

Gelman Sciences, Inc. d/b/a Pall Life Sciences 642 South Wagner Road Ann Arbor, MI 48103 734.436.4025 phone 734.436.4040 fax

# **CASE NARRATIVE**

Monthly Data Pall Life Sciences Project: 1,4-Dioxane Remediation

Date: June 2021

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Gelman Sciences, Inc. d/b/a Pall Life Sciences (PLS) attests to the validity of the laboratory data generated by PLS's Ann Arbor, Michigan Environmental Laboratory facilities reported herein. All analyses performed by PLS's Environmental Laboratory facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. PLS's Environmental group has reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

At the end of the month some of the 1,4-dioxane samples were sent to Ann Arbor Technical Services for analysis due to a reproducibility problem. The balance of the samples were analyzed for 1,4-dioxane at Pall Corporation's Environmental Laboratory. All bromate samples were analyzed by Pall Corporation's Environmental Laboratory. The test results in this report meet all NELAP requirements for parameters for which accreditation are required or available. Any exceptions to NELAP requirements are noted in this report. All exceptions are noted per laboratory standard operating procedure based on EPA Method 1624c. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results. The odd even rule is used for rounding. Holding times were met for all samples analyzed. Proper preservation was observed on all samples unless otherwise detailed in the individual sections below.

# RECEIPT/ STORAGE

The samples were received on the days noted in the report for the Month; the samples arrived in good condition, properly preserved and on ice when necessary. Samples that require 1,4-dioxane analysis are collected in hydrochloric HCl acid-preserved vials to a pH of ≤2, except for the Pall ozone treatment samples. These samples have chemicals that, when mixed with the HCl acid, cause interferences and trap damage. Every attempt is made to analyze these samples within 24 hours of receipt.

Samples that require Bromate analysis are collected and preserved in the laboratory with ethylene di-amine and refrigerated.

Samples that are delivered to the laboratory the same day as they are collected are likely not to have reached a fully chilled temperature. This is acceptable as long as there is evidence that chilling has begun. All samples are iced or refrigerated at 4°C (±2°C) from the time of collection until sample preparation or analysis.

# 1,4-Dioxane (GC-MS)

All ground water and treated water samples were analyzed for 1,4-Dioxane (GC-MS) in accordance with EPA 1624C, which has been modified to enhance detection limits. Samples that were diluted to bring them within the calibrated range of the instrument are noted with a "D" under the Qualifier Code section of the data report. Reporting limits were adjusted based on each dilution.

Reporting limit for undiluted samples is 1ppb (part per billion, micrograms per liter, µg/L). All quality control parameters were within the acceptance limits for reported samples unless indicated.

June 2021

# **Bromate (Ion Chromatography)**

All surface water and treated samples were analyzed for Bromate (Ion Chromatography) in accordance with EPA 300.1. Surrogates are added to all samples. All quality control parameters were within the acceptance limits with the balance of sample analyzed.

The reporting limit for treated samples is 5.0ppb and for surface samples is 2.0ppb.

# Qualifiers

# 1,4-Dioxane Qualifier Codes:

Qualifier Code	Description
nd:	The compound was analyzed for, but not detected at or above the detection limit indicated.
D:	Analyte value quantified from a dilution, reporting limit is raised to reflect dilution.
E:	The compound result is greater than the upper quantitation limit in the associated calibration curve, reported as estimate.
В:	The sample vials contained air bubbles larger than 5mm, which may affect compound results.
J:	The compound was positively identified; the associated numerical value is the approximate concentration.
M:	Matrix effects, sample required dilution.
R:	The reported value is unusable and rejected due to variance from quality control criteria.
V:	The reported value is considered estimated due to variance from quality control criteria.
H:	Sample was analyzed past 14 day hold time, but within 45 days.
0:	Samples analyzed in outside laboratory.
S:	Samples split with DEQ.

# **Bromate Qualifier Codes:**

Qualifier Code	Description
nd:	The compound was analyzed for, but was not detected at or above the detection limit indicated.
E:	The compound result is greater than the upper quantitation limit in the associated calibration curve.
J:	The compound was positively identified; the associated numerical value is the approximate concentration.
R:	The reported value is unusable and rejected due to variance from quality control criteria.
V:	The reported value is considered estimated due to variance from quality control criteria.
H:	Sample was analyzed past 28 day hold time
	Son 200 1 200 1 200 21

Manager: Susan E.O. Peters

Date: 07-09-2

Analyst: Gage M. Trendel

Date: 7/9/21



# Sample Analysis Report June, 2021

642 South Wagner Road Ann Arbor, MI 48103-9019 US 734.436.4025 phone

Analyst Initials	:
Date	:

Sample Name - Date/Time Sampled	1,4-Dioxane Results (ppb)	R.L. (ppb)	Bromate Results (ppb)	R.L. (ppb)	Bromide Results (ppb)	R.L. (ppb)	Comments	Qualifier(s)
Residential Wells								
Not Determined								
697 South Wagner Rd-06-10-21-11:35-1	nd	1.0						0
Miscellaneous Wells								
Bethlehem Cemetery-06-10-21-11:45-1	nd	1.0		Э				0
Extraction Wells								
C3		4						
DOLPH-06-04-21-10:00-1	150	10.0						D
TW-20-06-04-21-10:05-1	850	10.0						D
TW-20-06-14-21-11:30-1	820	20.0						O, D
D2								
LB-4-06-04-21-08:50-1	570	10.0						D
TW-21-06-04-21-09:45-1	320	10.0						D
Е								
TW-18-06-04-21-09:50-1	230	10.0						D
TW-23-06-04-21-08:55-1	420	10.0						D
Marshy								
PW-1-06-04-21-09:55-1	780	10.0						D
sw								
TW-22-06-04-21-10:10-1	560	10.0						D

Sample Name - Date/Time Sampled	1,4-Dioxane Results (ppb)	R.L. (ppb)	Bromate Results (ppb)	R.L. (ppb)	Bromide Results (ppb)	R.L. (ppb)	Comments	Qualifier(s)
TW-28-06-04-21-10:15-1	790	10.0						D
Monitoring Wells								
C3								
MW-125-06-16-21-14:31-1	220	10.0						O, D
MW-127s-06-16-21-09:49-1	nd	1.0						0
MW-128s-06-17-21-10:27-1	1.4	1.0						
MW-28-06-04-21-12:30-1	nd	1.0						
MW-37-06-17-21-11:43-1	240	10.0						O, D
D0								
A2 Cleaning Supply-06-01-21-12:05-1	43	1.0						
A2 Cleaning Supply-06-30-21-13:30-1	48	1.0						0
MW-136i-06-07-21-12:40-1	nd	1.0						
MW-136s-06-07-21-13:50-1	nd	1.0						
MW-141s-06-22-21-13:12-1	4	1.0						0
MW-41d-06-10-21-11:55-1	18	1.0						0
MW-41s-06-10-21-12:00-1	14	1.0						0
MW-51-06-21-21-08:10-1	nd	1.0						
MW-53d-06-01-21-09:21-1	nd	1.0						
MW-53i-06-01-21-11:47-1	46	1.0		12	,			
MW-53s-06-01-21-10:35-1	nd	1.0						
MW-61d-06-22-21-11:26-1	11	1.0						0
MW-61s-06-22-21-10:15-1	3	1.0						0
D2								
373 Pinewood Shallow-06-23-21-13:10-1	210	10.0						O, D
465 Dupont-06-23-21-11:22-1	800	100.0						O, D
MW-131s-06-21-21-09:22-1	nd	1.0						0

