

CASE NARRATIVE

Monthly Data Pall Life Sciences
Project: 1,4-Dioxane Remediation
Date: August, 2019

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.

The samples requiring analysis for 1,4-dioxane were split between Pall Corporation's Environmental Laboratory and Ann Arbor Technical Services (ATS). All bromate samples were analyzed at Pall Corporation's Environmental Laboratory. All 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.

The delay in sample analysis was due to a catastrophic autosampler failure that took considerable time to isolate and fix. The manufacturer's representative made major repairs only to find out that these repairs did not entirely fix the problems. Samples were sent out to ATS for analysis after the service engineer was unable to eliminate all problems during his service call.

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 , with the exception of 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 ($\pm 2^\circ\text{C}$) 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 1.0ppb (part per billion, micrograms per liter, µg/L). All quality control parameters were within the acceptance limits. All data is reported with two significant figures.

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. All data is reported with 2 significant figures.

Qualifiers

1,4-Dioxane Qualifier Codes:

<u>Qualifier Code</u>	<u>Description</u>
nd:	The compound was analyzed for, but was 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.
B:	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.
O:	Samples analyzed in outside laboratory.
S:	Samples split with DEQ.

Bromate Qualifier Codes:

<u>Qualifier Code</u>	<u>Description</u>
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

Analyst: Susan E.O. Peters Susan E.O. Peters Date: 09-11-19

Report Checked by: Laurel Beyer Laurel Beyer Date: 9/11/19

Sample Analysis Report

August, 2019

642 South Wagner Road
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Analyst Initials: SEOP
Date: 9-11-19

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)
Extraction Wells								
C3								
DOLPH-08-08-19-09:07-1	120	1.0						H
TW-10-08-16-19-09:10-1	380	10.0						O, D, H
TW-20-08-08-19-09:26-1	940	10.0						D
D2								
LB-4-08-08-19-08:47-1	490	10.0						O, D, H
TW-21-08-08-19-08:53-1	240	10.0						O, D, H
TW-9-08-16-19-09:16-1	600	10.0						O, D, H
E								
TW-17-08-16-19-09:15-1	140	10.0						O, D, H
TW-18-08-08-19-09:39-1	310	1.0						O, D, H
TW-19-08-08-19-08:36-1	640	10.0						O, D, H
TW-23-08-08-19-08:34-1	520	10.0						O, D, H
Marshy								
PW-1-08-08-19-09:35-1	930	10.0						O, D, H
SW								
TW-22-08-08-19-09:23-1	510	10.0						D
TW-28-08-08-19-09:18-1	740	10.0						D
Monitoring Wells								

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)
C3								
MW-105s-08-27-19-09:15-1	520	10.0						O, D
MW-16-08-20-19-11:56-1	1.7	1.0						H
D0								
A2 Cleaning Supply-08-05-19-14:00-1	99	1.0						
MW-40s-08-29-19-09:07-1	nd	1.0						H
MW-53d-08-05-19-10:50-1	nd	1.0						
MW-53i-08-05-19-13:21-1	57	1.0						
MW-53s-08-05-19-11:56-1	nd	1.0						
D2								
170 April-08-29-19-10:44-1	3.5	1.0						
3365 Jackson Rd-08-29-19-12:44-1	150	1.0						
373 Pinewood Shallow-08-22-19-12:55-1	260	10.0						O, D, H
MW-107-08-13-19-14:03-1	790	10.0						O, D, H
MW-113-08-08-19-09:36-1	96	1.0						
MW-118-08-22-19-14:29-1	55	1.0						H
MW-120s-08-21-19-11:21-1	nd	1.0						H
MW-122s-08-22-19-10:44-1	270	10.0						O, D, H
MW-126s-08-30-19-11:05-1	nd	1.0						
MW-130i-08-27-19-12:05-1	5.4	1.0						
MW-130s-08-27-19-11:13-1	nd	1.0						
MW-30i-08-23-19-10:33-1	3.2	1.0						H
MW-54d-08-07-19-10:36-1	15	1.0						
MW-54s-08-07-19-09:24-1	nd	1.0						
MW-77-08-19-19-12:03-1	1600	10.0						O, D, H
MW-92-08-19-19-10:30-1	55	1.0						H

