Th-230	1.719E-10	2.453E-9	4.970E-9	2.019E-9	5E-08	U	uCi/mL	09/22/25 19:36	DWILLIAMS	73.4%
Th-232	8.578E-10	1.469E-9	2.623E-9	8.466E-10	1.5E-08	U	uCi/mL	09/22/25 19:36	DWILLIAMS	73.4%

Analysis Method: HASL 300 U-02-RC **ABatch Sample ID:** ARS1-B25-01544-04

Analysis Description	Analysis Results	CSU +/- 2 s	MDA	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	-1.359E-9	3.416E-9	7.861E-9	3.194E-9	1.5E-07	U	uCi/mL	09/22/25 19:35	DWILLIAMS	48.7%
U-235	0.000	1.513E-9	4.248E-9	1.270E-9	1.5E-07	U	uCi/mL	09/22/25 19:35	DWILLIAMS	48.7%
U-238	-3.256E-9	2.635E-9	7.655E-9	3.092E-9	1.5E-07	U	uCi/mL	09/22/25 19:35	DWILLIAMS	48.7%

Analysis Method: EPA 901.1 **ABatch Sample ID:** ARS1-B25-01515-04

Analysis Description	Analysis Results	CSU +/- 2 s	MDA	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Be-7	-1.520E-9	1.440E-8	1.760E-8	8.800E-9	NP	U	uCi/mL	09/06/25 13:17	KE	N/A
Bi-212	-8.358E-9	1.597E-8	1.850E-8	9.250E-9	NP	U	uCi/mL	09/06/25 13:17	KE	N/A
Bi-214	5.530E-9	6.537E-9	5.530E-9	2.765E-9	NP	U	uCi/mL	09/06/25 13:17	KE	N/A
K-40	8.449E-8	1.628E-8	1.740E-8	8.700E-9	NP		uCi/mL	09/06/25 13:17	KE	N/A
Pb-210	-1.761E-8	4.647E-8	5.320E-8	2.660E-8	5E-09	U	uCi/mL	09/06/25 13:17	KE	N/A
Pb-214	9.577E-10	5.637E-10	5.870E-9	2.935E-9	NP	U	uCi/mL	09/06/25 13:17	KE	N/A
Ra-226	-1.663E-8	4.861E-8	5.440E-8	2.720E-8	3E-08	U	uCi/mL	09/06/25 13:17	KE	N/A
Ra-228	1.808E-9	8.128E-9	8.260E-9	4.130E-9	3E-08	U	uCi/mL	09/06/25 13:17	KE	N/A
Sc-46	9.682E-10	1.840E-9	2.060E-9	1.030E-9	NP	U	uCi/mL	09/06/25 13:17	KE	N/A
Th-228	1.630E-9	3.989E-9	5.510E-9	2.755E-9	1E-07	U	uCi/mL	09/06/25 13:17	KE	N/A
Tl-208	-6.692E-11	2.558E-9	2.630E-9	1.315E-9	NP	U	uCi/mL	09/06/25 13:17	KE	N/A
U-235	1.146E-8	6.492E-9	1.040E-8	5.200E-9	1.5E-07		uCi/mL	09/06/25 13:17	KE	N/A
U-238	-1.242E-7	4.754E-8	7.260E-8	3.630E-8	1.5E-07	U	uCi/mL	09/06/25 13:17	KE	N/A
Total NORM Gamma	1.068E-7	N/A	N/A	N/A	NP		uCi/mL	09/06/25 13:17	KE	N/A
Total NORM Activity	1.158E-7	N/A	N/A	N/A	NP		uCi/mL	09/06/25 13:17	KE	N/A

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Analytical Reports

for

State Of Michigan - EGLE- MMD

Batch QC

QC Results per Analytical Batch

Analytical Batch	**ARS1-B25-01515**
SDG	**ARS1-25-01803**
Analysis	**Gamma Spec (Short) in (Aqueous [AQ])**
Method	**EPA 901.1**
Analysis Code	**GAM-A-AQ**
Report Units	**uCi/mL**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