Sample Name - Date/Time Sampled	1,4-Dioxane Results (ppb)	R.L. (ppb)	Bromate Results (ppb)	R.L. (ppb)	Bromide Results (ppb)	R.L. (ppb)	Comments	Qualifier(s)
MW-56s-06-04-21-13:53-1	49	1.0						
MW-62i-06-04-21-10:15-1	nd	1.0						
MW-62s-06-04-21-11:25-1	nd	1.0						
E	*							
373 Pinewood Deep-06-23-21-12:40-1	nd	1.0						0
IW-2-06-30-21-09:01-1	1900	100.0					3000	O, D
IW-2-06-30-21-09:34-1	1900	100.0					6000	O, D
MW-103s-06-03-21-11:13-1	100	1.0						
MW-112i-06-03-21-09:55-1	11	1.0						
MW-112s-06-03-21-08:48-1	2.0	1.0						
MW-127d-06-16-21-08:40-1	- nd	1.0						0
MW-128d-06-17-21-09:18-1	nd	1.0						0
MW-131d-06-21-21-10:40-1	nd	1.0						0
MW-136d-06-07-21-11:31-1	nd	1.0						
MW-141d-06-22-21-12:52-1	nd	1.0						
MW-56d-06-04-21-12:43-1	nd	1.0						
MW-62d-06-04-21-09:06-1	nd	1.0						
MW-65d-06-24-21-12:47-1	15	1.0			ā			0
MW-65i-06-24-21-10:25-1	4	1.0						0
MW-65s-06-24-21-11:38-1	7	1.0						0
MW-76i-06-03-21-12:28-1	110	1.0						
MW-76s-06-03-21-13:36-1	350	10.0						D
MW-84s-06-01-21-13:45-1	550	10.0						D
Saginaw Forest Cabin #1-06-16-21-12:13-1	4	1.0						0
Saginaw Forest Cabin #2-06-16-21-11:04-1	nd	1.0						0
Marshy								
NMW-1s-06-25-21-12:00-1	1800	100.0				9-1		O, D

Sample Name - Date/Time Sampled	1,4-Dioxane Results (ppb)	R.L. (ppb)	Bromate Results (ppb)	R.L. (ppb)	Bromide Results (ppb)	R.L. (ppb)	Comments	Qualifier(s)
NMW-2s-06-25-21-12:20-1	2000	100.0						O, D
sw	•							
MW-58d-06-17-21-13:02-1	17	1.0						0
MW-58s-06-17-21-14:36-1	170	10.0						O, D
MW-78-06-16-21-13:22-1	28	1.0						0
Surface Water								
Not Applicable								
HC/HR-06-01-21-10:28-1	8		nd	2.0				
HC/HR-06-02-21-09:40-1			nd	2.0				
HC/HR-06-03-21-09:10-1			nd	2.0				
HC/HR-06-04-21-09:10-1			nd	2.0				
HC/HR-06-07-21-14:00-1	8		nd	2.0				
HC/HR-06-08-21-10:30-1			nd	2.0				
HC/HR-06-09-21-13:00-1			nd	2.0				
HC/HR-06-10-21-11:00-1			nd	2.0				
HC/HR-06-11-21-10:10-1			nd	2.0				
HC/HR-06-14-21-09:25-1			nd	2.0				
HC/HR-06-15-21-08:00-1			nd	2.0				
HC/HR-06-16-21-10:45-1			nd	2.0				
HC/HR-06-17-21-10:00-1			nd	2.0				
HC/HR-06-18-21-09:55-1			nd	2.0				
HC/HR-06-21-21-10:20-1			nd	2.0				
HC/HR-06-22-21-09:55-1			nd	2.0				
HC/HR-06-23-21-09:25-1			nd	2.0				
HC/HR-06-24-21-09:15-1			nd	2.0				
HC/HR-06-25-21-10:50-1			nd	2.0				

Sample Name - Date/Time Sampled	1,4-Dioxane Results (ppb)	R.L. (ppb)	Bromate Results (ppb)	R.L. (ppb)	Bromide Results (ppb)	R.L. (ppb)	Comments	Qualifier(s)
HC/HR-06-28-21-12:55-1			nd	2.0				
HC/HR-06-29-21-13:00-1			nd	2.0				
HC/HR-06-30-21-09:45-1			nd	2.0				
Treatment System								
OUTFALL-06-01-21-1	7.6	1.0						
OUTFALL-06-01-21-2			11	5.0				
OUTFALL-06-02-21-1	7.1	1.0						
OUTFALL-06-02-21-2			9.4	5.0				
OUTFALL-06-03-21-1	6.8	1.0				*		
OUTFALL-06-03-21-2			11	5.0				
OUTFALL-06-06-21-1	6.0	1.0						
OUTFALL-06-06-21-2			9.4	5.0				
OUTFALL-06-07-21-1	6.4	1.0						
OUTFALL-06-07-21-2			9.6	5.0				
OUTFALL-06-08-21-1	6.7	1.0						
OUTFALL-06-08-21-2			10	5.0				
OUTFALL-06-09-21-1	5.2	2.0						D
OUTFALL-06-09-21-2			10	5.0				
OUTFALL-06-10-21-1	4.8	1.0						
OUTFALL-06-10-21-2			8.2	5.0				
OUTFALL-06-13-21-1	5.1	1.0						
OUTFALL-06-13-21-2			9.5	5.0				
OUTFALL-06-14-21-1	6.4	1.0						
OUTFALL-06-14-21-2			9.6	5.0				
OUTFALL-06-15-21-1	6	1.0						0
OUTFALL-06-15-21-2			12	5.0		14		
OUTFALL-06-16-21-1	6	1.0						0

Sample Name - Date/Time Sampled	1,4-Dioxane Results (ppb)	R.L. (ppb)	Bromate Results (ppb)	R.L. (ppb)	Bromide Results (ppb)	R.L. (ppb)	Comments	Qualifier(s)
OUTFALL-06-16-21-2			10	5.0				
OUTFALL-06-17-21-1	6	1.0						0
OUTFALL-06-17-21-2			8.2	5.0				
OUTFALL-06-20-21-1	6	1.0						0
OUTFALL-06-20-21-2			9.4	5.0				
OUTFALL-06-21-21-1	5.7	1.0						
OUTFALL-06-21-21-2			8.9	5.0				
OUTFALL-06-22-21-1	7	1.0						0
OUTFALL-06-22-21-2			9.1	5.0				
OUTFALL-06-23-21-1	6.3	1.0						
OUTFALL-06-23-21-2			9.0	5.0				
OUTFALL-06-24-21-1	8	1.0						0
OUTFALL-06-24-21-2	19		7.6	5.0				
OUTFALL-06-27-21-1	6	1.0						0
OUTFALL-06-27-21-2			8.4	5.0				
OUTFALL-06-28-21-1	7	1.0						0
OUTFALL-06-28-21-2			9.0	5.0				
OUTFALL-06-29-21-1	6	1.0						0
OUTFALL-06-29-21-2			8.5	5.0				
OUTFALL-06-30-21-1	6	1.0						0
OUTFALL-06-30-21-2			9.6	5.0				
Red Pond-06-01-21-07:50-1	400	10.0						D
Red Pond-06-07-21-07:25-1	370	10.0		100				D
Red Pond-06-14-21-07:30-1	350	20.0						O, D
Red Pond-06-21-21-08:00-1	350	20.0						O, D
Red Pond-06-28-21-07:55-1	360	10.0						O, D



### **Data Transmittal Cover Page**

Project Name:

Pall Corporation

ATS Project Number: ATS Report Number(s):

G001-002

Client PO Number: Project Description:

Org\_SRF\_0630211

4504293919

This data report contains the results of thirty nine water samples, received by ATS on 6/30/21, to be analyzed for 1,4 Dioxane.

vve cersity that the sample analyses for this report have been conducted in accordance with guidelines provided in the referenced standard test method, and are consistent with detailed procedures described in a written Standard Operating Procedure specific to the ATS Laboratories, as required by USEFA. Laboratories, as required by USEFA. Laboratories, as required by USEFA. Laboratory data sheets, SOPs, and QA/QC information are available for inspection and audit at the laboratory upon request. Unless specifically noted on the data report, all applicable sample preservation and holding time requirements have been met.