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-BE-1d-08-14-19-12:53-1	620	10.0						O, D, H
MW-BE-1s-08-14-19-14:05-1	750	10.0						O, D, H
MW-KD-1d-08-13-19-12:43-1	350	10.0						O, D, H
MW-KD-1s-08-13-19-11:33-1	97	1.0						H
E								
373 Pinewood Deep-08-22-19-12:07-1	nd	1.0						H
MW-100-08-26-19-13:56-1	2100	40.0						O, D
MW-103s-08-06-19-13:21-1	71	1.0						
MW-105d-08-27-19-09:22-1	250	10.0						O, D, H
MW-106d-08-26-19-11:15-1	nd	1.0						
MW-106s-08-26-19-12:31-1	260	10.0						O, D
MW-108d-08-20-19-14:28-1	650	20.0						O, D, H
MW-108s-08-20-19-13:15-1	310	10.0						O, D, H
MW-112i-08-06-19-12:44-1	10	1.0						
MW-112s-08-06-19-12:12-1	nd	1.0						
MW-120d-08-21-19-09:57-1	nd	1.0						H
MW-122d-08-22-19-08:50-1	nd	1.0						H
MW-126d-08-30-19-09:52-1	nd	1.0						
MW-130d-08-27-19-10:51-1	nd	1.0						
MW-135-08-19-19-14:23-1	nd	1.0						H
MW-30d-08-23-19-11:42-1	140	10.0						O, D
MW-64-08-01-19-14:03-1	34	1.0						
MW-66-08-01-19-11:31-1	1.4	1.0						
MW-69-08-23-19-09:06-1	nd	1.0						H
MW-70-08-23-19-13:12-1	nd	1.0						H
MW-72d-08-23-19-14:45-1	690	10.0						O, D
MW-76i-08-06-19-10:11-1	91	1.0						H

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-76s-08-06-19-11:25-1	250	10.0						O, D, H
MW-79d-08-07-19-11:58-1	nd	1.0						
MW-79s-08-07-19-13:10-1	400	10.0						O, D, H
MW-81-08-09-19-10:36-1	220	10.0						O, D, H
MW-82s-08-09-19-12:00-1	360	10.0						O, D, H
MW-84s-08-06-19-14:35-1	58	1.0						
MW-85-08-08-19-13:52-1	390	10.0						D
MW-88-08-08-19-12:35-1	240	10.0						O, D, H
MW-89-08-14-19-10:05-1	nd	1.0						H
MW-90-08-14-19-11:25-1	9.7	1.0						V
MW-97d-08-16-19-11:11-1	nd	1.0						H
MW-97s-08-16-19-12:26-1	nd	1.0						H
MW-98s-08-19-19-09:06-1	4.2	1.0						H
MW-99d-08-16-19-08:41-1	nd	1.0						H
MW-99s-08-16-19-09:51-1	nd	1.0						H
Not Determined								
2575 Valley-08-08-19-11:00-1	87	1.0						H
Surface Water								
Not Applicable								
HC/HR-08-01-19-08:40-1				nd	2.0			
HC/HR-08-02-19-08:03-1				nd	2.0			
HC/HR-08-05-19-08:35-1				nd	2.0			
HC/HR-08-06-19-08:28-1				nd	2.0			
HC/HR-08-07-19-09:15-01				nd	2.0			
HC/HR-08-08-19-09:30-1				nd	2.0			
HC/HR-08-09-19-08:00-1				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-08-12-19-08:55-1			nd	2.0				
HC/HR-08-13-19-08:06-1			nd	2.0				
HC/HR-08-14-19-08:06-1			nd	2.0				
HC/HR-08-15-19-08:10-1			nd	2.0				
HC/HR-08-16-19-08:30-1			nd	2.0				
HC/HR-08-19-19-09:35-1			nd	2.0				
HC/HR-08-20-19-08:55-1			nd	2.0				
HC/HR-08-21-19-07:23-1			nd	2.0				
HC/HR-08-22-19-10:13-1			nd	2.0				
HC/HR-08-23-19-08:35-1			nd	2.0				
HC/HR-08-26-19-08:06-1			nd	2.0				
HC/HR-08-27-19-08:30-1			nd	2.0				
HC/HR-08-28-19-07:20-1			nd	2.0				
HC/HR-08-29-19-08:20-1			nd	2.0				
HC/HR-08-30-19-08:05-1			nd	2.0				
Treatment System								
OUTFALL-08-01-19-1	5.8	1.0						
OUTFALL-08-01-19-2			5.7	0.5				
OUTFALL-08-04-19-1	5.8	1.0						
OUTFALL-08-04-19-2			5.6	5.0				
OUTFALL-08-05-19-2			5.1	5.0				
OUTFALL-08-05-19-1	5.3	1.0						
OUTFALL-08-06-19-2			5.2	5.0				
OUTFALL-08-06-19-1	6.6	1.0						
OUTFALL-08-07-19-2			5.1	5.0				
OUTFALL-08-07-19-1	6.4	1.0						
OUTFALL-08-08-19-1	6.2	1.0						

