

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: October 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) due to vacation time taken in October. All Outfall bromate samples were analyzed at Pall Corporation's Environmental Laboratory. The HC/HR Surface water samples were analyzed for bromate at ATS. 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 is 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 (±2°C) from the time of collection until sample preparation or analysis.

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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, $\mu g/L$). 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:

Qualifier Code	Description
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.
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

Analyst: Susan E.O. Peters Susan E.O. Peters Date: 11 7	10
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Sample Analysis Report October, 2019

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

Analyst Initials: 350P

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			-5				5	
697 South Wagner Rd-10-18-19-14:50-1	nd	1.0						0
Extraction Wells								
C3							•	
DOLPH-10-02-19-09:15-1	120	2.0						D
TW-1-10-02-19-10:16-1	38	1.0						
TW-10-10-02-19-10:08-1	380	10.0						D
TW-14-10-02-19-10:03-1	17	1.0			1			
TW-20-10-02-19-09:33-1	880	25.0						D, H
TW-3-10-02-19-10:24-1	39	1.0			1.			
D2								
LB-4-10-02-19-08:35-1	460	10.0						D
TW-21-10-02-19-08:55-1	210	10.0						D
TW-5-10-02-19-09:57-1	710	10.0						D
TW-9-10-02-19-09:50-1	530	10.0						D
E								
TW-11-10-02-19-10:00-1	180	10.0						D
TW-17-10-02-19-10:06-1	330	10.0						D
TW-18-10-02-19-09:10-1	250	10.0						D
TW-19-10-02-19-08:10-1	590	10.0						D

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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-23-10-02-19-08:13-1	440	10.0	.,,					D
Marshy								
PW-1-10-02-19-09:23-1	630	10.0						D
SW	·							
TW-22-10-02-19-09:42-1	460	10.0						D
TW-28-10-02-19-09:38-1	630	10.0						D
Monitoring Wells								
C3								
MW-125-10-21-19-15:21-1	220	20.0						O, D
MW-127s-10-21-19-10:26-1	nd	1.0						0
MW-128s-10-22-19-10:58-1	nd	1.0						0
MW-18d-10-30-19-09:44-1	52	1.0						
MW-22-10-30-19-13:26-1	500	10.0						D
MW-2d-10-16-19-13:47-1	37	1.0						0
MW-32-10-24-19-14:02-1	22	1.0						0
MW-34s-10-28-19-10:41-1	nd	1.0						
MW-35-10-24-19-11:35-1	2	1.0						0
MW-37-10-22-19-12:16-1	220	10.0						O, D
MW-75-10-30-19-14:52-1	560	10.0						D
D0								
A2 Cleaning Supply-10-03-19-16:53-1	81	1.0						
MW-53d-10-03-19-13:28-1	nd	1.0						
MW-53i-10-03-19-15:48-1	36	1.0						
MW-53s-10-03-19-14:38-1	nd	1.0						
D2								
2819 Dexter Rd-10-07-19-10:26-1	180	2.0					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)
456 Clarendon-10-16-19-15:13-1	590	10.0						O, D
HZ-S-10-02-19-10:30-1	880	25.0						D
MW-107-10-09-19-11:30-1	710	10.0						O, D
MW-113-10-09-19-09:44-1	. 86	2.0						O, D
MW-117-10-10-19-09:38-1	nd	1.0						
MW-11d-10-28-19-12:31-1	340	10.0						D
MW-121s-10-15-19-09:32-1	nd	1.0						0
MW-124s-10-16-19-12:11-1	nd	1.0						0
MW-129i-10-15-19-12:38-1	nd	1.0						0
MW-129s-10-15-19-13:51-1	nd	1.0						0
MW-133i-10-17-19-11:30-1	2	1.0						0
MVV-133s-10-17-19-10:16-1	2	1.0						0
MW-17-10-18-19-12:44-1	240	10.0						O, D
MW-34d-10-28-19-09:14-1	nd	1.0						
MW-4d-10-28-19-14:44-1	350	10.0						D
Е								
MW-101-10-08-19-14:48-1	120	2.0						O, D
MW-103d-10-04-19-12:42-1	9.0	1.0						
MVV-103s-10-04-19-13:53-1	78	1,0						H
MW-104-10-08-19-12:09-1	20	1.0						
MW-110-10-08-19-13:29-1	92	2.0						O, D
MW-112d-10-04-19-08:59-1	nd	1.0						
MW-112i-10-04-19-11:24-1	10	1.0						
MW-112s-10-04-19-10:12-1	nd	1.0						
MW-115-10-09-19-14:42-1	530	10.0						O, D
MVV-116-10-09-19-13:09-1	430	5.0						O, D
MVV-119-10-10-19-11:09-1	37	1.0						

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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-121d-10-15-19-10:45-1	nd	1.0						0
MW-124d-10-16-19-10:50-1	nd	1.0						0
MW-127d-10-21-19-09:14-1	nd	1.0						0
MW-128d-10-22-19-09:45-1	nd	1.0						0
MW-129d-10-15-19-15:03-1	2	1.0						0
MW-133d-10-17-19-13:04-1	3	1.0						0
MW-30d-10-17-19-14:44-1	180	5.0						O, D
MW-66-10-24-19-10:00-1	2	1.0						0
MW-72d-10-18-19-11:16-1	800	100.0						O, D
MW-72s-10-18-19-10:00-1	nd	1.0						0
MW-76i-10-07-19-13:08-1	92	2.0						O, D
MW-76s-10-07-19-14:25-1	240	50						O, D
MW-84s-10-07-19-11:45-1	41	1.0						
MW-85-10-10-19-12:50-1	570	10.0						O, D
Saginaw Forest Cabin #1-10-21-19-12:57-1	nd	1.0						0
Saginaw Forest Cabin #2-10-21-19-11:43-1	nd	1.0						0
SH								
MW-2s-10-16-19-13:10-1	2	1.0						0
sw								,
MW-10d-10-30-19-11:32-1	490	10.0						D
MW-46-10-29-19-11:07-1	93	1.0						
MW-49-10-29-19-09:22-1	nd	1.0						
MW-50-10-29-19-14:34-1	940	10.0						D
MW-52s-10-29-19-12:41-1	220	10.0						D
MW-58d-10-22-19-13:41-1	16	1.0						0
MW-58s-10-22-19-14:51-1	190	10.0						O, D
MVV-78-10-21-19-14:09-1	25	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)
Surface Water								
Not Applicable								
HC/HR-10-01-19-07:30-1			nd	2.0			-	
HC/HR-10-02-19-08:45-1			nd	2.0				
HC/HR-10-03-19-08:15-1			nd	2.0				
HC/HR-10-04-19-08:35-1			nd	2.0				
HC/HR-10-07-19-08:15-1			nd	2.0				
HC/HR-10-08-19-07:25-1			nd	2.0				
HC/HR-10-09-19-07:55-1			nd	2.0				
HC/HR-10-10-19-07:55-1			nd	2.0				
HC/HR-10-11-19-08:20-1			nd	2.0				
HC/HR-10-14-19-08:05-1			nd	2.0				0
HC/HR-10-15-19-07:30-1			nd	2.0				0
HC/HR-10-16-19-08:27-1			nd	2.0				0
HC/HR-10-17-19-08:35-1			nd	2.0				0
HC/HR-10-18-19-08:05-1			nd	2.0				0
HC/HR-10-21-19-07:55-1			nd	2.0				0
HC/HR-10-22-19-08:25-1			nd	2.0				0
HC/HR-10-23-19-07:30-1			nd	2.0				0
HC/HR-10-24-19-08:00-1			nd	2.0				0
HC/HR-10-25-19-09:00-1			nd	2.0				0
HC/HR-10-28-19-09:30-1			nd	2.0				
HC/HR-10-29-19-08:00-1			nd	2.0				
HC/HR-10-30-19-07:20-1			nd	2.0				
HC/HR-10-31-19-07:53-1			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)
OUTFALL-10-01-19-2			6.0	5.0				
OUTFALL-10-01-19-1	5.6	1.0						
OUTFALL-10-02-19-1	5.8	1.0						
OUTFALL-10-02-19-2			7.2	5.0				
OUTFALL-10-03-19-1	5.2	1.0						
OUTFALL-10-03-19-2			6.0	5.0				
OUTFALL-10-06-19-2			6.8	5.0				
OUTFALL-10-06-19-1	5.4	1.0						Н
OUTFALL-10-07-19-2			5.6	5.0				
OUTFALL-10-07-19-1	5.4	1.0						
OUTFALL-10-08-19-2			5.6	5.0				
OUTFALL-10-08-19-1	5.1	1.0						
OUTFALL-10-09-19-2			6.1	5.0				
OUTFALL-10-09-19-1	5.0	1.0						
OUTFALL-10-10-19-2			6.1	5.0				
OUTFALL-10-10-19-1	5.9	1.0						
OUTFALL-10-13-19-2			5.5	5.0				
OUTFALL-10-13-19-1	7	1.0						0
OUTFALL-10-14-19-2			7.7	5.0				
OUTFALL-10-14-19-1	7	1.0						0
OUTFALL-10-15-19-2			6.6	5.0				
OUTFALL-10-15-19-1	6	1.0					:	0
OUTFALL-10-16-19-2			6.0	5.0				
OUTFALL-10-16-19-1	4	1.0						0
OUTFALL-10-17-19-2			6.4	5.0				
OUTFALL-10-17-19-1	6	1.0						0
OUTFALL-10-20-19-1	5	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-10-20-19-2			6.0	5.0				
OUTFALL-10-21-19-1	5	1.0						0
OUTFALL-10-21-19-2			6.0	5.0				
OUTFALL-10-22-19-1	nd	1.0						0
OUTFALL-10-22-19-2			7.5	5.0				
OUTFALL-10-23-19-1	nd	1.0						0
OUTFALL-10-23-19-2			6.6	5.0				
OUTFALL-10-24-19-1	5	1.0						0
OUTFALL-10-24-19-2			6.2	5.0				
OUTFALL-10-27-19-2			5.9	5.0				
OUTFALL-10-27-19-1	5.9	1.0						
OUTFALL-10-28-19-2			5.7	5.0				
OUTFALL-10-28-19-1	6.2	1.0						
OUTFALL-10-29-19-2			5.9	5.0				
OUTFALL-10-29-19-1	6.4	1.0						
OUTFALL-10-30-19-2			7.3	5.0				
OUTFALL-10-30-19-4	6.6	1.0						
OUTFALL-10-31-19-2			6.6	5.0				
OUTFALL-10-31-19-1	5.8	1.0						
Red Pond-10-07-19-08:50-1	380	10.0						D
Red Pond-10-14-19-08:23-1	340	10.0						D
Red Pond-10-21-19-09:07-1	360	10.0						D
Red Pond-10-28-19-10:30-1	360	10.0						D
Not Applicable								
E								
TW-12-10-02-19-09:01-1	14	1.0						

PLS Qualifier Codes:

- nd:
- D:
- The compound was analyzed for, but was not detected at or above the detection limit indicated.