Recipient:	Ms. Sue Peters		Email: FAX Number:	Sue_Peters@Pall.com
No. of Pag	es (including cover pg.):	48		
From:	Sarah Stubblefield Senlor Chemist / Lab Manager	Email: FAX Number:	Sarah.Stubblefie 734-995-3731	Id@AnnArborTechnicalServices.com
Additional	Message:			

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Client Sample Identification	Sample Date	Requested Turn Around Time	Analysis	Matrix
MW-141s	6/22/21	Rush	1,4-Dioxane	Water
Outfall 001	6/22/21	Rush	1,4-Dioxane	Water
465 DuPont	6/23/21	Rush	1,4-Dioxane	Water
373 Pinewood Deep	6/23/21	Rush	1,4-Dioxane	Water
373 Pinewood Shallow	6/23/21	Rush	1,4-Dioxane	Water
MW-65i	6/24/21	Rush	1,4-Dioxane	Water
MW-65s	6/24/21	Rush	1,4-Dioxane	Water
MW-65d	6/24/21	Rush	1,4-Dioxane	Water
Outfall 001	6/24/21	Rush	1,4-Dioxane	Water
NMW-1s	6/25/21	Rush	1,4-Dioxane	Water
NMW-2s	6/25/21	Rush	1,4-Dioxane	Water
Outfall 001	6/27/21	Rush	1,4-Dioxane	Water
Red Pond	6/28/21	Rush	1,4-Dioxane	Water
Outfall 001	6/28/21	Rush	1,4-Dioxane	Water
Outfall 001	6/29/21	Rush	1,4-Dioxane	Water

Upon receipt, samples were scheduled for the following analyses:

1,4-Dioxane (USEPA 1624)

Number of Samples 39 + 2 Matrix Spike + 2 Matrix Spike Duplicate

# Sample Receipt, Chain of Custody Records, and Holding Times

Samples were delivered directly to ATS by Pall Corporation staff. Samples were received with proper chain of custody records included. Sample condition and anomalies, if any, are either presented in the "Sample Receipt" section of this report or in the comments on individual data sheets. All samples were prepared and analyzed within 45 days with the following exceptions:

None

### Data Review and Approval

All data contained in this report have been generated in accordance with guidelines provided in the referenced standard test method, and are consistent with detailed procedures described in a written standard operating procedures (SOPs) specific to the ATS Laboratory, as required by USEPA. All data are peer and management reviewed to ensure compliance with the above referenced SOP's and project specifications. In addition, all data conform to the laboratory's Quality Assurance / Quality Control Manuals.

A single QA/QC batch is defined as no more than 20 samples excluding method blanks (MB, LRB), fortified blanks (BS, LFB, LCS), matrix spikes (MS, SPK), and duplicates whether spiked or native (MSD, SPK DUP, DUP, LR).

This data package constitutes a Level II package; other data report packages (Level I, Level IV DVP, EPA R5 EDD) are available upon request. There were no hardcopy data summary sheets generated for this project.







### LABORATORY OPERATIONS CASE NARRATIVE

ATS Project Number: G001-002

Report Date: 7/7/21

SRF / SDG Number(s): 0630211 Client PO Number: 4504293919

### Case Narrative Summary

This case narrative applies to the following 39 samples that were received at Ann Arbor Technical Services, Inc. (ATS) on 6/30/21, and associated matrix-specific QA/QC:

Client Sample Identification	Sample Date	Requested Turn Around Time	Analysis	Matrix
Received 6/30/21				
Bethlehem Cemetery	6/10/21	Rush	1,4-Dioxane	Water
MW-41d	6/10/21	Rush	1,4-Dioxane	Water
MW-41s	6/10/21	Rush	1,4-Dioxane	Water
Red Pond	6/14/21	Rush	1,4-Dioxane	Water
TW-20	6/14/21	Rush	1,4-Dioxane	Water
Outfall 001	6/15/21	Rush	1,4-Dioxane	Water
MW-127d	6/16/21	Rush	1,4-Dioxane	Water
MW-127S	6/16/21	Rush	1,4-Dioxane	Water
Saginaw Forest Cabin #2	6/16/21	Rush	1,4-Dioxane	Water
Saginaw Forest Cabin #1	6/16/21	Rush	1,4-Dioxane	Water
MW-78	6/16/21	Rush	1,4-Dioxane	Water
MW-125	6/16/21	Rush	1,4-Dioxane	Water
Outfall 001	6/16/21	Rush	1,4-Dioxane	Water
MW-128d	6/17/21	Rush	1,4-Dioxane	Water
MW-37	6/17/21	Rush	1,4-Dioxane	Water
MW-58d	6/17/21	Rush	1,4-Dioxane	Water
MW-58s	6/17/21	Rush	1,4-Dioxane	Water
Outfall 001	6/17/21	Rush	1,4-Dioxane	Water
Outfall 001	6/20/21	Rush	1,4-Dioxane	Water
Red Pond	6/21/21	Rush	1,4-Dioxane	Water
MW-131s	6/21/21	Rush	1,4-Dioxane	Water
MW-131-d	6/21/21	Rush	1,4-Dioxanc	Water
MW-61s	6/22/21	Rush	1,4-Dioxane	Water
MW-61d	6/22/21	Rush	1,4-Dioxane	Water

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Consultants in Chemistry & Environmental Science 290 South Wagner Road, Ann Arbor, Michigan 48103 Tel 734/995-0995 Fax 734/995-3731

# Sample Analysis

<u>I.4-Dioxane Analysis (GC/MS)</u>: Samples were analyzed by purge and trap GC/MS in accordance with USEPA method 1624 (Volatile Organic Compounds by Isotope Dilution Gas Chromatography – Mass Spectrometry). An initial calibration with at least five levels was used to quantitate 1,4-Dioxane. Samples were reported to project specific reporting limits. Samples were reported as mg/L.

Anomalies Noted:

### Analytical QA/QC Summary

### Calibration Verification

Method calibration was verified through the analysis of a mid-level initial calibration verification (CV) standard at a equency of every 12 hours. All verification standards met the acceptance criteria with the following exceptions:

None

# Instrument Blanks

Low system background was demonstrated through the analysis of instrument blanks at a minimum of every 12 hours. All instrument blanks met the acceptance criteria with the following exceptions:

• None

# **QA/QC Batch Summary**

### Internal Standards

Internal standards areas and retention times met the acceptance criteria with the following exceptions:

### Laboratory Reagent Blanks

A laboratory reagent blank (LRB) was analyzed with each QA/QC batch. The LRB's met the acceptance criteria with the following exceptions:

### Laboratory Fortified Blanks / Laboratory Control Samples

A laboratory fortified blank (LFB) was analyzed with each QA/QC batch. The LFB's met the acceptance criteria with the following exceptions:

• None





### Matrix Spikes and Spike Duplicates

A matrix spike (MS) and matrix spike duplicate (MSD) was analyzed with each QA/QC batch. The MS/MSD's met the acceptance criteria with the following exceptions:

• None

### Matrix Replicates

A matrix spike (MS) and matrix spike duplicate (MSD) was analyzed with each QA/QC batch. The replicates met the acceptance criteria with the following exceptions:

None

### Sample Dilutions

Samples containing compounds at concentrations above the initial calibration curve were diluted and reanalyzed for those compounds. The following samples were diluted for 1,4-Dioxane:

Red Pond 6/14/21

- TW-20 6/14/21
- MW-125 6/16/21 MW-58s 6/17/21
- MW-37 6/17/21 Red Pond 6/21/21 NMW-2s 6/25/21
- 465 DuPont 6/23/21
- · 373 Pinewood Shallow 6/23/21
- NMW-1s 6/25/21

Red Pond 6/28/21

Mark alatong

/ July 7, 2021

Mark T. DeLong (Quality Assurance Coordinator)

/ July 7, 2021

Philip B. Simon (Laboratory Director)

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Organic Analysis Data Summary Sheet

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

#G001-002 ATS Project: Pall Corporation
7/7/21
ATS SRF: 630211

Sample Identification: MW-41d

Sample Date: Sample Time: 6/10/21 11:55 AM Client Sampled By:

6/30/21 Laboratory Receipt Date: Sample Matrix:

'arameter	Method	Units	Result	Reporting Limit	Date	Time	By
Irganic Analysis							
1,4-Dloxane	EPA 1624	mg/L	0.018	0.001	7/1/21	19:47	SLS



# Organic Analysis Data Summary Sheet

Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Pall Corporation
Report Date: 7/7/21
ATS SRF: 630211 #G001-002

Sample Identification: Bethlehem Cemetery

Sample Date: Sample Time: Sampled By: Laboratory Receipt Date: Sample Matrix:

6/10/21 Client 6/30/21

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis	Analyzed By	
Organic Analysis							10000	
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	7/1/21	19:03	SLS	

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

rev. 7/7/21

**Organic Analysis** 

Ву

SLS



**Data Summary Sheet** ATS Project: Pall Corporation
Report Date: 7/7/21

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

Sample Date:

Sample Time: Sampled By:

1.4-Dioxane

Laboratory Receipt Date:

Sample Identification: MW-41s 6/10/21 12:00 PM Client 6/30/21

Sample Matrix: Water Reporting Limit Parameter Organic Analysis Method Units Result Date Time 20:31 EPA 1624 0.014 mg/L

Comments

All methods reference USEPA methods unless otherwise noted.
na - Indicates not available / applicable.

na - Indicates not available / applicable.

All methods reference USEPA methods unless otherwise noted.

rev. 7/7/21



For: Ms. Sue Peters

Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

### Organic Analysis **Data Summary Sheet**

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road

Ann Arbor, MI 48103

### Organic Analysis **Data Summary Sheet**

#G001-002

ATS Project: Pall Corporation 7/7/21

ATS SRF: 630211 #G001-002

Sample Identification: Red Pond

6/14/21 7:30 AM Sample Date: Sample Time: Client

Sampled By: Laboratory Receipt Date: Sample Matrix: 6/30/21 Water

rameter	Method	Units	Result	Reporting Limit	Date	Time	By
ganic Analysis							
1.4-Diovane	EPA 1624	mg/L	0.35	0.02	7/1/21	21:15	SLS

Sample Identification: TW-20

6/14/21 Sample Date:

Sample Time: Sampled By: 11:30 AM Client 6/30/21

Laboratory Receipt Date: Sample Matrix: Water

rameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By	
ganic Analysis								
1.4-Diovane	EPA 1624	mg/L	0.82	0.02	7/2/21	0:12	SLS	

ATS Project:

Report Date: ATS SRF:

Pall Corporation 7/7/21 630211

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X1G001-002.21\SRF.0630211\ORG\_SRF\_0630211

rev. 7/7/21

Comments

All methods reference USEPA methods unless otherwise noted. na - Indicates not available / applicable.

Organic Analysis Data Summary Sheet

rev. 7/7/21

#G001-002

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Pall Corporation
Report Date: 7/7/21
ATS SRF: 630211 Sample Identification: Outfall 001

Sample Date: Sample Time: Sampled By: 6/15/21 na Client

6/30/21

Laboratory Receipt Date: Sample Matrix:

arameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By	
organic Analysis								
1,4-Dioxane	EPA 1624	mg/L	0.006	0.001	7/2/21	1:40	SLS	

Organic Analysis **Data Summary Sheet** #G001-002

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

Sample Matrix:

Sample Identification: MW-127d Sample Date: Sample Time: Sampled By: Laboratory Receipt Date: 8:40 AM

Client 6/30/21 Water

Analysis Time Analyzed By Reporting Limit Parameter Organic Analysis 1,4-Dioxane Method Units Result Date SLS 7/2/21 2:24

ATS Project: Pall Corporation
Report Date: 7/7/21
ATS SRF: 630211

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

Comments

All methods reference USEPA methods unless otherwise noted.
na - Indicates not available / applicable.



For: Ms. Sue Peters Pall Corporation 642 South Wagner Road

Ann Arbor, MI 48103

230 South Wagner Road Ann Arbor, Michigan 48103 Tel, 734995-095 Fax. 734995-3731 Michigan Laboratory ID: 8804

### **Organic Analysis Data Summary Sheet**

ATS Project: Pall Corporation Report Date: ATS SRF:

#G001-002 630211

Sample Identification: MW-127S

Sample Date: Sample Time: Sampled By: 6/16/21 9:49 AM Client Laboratory Receipt Date: Sample Matrix: 6/30/21

'arameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Irganic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	7/2/21	3:08	SLS

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X1G001-002.21\SRF 0630211\ORG\_\$RF\_0630211

230 South Wagner Road Ann Arbor, Michigan 48103 Tel. 734395-0395 Fax. 73431

rev. 7/7/21

rev. 7/7/21

Organic Analysis **Data Summary Sheet** 

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Pall Corporation
Report Date: 7/7/21 #G001-002 ATS SRF:

Sample Identification: Saginaw Forest Cabin #1 6/16/21

Sample Date: Sample Time: Sampled By:

Laboratory Receipt Date: Sample Matrix:

Client 6/30/21

Analysis Analysis Analyzed Reporting Limit Parameter Organic Analysis Method Units Result Date Time Ву 1,4-Dioxane EPA 1624

Sample Matrix:

Organic Analysis **Data Summary Sheet** 

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Pall Corporation
Report Date: 7/7/21 #G001-002 Report Date: 7/7/21 ATS SRF: 630211

Sample Identification: Saginaw Forest Cabin #2

Sample Date: Sample Time: Sampled By: 6/16/21 Client Laboratory Receipt Date: 6/30/21

Analysis Analysis Date Analyzed Reporting Limit Units Result Parameter Organic Analysis Method Time Ву 1,4-Dioxane EPA 1624 7/2/21 3:52 SLS

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X1G001-002.21\SRF.0630211\ORG. SRF.0630211

rev. 7/7/21

Organic Analysis

**Data Summary Sheet** #G001-002

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

Sample Identification: MW-78 6/16/21 1:22 PM Client

Sample Date: Sample Time: Sampled By: 6/30/21 Water Laboratory Receipt Date:

Analysis Analysis Analyzed Reporting Limit Parameter Method Units Result Date Time Ву Organic Analysis 1,4-Dloxa

ATS Project: Pall Corporation
Report Date: 7/7/21

ATS SRF: 630211

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

Y10001-002 21158E 0620211108G SBE 0630211

Comments

All methods reference USEPA methods unless otherwise noted

na - Indicates not available / applicable. Sample analyzed at native pH.