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-08-08-19-2			5.4	5.0				
OUTFALL-08-11-19-1	6.3	1.0						
OUTFALL-08-11-19-2			6.3	5.0				
OUTFALL-08-12-19-1	6.1	1.0						
OUTFALL-08-12-19-2			5.6	5.0				
OUTFALL-08-13-19-2			6.3	5.0				
OUTFALL-08-13-19-1	5.9	1.0						
OUTFALL-08-14-19-2			5.9	5.0				
OUTFALL-08-14-19-1	6.3	1.0						
OUTFALL-08-15-19-2			6.2	5.0				
OUTFALL-08-15-19-1	4.8	1.0						H
OUTFALL-08-18-19-2			6.0	5.0				
OUTFALL-08-18-19-1	5.0	1.0						H
OUTFALL-08-19-19-2			nd	5.0				
OUTFALL-08-19-19-1	6.0	1.0						H
OUTFALL-08-20-19-2			5.5	5.0				
OUTFALL-08-20-19-1	5.9	1.0						H
OUTFALL-08-21-19-00:00-2			5.1	5.0				
OUTFALL-08-21-19-00:00-1	5.8	1.0						H
OUTFALL-08-22-19-02			5.5	5.0				
OUTFALL-08-22-19-01	6.0	1.0						H
OUTFALL-08-25-19-2			5.2	5.0				
OUTFALL-08-25-19-1	6.1	1.0						H
OUTFALL-08-26-19-2			5.8	5.0				
OUTFALL-08-26-19-1	5.7	1.0						H
OUTFALL-08-27-19-1	5.6	1.0						H
OUTFALL-08-27-19-2			6.2	5.0				

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-08-28-19-1	5.2	1.0						
OUTFALL-08-28-19-2			6.0	5.0				
OUTFALL-08-29-19-1	6.3	1.0						
OUTFALL-08-29-19-2			5.6	5.0				
Red Pond-08-05-19-09:30-1	350	10.0						D
Red Pond-08-12-19-08:26-1	340	10.0						D, H
Red Pond-08-19-19-12:30-1	330	10.0						D, H
Red Pond-08-26-19-08:00-1	340	10.0						D, H

Qualifiers

1,4-Dioxane Qualifier Codes:

<i>Qualifier Code</i>	<i>Description</i>
nd:	The compound was analyzed for, but was 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.
B:	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.
O:	Samples analyzed in outside laboratory.
S:	Samples split with DEQ.



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Wisconsin Laboratory ID: 998321720

Data Transmittal Cover Page

Project Name: Pall Corporation
ATS Project Number: G001-002
ATS Report Number(s): SRF_0904191

Project Description: This data report contains the results of twenty nine water samples, received by ATS on 9/4/19 to be analyzed for 1,4-Dioxane.

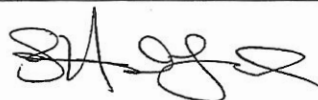
We certify that the sample analyses for this report have been conducted in accordance with guidelines provided in the referenced standard test method, and are consistent with detailed procedures described in a written Standard Operating Procedure specific to the ATS Laboratories, as required by USEPA. 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.

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No. of Pages (including cover pg.): 38

From: Sarah Stubblefield Email: Sarah.Stubblefield@AnnArborTechnicalServices.com
Senior Chemist / Lab Manager FAX Number: 734-995-3731

Additional Message: _____

Date: 9/6/19 Signed: 

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LABORATORY OPERATIONS
CASE NARRATIVE

ATS Project Number: G001-002
Report Date: 9/6/19
SDG Number's: 0904191

Case Narrative Summary

This case narrative applies to the following twenty nine samples that were received by Ann Arbor Technical Services, Inc. (ATS) on 9/4/19, and associated matrix-specific QA/QC.