 Analyte value quantified from a dilution, reporting limit is raised to reflect dilution.

 Sample was analyzed past 14 day hold time, but within 45 days used by ATS for same method with EPA approval. Samples analyzed in outside laboratory, Ann Arbor Technical Services (ATS).
- H: 0;



Data Transmittal Cover Page

Project Name: Pall Corporation

ATS Project Number:

G001-002

ATS Report Number(s):

SRF_1014191 through 1025191

Project Description: This data report contains the results of 62 water samples, received by ATS between 10/14/19 and 10/25/19, to be analyzed for 1,4-Dioxane and Bromate.

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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LABORATORY OPERATIONS CASE NARRATIVE

ATS Project Number: G001-002

Report Date: 10/29/19

SRF / SDG Numbers: 1014191, 1015191, 1015192, 1016191, 1016192, 1017191, 1017192, 1018191, 1018192, 1021191, 1021192, 1022191, 1022192, 1023191, 1024191,

1024192, 1025191

Case Narrative Summary

This case narrative applies to the following 62 samples that were received at Ann Arbor Technical Services, Inc. (ATS) between 10/14/19 and 10/25/19, and associated matrix-specific QA/QC:

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Client Sample Identification	Sample Date	Requested Turn Around Time	Analysis	Matrix
Received 10/14/19				
Outfall 001	10/13/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/14/19	Urgent	Bromate	Surface Wate
Received 10/15/19				
Outfall 001	10/14/19	Urgent	1,4-Dioxane	Treated Wate
HC/HR	10/15/19	Urgent	Bromate	Surface Water
2819 Dexter Rd.	10/7/19	Standard	1,4-Dioxane	Ground Wate
MW-76I	10/7/19	Standard	1,4-Dioxane	Ground Water
MW-76S	10/7/19	Standard	1,4-Dioxane	Ground Wate
MW-110	10/8/19	Standard	1,4-Dioxane	Ground Wate
MW-101	10/8/19	Standard	1,4-Dioxane	Ground Wate
MW-113	10/9/19	Standard	1,4-Dioxane	Ground Wate
MW-107	10/9/19	Standard	1,4-Dioxane	Ground Wate
MW-116	10/9/19	Standard	1,4-Dioxane	Ground Wate
MW-115	10/9/19	Standard	1,4-Dioxane	Ground Wate
MW-85	10/10/19	Standard	1,4-Dioxane	Ground Wate
MW-121S	10/15/19	Standard	1,4-Dioxane	Ground Wate
MW-121D	10/15/19	Standard	1,4-Dioxane	Ground Wate
MW-129I	10/15/19	Standard	1,4-Dioxane	Ground Wate
MW-129S	10/15/19	Standard	1,4-Dioxane	Ground Wate
MW-129D	10/15/19	Standard	1,4-Dioxane	Ground Wate
Received 10/16/19				
Outfall 001	10/15/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/16/19	Urgent	Bromate	Surface Wate
MW-124D	10/16/19	Standard	1,4-Dioxane	Ground Wate

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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

Client Sample Identification	Sample Date	Requested Turn Around Time	Analysis	Matrix
MW-124S	10/16/19	Standard	1,4-Dioxane	Ground Water
MW-2S	10/16/19	Standard	1,4-Dioxane	Ground Water
MW-2D	10/16/19	Standard	1,4-Dioxane	Ground Water
456 Clarendon	10/16/19	Standard	1,4-Dioxane	Ground Water
Received 10/17/19				
Outfall 001	10/16/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/17/19	Urgent	Bromate	Surface Water
MW-133S	10/17/19	Standard	1,4-Dioxane	Ground Water
MW-133I	10/17/19	Standard	1,4-Dioxane	Ground Water
MW-133D	10/17/19	Standard	1,4-Dioxane	Ground Water
MW-30D	10/17/19	Standard	1,4-Dioxane	Ground Water
Received 10/18/19				
Outfall 001	10/17/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/18/19	Urgent	Bromate	Surface Water
MW-72S	10/18/19	Standard	1,4-Dioxane	Ground Water
MW-72D	10/18/19	Standard	1,4-Dioxane	Ground Water
MW-17	10/18/19	Standard	1,4-Dioxane	Ground Water
697 South Wagner Rd.	10/18/19	Standard	1,4-Dioxane	Drinking Water
Received 10/21/19				
Outfall 001	10/20/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/21/19	Urgent	Bromate	Surface Water
MW-127D	10/21/19	Standard	1,4-Dioxane	Ground Water
MW-127S	10/21/19	Standard	1,4-Dioxane	Ground Water
Saginaw Forest Cabin #2	10/21/19	Standard	1,4-Dioxane	Ground Water
Saginaw Forest Cabin #1	10/21/19	Standard	1,4-Dioxane	Ground Water
MW-78	10/21/19	Standard	1,4-Dioxane	Ground Water
MW-125	10/21/19	Standard	1,4-Dioxane	Ground Water
Received 10/22/19				
Outfall 001	10/21/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/22/19	Urgent	Bromate	Surface Water
MW-128D	10/22/19	Standard	1,4-Dioxane	Ground Water
MW-128S	10/22/19	Standard	1,4-Dioxane	Ground Water
MW-37	10/22/19	Standard	1,4-Dioxane	Ground Water
MW-58D	10/22/19	Standard	1,4-Dioxane	Ground Water
MW-58S	10/22/19	Standard	1,4-Dioxane	Ground Water
Received 10/23/19				
Outfall 001	10/22/19	Urgent	1,4-Dioxane	Treated Water
HC/HR	10/23/19	Urgent	Bromate	Surface Water
Received 10/24/19				
Outfall 001	10/23/19	Urgent	1,4-Dioxane	Ground Water
HC/HR	10/24/19	Urgent	Bromate	Surface Water
MW-66	10/24/19	Standard	1,4-Dioxane	Ground Water

G001-002.19/CN_1014,1015,1016,1017,1018,1021,1022,1023,1024,1025.doc



Client Sample Identification	Sample Date	Requested Turn Around Time	Analysis	Matrix	
MW-35	10/24/19	Standard	1,4-Dioxane	Ground Water	
MW-32	10/24/19	Standard	1,4-Dioxane	Ground Water	
Received 10/25/19					
Outfall 001	10/24/19	Urgent	1,4-Dioxane	Treated Water	
HC/HR	10/25/19	Urgent	Bromate	Surface Water	

Upon receipt, samples were scheduled for the following analyses:

Analysis

1,4-Dioxane by US EPA 1624

Number of Samples

52 + 10 Matrix Spike / 10 Matrix Spike Duplicate

Bromate by ATS 300.1 MOD

10 + 10 Matrix Spike / 10 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, if any, 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 procedures (SOPs) 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.

G001-002.19/CN 1014,1015,1016,1017,1018,1021,1022,1023,1024,1025.doc



Sample Analysis

1.4-Dioxane Analysis (GC/MS): Samples were analyzed in accordance with US 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.

Bromate Analysis (IC): Samples were analyzed in accordance with ATS modified method 300.1 (Determination of Inorganic Anions in Drinking Waters by Ion Chromatography). An initial calibration with at least five levels was used to quantitate Bromate. 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 24 hours (1,4-Dioxane) or 10 samples (bromate). All verification standards met the acceptance criteria with the following exceptions:

None

Instrument Blanks

Instrument blanks were analyzed at a frequency of every 24 hours (1,4-Dioxane) or 10 samples (bromate). All blanks met the acceptance criteria with the following exceptions:

None

OA/OC 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:

Sample ID	Constituent	Percent Recovery	Acceptance Limits
Outfall 10/15/19 Matrix Spike	1,4-Dioxane	77.6	80-120%
MW-125 10/21/19 Matrix Spike	1,4-Dioxane	122.1	80-120%
HC/HR 10/21/19 Matrix Spike	Bromate	68.9	70-130%

G001-002.19/CN 1014.1015.1016.1017.1018.1021,1022,1023,1024,1025.doc



Matrix Duplicates

A replicate analysis was analyzed with each QA/QC batch. All replicates met the acceptance criteria with the following exceptions:

Sample ID	Constituent	Percent Difference	Acceptance Limits	
HC/HR 10/17/19	Bromate	22.5	<20%	

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:

• MW-76I 10/7/19 2819 Dexter Road 10/7/19 • MW-76S 10/7/19 MW-113 10/9/19 • MW-110 10/8/19 • MW-101 10/8/19 • MW-107 10/9/19 • MW-116 10/9/19 MW-115 10/9/19 456 Clarendon 10/16/19 MW-30D 10/17/19 • MW-85 10/10/19 • MW-17 10/18/19 • MW-125 10/21/19 MW-72D 10/18/19 • MW-37 10/22/19 MW-58S 10/22/19

Markalitong

/ October 31, 2019

Mark T. DeLong (Quality Assurance Coordinator)