Pall Corporation

642 South Wagner Road

Ann Arbor, MI 48103

For. Ms. Sue Peters

290 South Wagner Road Ann Arbor, Michigan 48103 Tel. 734935-0355 Fax. 734935-3731 Michigan Laborztow ID: 8684

### Organic Analysis **Data Summary Sheet**

ATS Project: Pall Corporation Report Date: 7/7/21 630211 ATS SRF:

#G001-002

MW-125

Sample Date: Sample Time: Sampled By: 6/16/21 2:31 PM Client Laboratory Receipt Date: Sample Matrix: 6/30/21

Analysis Analysis Analyzed Reporting Limit Units Result Time By Organic Analysis 1,4-Dioxane EPA 1624 0.22 SLS

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X1G001-002.21\SRF.0630211\ORG\_SRF\_0630211

Organic Analysis

rev. 7/7/21

**Data Summary Sheet** ATS Project: Pall Corporation 7/7/21 #G001-002

For: Ms. Sue Peters
Pall Corporation
642 South Wagner Road Ann Arbor, MI 48103

Report Date: ATS SRF:

Sample Identification: MW-128d Sample Date: Sample Time: 6/17/21 9:18 AM Sampled By: Client Laboratory Receipt Date: Sample Matrix:

6/30/21 Water

Analysis Analysis Analyzed Reporting Limit Ву 'arameter Irganic Analysis Method Result Date Time 1,4-Dioxane EPA 1624

Organic Analysis Data Summary Sheet

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103 ATS Project: Pall Corporation
7/7/21
ATS SRF: 630211 #G001-002

Sample Identification: Outfall 001

Sample Date: Sample Time: Sampled By:

Laboratory Receipt Date: Sample Matrix:

6/16/21 Client 6/30/21 Water

Analysis Analysis Analyzed Reporting Limit Parameter Organic Analysis Method Units Result Date Time Ву SLS 0.001

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable. Sample analyzed at native pH.

Organic Analysis



**Data Summary Sheet** ATS Project: Pall Corporation
Report Date: 7/7/21 #G001-002

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

Sample Date:

Sample Time:

Sampled By:

Sample Identification: MW-37 6/17/21 11:43 AM Client

Laboratory Receipt Date Sample Matrix: 6/30/21 Water

Analysis Analyzed Reporting Limit Parameter Organic Analysis Method Units Result Date Time Ву 1,4-Dloxane

ATS SRF:

630211

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable

Y1G001-002 21ISBE 0630211/08Q SBE 0630211

Comments

All methods reference USEPA methods unless otherwise noted

na - Indicates not available / applicable.



642 South Wagner Road Ann Arbor, MI 48103

For: Ms. Sue Peters

Sample Matrix:

### Organic Analysis **Data Summary Sheet**

#G001-002

ATS Project: Pall Corporation
Report Date: 7/7/21
ATS SRF: 630211

Sample Identification: MW-58d

Sample Date: Sample Time: Sampled By: Laboratory Receipt Date: 6/17/21 1:02 PM Client 6/30/21 Water

Analyzed Analysis Analysis Reporting Limit Result Date Time By Parameter Organic Analysis 11:55 EPA 1624 0.017 0.001 7/2/21 1,4-Dloxane mg/L

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X1G001-C02-21ISRF 0530211IORG SRF 0630211

Sample Identification:

Organic Analysis Data Summary Sheet ATS Project: Pall Corporation
Report Date: 7/7/21

ATS SRF: 630211 #G001-002

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

Sample Time: Sampled By: Laboratory Receipt Date: Sample Matrix:

Sample Date:

Outfall 001

na Client 6/30/21

6/17/21

Analyzed Reporting Limit Date Time Ву Parameter Organic Analysis 1,4-Dioxane Result Method Units SLS 13:23 EPA 1624 0.006 0.001 7/2/21

Organic Analysis **Data Summary Sheet** 

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

Pall Corporation 7/7/21 ATS Project: #G001-002 Report Date: ATS SRF: 630211

Sample Identification: MW-58s

Sample Date: Sample Time: Sampled By: Laboratory Receipt Date:

Sample Matrix:

6/17/21 2:36 PM Client 6/30/21

Analyzed By Analysis Date Reporting Limit Parameter Organic Analysis 1,4-Dioxane Result Method Units SLS 0.17 0.01 7/2/21 12:39

Comments

All methods reference USEPA methods unless otherwise noted. na - Indicates not available / applicable.

X1G001-002.21\SRF.0630211\ORG\_SRF\_0630211

rev. 7/7/21

rev. 7/7/21

Organic Analysis **Data Summary Sheet** 

#G001-002

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

Sample Date:

Sample Matrix:

Sample Identification: Outfall 001

Sample Time: Sampled By; Laboratory Receipt Date: na Client 6/30/21 Water

Analyzed By Reporting Limit Parameter Organic Analysis 1,4-Dioxane Date Method Units Result Time 0.001 7/2/21 14:07 SLS

ATS Project: Pall Corporation
Report Date: 7/7/21

630211

ATS SRF:

Comments

All methods reference USEPA methods unless otherwise noted na - Indicates not available / applicable.

Sample analyzed at native pH.

na - Indicates not available / applicable. Sample analyzed at native pH.

All methods reference USEPA methods unless otherwise noted.

Comments

rev. 7/7/21



Sample Identification:

MW-131s

6/21/21

9:22 AM

Client

6/30/21

Method

Units

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

Sample Date: Sample Time: Sampled By:

Parameter

Organic Analysis 1,4-Dioxane

Laboratory Receipt Date: Sample Matrix:

### **Organic Analysis Data Summary Sheet**

Analysis Time

20:15

Date

7/2/21

#G001-002

Ву

SLS

ATS Project: Pall Corporation
Report Date: 7/7/21
ATS SRF: 630211

Reporting Limit

For. Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103 ATS Project: Pall Corporation
Report Date: 7/7/21
ATS SRF: 630211 #G001-002

Sample Identification: Red Pond

Sample Date: Sample Time: Sampled By: Laboratory Receipt Date: Sample Matrix: Water

8:00 AM Client 6/30/21

'arameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Irganic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.35	0.02	7/2/21	18:47	SLS

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

001-002.21\SRF 0630211\ORG\_SRF\_0630211

rev. 7/7/21

X1G001-002-21\SRF 0630211\ORG SRF 0630211

**Organic Analysis Data Summary Sheet** 

my 7/1/21

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Pall Corporation
Report Date: 7/7/21

ATS SRF: 630211 #G001-002

Sample Identification: MW-61s

Sample Date: 6/22/21 Sample Time: Sampled By: Laboratory Receipt Date: 10:15 AM Client 6/30/21

Sample Matrix: Water Analyzed By Parameter Organic Analysis 1,4-Dioxane Date Method Time EPA 1624 0.003 0.001 7/2/21 21:43 SLS

mg/L

Comments

All methods reference USEPA methods unless otherwise noted. na - Indicates not available / applicable.

**Organic Analysis Data Summary Sheet** 

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

175 Ju

ATS Project: Report Date: Pall Corporation 7/7/21 #G001-002 ATS SRF: 630211

Sample Identification: MW-131-d

Sample Date: Sample Time: Sampled By: 6/21/21 Laboratory Receipt Date: 6/30/21 Sample Matrix

Reporting Limit Method Units Time Ву 1,4-Dioxane EPA 1624 0.001 7/2/21 20:59 SLS

Comments

All methods reference USEPA methods unless otherwise noted. na - Indicates not available / applicable.