Client Sample Identification	Sample Date	Requested Turn Around Time	Analysis	Matrix
TW-17	8/16/19	Rush	1,4-Dioxane	Water
TW-9	8/16/19	Rush	1,4-Dioxane	Water
MW-BE-1d	8/14/19	Rush	1,4-Dioxane	Water
MW-BE-1s	8/14/19	Rush	1,4-Dioxane	Water
MW-77	8/19/19	Rush	1,4-Dioxane	Water
MW-108s	8/20/19	Rush	1,4-Dioxane	Water
MW-108d	8/20/19	Rush	1,4-Dioxane	Water
MW-122s	8/22/19	Rush	1,4-Dioxane	Water
373 PINWOOD SHALLOWS	8/22/19	Rush	1,4-Dioxane	Water
MW-30d	8/23/19	Rush	1,4-Dioxane	Water
MW-72d	8/23/19	Rush	1,4-Dioxane	Water
MW-108s	8/26/19	Rush	1,4-Dioxane	Water
MW-100	8/26/19	Rush	1,4-Dioxane	Water
MW-105s	8/27/19	Rush	1,4-Dioxane	Water
MW-105d	8/27/19	Rush	1,4-Dioxane	Water
MW-76s	8/6/19	Rush	1,4-Dioxane	Water
TW-19	8/8/19	Rush	1,4-Dioxane	Water
TW-23	8/8/19	Rush	1,4-Dioxane	Water
LB-4	8/8/19	Rush	1,4-Dioxane	Water
TW-21	8/8/19	Rush	1,4-Dioxane	Water
TW-18	8/8/19	Rush	1,4-Dioxane	Water
PW-1	8/8/19	Rush	1,4-Dioxane	Water
MW-79s	8/7/19	Rush	1,4-Dioxane	Water
MW-88	8/8/19	Rush	1,4-Dioxane	Water
MW-81	8/9/19	Rush	1,4-Dioxane	Water
MW-82s	8/9/19	Rush	1,4-Dioxane	Water

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Consultants in Chemistry & Environmental Science
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Samples cont.

Client Sample Identification	Sample Date	Requested Turn Around Time	Analysis	Matrix
MW-KD-1d	8/13/19	Rush	1,4-Dioxane	Water
MW-107	8/13/19	Rush	1,4-Dioxane	Water
TW-10	8/16/19	Rush	1,4-Dioxane	Water

Upon receipt, samples were scheduled for the following analyses:

Analysis	Number of Samples
• 1,4-Dioxane by US EPA 1624	• 29 + 2 Matrix Spike + 2 Matrix Spike Duplicate

Sample Receipt and Chain of Custody Records

Samples were delivered directly to ATS by Pall Corporation staff. Samples were received with proper chain of custody records included. Sample condition and anomalies are presented in the "Chain of Custody and Sample Receipt Documentation" section of this report.

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 procedure (SOP) specific to the ATS Laboratory, as required by US EPA. 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).

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 in accordance with EPA 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.

Anomalies Noted:

- None



Analytical QA/QC Summary

Calibration Verification

Method calibration was verified through the running 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

Instrument Blanks

Instrument blanks were analyzed at a frequency of every 12 hours. All blanks met the acceptance criteria with the following exceptions:

- None

QA/QC Batch Summary

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 Fortified Blanks and Matrix Spikes

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

- None

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

Laboratory Sample ID	Analytical method	Constituent	Percent Recovery	Acceptance Limits
MW-105d Matrix Spike	USEPA 1624	1,4 Dx	121.3	80-120%

Matrix Duplicates

A replicate analysis was analyzed with each QA/QC batch. All 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:

- All Samples



/ September 6, 2019

Mark T. DeLong (Quality Assurance Coordinator)



/ September 6, 2019

Philip B. Simon (Laboratory Director)



Organic Analysis
Data Summary Sheet

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

ATS Project: Pall Corporation #G001-002
Report Date: 9/6/19
ATS SRF: 0904191 (Rush)

Sample Identification: MW-76S

Sample Date: 8/6/19
Sample Time: 11:25 AM
Sampled By: Client
Laboratory Receipt Date: 9/4/19
Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.25	0.01	9/4/19	12:28	JEB

Comments

All methods reference USEPA methods unless otherwise noted.



**Organic Analysis
Data Summary Sheet**

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: TW-23

Sample Date: 8/8/19
 Sample Time: 8:40 AM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.52	0.01	9/4/19	15:24	JEB

Comments
 All methods reference USEPA methods unless otherwise noted.

**Organic Analysis
Data Summary Sheet**

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: TW-19

Sample Date: 8/8/19
 Sample Time: 8:56 AM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.64	0.01	9/4/19	14:40	JEB

Comments
 All methods reference USEPA methods unless otherwise noted.

Organic Analysis Data Summary Sheet

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: TW-21

Sample Date: 8/8/19
 Sample Time: 8:53 AM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.24	0.01	9/4/19	16:53	JEB

Comments

All methods reference USEPA methods unless otherwise noted.

X:\G001-002.1\ORG_SRF_0904191

rev. 9/06/19

Organic Analysis Data Summary Sheet

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: LB-4

Sample Date: 8/8/19
 Sample Time: 8:50 AM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.49	0.01	9/4/19	16:08	JEB

Comments

All methods reference USEPA methods unless otherwise noted.