/ October 31, 2019

Philip B. Simon (Laboratory Director)

G001-002,19/CN 1014,1015,1016,1017,1018,1021,1022,1023,1024,1025.doc



ANN ARBOR TECHNICAL SERVICES, INC. for Pall \ detances

sizylenA edemor8				zizylenA enexoiG-P,L					
geanj¢ (m≣∖Γ)	Sample Time	Sample Date	Of əlqms2	Result (mg/L)	emiT alqme2	Sample Date	Oi əldms2		
200.0>	80:8	61/51/01	нс\нв	700.0	eu	61/21/01	100 llettuO		
<0.002	7:30	6T/ST/OT	нс/нв	700.0	eu	61/v1/01	Cuttall 001		
Z00.0>	72:8	61/91/01	нс\нв	900.0	eu	61/51/01	Cutfall 001		
<0.002	8:32	6t/Lt/0t	нс\нв	400,0	eu Us	61/91/01	Cuttell 001		
200.0>	50:8	61/81/01	нс\нв	900.0	eu	61/21/01	Outfall 001		
<0.002	2:52	61/12/01	нс\ни	\$00.0	na	10/50/16	£00 llsifuO		
<0.002	8:22	10/22/19	нс\нк	500.0	eu	6t/tz/0t	Cutfell 001		
200.0>	7:30	61/52/01	нс/ни	900.0	eu	6t/zz/0t	Outfall 001		
Z00.0>	00:8	70/54/16	нс\нв	900.0	eu	10/53/16	Outfall 001		
200.0>	00:6	6T/SZ/0T	нс\нв	200.0	eu	91/42/01	LOO HeltuO		

X:/G001-002.19/14DX_8RO3_5preadshert

61/67/01 ABJ



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

ATS Project: Report Date:

#G001-002 Pall Corporation 10/25/19 Updated 10/29/19

Analysis

ATS SRF: 1025191 (Urgent)

Sample Identification: Outfall 001

10/24/19

Sample Date: Sample Time:

na Client Sampled By:

Laboratory Receipt Date: Sample Matrix:

10/25/19 Treated Water

Parameter Organic Analysis 1,4-Dioxane

Method EPA 1624 mg/L

Reporting Limit Date Result 0.005 0.001 10/25/19 Analysis Analyzed Time Ву

11:13 SLS

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 10/29/19 Report Date: ATS SRF: 1015192

Sample Identification:

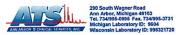
MW-107

Sample Date: 10/9/19 Sample Time: 11:30 AM Client Sampled By:

Laboratory Receipt Date: Sample Matrix:

10/15/19 Groundwater

Analysis Analyzed Analysis Reporting Limit Date Time Ву Method Units Result Parameter Organic Analysis 0.71 0.01 10/16/19 22:05 JEB EPA 1624 ma/L 1,4-Dioxane



Organic Analysis Data Summary Sheet

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

Report Date:

ATS Project: Pall Corporation #G001-002 10/22/19 Updated 10/29/19

ATS SRF:

1022191 (Urgent)

Sample Identification: Outfall 001

Sample Date: Sample Time:

10/21/19 na Client

Sampled By: Laboratory Receipt Date: Sample Matrix:

10/22/19

Treated Water

Analysis Analysis Analyzed Reporting Limit Method Units Result Date Time Ву Parameter Organic Analysis EPA 1624 mg/L 0.005 0.001 10/22/19 12:20 SLS 1,4-Dioxane



Organic Analysis **Data Summary Sheet**

For: Ms. Sue Peters

Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Report Date:

Pall Corporation #G001-002 10/14/19 Updated 10/29/19

ATS SRF: 1014191 (Urgent)

Sample Identification: Outfall 001

Sample Date:

10/13/19

Sample Time:

na

Sampled By:

Client

Laboratory Receipt Date:

10/14/19

Sample Matrix:

Treated Water

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.007	0.001	10/14/19	15:44	JEB

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

Sample analyzed at native pH.

X:\G001-002.19\SRF_1014191 through 1025191



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

ATS Project: Report Date:

Pall Corporation 10/15/19 Updated 10/29/19 #G001-002

ATS SRF: 1015191 (Urgent)

Sample Identification:

Outfall 001

Sample Date: Sample Time: 10/14/19 na

Sampled By:

Parameter

Organic Analysis

1,4-Dioxane

Client

Laboratory Receipt Date:

10/15/19

Sample Matrix:

Treated Water

Method EPA 1624

mg/L

0.007

Result

Date 0.001 10/15/19

Reporting Limit

10:38

Analysis

Analysis

Time Ву JEB

Analyzed

#G001-002

Organic Analysis Data Summary Sheet

For: Ms. Sue Peters

Pall Corporation 642 South Wagner Road

Ann Arbor, MI 48103

Report Date:

ATS Project: Pall Corporation

10/16/19 Updated 10/29/19

1016191 (Urgent) ATS SRF:

Sample Identification: Outfall 001

Sample Date: Sample Time: 10/15/19 na

Sampled By:

Client

Laboratory Receipt Date:

10/16/19

Sample Matrix:

Treated Water Analysis

Analysis Analyzed Reporting Limit Parameter Method Result Date Time Ву Organic Analysis 1,4-Dioxane EPA 1624 0,006 0.001 10/16/19 10:26 JEB ma/L

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable,

Sample analyzed at native pH.

X:\G001-002.19\SRF_1014191 through 1025191

rev. 10/29/19



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: ATS SRF:

Result

0.004

10/17/19 Updated 10/29/19 1017191 (Urgent)

Sample Identification: Outfall 001

Sample Date:

Parameter

Organic Analysis

1,4-Dioxane

10/16/19 na

Sample Time: Sampled By:

Client

Laboratory Receipt Date: Sample Matrix:

10/17/19

Method

EPA 1624

Treated Water

Units

mg/L

Analysis Analysis Reporting Limit Date Time

10/17/19

Organic Analysis **Data Summary Sheet**

10:45

For: Ms. Sue Peters Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

Report Date: ATS SRF:

ATS Project: Pall Corporation 10/18/19 Updated 10/29/19 1018191 (Urgent)

0.001

#G001-002

By

JEB

Analyzed

Ву

JEB

Sample Identification: Outfall 001

Sample Date: Sample Time: 10/17/19 na

Sampled By:

Client

Laboratory Receipt Date: Sample Matrix:

10/18/19

Treated Water

Analysis Analysis Analyzed Reporting Limit Units Result Time Parameter Method Date Organic Analysis 1,4-Dioxane **EPA 1624** 0.006 0.001 10/18/19 10:50

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

Sample analyzed at native pH.

X:\G001-002.19\SRF_1014191 through 1025191



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

ATS Project: Pall Corporation #G001-002 10/21/19 Updated 10/29/19 ATS SRF: 1021191 (Urgent)

Outfall 001 Sample Identification:

Sample Date:

10/20/19 na Client

Sampled By: Laboratory Receipt Date:

10/21/19 Treated Water

Sample Matrix:

Parameter

Organic Analysis

1,4-Dioxane

Sample Time:

Analysis Analysis Analyzed Reporting Limit Method Units Result Date Time Ву EPA 1624 0.005 0.001 10/21/19 11:07 SLS mg/L

Organic Analysis **Data Summary Sheet**

#G001-002

For: Ms. Sue Peters Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Report Date:

Pall Corporation 10/23/19 Updated 10/29/19

ATS SRF: 1023191 (Urgent)

Sample Identification:

Sample Date: 10/22/19 Sample Time: na Sampled By:

Laboratory Receipt Date: Sample Matrix:

Client 10/23/19

Outfall 001

Treated Water

Analysis Analysis Analyzed Reporting Limit Method Units Result Date Time By Parameter Organic Analysis 1,4-Dioxane FPA 1624 mg/L 0.006 0.001 10/23/19 10:40 JEB

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

Sample analyzed at native pH.

X:\G001-002.19\SRF_1014191 through 1025191

rev. 10/29/19



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: 10/24/19 Updated 10/29/19 ATS SRF: 1024191 (Urgent)

Sample Identification:

Sample Date: Sample Time:

10/23/19 na

Sampled By: Laboratory Receipt Date: Sample Matrix:

Parameter

Organic Analysis

1,4-Dioxane

Client 10/24/19

Outfall 001

Treated Water

Method

EPA 1624

Result

0.006

Units

Analysis Analysis Date Time

10/24/19

10:23 SLS

Analyzed

By

#G001-002

Analyzed

Ву

JEB

290 South Wagner Road Ann Arbor, Michigan 48103 Tel. 734/995-0995 Fax. 734/995-3731

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: ATS SRF:

10/29/19 1015192

Reporting Limit

0.001

Sample Identification: 2819 Dexter Road

Sample Date: Sample Time:

10/7/19 10:26 AM Client Sampled By:

Laboratory Receipt Date: Sample Matrix:

10/15/19 Groundwater

Analysis Analysis Reporting Limit Time Method Units Result Date 10/17/19 13:06 0.002 **FPA 1624** mg/L 0.15

Comments

Parameter

Organic Analysis

1,4-Dioxane

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

Sample analyzed at native pH.