X1G001-002.21\SRF 0530211\ORG SRF 0530211

Comments

All methods reference USEPA methods unless otherwise noted.
na - Indicates not available / applicable.

rev. 7/7/21



For: Ms. Sue Peters Pall Corporation 642 South Wagner Road

Ann Arbor, MI 48103

### Organic Analysis **Data Summary Sheet**

rev. 7/7/21

Organic Analysis

#G001-002

**Data Summary Sheet** 

Report Date: ATS SRF:

Pall Corporation #G001-002 7/7/21 630211

Sample Identification: MW-61d

Sample Date: Sample Time: Sampled By: Laboratory Receipt Date: Sample Matrix:

6/22/21 11:26 AM Client 6/30/21

Analysis Analyzed Reporting Limit arameter Result Method Units By 1,4-Dioxane EPA 1624 0.011

Comments

All methods reference USEPA methods unless otherwise noted. na - Indicates not available / applicable

X1G001-002.21\SRF.0630211\ORG\_\$RF\_0630211

290 South Wagner Road Ann Arbor, Michigan 48103 Tel. 734/995-0995 Faz. 734/99 Michigan Laboratory ID: 5604

Pall Corporation 642 South Wagner Road

Sample Date: Sample Time:

Sample Identification: Outfall 001 6/22/21 Client

Sampled By: Laboratory Receipt Date: Sample Matrix: 6/30/21 Water

Analysis Analyzed Reporting Limit 'arameter Irganic Analysis Method Units Result Date Time Ву 1,4-Dioxane

ATS Project: Pall Corporation
Report Date: 777/21

ATS SRF:

MW-141s

Organic Analysis **Data Summary Sheet** 

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

Sample Matrix

ATS Project: Pall Corporation
Report Date: 7/7/21
ATS SRF: 630211 #G001-002

Sample Identification:

Sample Date: Sample Time: Sampled By: 6/22/21 Client Laboratory Receipt Date: 6/30/21

Analysis Time Reporting Limit Units Result Parameter Organic Analysis Method Date 1.4-Dioxane EPA 1624 0.001 7/2/21 23:11 SLS

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable

X1G001-002.21\SRF 0630211\ORG\_SRF\_0630211

rev. 7/7/21

**Organic Analysis Data Summary Sheet** #G001-002

For, Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

Sample Date:

Sample Identification: 465 DuPont 6/23/21 11:22 AM

Sample Time: Sampled By: Client 6/30/21 Laboratory Receipt Date: Sample Matrix: Water

Analysis Date Analyzed By Reporting Limit Parameter Organic Analysis 1,4-Dioxane Method Units Time EPA 1624 8.0 0.1 7/3/21 0:39 SLS

ATS Project:

Report Date: ATS SRF:

Pall Corporation 7/7/21 630211

Comments

All methods reference USEPA methods unless otherwise noted.
na - Indicates not available / applicable.

na - Indicates not available / applicable. Sample analyzed at native pH.

All methods reference USEPA methods unless otherwise noted.

Comments



For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Pall Corporation 7/7/21

ATS SRF: 630211

Sample Identification: 373 Pinewood Deep

Sample Date: Sample Time: Sampled By: Laboratory Receipt Date: Sample Matrix:

6/23/21 Client 6/30/21

Reporting Limit Units Result Method Ву Parameter
Organic Analysis 1,4-Dloxane EPA 1624 0.001 7/3/21 3:35 SLS

Comments

All methods reference USEPA methods unless otherwise noted. na - Indicates not available / applicable.

X1G001-002.21\SRF.0630211\ORG. SRF.0630211

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

Report Date: 7/7/21 ATS SRF: 630211

ATS Project: Pall Corporation

rev. 7/7/21

**Organic Analysis** 

**Data Summary Sheet** 

Sample Identification: MW-65i

Sample Date: Sample Time: Sampled By: 6/24/21 10:25 AM 6/30/21 Laboratory Receipt Date: Sample Matrix:

Analyzed Analysis Date Reporting Limit Parameter Organic Analysis Method Units Result Time Ву 1,4-Dioxane EPA 1624 0.004 0.001 7/3/21

### Organic Analysis Data Summary Sheet

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103 ATS Project: Pall Corporation
Report Date: 7/7/21
ATS SRF: 630211 #G001-002

Sample Identification: 373 Pinewood Shallow

Sample Date: Sample Time: Sampled By: Laboratory Receipt Date: Sample Matrix:

6/23/21 1:10 PM Client 6/30/21 Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.21	0.01	7/3/21	6:31	SLS

Comments

All methods reference USEPA methods unless otherwise noted.

X\G001-002.21\SRF 0630211\ORG\_SRF\_0630211

**Organic Analysis** Data Summary Sheet

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

Sample Date:

Sample Time: Sampled By:

MW-65s 6/24/21

11:38 AM Client 6/30/21

Laboratory Receipt Date: Sample Matrix:

Sample Identification:

Analysis Time Analyzed By Reporting Limit Parameter Organic Analysis Method Units Result Date 1,4-Dioxane EPA 1624 0.007 8:43 SLS

ATS Project: Pall Corporation
7/7/21
ATS SRF: 630211

Comments
All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

na - Indicates not available / applicable.



For. Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103 ATS Project: Pall Corporation
7/7/21
ATS SRF: 630211

#G001-002

9:27

SLS

7/3/21

Sample Identification: MW-65d

Sample Date: 6/24/21 Sample Time: Sampled By: Laboratory Receipt Date: 12:47 PM Client 6/30/21

Sample Matrix: Water Analysis Date Reporting Limit 'arameter Irganic Analysis 1,4-Dioxane Units Result EPA 1624 0.015 0.001

mg/L

Comments
All methods reference USEPA methods unless otherwise noted.
na - Indicates not available / applicable.

X1G001-002.21\SRF.0630211\ORG\_SRF\_0630211

Sample Identification: NMW-1s

**Organic Analysis** Data Summary Sheet

ATS Project: Pall Corporation
Report Date: 7/17/21
ATS SRF: 630211

rev. 7/7/21

#G001-002

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

Sampled By: Laboratory Receipt Date:

Sample Date: Sample Time:

Sample Matrix:

6/25/21 12:00 PM Client 6/30/21 Water

Analyzed By Analysis Date Analysis Time Reporting Limit rganic Analysis 1,4-Dioxane Method Units EPA 1624 mg/L 1.8 7/3/21 SLS 0.1 10:54



**Organic Analysis** Data Summary Sheet

Analysis

Time

10:11

Analyzed

SLS

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103 ATS Project: Pall Corporation 7/7/21
ATS SRF: 630211 #G001-002

Analysis

Date

7/3/21

Sample Identification: Outfall 001

Sample Date: Sample Time: 6/24/21

Sampled By: Laboratory Receipt Date: Sample Matrix: Water Reporting Limit Parameter Organic Analysis 1,4-Dioxane Method Result

EPA 1624

mg/L

0.008

0.001

Comments

All methods reference USEPA methods unless otherwise noted.
na - Indicates not available / applicable.

Sample analyzed at native pH.