X:\G001-002.1\ORG_SRF_0904191

rev. 9/06/19

**Organic Analysis
 Data Summary Sheet**

**Organic Analysis
 Data Summary Sheet**

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: PW-1

Sample Date: 8/8/19
 Sample Time: 9:38 AM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Sample Identification: TW-18

Sample Date: 8/8/19
 Sample Time: 9:39 AM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.93	0.01	9/4/19	18:21	JEB

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.31	0.01	9/4/19	17:37	JEB

Comments
 All methods reference USEPA methods unless otherwise noted.

Comments
 All methods reference USEPA methods unless otherwise noted.



290 South Wagner Road
Ann Arbor, Michigan 48103
Tel. 734/995-0995 Fax. 734/995-3731
Michigan Laboratory ID: 9804
Wisconsin Laboratory ID: 988321720

Organic Analysis Data Summary Sheet

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

ATS Project: Pall Corporation #G001-002
Report Date: 9/6/19
ATS SRF: 0904191 (Rush)

Sample Identification: MW-88

Sample Date: 8/8/19
Sample Time: 12:35 PM
Sampled By: Client
Laboratory Receipt Date: 9/4/19
Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.24	0.01	9/4/19	20:09	JEB

Comments

All methods reference USEPA methods unless otherwise noted.

X:\G001-002.19\ORG_SRF_0904191

rev. 9/06/19



290 South Wagner Road
Ann Arbor, Michigan 48103
Tel. 734/995-0995 Fax. 734/995-3731
Michigan Laboratory ID: 9804
Wisconsin Laboratory ID: 988321720

Organic Analysis Data Summary Sheet

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

ATS Project: Pall Corporation #G001-002
Report Date: 9/6/19
ATS SRF: 0904191 (Rush)

Sample Identification: MW-79S

Sample Date: 8/7/19
Sample Time: 1:10 PM
Sampled By: Client
Laboratory Receipt Date: 9/4/19
Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.40	0.01	9/4/19	19:25	JEB

Comments

All methods reference USEPA methods unless otherwise noted.

X:\G001-002.19\ORG_SRF_0904191

rev. 9/06/19

**Organic Analysis
 Data Summary Sheet**

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: MW-82S

Sample Date: 8/9/19
 Sample Time: 12:00 PM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.36	0.01	9/4/19	21:38	JEB

Comments
 All methods reference USEPA methods unless otherwise noted.

**Organic Analysis
 Data Summary Sheet**

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: MW-81

Sample Date: 8/9/19
 Sample Time: 10:36 AM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.22	0.01	9/4/19	20:53	JEB

Comments
 All methods reference USEPA methods unless otherwise noted.

**Organic Analysis
 Data Summary Sheet**

**Organic Analysis
 Data Summary Sheet**

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: MW-107

Sample Date: 8/13/19
 Sample Time: 2:03 PM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.79	0.01	9/4/19	23:06	JEB

Comments
 All methods reference USEPA methods unless otherwise noted.

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: MW-KD-1d

Sample Date: 8/13/19
 Sample Time: 12:43 PM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.35	0.01	9/4/19	22:22	JEB

Comments
 All methods reference USEPA methods unless otherwise noted.

**Organic Analysis
 Data Summary Sheet**

**Organic Analysis
 Data Summary Sheet**

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: TW-10

Sample Date: 8/16/19
 Sample Time: 9:08 AM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Sample Identification: TW-17

Sample Date: 8/16/19
 Sample Time: 9:11 AM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.38	0.01	9/4/19	23:50	JEB

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.14	0.01	9/5/19	4:59	JEB

Comments
 All methods reference USEPA methods unless otherwise noted.

Comments
 All methods reference USEPA methods unless otherwise noted.



290 South Wagner Road
Ann Arbor, Michigan 48103
Tel: 734/995-0995 Fax: 734/995-3731
Michigan Laboratory ID: 9604
Wisconsin Laboratory ID: 998321720

Organic Analysis Data Summary Sheet

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

ATS Project: Pall Corporation #G001-002
Report Date: 9/6/19
ATS SRF: 0904191 (Rush)

Sample Identification: MW-BE-1d

Sample Date: 8/14/19
Sample Time: 12:53 PM
Sampled By: Client
Laboratory Receipt Date: 9/4/19
Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.62	0.01	9/5/19	8:27	JEB

Comments

All methods reference USEPA methods unless otherwise noted.