X:\G001-002.19\SRF 1014191 through 1025191



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

ATS Project: Pall Corporation #G001-002 Report Date: 10/29/19 ATS SRF: 1015192

Sample Identification: MW-76I

10/7/19 1:08 PM Client

Sampled By: Laboratory Receipt Date: Sample Matrix:

10/15/19 Groundwater

Parameter Organic Analysis 1,4-Dioxane

Sample Date:

Sample Time:

Method EPA 1624 Units Result

0.092

Reporting Limit Date 0.002

10/16/19

Analysis

Time Ву 20:35 JEB

Analysis

Analyzed

#G001-002

Michigan 48103 0995 Fax. 734/995-3731

Organic Analysis **Data Summary Sheet**

For: Ms. Sue Peters Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

Report Date:

ATS Project: Pall Corporation 10/29/19

1015192

ATS SRF:

Sample Identification: MW-76S

Sample Date:

Sample Time:

Sampled By: Laboratory Receipt Date: Client 10/15/19

10/7/19

2:25 PM

Sample Matrix:

Groundwater

Analyzed Analysis Analysis Reporting Limit Date Time Ву Result Units Parameter Method Organic Analysis 0.05 10/16/19 19:17 JEB **EPA 1624** 0.24 1.4-Dioxane

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191

rev. 10/29/19



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 Report Date: 10/29/19 ATS SRF: 1015192

Sample Identification: MW-110

Sample Date: Sample Time:

Parameter

Organic Analysis

1,4-Dioxane

10/8/19 1:29 PM

Sampled By: Laboratory Receipt Date: Sample Matrix:

Client 10/15/19

Groundwater

Reporting Limit

Analysis Analysis Date Time

Method Result Ву EPA 1624 0.092 0.002 10/16/19 19:59 JEB mg/L



Organic Analysis **Data Summary Sheet**

rev. 10/29/19

Analyzed

#G001-002

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

ATS SRF:

ATS Project: Pall Corporation Report Date: 10/29/19 1015192

MW-101 Sample Identification:

Sample Date:

Sample Matrix:

Sample Time:

Sampled By: Laboratory Receipt Date:

10/8/19 2:48 PM Client

10/15/19 Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By	
Organic Analysis								
1,4-Dioxane	EPA 1624	mg/L	0.12	0.002	10/16/19	20:41	SLS	

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191



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

ATS Project: Pall Corporation #G001-002 Report Date: 10/29/19 ATS SRF: 1015192

Sample Identification:

MW-113

Sample Date: Sample Time:

10/9/19 9:44 AM

Sampled By:

Parameter

Organic Analysis

1,4-Dioxane

Client

Laboratory Receipt Date:

Sample Matrix:

10/15/19

Groundwater

Method **EPA 1624**

Units mg/L

Result 0.086

Analysis Reporting Limit Date 0.002

Time 10/16/19

Ву 21:23 JEB

Analyzed

#G001-002

Analysis

Organic Analysis Data Summary Sheet

For: Ms. Sue Peters Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Report Date:

Pall Corporation 10/29/19

ATS SRF: 1015192

Sample Identification: MW-116

Sample Date: Sample Time: 10/9/19 1:09 PM

Sampled By: Laboratory Receipt Date: Client 10/15/19

Groundwater

Sample Matrix: Parameter

1,4-Dioxane

Analysis Analysis Analyzed Reporting Limit Method Result Date Time By 10/16/19 JEB FPA 1624 mg/L 0.43 0.005 22:47

Comments

Organic Analysis

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191

rev. 10/29/19



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:

#G001-002 10/29/19 ATS SRF: 1015192

Sample Identification: MW-115

Sampled By: Laboratory Receipt Date: Sample Matrix:

Sample Date:

Sample Time:

Parameter

Organic Analysis

1,4-Dioxane

10/9/19 2:42 PM Client 10/15/19

Groundwater

Method

EPA 1624

Units

mg/L

Analysis Analysis

Analyzed Reporting Limit Result Date Time Ву 10/16/19 23:29 JEB 0.53 0.01

Organic Analysis **Data Summary Sheet**

#G001-002

For: Ms. Sue Peters

Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Pall Corporation Report Date: 10/29/19

ATS SRF: 1015192

Sample Identification: MW-85

Sample Date: Sample Time:

10/10/19 12:50 PM

Sampled By: Laboratory Receipt Date: Sample Matrix:

Client 10/15/19

Groundwater

Analysis Analysis Analyzed Reporting Limit Date Time Ву Parameter Method Units Result Organic Analysis JEB 1,4-Dioxane EPA 1624 mg/L 0.57 0.01 10/17/19 12:11

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191



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

ATS Project: Report Date: ATS SRF: 1015192

#G001-002 Pall Corporation 10/29/19

Sample Identification: MW-121S

10/15/19 9:32 AM

Sample Date: Sample Time: Sampled By:

Client Laboratory Receipt Date: Sample Matrix:

10/15/19 Groundwater

Parameter Method Organic Analysis EPA 1624 1,4-Dioxane

Reporting Limit Result Units mg/L < 0.001 0.001

Analysis Analysis Time Date 10/16/19 3:04

Analyzed

Ву

JEB

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: 10/29/19 ATS SRF: 1015192

10/16/19

Sample Identification: MW-121D

Sample Date: Sample Time: 10/15/19 10:45 AM Client

Sampled By: Laboratory Receipt Date:

10/15/19 Groundwater

EPA 1624

Sample Matrix: Parameter

Analysis Analysis Analyzed Reporting Limit Method Units Result Date Time Bv

0.001

<0.001

Comments

1,4-Dioxane

Organic Analysis

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191

rev. 10/29/19

15:46

JEB



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 Report Date: 10/29/19 ATS SRF: 1015192

Sample Identification:

Sample Date: Sample Time: Sampled By:

10/15/19 12:38 PM

Laboratory Receipt Date: Sample Matrix:

Client 10/15/19

MW-1291

Groundwater

Analysis Analysis Analyzed Reporting Limit Parameter Method Units Result Date Time Ву Organic Analysis EPA 1624 0.001 10/16/19 16:28 JEB 1,4-Dioxane mg/L < 0.001



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: 10/29/19 ATS SRF: 1015192

#G001-002

Sample Identification: MW-129S

Sample Date: Sample Time:

10/15/19 1:51 PM Client

Sampled By: Laboratory Receipt Date: Sample Matrix:

10/15/19 Groundwater

Analysis Analysis Analyzed Reporting Limit Method Units Result Date Time Ву Parameter Organic Analysis JEB EPA 1624 0.001 10/16/19 17:10 1,4-Dioxane mg/L < 0.001

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191



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

ATS Project: Report Date: ATS SRF: 1015192

Pall Corporation #G001-002 10/29/19

Sample Identification: MW-129D

Sample Date: Sample Time: Sampled By:

10/15/19 3:03 PM Client

Laboratory Receipt Date: Sample Matrix:

Parameter

Organic Analysis

1,4-Dioxane

10/15/19 Groundwater

EPA 1624

Method Result

Units

ma/L

Reporting Limit 0.002 0.001

Analysis Analysis Analyzed Date Time 10/16/19

By 17:52 JEB

10/16/19

EPA 1624

Organic Analysis **Data Summary Sheet**

Analysis

Time

13:49

Analysis

Date

10/17/19

#G001-002

Analyzed

Ву

JEB

For: Ms. Sue Peters Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

Report Date:

Result

< 0.001

ATS Project: Pall Corporation 10/29/19

Reporting Limit

0.001

ATS SRF: 1016192

Sample Identification: MW-124D

Sample Date: Sample Time:

Organic Analysis

1,4-Dioxane

Comments

10:50 AM Client Sampled By:

Laboratory Receipt Date:

10/16/19

Sample Matrix: Groundwater Parameter Method

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002,19\SRF_1014191 through 1025191

rev. 10/29/19



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: 10/29/19

Result

< 0.001

0.001

#G001-002 ATS SRF: 1016192

Sample Identification: MW-124S

Sample Date: Sample Time:

Sample Matrix:

Parameter

Organic Analysis

1,4-Dioxane

10/16/19 12:11 PM

Sampled By: Laboratory Receipt Date: Client 10/16/19

Groundwater

Method

EPA 1624

Units

mg/L

Analysis Reporting Limit

Analysis Analyzed Date Time Ву

JEB 10/17/19 14:31

Organic Analysis **Data Summary Sheet**

Analysis

Time

15:13

Analyzed

Ву

JEB

For: Ms. Sue Peters

Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Pall Corporation #G001-002 Report Date: 10/29/19 ATS SRF: 1016192

Analysis

Date

10/17/19

Reporting Limit

0.001

Sample Identification: MW-2S

Sample Date: Sample Time: 10/16/19 1:10 PM

Sampled By: Laboratory Receipt Date: Client 10/16/19

Sample Matrix:

Groundwater

EPA 1624

mg/L

0.002

Parameter Method Units Result Organic Analysis

Comments

1,4-Dioxane

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191



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

#G001-002 ATS Project: Pall Corporation 10/29/19 Report Date: ATS SRF: 1016192

Sample Identification:

MW-2D

10/16/19 Sample Date:

Sample Time: 1:47 PM Client Sampled By:

Laboratory Receipt Date:

Sample Matrix:

10/16/19 Groundwater

EPA 1624

Method

Units

mg/L

Result 0.037

Analysis Reporting Limit Date 10/17/19 0.001

Analysis Time

Ву 15:55 JEB

Analyzed

#G001-002

Parameter

Organic Analysis

1,4-Dioxane

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:

10/29/19

ATS SRF: 1016192

Sample Identification: 456 Clarendon

Sample Date: Sample Time:

10/16/19 3:13 PM Client

Sampled By: Laboratory Receipt Date:

10/16/19

Sample Matrix: Groundwater

Parameter	Method	Units	Result	Reporting Limit	Analysis Date	Analysis Time	Analyzed By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	0.59	0.01	10/17/19	16:37	JEB

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191

rev. 10/29/19



Organic Analysis **Data Summary Sheet**

#G001-002

Analyzed

For: Ms. Sue Peters Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Pall Corporation Report Date: 10/29/19 ATS SRF:

1017192

0.001

Sample Identification: MW-133S

Sample Date: Sample Time: Sampled By:

Parameter

Organic Analysis

1,4-Dioxane

10/17/19 10:16 AM

Laboratory Receipt Date: Sample Matrix:

Client 10/17/19

Method

EPA 1624

Groundwater

Units

mg/L

Analysis Analysis Reporting Limit Date

10/18/19

Time Ву 11:33 JEB

Organic Analysis **Data Summary Sheet**

Analysis

Time

13:39

Analyzed

Ву

JEB

For: Ms. Sue Peters Pall Corporation

642 South Wagner Road

Ann Arbor, MI 48103

ATS Project: Report Date: ATS SRF:

Result

0.002

Pall Corporation #G001-002 10/29/19 1017192

Analysis

Date

10/18/19

Sample Identification: MW-1331

Sample Date: Sample Time: Sampled By:

10/17/19 11:30 AM Client

Laboratory Receipt Date: Sample Matrix:

10/17/19 Groundwater

Reporting Limit Parameter Method Result Organic Analysis 1,4-Dioxane EPA 1624 0.002 0.001 ma/L

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191



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

ATS Project: Report Date: ATS SRF:

#G001-002 Pall Corporation 10/29/19 1017192

Sample Identification:

MW-133D

Sample Date: Sample Time: Sampled By:

10/17/19 1:04 PM Client

Laboratory Receipt Date:

10/17/19

Sample Matrix:

Parameter

Organic Analysis

1,4-Dioxane

Groundwater

EPA 1624

Method Units Result

mg/L

Analysis Reporting Limit Date 0.001 10/18/19

Analysis Analyzed Time By

JEB 14:21

#G001-002

Analyzed

Ву

JEB

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:

0.003

10/29/19

ATS SRF: 1017192

Sample Identification: MW-30D

Sample Date:

10/17/19 Sample Time: 2:44 PM Client

Sampled By: Laboratory Receipt Date:

10/17/19 Groundwater

Sample Matrix:

Analysis Analysis Reporting Limit Parameter Method Units Result Date Time Organic Analysis 1,4-Dioxane EPA 1624 0.005 10/18/19 15:03 0.18 ma/L

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191

rev. 10/29/19



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:

#G001-002 10/29/19 ATS SRF: 1018192

Sample Identification:

Sample Date: Sample Time: 10/18/19 10:00 AM

Sampled By: Laboratory Receipt Date: Sample Matrix:

Parameter

Organic Analysis

1,4-Dioxane

Client 10/18/19

MW-72S

Groundwater

Method

EPA 1624

Result

< 0.001

0.001

Units

mg/L

Analysis Analysis Reporting Limit Date Time

10/21/19 15:04 SLS

Analyzed

Ву

Organic Analysis Data Summary Sheet

For: Ms. Sue Peters

Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Report Date: ATS SRF:

Pall Corporation #G001-002 10/29/19 1018192

Sample Identification: MW-72D

Sample Date: Sample Time: 10/18/19 11:16 AM

Sampled By: Laboratory Receipt Date: Client 10/18/19

Sample Matrix:

Groundwater

Method Units

Analysis Analysis Analyzed Reporting Limit Parameter Result Time Date By Organic Analysis FPA 1624 10/22/19 SIS 0.8 0.1 16:04 1,4-Dioxane mg/L

Comments

All methods reference USEPA methods unless otherwise noted,

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191



#G001-002

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

ATS Project: Pall Corporation Report Date: 10/29/19 ATS SRF: 1018192

Sample Identification: MW-17

10/18/19 12:44 PM

Sample Date: Sample Time:

Sampled By:

Laboratory Receipt Date: Sample Matrix:

Client 10/18/19 Groundwater

Parameter Method Units Organic Analysis 1,4-Dioxane EPA 1624 mg/L

Analysis Analysis Analyzed Reporting Limit Result Date Time By 0.24 0.01 10/21/19 15:47 SLS

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: Report Date: ATS SRF:

#G001-002 Pall Corporation 10/29/19 1018192

Sample Identification: 697 South Wagner Road

Sample Date: Sample Time:

10/18/19 2:50 PM Client

Sampled By: Laboratory Receipt Date: Sample Matrix:

10/18/19 Drinking Water

Analysis Analysis Analyzed Reporting Limit Method Units Result Date Time Ву Parameter Organic Analysis EPA 1624 10/21/19 14:22 SLS 1,4-Dioxane ma/L < 0.001 0.001

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable

X:\G001-002.19\SRF_1014191 through 1025191

rev. 10/29/19



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: 10/29/19

ATS SRF: 1021192

#G001-002

Sample Identification:

Sample Date: Sample Time:

Parameter

Organic Analysis

1,4-Dloxane

10/21/19 9:14 AM

Sampled By: Laboratory Receipt Date: Sample Matrix:

Client 10/21/19 Groundwater

Method

EPA 1624

mg/L

MW-127D

Analysis Reporting Limit Units Result

0.001

1021192

Analysis Analyzed Date Time By 13:35

SLS

Organic Analysis **Data Summary Sheet**

For: Ms. Sue Peters Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Report Date: ATS SRF:

<0.001

Pall Corporation #G001-002 10/29/19

10/25/19

Sample Identification: MW-127S

Sample Date: Sample Time: 10/21/19 10:26 AM

Sampled By: Laboratory Receipt Date: Sample Matrix:

Client 10/21/19

Groundwater

Parameter	Method	Units	Result	Reporting Limit	Date	Time	By
Organic Analysis							
1,4-Dioxane	EPA 1624	mg/L	<0.001	0.001	. 10/25/19	14:17	SLS

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191



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

ATS Project: Pall Corporation #G001-002 Report Date: 10/29/19 ATS SRF: 1021192

Sample Identification: Saginaw Forest Cabin #2

Sample Date: Sample Time: Sampled By:

10/21/19 11:43 AM Client 10/21/19

Laboratory Receipt Date:

Sample Matrix:

Groundwater

Method

EPA 1624

Parameter Organic Analysis 1,4-Dioxane

Units mg/L

Result < 0.001

Reporting Limit Date 0.001 10/25/19

Analysis

Analysis Analyzed Time

By 12:52 SLS

#G001-002

Analyzed

Ann Arbor, Michigan 48103 Tel. 734/995-0995 Fax. 734/995-3731

Organic Analysis Data Summary Sheet

For: Ms. Sue Peters Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Report Date: ATS SRF:

Pall Corporation

10/29/19

1021192

Sample Identification: Saginaw Forest Cabin #1

10/21/19

Sample Date: Sample Time:

12:57 PM Sampled By: Client

Laboratory Receipt Date:

10/21/19 Groundwater

EPA 1624

Sample Matrix: Method

Parameter Organic Analysis 1,4-Dioxane

Result < 0.001 ma/L

Reporting Limit 0.001 10/25/19

Date

Analysis

Analysis Time

Ву 12:10 SLS

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191

rev. 10/29/19



Organic Analysis **Data Summary Sheet**

#G001-002

For: Ms. Sue Peters

Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Pall Corporation Report Date:

10/29/19 ATS SRF: 1021192

0.001

Sample Identification: MW-78

Sample Date: Sample Time:

Parameter

Organic Analysis

1,4-Dioxane

10/21/19 2:09 PM Client

Sampled By: Laboratory Receipt Date: Sample Matrix:

10/21/19

Groundwater

Method

EPA 1624

Units

ma/L

Analysis Analysis Reporting Limit Date Time

10/25/19

Analyzed Ву 14:59 SLS

290 South Wagner Road Ann Arbor, Michigan 48103 Tel. 734/995-0995 Fax. 734/995-3731

Organic Analysis **Data Summary Sheet**

For: Ms. Sue Peters Pall Corporation

642 South Wagner Road

Ann Arbor, MI 48103

ATS Project: Report Date: ATS SRF:

Result

0.025

Pall Corporation #G001-002 10/29/19 1021192

0.22

Sample Identification: MW-125

Sample Date: Sample Time: 10/21/19 3:21 PM Client

Sampled By: Laboratory Receipt Date: Sample Matrix:

10/21/19 Groundwater

Method

EPA 1624

Units Result

mg/L

Analysis Analysis Reporting Limit Date 0.02 10/25/19

Time Ву 16:27 SLS

Analyzed

Parameter

Organic Analysis

1,4-Dioxane

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191



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

ATS Project: Report Date: ATS SRF: 1022192

Pall Corporation #G001-002 10/29/19

Sample Identification: MW-128D

10/22/19

Sample Date: Sample Time: Sampled By:

Parameter

Organic Analysis

1,4-Dioxane

9:45 AM Client

Laboratory Receipt Date:

10/22/19

Sample Matrix:

Groundwater

Method

EPA 1624

Reporting Limit Units Result

<0.001

mg/L

Analysis Date 10/22/19

Analysis Analyzed Time By

SLS

#G001-002

Analyzed

By

SIS

Organic Analysis **Data Summary Sheet**

Analysis

Time

19:35

18:53

For: Ms. Sue Peters Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

Report Date:

ATS Project: Pall Corporation 10/29/19

0.001

ATS SRF: 1022192

Sample Identification: MW-128S

Sample Date: Sample Time:

10/22/19 10:58 AM Client

Sampled By: Laboratory Receipt Date:

10/22/19

Method

EPA 1624

Units

mg/L

Sample Matrix:

Groundwater

Parameter

Reporting Limit Result

Analysis Date < 0.001 0.001 10/22/19

Comments

1,4-Dioxane

Organic Analysis

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191

rev. 10/29/19



Organic Analysis **Data Summary Sheet**

#G001-002

Analyzed

Ву

SLS

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

ATS Project: Pall Corporation Report Date: 10/29/19 ATS SRF:

1022192

Sample Identification: MW-37

Sample Date: Sample Time:

Parameter

Organic Analysis

1,4-Dioxane

10/22/19 12:16 PM

Sampled By: Laboratory Receipt Date: Sample Matrix:

Client 10/22/19

Method

EPA 1624

Groundwater

Units

mg/L

Analysis Analysis Reporting Limit Result Date Time

0.01

Organic Analysis **Data Summary Sheet**

21:41

For: Ms. Sue Peters

Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Report Date:

0.22

Pall Corporation #G001-002 10/29/19 ATS SRF: 1022192

10/22/19

Sample Identification: MW-58D

Sample Date: Sample Time:

10/22/19 1:41 PM

Sampled By: Laboratory Receipt Date: Sample Matrix:

Client 10/22/19

Groundwater

Analysis Analysis Analyzed Reporting Limit Parameter Method Units Result Date Time Ву Organic Analysis 1,4-Dioxane **EPA 1624** mg/L 0.016 0.001 10/22/19 20:17 SLS