X \G001-002.21\SRF 0630211\ORG\_SRF\_0630211

rev. 7/7/21

Organic Analysis Data Summary Sheet

For. Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103 ATS Project: Pall Corporation
Report Date: 7/7/21
ATS SRF: 630211 #G001-002

Sample Identification: NMW-2s

Sample Date: Sample Time:

12:20 PM Client 6/30/21

Sampled By: Laboratory Receipt Date: Sample Matrix:

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis	1).						
1,4-Dioxane	EPA 1624	mg/L	2.0	0.1	7/3/21	11:38	SLS

Comments All methods r

ods reference USEPA methods unless otherwise no

na - Indicates not available / applicab

Comments

All methods reference USEPA methods unless otherwise noted



Red Pond

6/28/21

7:55 AM

Client 6/30/21

Water

EPA 1624

Units

mg/L

Result

0.36

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road

Ann Arbor, MI 48103

Laboratory Receipt Date: Sample Matrix:

Sample Date:

Sample Time: Sampled By:

Parameter Organic Analysis

1,4-Dloxane

Sample Identification:

Organic Analysis **Data Summary Sheet** 

Analysis

Analysis

Date

Analyzed

By

SLS

ATS Project: Pall Corporation
Report Date: 7/7/21

ATS SRF: 630211

Reporting Limit

0.01

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103 ATS Project: Pall Corporation
Report Date: 7/7/21
ATS SRF: 630211 #G001-002

Sample Identification: Outfall 001

Sample Date: Sample Time: 6/27/21 na Client Sampled By: Laboratory Receipt Date: Sample Matrix: 6/30/21

Analysis Date Analysis Analyzed Reporting Limit Units Time Method Parameter Organic Analysis SLS 7/3/21 13:06 EPA 1624 0.006 0.001

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X1G001-002.21\SRF.0630211\ORG. SRF.0630211

Sample Identification:

X1G001-002.21\SRF.0630211\ORG\_SRF\_0630211

na - Indicates not available / applicable. Sample analyzed at native pH.

Comments

All methods reference USEPA methods unless otherwise noted.

Organic Analysis **Data Summary Sheet** 

Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

Pall Corporation 7/7/21 630211 #G001-002 ATS Project: Report Date: ATS SRF:

Sample Identification: Outfall 001

Sample Date: 6/28/21 Sample Time: na Client Sampled By: Laboratory Receipt Date: Sample Matrix: 6/30/21

Analysis Analyzed Reporting Limit Date Time Ву Units 'arameter Irganic Analysis Method SLS 15:18 0.001 7/3/21 EPA 1624 0.007

Organic Analysis **Data Summary Sheet** #G001-002

rev. 7/7/21

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

Sample Date:

Sample Time: Sampled By:

Sample Matrix:

Laboratory Receipt Date:

6/29/21 na Client 6/30/21 Water

Outfall 001

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dloxane	EPA 1624	mg/L	0.006	0.001	7/3/21	16:02	SLS

ATS Project: Pall Corporation
Report Date: 7/7/21

Comments All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable. Sample analyzed at native pH.

Comments
All methods reference USEPA methods unless otherwise noted.
na - Indicates not available / applicable.

Sample analyzed at native pH.

ch Number: QCORG0701211 Parameter: 1,4-Dioxane (EPA 1624)

## Quality Assurance / Quality Control **Data Summary**

ATS Project: Pall Corporation
Report Date: 7/7/21

#G001-002

Results of QA Samples run concurrently with project samples

REPLICATE ANALYSIS  Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 Red Pond 6/14/21 Matrix Spike	1.5 mg/L	1.3 mg/L	1.4 mg/L	13.9

SPIKES and/or QC CHECK SAMPLES  Sample/Analyte	Known	Spike	Analyzed	Recovery
	Concentration	Concentration	Concentration	(percent)
#G001-002 Laboratory Fortifed Blank Red Pond 6/14/21 Matrix Spike Red Pond 6/14/21 Matrix Spike Duplicate	<0.001 mg/L 0.35 mg/L 0.35 mg/L	0.020 mg/L 1.0 mg/L 1.0 mg/L	0.021 mg/L 1.5 mg/L 1.3 mg/L	106.3 112.1 92.9

Analyzed Concentration	QC Decision
<0.001 mg/L	Acceptable
	52000000

Comments:	
Calculations performed prior to rounding.	

Control Limits:

coverles
Laboratory Control Sample Recovery (85 - 115%)
Matrix Spike Recovery (80 - 120%) Relative Range Replicates (<20%)

QC Batch Number: QCORG0702211

Parameter: 1,4-Dioxane (EPA 1624)

Quality Assurance / Quality Control **Data Summary** 

#G001-002

ATS Project: Pall Corporation
Report Date: 7/7/21

Results of QA Samples run concurrently with project samples

REPLICATE ANALYSIS  Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 465 DuPont 6/23/21 Malrix Spike	3.6 mg/L	3.1 mg/L	3.4 mg/L	14.9

SPIKES and/or QC CHECK SAMPLES  Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	(percent)
#G001-002 Laboratory Fortified Blank 465 DuPont 6/23/21 Matrix Spike 465 DuPont 6/23/21 Matrix Spike Duplicate	<0.001 mg/L 0.87 mg/L 0.87 mg/L	0.020 mg/L 2.5 mg/L 2.5 mg/L	0.021 mg/L 3.6 mg/L 3.1 mg/L	105.8 111.0 90.9

BLANK ANALYSIS Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank	<0.001 mg/L	Acceptable

Comments:	
Calculations performed prior to rounding.	

Control Limits:

Recoveries
Laboratory Control Sample Recovery (85 - 115%)
Matrix Spike Recovery (80 - 120%)
Relative Range
Replicates (<20%)

I-002.21\SRF 0630211\ORG\_SRF\_0630211

CHAIN OF CUSTODY RECORD

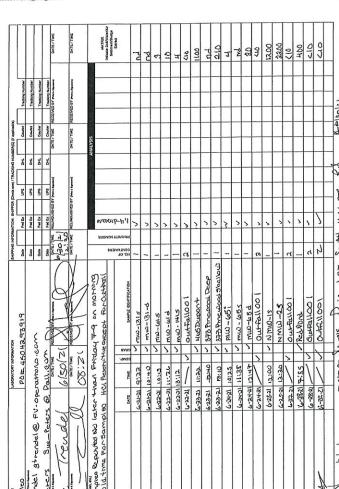
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Page 1

CHAIN OF CUSTODY RECORD

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### **Data Transmittal Cover Page**

Project Name: Pall Corporation ATS Project Number: G001-002

Org\_SRF\_0707211 ATS Report Number(s):

Client PO Number: 4504293919

This data report contains the results of four water samples, received by ATS on 7/7/21, to be analyzed for 1,4 Dioxane.

We certify that the sample analyses for this report have been conducted in accordance with guidelines provided in the referenced standard test method, and are consistent with detailed procedures described in a written Standard Operating Procedure specific to the ATS Laboratories, as regulated by USEPA. Laboratory data sheets, SOPs, and QAYQC information are available for inspection and sudit at the laboratory upon request. Unless specifically noted on the data report, all applicable sample preservation and holding time requirements have been net.

Recipient:	Ms. Sue Peters		Email: FAX Number:	Sue Peters@Pall.com
No. of Page	es (including cover pg.):	10		
From:	Sarah Stubblefield Senior Chemist / Lab Manager	Email: FAX Number:	Sarah, Stubblefie 734-995-3731	d@AnnArborTechnicalServices.com
Additional	Messago:			
Date:	7/9/21	Signed:	8A.	fa
	IF YOU DO NOT RECEIVE A	LL PAGES OF TH	IIS TRANSMITTAL	, PLEASE CALL 734-995-0995.

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X:\G001-002.21\Data\_Transmittal\_Cover\_Page SLS

A single QA/QC batch is defined as no more than 20 samples excluding method blanks (MB, LRB), fortified blanks (BS, LFB, LCS), matrix spikes (MS, SPK), and duplicates whether spiked or native (MSD, SPK DUP, DUP, LR).

### Data Deliverables

This data package constitutes a Level II package; other data report packages (Level I, Level IV DVP, EPA R5 EDD) are available upon request. There were no hardcopy data summary sheets generated for this project.

Sample Analysis

1.4-Dioxane Analysis (GC/MS): Samples were analyzed by purge and trap GC/MS in accordance with USEPA method 1624 (Volatile Organic Compounds by Isotope Dilution Gas Chromatography – Mass Spectrometry). An initial calibration with at least five levels was used to quantilate 1,4-Dioxane. Samples were reported to project specific reporting limits. Samples were reported as mg/L.