X:\G001-002.19\ORQ_SRF_0904191

rev. 9/06/19



290 South Wagner Road
Ann Arbor, Michigan 48103
Tel: 734/995-0995 Fax: 734/995-3731
Michigan Laboratory ID: 9604
Wisconsin Laboratory ID: 998321720

Organic Analysis Data Summary Sheet

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

ATS Project: Pall Corporation #G001-002
Report Date: 9/6/19
ATS SRF: 0904191 (Rush)

Sample Identification: TW-9

Sample Date: 8/16/19
Sample Time: 9:15 AM
Sampled By: Client
Laboratory Receipt Date: 9/4/19
Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.60	0.01	9/5/19	5:43	JEB

Comments

All methods reference USEPA methods unless otherwise noted.

X:\G001-002.19\ORQ_SRF_0904191

rev. 9/06/19

Organic Analysis Data Summary Sheet

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: MW-105d

Sample Date: 8/27/19
 Sample Time: 9:22 AM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.25	0.01	9/5/19	2:46	JEB

Comments

All methods reference USEPA methods unless otherwise noted.

Organic Analysis Data Summary Sheet

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: MW-BE-1s

Sample Date: 8/14/19
 Sample Time: 2:05 PM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.75	0.01	9/5/19	7:11	JEB

Comments

All methods reference USEPA methods unless otherwise noted.

Organic Analysis Data Summary Sheet

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: MW-77

Sample Date: 8/19/19
 Sample Time: 12:03 PM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	1.6	0.02	9/5/19	7:55	JEB

Comments

All methods reference USEPA methods unless otherwise noted.

Organic Analysis Data Summary Sheet

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: MW-108s

Sample Date: 8/20/19
 Sample Time: 1:15 PM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.31	0.01	9/5/19	8:39	JEB

Comments

All methods reference USEPA methods unless otherwise noted.



290 South Wagner Road
Ann Arbor, Michigan 48103
Tel. 734/995-0995 Fax. 734/995-3731
Michigan Laboratory ID: 9604
Wisconsin Laboratory ID: 988321720

Organic Analysis Data Summary Sheet

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

ATS Project: Pall Corporation #G001-002
Report Date: 9/6/19
ATS SRF: 0904191 (Rush)

Sample Identification: MW-108d

Sample Date: 8/20/19
Sample Time: 11:28 AM
Sampled By: Client
Laboratory Receipt Date: 9/4/19
Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.65	0.02	9/5/19	9:23	JEB

Comments

All methods reference USEPA methods unless otherwise noted.

X:\G001-002.19\ORG_SRF_0904191

rev. 9/06/19



290 South Wagner Road
Ann Arbor, Michigan 48103
Tel. 734/995-0995 Fax. 734/995-3731
Michigan Laboratory ID: 9604
Wisconsin Laboratory ID: 988321720

Organic Analysis Data Summary Sheet

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

ATS Project: Pall Corporation #G001-002
Report Date: 9/6/19
ATS SRF: 0904191 (Rush)

Sample Identification: MW-122s

Sample Date: 8/22/19
Sample Time: 10:44 AM
Sampled By: Client
Laboratory Receipt Date: 9/4/19
Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.27	0.01	9/5/19	10:07	JEB

Comments

All methods reference USEPA methods unless otherwise noted.

X:\G001-002.19\ORG_SRF_0904191

rev. 9/06/19

**Organic Analysis
 Data Summary Sheet**

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: 373 PINWOOD SHALLOWS

Sample Date: 8/22/19
 Sample Time: 12:55 PM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.26	0.01	9/5/19	10:51	JEB

Comments
 All methods reference USEPA methods unless otherwise noted.

**Organic Analysis
 Data Summary Sheet**

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: MW-30d

Sample Date: 8/23/19
 Sample Time: 11:42 AM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.14	0.01	9/5/19	11:35	JEB

Comments
 All methods reference USEPA methods unless otherwise noted.

**Organic Analysis
Data Summary Sheet**

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/5/19
 ATS SRF: 0904191 (Rush)

Sample Identification: MW-72d

Sample Date: 8/23/19
 Sample Time: 2:45 PM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.68	0.01	9/5/19	12:19	JEB

Comments
 All methods reference USEPA methods unless otherwise noted.

X:\G001-002.19\ORG_SRF_0904191

rev. 9/06/19

**Organic Analysis
Data Summary Sheet**

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: MW-106s

Sample Date: 8/25/19
 Sample Time: 12:31 PM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis 1,4-Dioxane	EPA 1624	mg/L	0.26	0.01	9/5/19	13:03	JEB

Comments
 All methods reference USEPA methods unless otherwise noted.