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF 1014191 through 1025191



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

ATS Project: Pall Corporation #G001-002 Report Date: 10/29/19 ATS SRF: 1022192

Sample Identification:

MW-58S

Sample Date: Sample Time:

10/22/19 2:51 PM

Sampled By:

Client 10/22/19

Laboratory Receipt Date: Sample Matrix:

Groundwater

Parameter Organic Analysis 1,4-Dioxane

Analyzed Analysis Analysis Reporting Limit Method Date Time Ву EPA 1624 10/22/19 SLS mg/L 0.19 0.01 20:59

Organic Analysis **Data Summary Sheet**

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

Report Date: ATS SRF:

ATS Project: Pall Corporation 10/29/19

#G001-002

1024192

Sample Identification: MW-66

Sample Date: Sample Time: 10/24/19 10:00 AM

Sampled By: Laboratory Receipt Date: Client 10/24/19

Sample Matrix:

Groundwater

Analysis Analysis Analyzed Reporting Limit Parameter Method Units Result Date Time By Organic Analysis 1,4-Dioxane EPA 1624 10/24/19 16:42 SLS ma/L 0.002 0.001

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191

rev. 10/29/19



Organic Analysis **Data Summary Sheet**

#G001-002

SLS

For: Ms. Sue Peters Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Pall Corporation Report Date: 10/29/19 ATS SRF: 1024192

Sample Identification:

Sample Date:

MW-35 10/24/19 11:35 AM

Sample Time: Sampled By:

Parameter

Organic Analysis

1,4-Dioxane

Client

Laboratory Receipt Date: Sample Matrix:

10/24/19 Groundwater

EPA 1624

Analysis Analysis Analyzed Reporting Limit Method Units Result Date Time Ву

0.001



Organic Analysis **Data Summary Sheet**

Amelicate

18:49

For: Ms. Sue Peters Pall Corporation

642 South Wagner Road

Ann Arbor, MI 48103

ATS Project: Report Date: ATS SRF:

0.002

ma/L

Pall Corporation #G001-002 10/29/19 1024192

10/24/19

Sample Identification: MW-32

Sample Date: Sample Time: 10/24/19 2:02 PM Client

Sampled By: Laboratory Receipt Date: Sample Matrix:

10/24/19

Groundwater

Parameter	Method	Units	Result	Reporting Limit	Date	Time	By
Organic Analysis			-				
1,4-Dioxane	EPA 1624	mg/L	0.022	0.001	10/24/19	19:31	SLS

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

X:\G001-002.19\SRF_1014191 through 1025191



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

ATS Project:

Pall Corporation

#G001-002

ATS SRF:

10/14/19 Updated 10/29/19 1014191 (Urgent)

Sample Identification:

HC/HR

Sample Date: Sample Time:

Sample Matrix:

10/14/19 8:05 AM Client

Sampled By: Laboratory Receipt Date:

10/14/19 Surface Water

ATS 300.1 MOD

Parameter Inorganic Analysis Method

Bromate

Units Result <0.002 mg/L

Reporting Limit Date 0.002* 10/14/19

Analysis

Time By 14:51

Analysis

SLS

Analyzed

#G001-002

Analyzed

Ву

SLS

Inorganic Analysis **Data Summary Sheet**

Analysis

Time

9:17

Analysis

Date

10/15/19

For: Ms. Sue Peters Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

Report Date:

ATS Project: Pall Corporation

0.002*

10/15/19 Updated 10/29/19

1015191 (Urgent)

Sample Identification:

HC/HR

Sample Date: Sample Time: Sampled By:

10/15/19 7:30 AM Client

Laboratory Receipt Date:

10/15/19

Sample Matrix:

Surface Water

Parameter Inorganic Analysis

Bromate

ATS 300.1 MOD

Reporting Limit Method Units Result

mg/L

<0.002

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

*Elevated reporting limit due to matrix interference.

X:\G001-002.19\SRF_1014191 through 1025191

rev. 10/29/19



Inorganic Analysis **Data Summary Sheet**

#G001-002

For: Ms. Sue Peters

Sample Date:

Sample Matrix:

Parameter

Inorganic Analysis

Bromate

Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

Report Date:

Result

< 0.002

ATS Project: Pall Corporation 10/16/19 Updated 10/29/19

ATS SRF: 1016191 (Urgent)

Sample Identification: HC/HR

Sample Time: Sampled By:

Laboratory Receipt Date:

8:27 AM Client 10/16/19

10/16/19

Surface Water

Method

ATS 300.1 MOD

Units

mg/L

Units

mg/L

Reporting Limit

0.002*

Date

10/16/19

Analysis Analysis Analyzed Time

Ву 11:04 SLS

Inorganic Analysis **Data Summary Sheet**

For: Ms. Sue Peters

Pall Corporation 642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Pall Corporation Report Date: ATS SRF:

#G001-002 10/17/19 Updated 10/29/19

1017191 (Urgent)

Sample Identification: HC/HR

Sample Date: Sample Time:

Parameter

Inorganic Analysis

Bromate

10/17/19 8:35 AM

Sampled By: Laboratory Receipt Date: Sample Matrix:

Client 10/17/19

Surface Water

Method ATS 300.1 MOD

Analysis Analysis Reporting Limit Result Date Time < 0.002 0.002* 10/17/19 11:55

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

*Elevated reporting limit due to matrix interference.

X:\G001-002.19\SRF_1014191 through 1025191

rev. 10/29/19

Analyzed

By

SLS



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

ATS Project: Report Date:

Pall Corporation #G001-002 10/18/19 Updated 10/29/19

ATS SRF: 1018191 (Urgent)

Sample Identification:

HC/HR

Sample Date: Sample Time: Sampled By:

Parameter

Inorganic Analysis

Bromate

10/18/19 8:05 AM Client

Laboratory Receipt Date:

10/18/19

Sample Matrix:

Surface Water

Method ATS 300.1 MOD

Result < 0.002

Units

Analysis Reporting Limit Date 0.002* 10/18/19

Analysis Analyzed Time By

10:40 SLS

#G001-002

Inorganic Analysis **Data Summary Sheet**

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

ATS Project: Report Date: ATS SRF:

Pall Corporation

10/21/19 Updated 10/29/19

1021191 (Urgent)

Sample Identification:

HC/HR

Sample Date: Sample Time:

10/21/19 7:55 AM Client

Sampled By: Laboratory Receipt Date:

10/21/19

Sample Matrix:

Surface Water

Analysis Analysis Analyzed Reporting Limit Method Date Time Ву Parameter Units Result Inorganic Analysis ATS 300.1 MOD 10/21/19 10:57 SLS < 0.002 0.002*

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

*Elevated reporting limit due to matrix interference.

X:\G001-002.19\SRF_1014191 through 1025191

rev. 10/29/19



Inorganic Analysis **Data Summary Sheet**

For: Ms. Sue Peters Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Pall Corporation

Report Date: 10/22/19 Updated 10/29/19

ATS SRF: 1022191 (Urgent)

Sample Identification: HC/HR

Sample Date: Sample Time: Sampled By:

Parameter

Inorganic Analysis

Bromate

10/22/19 8:25 AM Client

Laboratory Receipt Date: Sample Matrix:

10/22/19

Method

ATS 300.1 MOD

Surface Water

Reporting Limit

Result

< 0.002

ma/L

Analysis Analysis Analyzed Date Time Ву 10/22/19 10:50 SLS

Inorganic Analysis **Data Summary Sheet**

#G001-002

For: Ms. Sue Peters

Pall Corporation

642 South Wagner Road Ann Arbor, MI 48103

ATS Project: Report Date:

Pall Corporation 10/23/19 Updated 10/29/19

Analysis

ATS SRF: 1023191 (Urgent)

0.002

Sample Identification: HC/HR

Sample Date: Sample Time:

10/23/19 7:30 AM Client

Sampled By: Laboratory Receipt Date: Sample Matrix:

10/23/19 Surface Water

Parameter		Method	Units	Result	Reporting Limit	Date	Time	Ву	
Inorganic Analysis									
Bromate	175	ATS 300.1 MOD	mg/L	< 0.002	0.002*	10/23/19	11:33	SLS	
				W 1997					

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

*Elevated reporting limit due to matrix interference.

X:\G001-002.19\SRF_1014191 through 1025191

rev. 10/29/19

Analysis Analyzed



For: Ms. Sue Peters Pall Corporation

ATS Project: Pall Corporation Report Date:

#G001-002

642 South Wagner Road Ann Arbor, MI 48103

ATS SRF:

10/24/19 Updated 10/29/19 1024191 (Urgent)

Sample Identification: HC/HR

Sample Date: Sample Time:

10/24/19 8:00 AM Client

Sampled By: Laboratory Receipt Date: Sample Matrix:

10/24/19

Surface Water

Parameter Inorganic Analysis Bromate

Method ATS 300.1 MOD Result <0.002

Units

mg/L

Analysis Reporting Limit Date 0.002* 10/24/19

Analyzed Analysis Time 10:14

Ву SLS

#G001-002

Analyzed

Ву

SLS

Inorganic Analysis **Data Summary Sheet**

For: Ms. Sue Peters

Pall Corporation

642 South Wagner Road

Report Date:

ATS Project: Pall Corporation

10/25/19 Updated 10/29/19

Ann Arbor, MI 48103

ATS SRF: 1025191 (Urgent)

Sample Identification: HC/HR

Sample Date:

Sample Time:

9:00 AM Sampled By: Client

Laboratory Receipt Date: Sample Matrix:

10/25/19

Surface Water

10/25/19

Parameter Inorganic Analysis Bromate

Method

ATS 300.1 MOD

Units

Reporting Limit Result Date <0.002 0.002* 10/25/19

Analysis

Analysis Time 11:23

Comments

All methods reference USEPA methods unless otherwise noted.

na - Indicates not available / applicable.