Anomalies Noted:

None

### Analytical QA/QC Summary

### Calibration Verification

Method calibration was verified through the analysis of a mid-level initial calibration verification (CV) standard at a frequency of every 12 hours. All verification standards met the acceptance criteria with the following exceptions:

None

Low system background was demonstrated through the analysis of instrument blanks at a minimum of every 12 hours. All instrument blanks met the acceptance criteria with the following exceptions:

### OA/OC Batch Summary

### Internal Standards

Internal standards areas and retention times met the acceptance criteria with the following exceptions:

### Laboratory Reagent Blanks

A laboratory reagent blank (LRB) was analyzed with each QA/QC batch. The LRB's met the acceptance criteria with the following exceptions:

None





### LABORATORY OPERATIONS CASE NARRATIVE

ATS Project Number: G001-002

Report Date: 7/9/21

SRF / SDG Number(s): 0707211 Client PO Number: 4504293919

### Case Narrative Summary

This case narrative applies to the following 4 samples that were received at Ann Arbor Technical Services, Inc. (ATS) on 7/7/21, and associated matrix-specific QA/QC:

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Client Sample Identification	Sample Date	Requested Turn Around Time	Analysis	Matrix
Received 7/7/21				
IW-2 09:01	6/30/21	Rush	1,4-Dioxane	Water
IW-2 09:34	6/30/21	Rush	1,4-Dioxane	Water
A2 Cleaning Supply	6/29/21	Rush	1,4-Dioxane	Water
Outfall 001	6/30/21	Rush	1,4-Dioxane	Water

Upon receipt, samples were scheduled for the following analyses:

1.4-Dioxane (USEPA 1624)

Number of Samples

4 + 1 Matrix Spike + 1 Matrix Spike Duplicate

### Sample Receipt, Chain of Custody Records, and Holding Times

Samples were delivered directly to ATS by Pall Corporation staff. Samples were received with proper chain of custody records included. Sample condition and anomalies, if any, are either presented in the "Sample Receipt" section of this report or in the comments on individual data sheets. All samples were prepared and analyzed within 45 days with the following exceptions:

None

None

### Data Review and Approval

All data contained in this report have been generated in accordance with guidelines provided in the referenced standard test method, and are consistent with detailed procedures described in a written standard operating procedures (SOPs) specific to the ATS Laboratory, as required by USEPA. All data are peer and management reviewed to ensure compliance with the above referenced SOP's and project specifications. In addition, all data conform to the laboratory's Quality Assurance / Quality Control Manuals.

G001-002.21/CN\_0707211.doc

Consultants in Chemistry & Environmental Science 290 South Wagner Road, Ann Arbor, Michigan 48103 Tel 734/995-0995 Fax 734/995-3731

### Laboratory Fortified Blanks / Laboratory Control Samples

A laboratory fortified blank (LFB) was analyzed with each QA/QC batch. The LFB's met the acceptance criteria with the following exceptions

### Matrix Spikes and Spike Duplicates

A matrix spike (MS) and matrix spike duplicate (MSD) was analyzed with each QA/QC batch. The MS/MSD's met the acceptance criteria with the following exceptions:

### Matrix Replicates

A matrix spike (MS) and matrix spike duplicate (MSD) was analyzed with each QA/QC batch. The replicates met the acceptance criteria with the following exceptions:

• None

### Sample Dilutions

Samples containing compounds at concentrations above the initial calibration curve were diluted and reanalyzed for those compounds. The following samples were diluted for 1,4-Dioxane:

• IW-2 6/30/21 09:01

· IW-2 6/30/21 09:34

Mark alitong

/ July 9, 2021

Mark T. DeLong (Quality Assurance Coordinator)

Philip B. Simon (Laboratory Director)

/ July 9, 2021





or. Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Pall Corporation
Report Date: 7/9/21

ATS SRF: 0707211

#G001-002

Sample Identification: IW-2

Sample Date:

6/30/21 9:01 AM

Sample Time: Sampled By: Laboratory Receipt Date: Sample Matrix Client 7/7/21 Water

Reporting Limit Parameter Organic Analysis 1,4-Dioxane Units Result 1.9

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X1G001-002-21\SRF 0707211\ORG\_SRF\_0707211

Organic Analysis Data Summary Sheet

or: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103 ATS Project: Pall Corporation
Report Date: 7/9/21
ATS SRF: 0707211

#G001-002

Sample Identification: A2 Cleaning Supply

Sample Date: Sample Time: Sampled By: Laboratory Receipt Date: Sample Matric

6/29/21 1:30 PM Client 7/7/21 Water

Analyzed Parameter Organic Analysis SLS EPA 1624 1,4-Dioxane

250 South Wagnar Ro Ann Arbor, Michigan Tel. 734/93-0995 Fan Wichigan Laboratory

**Organic Analysis Data Summary Sheet** 

Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Pall Corporation
Report Date: 7/9/21
ATS SRF: 0707211 #G001-002

Sample Identification: IW-2

Sample Date: 6/30/21 Sample Time: Sampled By:

9:34 AM Client 7/7/21 Laboratory Receipt Date: Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Date	Time	By	
Organic Analysis								
1,4-Dioxane	EPA 1624	mg/L	1.9	0.1	7/7/21	20:42	SLS	

Comments
All methods reference USEPA methods unless otherwise noted.
na - Indicates not available / applicable.

X1G001-002 21ISRF 0707211VORG\_SRF\_0707211

415llu

Organic Analysis Data Summary Sheet

For: Ms. Sue Peters Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103 ATS Project: Pall Corporation
Report Date: 7/9/21

ATS SRF: 0707211 #G001-002

Sample Identification: Outfall 001

Sample Date: Sample Time: Sampled By: Laboratory Receipt Date: Sample Matrix: 6/30/21 na Client

7/7/21

Analysis Analysis Analyzed By Reporting Limit Parameter Organic Analysis 1,4-Dioxane Units Result Date Time 7/7/21 23:38 SLS

Comments hods reference USEPA methods unless otherwise noted.

X1G001-002.21\SRF 0707211\ORG\_SRF\_0707211

na - Indicates not available / applicable.

Comments

All methods reference USEPA methods unless otherwise noted. na - Indicates not available / applicable.

Sample analyzed at native pH.



## Quality Assurance / Quality Control **Data Summary**

Parameter: 1,4-Dioxane (EPA 1624)

ATS Project: Pall Corporation Report Date: 7/9/21

#G001-002

Results of QA Samples run concurrently with project samples

REPLICATE ANALYSIS Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)	
#G001-002 RM-2 0/30/21 (9:01 AM) Mairk Spike	4.2 mg/L	4.6 mg/L	4.4 mg/L	8.8	
SPIKES and/or QC CHECK SAMPLES Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)	
#G001-002 Laboralory Fortified Blank NV2 g/0021 (9:01 AM) Marix Spike NV-2 g/3021 (9:01 AM) Marix Spike Duplicate	<0.001 mg/L 1.9 mg/L 1.9 mg/L	0.020 mg/L 2.5 mg/L 2.5 mg/L	0.020 mg/L 4.2 mg/L 4.6 mg/L	97.9 94.5 110.1	
BLANK ANALYSIS Sample		Analyzed	Concentration	QC Decision	
#G001-002 Laboratory Reagent Blank		<0.0	001 mg/L	Acceptable	

secoveries
Laboratory Control Sample Recovery (85 - 115%)
Matrix Spike Recovery (80 - 120%)
Relative Range
Replicates ( <20%)

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