X:\G001-002.19\ORG_SRF_0904191

rev. 9/06/19

**Organic Analysis
 Data Summary Sheet**

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: MW-100

Sample Date: 8/26/19
 Sample Time: 1:56 PM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	2.1	0.04	9/5/19	13:47	JEB

Comments
 All methods reference USEPA methods unless otherwise noted.

**Organic Analysis
 Data Summary Sheet**

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

ATS Project: Pall Corporation #G001-002
 Report Date: 9/6/19
 ATS SRF: 0904191 (Rush)

Sample Identification: MW-105s

Sample Date: 8/27/19
 Sample Time: 9:15 AM
 Sampled By: Client
 Laboratory Receipt Date: 9/4/19
 Sample Matrix: Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.52	0.01	9/5/19	14:31	JEB

Comments
 All methods reference USEPA methods unless otherwise noted.



230 South Wagner Road
Ann Arbor, Michigan 48103
Tel. 734/995-0995 Fax. 734/995-3731
Michigan Laboratory ID: 9604
Wisconsin Laboratory ID: 998321720

Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG0904191
Parameter: 1,4-Dioxane (EPA 1624)

ATS Project: Pall Corporation #G001-002
Report Date: 9/6/19

Results of QA Samples run concurrently with project samples

REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 MW-76s Matrix Spike	1.3 mg/L	1.4 mg/L	1.3 mg/L	7.2
MW-105d Matrix Spike	0.86 mg/L	0.83 mg/L	0.84 mg/L	3.9

SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002 Laboratory Fortified Blank #1	<0.001 mg/L	0.010 mg/L	0.011 mg/L	107.8
Laboratory Fortified Blank #2	<0.001 mg/L	0.010 mg/L	0.012 mg/L	118.5
MW-76s Matrix Spike	0.25 mg/L	1.0 mg/L	1.3 mg/L	103.9
MW-76s Matrix Spike Duplicate	0.25 mg/L	1.0 mg/L	1.4 mg/L	113.6
MW-105d Matrix Spike	0.25 mg/L	0.50 mg/L	0.86 mg/L	121.3*
MW-105d Matrix Spike Duplicate	0.25 mg/L	0.50 mg/L	0.83 mg/L	114.7

BLANK ANALYSIS

Sample	Analyzed Concentration	QC Decision
#G001-002 Laboratory Reagent Blank #1	<0.001 mg/L	Acceptable
Laboratory Reagent Blank #2	<0.001 mg/L	Acceptable

Comments:

Calculations performed prior to rounding.
*Outside Standard Control Limits

Control Limits:

Recoveries
Laboratory Control Sample Recovery (85 - 116%)
Matrix Spike Recovery (80 - 120%)
Relative Range
Replicates (<20%)

230 South Wagner Road
Ann Arbor, MI 48103
Tel 734/995-0995
Fax 734/995-3731

PAGE 1 of 3

CHAIN OF CUSTODY RECORD

PROJECT NO:		PROJECT NAME: <u>Pall Corp. Samples</u>		NO. OF CONTAINERS		SAMPLE TYPE		REMARKS <small>INDICATE SOIL/WATER/AIR SEDIMENT/SLUDGE</small>
<u>14-01-0000</u>		<u>14-01-0000</u>		<u>1</u>		<u>1,4-dioxane</u>		
SAMPLERS (SIGNATURE): <u>Steven Soper</u>		DATE/TIME: <u>9/4/19 9:40</u>		RECEIVED BY (SIGNATURE): <u>[Signature]</u>		DATE/TIME: <u>9/4/19 9:40</u>		RECEIVED BY (SIGNATURE):
STA. NO.	DATE	TIME	COMP.	QAC	STATION LOCATION	NO. OF CONTAINERS	1,4-dioxane	REMARKS
	8-29	11:25	✓		M10-76S	1	✓	290 ppb
	8-29	8:56	✓		T10-19	1	✓	540 ppb
	8-29	8:40	✓		T10-23	1	✓	500 ppb
	8-29	8:50	✓		LB-4	1	✓	450 ppb
	8-29	8:53	✓		T10-21	1	✓	230 ppb
	8-29	9:29	✓		T10-18	1	✓	220 ppb
	8-29	9:38	✓		BP P10-	1	✓	270 ppb
	8-29	10:40	✓		M10-79S	1	✓	420 ppb
	8-29	12:35	✓		M10-85	1	✓	230 ppb
	8-29	10:36	✓		M10-81	1	✓	200 ppb
	8-29	12:00	✓		M10-82S	1	✓	320 ppb
	8-29	12:43	✓		M10-100 = 1d	1	✓	260 ppb
	8-29	14:23	✓		M10-102	1	✓	680 ppb
	8-16	9:05	✓		T10-10	1	✓	400 ppb
RELINQUISHED BY (SIGNATURE): <u>Steven Soper</u>		DATE/TIME: <u>9-4-19 9:40</u>		RECEIVED BY (SIGNATURE): <u>[Signature]</u>		RELINQUISHED BY (SIGNATURE):		DATE/TIME: <u>9-4-19 9:40</u>
RELINQUISHED BY (SIGNATURE):		DATE/TIME:		RECEIVED BY (SIGNATURE):		RELINQUISHED BY (SIGNATURE):		DATE/TIME:
RELINQUISHED BY (SIGNATURE):		DATE/TIME:		RECEIVED FOR DISPOSAL BY (SIGNATURE):		DATE/TIME:		REMARKS:

CHAIN OF CUSTODY RECORD

PROJECT NO.		PROJECT NAME		SAMPLERS (SIGNATURE)		NO. OF CONTAINERS		SAMPLE TYPE		REMARKS	
8-16-19		Ball Samples IWL at 155 ft in well ASAP		Suzanne R. R. [Signature]		1		1-4-drossane		INDICATE SOIL/WATER/AIR SEDIMENT/SLUDGE	
STA. NO.	DATE	TIME	COMP.	BRAB.	STATION LOCATION	NO. OF CONTAINERS	1-4-drossane				
8-16-19	09:11		✓	✓	TW-17	1	✓				870 ppb
8-16-19	09:16		✓	✓	TW-9	1	✓				630 ppb
8-16-19	12:53		✓	✓	MU-DE-1d	1	✓				560 ppb
8-16-19	14:16		✓	✓	MU-DE-1S	1	✓				740 ppb
8-16-19	12:05		✓	✓	MU-7F	1	✓				1400 ppb
8-26-19	08:15		✓	✓	MU-10S	1	✓				380 ppb
8-26-19	11:25		✓	✓	MU-10Bd	1	✓				800 ppb
8-26-19	10:44		✓	✓	MU-12S	1	✓				210 ppb
8-26-19	12:55		✓	✓	377 Pine wood Hollow	1	✓				240 ppb
8-26-19	11:42		✓	✓	MU-30d	1	✓				180 ppb
8-26-19	14:45		✓	✓	MU-72d	1	✓				680 ppb
8-26-19	12:31		✓	✓	MU-10S	1	✓				840 ppb
8-26-19	12:36		✓	✓	MU-100	1	✓				2000 ppb
8-27-19	9:15		✓	✓	MU-10S	1	✓				450 ppb
RELINQUISHED BY (SIGNATURE)		DATE/TIME		RECEIVED BY (SIGNATURE)		DATE/TIME		RECEIVED BY (SIGNATURE)		DATE/TIME	
Suzanne R. R. [Signature]		8-16-19 09:40		[Signature]							
RELINQUISHED BY (SIGNATURE)		DATE/TIME		RECEIVED BY (SIGNATURE)		DATE/TIME		RECEIVED BY (SIGNATURE)		DATE/TIME	
RELINQUISHED BY (SIGNATURE)		DATE/TIME		RECEIVED FOR DISPOSAL BY (SIGNATURE)		DATE/TIME		REMARKS		DATE/TIME	

CHAIN OF CUSTODY RECORD

PROJECT NO.		PROJECT NAME		SAMPLERS (SIGNATURE)		NO. OF CONTAINERS		SAMPLE TYPE		REMARKS	
8-27-19		Ball Samples IWL at 155 ft in well ASAP		Suzanne R. R. [Signature]		1		1-4-drossane		INDICATE SOIL/WATER/AIR SEDIMENT/SLUDGE	
STA. NO.	DATE	TIME	COMP.	BRAB.	STATION LOCATION	NO. OF CONTAINERS	1-4-drossane				
8-27-19	09:20		✓	✓	MU-10Bd	1	✓				190 ppb
RELINQUISHED BY (SIGNATURE)		DATE/TIME		RECEIVED BY (SIGNATURE)		DATE/TIME		RECEIVED BY (SIGNATURE)		DATE/TIME	
Suzanne R. R. [Signature]		8-27-19 09:45		[Signature]							
RELINQUISHED BY (SIGNATURE)		DATE/TIME		RECEIVED BY (SIGNATURE)		DATE/TIME		RECEIVED BY (SIGNATURE)		DATE/TIME	
RELINQUISHED BY (SIGNATURE)		DATE/TIME		RECEIVED FOR DISPOSAL BY (SIGNATURE)		DATE/TIME		REMARKS		DATE/TIME	