*Elevated reporting limit due to matrix interference.

X:\G001-002.19\SRF_1014191 through 1025191



290 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

AC Batch Number: QCORG101419
Parameter: 1,4-Dioxane (EPA 1624)

ATS Project: Pall Corporation
Report Date: 10/29/19

#G001-002

Results of QA Samples run concurrently with project samples

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 Outfall 10/13/19 Matrix Spike	0.017 mg/L	0.016 mg/L	0.016 mg/L	5.5

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.011 mg/L	113.0
Outfall 10/13/19 Matrix Spike	0.007 mg/L	0.010 mg/L	0.017 mg/L	101.1
Outfall 10/13/19 Matrix Spike Duplicate	0.007 mg/L	0.010 mg/L	0.016 mg/L	91.9
		-		

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%) 290 South Wagner Road Ann Arbor, Michigan 49103 Tel. 734/995-998 Fax. 734/995-3731 Michigan Laboratory ID: 9904 Wisconsin Laboratory ID: 998321720

Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG101519	ATS Project: Pall Corporation	#G001-002
Parameter: 1,4-Dioxane (EPA 1624)	Report Date: 10/29/19	

Results of QA Samples run concurrently with project samples

REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002				
Outfall 10/14/19 Matrix Spike	0.016 mg/L	0.015 mg/L	0.016 mg/L	8.4

SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	109.6
Outfall 10/14/19 Matrix Spike	0.007 mg/L	0.010 mg/L	0.016 mg/L	97.7
Outfall 10/14/19 Matrix Spike Duplicate	0.007 mg/L	0.010 mg/L	0.015 mg/L	84.5
	1 1			

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%)



 QC Batch Number: QCORG101619
 ATS Project: Pall Corporation
 #G001-002

 Parameter: 1,4-Dioxane (EPA 1624)
 Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 Outfall 10/15/19 Matrix Spike	0.014 mg/L	0.016 mg/L	0.015 mg/L	9.3

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
Campieranaryte	Concentiation	Concentiation	Concentration	(percent)
G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	98.9
Outfall 10/15/19 Matrix Spike	0.006 mg/L	0.010 mg/L	0.014 mg/L	77.6*
Outfall 10/15/19 Matrix Spike Duplicate	0.006 mg/L	0.010 mg/L	0.016 mg/L	91.4
	1 "			
	1			
	1			

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

Comments:

Calculations performed prior to rounding.

*Outside standard contol limits.

Control Limits:

Laboratory Control Sample Recovery (85 - 115%) Matrix Spike Recovery (80 - 120%)

Relative Range Replicates (<20%) 290 South Wagner Road Ann Arbor, Michigan 48103 Tel. 734/995-9995 Fax. 734/995-3731 Michigan Laboratory ID: 9803 Wisconsin Laboratory ID: 980321720

Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG101719 Parameter: 1,4-Dioxane (EPA 1624) ATS Project: Pall Corporation #G001-002 Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

		ANA	

Replicate #1	Replicate #2	Mean	Relative Range (percent)
0.022 ma/l	0.024 mail	0.000 #	
0.025 Hig/L	0.024 mg/L	0.023 mg/L	4.5
S4	4		
	Replicate #1 0.023 mg/L	0.023 mg/L 0.024 mg/L	0.023 mg/L 0.024 mg/L 0.023 mg/L

SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.009 mg/L	87.4
Outfall 10/16/19 Matrix Spike	0.004 mg/L	0.020 mg/L	0.023 mg/L	91.7
Outfall 10/16/19 Matrix Spike Duplicate	0.004 mg/L	0.020 mg/L	0.024 mg/L	96.9

DI	A BILL	 LIAI	YSIS	٠

Analyzed Concentration	QC Decision
<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%)



QC Batch Number: QCORG101819 ATS Project: Pall Corporation Parameter: 1,4-Dioxane (EPA 1624)

Report Date: 10/29/19

#G001-002

Results of QA Samples run concurrently with project samples

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 MW-133S 10/17/19 Matrix Splike	0.012 mg/L	0.013 mg/L	0.012 mg/L	14.8

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.009 mg/L	93.8
MW-133S 10/17/19 Matrix Spike	0.002 mg/L	0,010 mg/L	0.012 mg/L	99.5
MW-133S 10/17/19 Matrix Spike Duplicate	0.002 mg/L	0.010 mg/L	0.013 mg/L	118.1

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:

Laboratory Control Sample Recovery (85 - 115%) Matrix Spike Recovery (80 - 120%)

Relative Range Replicates (<20%) 290 South Wagner Road Ann Arbor, Michigan 48103 Tel. 734/995-3995 Fax. 734/995-3731 Michigan Laboratory ID: 9604 Wisconsin Laboratory ID: 998321720

Quality Assurance / Quality Control **Data Summary**

QC Batch Number: QCORG102119 ATS Project: Pall Corporation #G001-002 Parameter: 1,4-Dioxane (EPA 1624) Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 Outfall 10/20/19 Matrix Spike	0.015 mg/L	0.014 mg/L	0.015 mg/L	5.7
		*		

SPIKES and/or QC CHECK SAMPLES Recovery Known Spike Analyzed Sample/Analyte Concentration Concentration Concentration (percent) #G001-002 0.010 mg/L Laboratory Fortified Blank <0.001 mg/L 0.011 mg/L 106.0 Outfall 10/20/19 Matrix Spike 0.005 mg/L 0.010 mg/L 0.015 mg/L 98.1 Outfall 10/20/19 Matrix Spike Duplicate 0.005 mg/L 0.014 mg/L 0.010 mg/L 89.6

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

Comments:	Control Limits:	

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

Calculations performed prior to rounding.

DI ANIIC ANIAI MOIO



ch Number:	QCORG102219	AT
Parameter:	1,4-Dioxane (EPA 1624)	Re

ATS Project: Pall Corporation #G001-002

Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 MW-72D 10/18/19 Matrix Splke	1.6 mg/L	1.7 mg/L	1.7 mg/L	3.8

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.009 mg/L	91.1
MW-72D 10/18/19 Matrlx Spike	0.8 mg/L	1.0 mg/L	1.6 mg/L	85.9
MW-72D 10/18/19 Matrix Spike Duplicate	0.8 mg/L	1.0 mg/L	1.7 mg/L	92.3

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

2	
Comments:	
Calculations performed prior to rounding	

Control Limits:

Recoveries

Laboratory Control Sample Recovery (85 - 115%) Matrix Spike Recovery (80 - 120%)

Matrix Spike Recovery (80 - 120 Relative Range Replicates (<20%)

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rev 10/29/19



Quality Assurance / Quality Control Data Summary

 QC Batch Number:
 QCORG102319
 ATS Project:
 Pall Corporation
 #G001-002

 Parameter:
 1,4-Dioxane (EPA 1624)
 Report Date:
 10/29/19

Results of QA Samples run concurrently with project samples

REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent
#G001-002				
Outfall 10/22/19 Matrix Spike	0.026 mg/L	0.027 mg/L	0.027 mg/L	3.3
				1

SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	100.0
Outfall 10/22/19 Matrix Spike	0.006 mg/L	0.020 mg/L	0.026 mg/L	101.6
Outfall 10/22/19 Matrix Spike Duplicate	0.006 mg/L	0.020 mg/L	0.027 mg/L	106.0
	1			

 BLANK ANALYSIS

 Sample
 Analyzed Concentration
 QC Decision

 #G001-002
 Concentration
 Acceptable

 Laboratory Reagent Blank
 <0.001 mg/L</td>
 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%)

X:\G001-002.19\SRF_1014191 through 1025191



Parameter: 1,4-Dioxane (EPA 1624)

Quality Assurance / Quality Control Data Summary

 ATS Project:
 Pall Corporation
 #G001-002

 Report Date:
 10/29/19

Results of QA Samples run concurrently with project samples

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
G001-002 MW-66 10/24/19 Matrix Splike	0.013 mg/L	0.013 mg/L	0.013 mg/L	2.0

SPIKES	and/or	OC	CHECK	SAMPL	FS

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
¢G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.009 mg/L	91.9
MW-66 10/24/19 Matrix Splke	0.002 mg/L	0.010 mg/L	0.013 mg/L	112.6
MW-66 10/24/19 Matrix Spike Duplicate	0.002 mg/L	0.010 mg/L	0.013 mg/L	110.1

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%) 290 South Wagner Road Ann Arbor, Milchigan 49103 Tal. 734/995-0995 Fax, 734/995-3731 Milchigan Laboratory ID: 98634 Wisconsin Laboratory ID: 998321720

Quality Assurance / Quality Control Data Summary

 QC Batch Number: QCORG102519
 ATS P

 Parameter: 1,4-Dioxane (EPA 1624)
 Report

ATS Project: Pall Corporation #G001-002 Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 MW-125 10/21/19 Matrix Spike	0.66 mg/L	0.71 mg/L	0.68 mg/L	7.4

SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	96.4
MW-125 10/21/19 Matrix Spike	0.20 mg/L	0.40 mg/L	0.66 mg/L	109.5
MW-125 10/21/19 Matrix Spike Duplicate	0.20 mg/L	0.40 mg/L	0.71 mg/L	122.1*

BLANK ANALYSIS

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

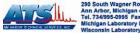
Comments:

Calculations performed prior to rounding.
*Outside standard control limits.

Control Limits:

Recoveries

Laboratory Control Sample Recovery (85 - 115%) Matrix Spike Recovery (80 - 120%)



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

Quality Assurance / Quality Control **Data Summary**

2C Batch Number: QCORG101419 Parameter: Bromate (ATS 300.1 MOD) ATS Project: Pall Corporation Report Date: 10/29/19

#G001-002

Results of QA Samples run concurrently with project samples

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
4G001-002 HC/HR 10/14/19 Matrix Spilke	0.009 mg/L	0.008 mg/L	0.009 mg/L	7.0

SPIKES and	d/or QC	CHECK	SAMPLE	S
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Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	103.8
HC/HR 10/14/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.009 mg/L	89.5
HC/HR 10/14/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.008 mg/L	83.2

BLANK ANALYSIS

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

Comments:

Calculations performed prior to rounding.