			Analysis Date	09/07/25 09:58	Analysis Technician	KE	
Analysis Batch Sample ID	**QC Type**	**Analyte**	**Results**	**CSU (2s)**	**Expected Value**	**LCS Rec (%)**	**MDA**
ARS1-B25-01515-01	**LCS**	AM-241	4.201E-5	3.036E-6	4.373E-5	96.1	6.102E-7
ARS1-B25-01515-01	**LCS**	CO-60	6.835E-5	3.470E-6	6.816E-5	100.3	1.172E-6
ARS1-B25-01515-01	**LCS**	CS-137	5.338E-5	2.343E-6	5.181E-5	103.0	1.340E-7

Duplicate RER/DER/RPD

		Analysis Date	09/07/25 10:13	Analysis Technician	KE	
Analyte	**Results LCS**	**CSU LCS (2s)**	**Results LCSD**	**CSU LCSD (2s)**	**DER**	**RPD**
AM-241	4.201E-5	3.036E-6	4.158E-5	3.005E-6	0.198	1.0
CO-60	6.835E-5	3.470E-6	6.650E-5	3.411E-6	0.744	2.7
CS-137	5.338E-5	2.343E-6	5.277E-5	2.325E-6	0.364	1.2

Method Blank

		Analysis Date	09/05/25 14:04	Analysis Technician	KE	
Analysis Batch Sample ID	**QC Type**	**Analyte**	**Results**	**CSU (2s)**	**MDA**	**Qual**
ARS1-B25-01515-03	**MBL**	BE-7	-1.999E-9	1.452E-8	1.770E-8	U
ARS1-B25-01515-03	**MBL**	BI-212	-8.028E-9	1.660E-8	1.930E-8	U
ARS1-B25-01515-03	**MBL**	BI-214	-6.704E-9	6.239E-9	5.510E-9	U
ARS1-B25-01515-03	**MBL**	K-40	2.040E-8	2.208E-8	2.040E-8	U
ARS1-B25-01515-03	**MBL**	PB-210	4.525E-9	4.734E-8	5.420E-8	U
ARS1-B25-01515-03	**MBL**	PB-214	2.492E-9	9.533E-10	6.040E-9	U
ARS1-B25-01515-03	**MBL**	RA-226	0.000	4.034E-8	6.390E-8	U
ARS1-B25-01515-03	**MBL**	RA-228	2.103E-9	8.284E-9	8.440E-9	U
ARS1-B25-01515-03	**MBL**	SC-46	5.162E-10	2.333E-9	2.550E-9	U
ARS1-B25-01515-03	**MBL**	TH-228	-6.173E-10	4.168E-9	4.730E-9	U
ARS1-B25-01515-03	**MBL**	TL-208	2.710E-9	2.651E-9	2.710E-9	U
ARS1-B25-01515-03	**MBL**	U-235	-2.774E-9	1.143E-8	1.900E-8	U
ARS1-B25-01515-03	**MBL**	U-238	-1.767E-8	4.261E-8	6.330E-8	U

QC Results per Analytical Batch

Analytical Batch	**ARS1-B25-01537**
SDG	**ARS1-25-01803**
Analysis	**Thorium in (Water [Aqueous, AQ])**
Method	**Eichrom ACW10**
Analysis Code	**ASP-TH-AQ**
Report Units	**uCi/mL**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

			Analysis Date	09/22/25 19:36	**Analysis Technician**	DWILLIAMS	
Analysis Batch Sample ID	**QC Type**	**Analyte**	**Results**	**CSU (2s)**	**Expected Value**	**LCS Rec (%)**	**MDA**
ARS1-B25-01537-01	**LCS**	TH-230	6.087E-9	7.914E-10	5.416E-9	112.4	3.515E-11

Duplicate RER/DER/RPD

Analysis Date	09/22/25 19:36	**Analysis Technician**	DWILLIAMS			
Analyte	**Results LCS**	**CSU LCS (2s)**	**Results LCSD**	**CSU LCSD (2s)**	**DER**	**RPD**
TH-230	6.087E-9	7.914E-10	6.480E-9	8.524E-10	0.663	6.3

Method Blank

Analysis Date	09/22/25 19:36	**Analysis Technician**	DWILLIAMS			
Analysis Batch Sample ID	**QC Type**	**Analyte**	**Results**	**CSU (2s)**	**MDA**	**Qual**
ARS1-B25-01537-03	**MBL**	TH-228	-1.194E-9	2.740E-9	5.975E-9	U
ARS1-B25-01537-03	**MBL**	TH-230	5.064E-9	2.985E-9	3.271E-9	
ARS1-B25-01537-03	**MBL**	TH-232	1.011E-9	1.406E-9	2.271E-9	U

QC Results per Analytical Batch

Analytical Batch	**ARS1-B25-01544**
SDG	**ARS1-25-01803**
Analysis	**Uranium (233, 234U, 235U, 238U) in (Water [Aqueous, AQ])**
Method	**HASL 300 U-02-RC**
Analysis Code	**ASP-U-AQ**
Report Units	**uCi/mL**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

			Analysis Date	09/22/25 19:35	Analysis Technician	DWILLIAMS	
Analysis Batch Sample ID	**QC Type**	**Analyte**	**Results**	**CSU (2s)**	**Expected Value**	**LCS Rec (%)**	**MDA**
ARS1-B25-01544-01	**LCS**	U-238	8.271E-9	1.041E-9	8.271E-9	100.0	3.656E-11

Duplicate RER/DER/RPD

		Analysis Date	09/22/25 19:35	Analysis Technician	DWILLIAMS	
Analyte	**Results LCS**	**CSU LCS (2s)**	**Results LCSD**	**CSU LCSD (2s)**	**DER**	**RPD**
U-238	8.271E-9	1.041E-9	8.647E-9	1.089E-9	0.490	4.4

Method Blank

		Analysis Date	09/22/25 19:35	Analysis Technician	DWILLIAMS	
Analysis Batch Sample ID	**QC Type**	**Analyte**	**Results**	**CSU (2s)**	**MDA**	**Qual**
ARS1-B25-01544-03	**MBL**	U-234	5.559E-10	1.888E-9	3.798E-9	U
ARS1-B25-01544-03	**MBL**	U-235	4.296E-10	8.436E-10	1.164E-9	U
ARS1-B25-01544-03	**MBL**	U-238	-5.548E-10	1.885E-9	4.497E-9	U

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Sample Management Records

Chain of Custody

ARS - American Radiation Services

AMERICAN RADIATION SERVICES

Updated 12-11-24 PALA-SR-001-FM-04 r 01.0 Chain of Custody Form
Revision Date: 1/8/2025

Company Name: State of Michigan - EGLE - MMD
Address: 815 Filley St
Lansing MI 48906
Phone #: 517-243-7197
Email #1: paquettej3@michigan.gov
Email #2: radioactivematerial@michigan.gov

Client Contact: Jay Paquette
Purchase Order: CC
Job #: N/A
Job Location: WPI NPDES Sampling Port

Turnaround time in business days (please circle one)
3hr 24hr 48hr 3day (5day) 10day 15day (standard)

Sent To: ARS Analytical
Contact: Sample Receiving
Address: 2609 North River Road
Port Allen, LA 70767
Phone: (225) 372-4748
eMail: projectmanagers@ars-analytical.com