** Elevated reporting limit due to matrix interference.

Control Limits:

Recoveries

Laboratory Control Sample Recovery (80 - 120%) Matrix Spike Recovery (70 - 130%)

Relative Range

Replicates (<20%)

290 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: QCORG101519

Parameter: Bromate (ATS 300.1 MOD)

ATS Project: Pall Corporation

#G001-002

Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 HC/HR 10/15/19 Matrix Spike	0.011 mg/L	0.012 mg/L	0.012 mg/L	11.6

SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	96.3
HC/HR 10/15/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.011 mg/L	110.4
HC/HR 10/15/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.012 mg/L	124.0
		=		
			to recommend to the second cold	Access to the second

BLANK ANALYSIS

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

Comments:

Calculations performed prior to rounding.

** Elevated reporting limit due to matrix interference.

Control Limits:

Laboratory Control Sample Recovery (80 - 120%) Matrix Spike Recovery (70 - 130%)



C Batch Number: QCORG101619

Parameter: Bromate (ATS 300.1 MOD)

ATS Project: Pall Corporation

#G001-002

Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 HC/HR 10/16/19 Matrix Spilke	0.009 mg/L	0,010 mg/L	0.010 mg/L	15.6
				2.7

DIKES and/or OC CHECK SAMDLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	100.9
HC/HR 10/16/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.009 mg/L	87.5
HC/HR 10/16/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.010 mg/L	102.3

BLANK ANALYSIS

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

Comments:

Calculations performed prior to rounding.

** Elevated reporting limit due to matrix interference.

Control Limits:

Recoveries

Laboratory Control Sample Recovery (80 - 120%) Matrix Spike Recovery (70 - 130%)

Relative Range

Replicates (<20%)

290 South Wagner Road Ann Arbor, Michigan 48103 Tel. 734/995-0995 Fax, 734/995-3731 Michigan Laboratory ID: 9804 Wisconsin Laboratory ID: 989321720

Quality Assurance / Quality Control Data Summary

QC Batch Number: QCORG101719

Parameter: Bromate (ATS 300.1 MOD)

ATS Project: Pall Corporation
Report Date: 10/29/19

#G001-002

Results of QA Samples run concurrently with project samples

REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002				
HC/HR 10/17/19 Matrix Spike	0.009 mg/L	0.011 mg/L	0.010 mg/L	22.5*
		1		

SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	95.1
HC/HR 10/17/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.009 mg/L	86.4
HC/HR 10/17/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.011 mg/L	108.3

BLANK ANALYSIS

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

Comments:

Calculations performed prior to rounding.

** Elevated reporting limit due to matrix interference.

*Outside standard control limits.

Control Limits:

Recoveries

Laboratory Control Sample Recovery (80 - 120%) Matrix Spike Recovery (70 - 130%)



Quality Assurance / Quality Control **Data Summary**

Batch Number:	QCORG101819
Parameter	Bromate (ATS 300 1 MOD)

ATS Project: Pall Corporation

#G001-002

Report Date: 10/29/19

QC Batch Number: QCORG102119 Parameter: Bromate (ATS 300.1 MOD) ATS Project: Pall Corporation

Quality Assurance / Quality Control

#G001-002

Data Summary

Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

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

REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002				
HC/HR 10/21/19 Matrix Spike	0.007 mg/L	0.008 mg/L	0.008 mg/L	19.1
				1

SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.008 mg/L	84.5
HC/HR 10/21/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.007 mg/L	68.9*
HC/HR 10/21/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.008 mg/L	83.4

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

Calculations performed prior to rounding.

** Elevated reporting limit due to matrix interference.

*Outside standard control limits.

Control Limits:

Laboratory Control Sample Recovery (80 - 120%) Matrix Spike Recovery (70 - 130%)

Relative Range Replicates (<20%)

Results of QA Sa	amples run concurrently	with project samples
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REP	LICAT	E.	ANA	LY	SI	S
						_

			(percent)
0.012 mg/L	0.012 mg/L	0.012 mg/L	4.8
	0.012 mg/L	0.012 mg/L 0.012 mg/L	0.012 mg/L 0.012 mg/L 0.012 mg/L

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	97.8
HC/HR 10/18/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.012 mg/L	120.7
HC/HR 10/18/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.012 mg/L	115.0
			A1	

BLANK ANALYSIS

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

Comments:

Calculations performed prior to rounding.

** Elevated reporting limit due to matrix interference.

Control Limits:

Recoveries

Laboratory Control Sample Recovery (80 - 120%) Matrix Spike Recovery (70 - 130%)

Relative Range

Replicates (<20%)

G001-002.19\SRF_1014191 through 1025191

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rev 10/29/19



290 South Wagner Road Ann Arbor, Michigan 48103 Tel. 734/995-3995 Fax. 734/995-3731 Michigan Laboratory ID: 9604 Wisconsin Laboratory ID: 998321720

Quality Assurance / Quality Control Data Summary

C Batch Number: QCORG102219

Parameter: Bromate (ATS 300.1 MOD)

ATS Project: Pall Corporation

#G001-002

Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

Replicate #1	Replicate #2	Mean	Relative Range (percent)
0.010 mg/L	0.012 mg/L	0.011 mg/L	19.5

SDIVES and/or OC CHECK SAMDLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
¢G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	95.7
HC/HR 10/22/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.010 mg/L	100.6
HC/HR 10/22/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.012 mg/L	122.3

BLANK ANALYSIS

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

Comments:

Calculations performed prior to rounding.

** Elevated reporting limit due to matrix interference.

Control Limits:

Recoveries

Laboratory Control Sample Recovery (80 - 120%) Matrix Spike Recovery (70 - 130%)

Relative Range

Replicates (<20%)

290 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: QCORG102319

Parameter: Bromate (ATS 300.1 MOD)

ATS Project: Pall Corporation Report Date: 10/29/19

#G001-002

Results of QA Samples run concurrently with project samples

DEDITIONTE ANALVEIS

Replicate #1	Replicate #2	Mean	Relative Range (percent)
0,011 mg/L	0.011 mg/L	0.011 mg/L	0.9

SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.010 mg/L	100.5
HC/HR 10/23/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.011 mg/L	108.0
HC/HR 10/23/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.011 mg/L	107.1

BLANK ANALYSIS

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

Comments:

Calculations performed prior to rounding.

** Elevated reporting limit due to matrix interference.

Control Limits:

Recoveries

Laboratory Control Sample Recovery (80 - 120%) Matrix Spike Recovery (70 - 130%)

Relative Range Replicates (<20%)



Quality Assurance / Quality Control

Data Summary

#G001-002

C Batch Number:	QCORG102419

ATS Project: Pall Corporation Parameter: Bromate (ATS 300.1 MOD) Report Date: 10/29/19

Results of QA Samples run concurrently with project samples

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent			
#G001-002 HC/HR 10/24/19 Matrix Spilke	0.012 mg/L	0.012 mg/L	0.012 mg/L	1.6			

SDIVES and/or OC CHECK SAMDLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.012 mg/L	116.7
HC/HR 10/24/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.012 mg/L	120.7
HC/HR 10/24/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.012 mg/L	122.6
			1	

BLANK ANALYSIS

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

Comments:

Calculations performed prior to rounding.

** Elevated reporting limit due to matrix interference.

Control Limits:

Recoveries

Laboratory Control Sample Recovery (80 - 120%) Matrix Spike Recovery (70 - 130%)

Relative Range

Replicates (<20%)

290 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: QCORG102519 Parameter: Bromate (ATS 300.1 MOD) ATS Project: Pall Corporation Report Date: 10/29/19

#G001-002

Results of QA Samples run concurrently with project samples

REPLICATE ANALYSIS

Sample	Replicate #1	Replicate #2	Mean	Relative Range (percent)
#G001-002 HC/HR 10/25/19 Matrix Spike	0.011 mg/L	0.011 mg/L	0.011 mg/L	0.7

SPIKES and/or QC CHECK SAMPLES

Sample/Analyte	Known Concentration	Spike Concentration	Analyzed Concentration	Recovery (percent)
#G001-002				
Laboratory Fortified Blank	<0.001 mg/L	0.010 mg/L	0.009 mg/L	90.7
HC/HR 10/25/19 Matrix Spike	<0.002 mg/L**	0.010 mg/L	0.011 mg/L	110.4
HC/HR 10/25/19 Matrix Spike Duplicate	<0.002 mg/L**	0.010 mg/L	0.011 mg/L	111.1
				×:

BLANK ANALYSIS

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

Comments:

Calculations performed prior to rounding.

** Elevated reporting limit due to matrix interference.

Control Limits:

Laboratory Control Sample Recovery (80 - 120%) Matrix Spike Recovery (70 - 130%)

Relative Range

Replicates (<20%)



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CHAIN OF CUSTODY RECORD

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290 South Wagner Road Ann Arbor, Michigan 45103 Tat. 734:335-095 Fax, 734:35-3731 Michigan Laboratory ID: 950-21720 Wisconsin Laboratory ID: 951-221720 CHAIN OF CUSTODY RECORD

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230 South Wagner Road Ann Arbor, Michigan 48103 Tal, 734100-0395 Fax, 7341925-3731 Michigan Laboratory (D. 9606

CHAIN OF CUSTODY RECORD

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250 South Wagner Road Ann Arbor, Michigan 48103 Tel. 734995-6995 Fax. 734595-3731 Michigan Laboratory (Cr. 8804 Wisconship Laboratory (Cr. 980731728

CHAIN OF CUSTODY RECORD

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294 South Wagner Road Ann Arbor, Michigan 45103 Yel. 734935-3955 Faz. 734935-3131 Altahigan Laboratory (D: 8594 Vriscansin Laboratory (D: 85832)720 CHAIN OF CUSTODY RECORD

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