	Sample Collection Date/Time	Sample ID	* Type of Sample	# of Cont.	Radiochemistry: Am	Pu	U	Th	Np	Sr-90	Sr-89/90	Tc-99	H-3	LL H-3	Gross: Alpha	Beta	Radium in Water: Ra-228	Ra-226	Gamma Spectroscopy: NORM	I-131	Custom Library**	Stable Chemistry: Total U	RCRA Metals	RCRA Metals + Hg	Mercury	*Custom Metals	pH		Other			
1	9-4-25 09:20AM	W-eff	AQ	1			X	X											X												
2																															
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															
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14																															
15																															
16																															
17																															
18																															
19																															
20																															

Additional notes: Please provide preliminary Gamma Spec @ 5day, 15day for alpha

Requested Units: uCi/mL

* If metals requested, please provide list here:

*Please list isotopes for custom library in Notes section

**Standard NORM Library Includes:
Ra-226, Ra-228, Pb-210, Pb-214, Bi-212, Bi-214
K-40, Be-7 Sc-46, Tl-208, Th-228, U-235, U-238

* Types of sample: **S**: Solids, **AQ**: Aqueous, **DW**: Drinking Water, **Sm:** Smear, **LT**: Leak Test, **AF**: Air Filter, **Si**: Silica Gel, **VG**: Vegetation, **Bio**: Bioassay

Relinquished by (Signature):	Date / Time Relinquished:
Micky Maynard	9-4-25 1150

Recieved by (Signature):	Date / Time Received:
Jay Paquette	9-4-25 1150
Jason Ricciardi	9-5-25 1005

Please contact Jay for MDA's if needed.

SDG Report - Samples and Containers

SDG Specific Data					
SDG	ARS1-25-01803	TAT Days	15 Business Days	Project Type	Environmental
Sample Count	1 Rpt Level 2a	Date Received	09/05/2025	COC Number	
Client	State Of Michigan - EGLE- MMD	Discrepancy Resol	N/A	PO Number	CC
Client Code	1332	Client Deadline	09/26/2025	Job Number	
Profile Number	PN-01604	Disposal Code	H	Job Location	WPI NPDES Sampling Port
Archive Period	10	Holding Period	30		
Comment	GAM-AQ is 5-day TAT and preliminary report will be issued.				

Samples and Containers Checked In Thus Far

FR	Name	Matrix	Start Date	End Date	Storage	Comments
001	W-eff	Aqueous	09/04/2025 09:20	09/04/2025 09:20	PrePrep	

IC_ID	Cnt	Container Type	Container Size	pH Orig	pH Final	Temp (C)	Comments
493631	1	HDP Container	1 Gal				

SDG Report - Analysis Assignments

SDG	ARS1-25-01803	Sample Count	1
Client	State Of Michigan - EGLE- MMD	Analysis Count	3-3

Sample Count Totals Per Analysis

Analysis Code	Analysis Description	In/Out	Samples Count
ASP-TH-AQ	Thorium in (Water [Aqueous, AQ])	I	1
ASP-U-AQ	Uranium (233, 234U, 235U, 238U) in (Water [Aqueous, AQ])	I	1
GAM-A-AQ	Gamma Spec (Short) in (Aqueous [AQ])	I	1

Analyses Assigned Per Fraction

Fraction	Analysis Code	X = Assigned
001	ASP-TH-AQ	X
001	ASP-U-AQ	X
001	GAM-A-AQ	X

DQO Report for SDG

ARS1-25-01803

Client Name: State Of Michigan - EGLE- MMD Profile Name: Jay Paquette Report Level: 2a

Analysis Code	Prep Type	Units	Aliquot	Prep Code	Procedure		Count Time				
ASP-TH-AQ	WRAD	uCi	mL	N/A	PALA-RAD-031						
	Analyte			RDL	LCS LL/UL	MS LL/UL	RadY LL/UL	GravY LL/UL	RER	RPD	Surr LL/UL
	Th-228 (14274-82-9)			1E-07 uCi/mL	75/125	60/140	30/110	30/110	1	25	N/A
	Th-230 (14269-63-7)			5E-08 uCi/mL	75/125	60/140	30/110	30/110	1	25	N/A
	Th-232 (7440-29-1)			1.5E-08 uCi/mL	75/125	60/140	30/110	30/110	1	25	N/A
ASP-U-AQ	WRAD	uCi	mL	N/A	PALA-RAD-026						
	Analyte			RDL	LCS LL/UL	MS LL/UL	RadY LL/UL	GravY LL/UL	RER	RPD	Surr LL/UL
	U-234 (13966-29-5)			1.5E-07 uCi/mL	75/125	60/140	30/110	30/110	1	25	N/A
	U-235 (15117-96-1)			1.5E-07 uCi/mL	75/125	60/140	30/110	30/110	1	25	N/A
	U-238 (7440-61-1)			1.5E-07 uCi/mL	75/125	60/140	30/110	30/110	1	25	N/A
GAM-A-AQ	LGAM	uCi	mL	N/A	PALA-RAD-006						
	Analyte			RDL	LCS LL/UL	MS LL/UL	RadY LL/UL	GravY LL/UL	RER	RPD	Surr LL/UL
	Be-7 (13966-02-4)				75/125	60/140	30/110	30/110	1	25	N/A
	Bi-212 (14913-49-6)				75/125	60/140	30/110	30/110	1	25	N/A
	Bi-214 (14733-03-0)				75/125	60/140	30/110	30/110	1	25	N/A
	K-40 (13966-00-2)				75/125	60/140	30/110	30/110	1	25	N/A
	Pb-210 (14255-04-0)			5E-09 uCi/mL	75/125	60/140	30/110	30/110	1	25	N/A
	Pb-214 (15067-28-4)				75/125	60/140	30/110	30/110	1	25	N/A
	Ra-226 (13982-63-3)			3E-08 uCi/mL	75/125	60/140	30/110	30/110	1	25	N/A
	Ra-228 (15262-20-1)			3E-08 uCi/mL	75/125	60/140	30/110	30/110	1	25	N/A
	Sc-46 (13967-63-0)				75/125	60/140	30/110	30/110	1	25	N/A
	Th-228 (14274-82-9)			1E-07 uCi/mL	75/125	60/140	30/110	30/110	1	25	N/A
	Tl-208 (14913-50-9)				75/125	60/140	30/110	30/110	1	25	N/A
	U-235 (15117-96-1)			1.5E-07 uCi/mL	75/125	60/140	30/110	30/110	1	25	N/A

User: SLEESE Last Modified: 9/10/2025 3:02:26 PM

GAM-A-AQ	U-238 (7440-61-1)	1.5E-07 uCi/mL	75/125	60/140	30/110	30/110	1	25	N/A
	Total NORM Activity		75/125	60/140	30/110	30/110	1	25	N/A
	Total NORM Gamma		75/125	60/140	30/110	30/110	1	25	N/A

Analysis Code	Fraction	Units	Aliquot	Conductivity	Analyte Count
ASP-TH-AQ	001	uCi	mL	N/A	3
		Group		**Analyte**	
				Th-228	
				Th-230	
				Th-232	
ASP-U-AQ	001	uCi	mL	N/A	3
		Group		**Analyte**	
				U-234	
				U-235	
				U-238	
GAM-A-AQ	001	uCi	mL	N/A	15
		Group		**Analyte**	
				Be-7	
				Bi-212	
				Bi-214	
				K-40	
				Pb-210	
				Pb-214	
				Ra-226	
				Ra-228	
				Sc-46	
				Tl-208	
				U-235	
				U-238	
				Total NORM Activity	
				Total NORM Gamma	
				Th-228	

PALA Sample Receipt Inspection Form

Client Name: State of Michigan-EGLE-MMD

SDG: ARS1-25-01803

Sample Custodian: Jamie Survey Start Date: 9-5-25 Survey Start Time: 1045

Thermometer ID: E40840134O7 Calibration Due Date: 1-13-26 pH Paper Lot# 239424

Exposure Rate Meter + Probe Unit ID: 242810/PR 264266 Calibration Due Date: 11-26-25 Background: 6 µR/hr

Count Rate Meter + Probe Unit ID: 330343/PR 368107 Calibration Due Date: 11-5-25 Background: 40 cpm

Delivery Type (circle one): Direct Lock Box (Commercial Carrier: UPS) Total # of ESCs: 1 # of Coolers: NA

*True temperature is recorded which includes any applicable correction factors.

External Shipping Container Tracking:	Exposure Rate (µR/hr) (limit <500 µR/hr)	Max External Swipe Counts (cpm)	Max Internal Swipe Counts (cpm)	ESC True Temps* (°C)	TRAX Matrix ID (circle all that apply): (See Section 4.3 of SOP)
A: 1Z3A275F0197251439	5	40	40	NA	(AQ) WD WG WO
B:					WS WW SI UR
C:					SO OL BI VG
D:					WP SM AF
E:					
F:					

Visual Inspection: External Shipping Container	(Circle response)		
Good Condition with no Leaks or Tears	(Yes)	No	
Marked Radioactive	Yes	(No)	
UN2910	Yes	(No)	
Security Seals	(Yes)	No	
If yes, intact?	(Yes)	No	N/A
Internal Shipping Container			
COC's Present	(Yes)	No	
Well packaged container with no signs of leakage	(Yes)	No	

COC/Sample Inspection	(Circle response)		
Sample Containers in good condition	(Yes)	No	
No spills or leaks	(Yes)	No	
Marked Radioactive	Yes	(No)	
Durable labels w/indelible ink	(Yes)	No	
COC reliquished/received correctly	(Yes)	No	
Adequate volume/filled correctly	(Yes)	No	
Hold Time sufficient for analysis	(Yes)	No	
For VOC/Radon, Head space?	Yes	No	(N/A)
If yes, <6mm?	Yes	No	(N/A)
# of containers received matches # on COC	(Yes)	No	
Samples received on ice?	Yes	(No)	
Type (circle one):	Bagged Ice	Loose Ice	Blue Ice (N/A)

Comments:

Sample Survey Fo

Client Name: State of Michigan-EGLE-MMD

SDG: ARS1-25-01803

Pipette ID:_____ Tip Lot#:_____

Disposible pipette lot#:_____

Sample ID from Client on COC or Sample	ESC Letter	Sample Container Type	Approx. Fill Level (%)	pH <2 is Acceptable: pH As Rec'd	pH <2 is Acceptable: pH Adjusted	Acid Lot # or Ind container temp (°C)	Vol. of Acid Used (mL)	Acceptance Limits <100 cpm/cm² cpm	Acceptance Limits <500 uR/hr uR/hr
W-ESS	A	HDPE 1gal	100	NA	NA	NA	NA	40	5

Sample Custodian: Jamie Survey End Date: 9-5-25 Survey/pH End Time: 1047

pH re-check required? YES or NO *NOTE: Any metals sample acidified at sample receiving must be re-checked after a 24 hour hold.*

If YES: pH re-check date/time: _____/_____ Analyst: _____ pH strip lot #: _____

Were all re-checked samples' pH < 2? YES or NO* *If no, complete and send to Project Management:
1. Section A of PALA-SR-001-FM-05 (24 Hour Hold pH Readjustment)
2. SR section of PALA-SR-001-FM-03 (Discrepant Sample Receipt Report).

JAY PAQUETTE
517-243-7197
MI EGLE RPL
525 FILLEY STREET
LANSING MI 48906

11 LBS

SHIP TO:
SHIPPING AND RECEIVING
ARS ANALYTICAL LAB
2609 NORTH RIVER ROAD
PORT ALLEN LA 70767

LA 708 9-88

UPS NEXT DAY AIR

1

TRACKING #: 1Z 3A2 75F 01 9725 1439

BILLING: P/P

TM