TETRA TECH

March 22, 2021

Mr. Doug Ferguson
On-Scene Coordinator
U.S. Environmental Protection Agency, Region 7
11201 Renner Boulevard
Lenexa, Kansas 66219

Subject: **Emergency Response Trip Report**
AltEn Facility Release – Mead, Nebraska
U.S. EPA Region 7 START 5, Contract No. 68HE0719D0001
Task Order No. 19F0027.015
Task Monitor: Doug Ferguson, On-Scene Coordinator

Dear Mr. Ferguson:

Tetra Tech, Inc. submits the attached Emergency Response Trip Report regarding the AltEn site in Mead, Nebraska, where release of liquid waste products from an aboveground tank occurred. If you have any questions or comments, please contact Project Manager Eric Deselich at (816) 412-1750.

Sincerely,

Eric Deselich
START Project Manager

Ted Faile, PG, CHMM
START Program Manager

Enclosures

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EMERGENCY RESPONSE TRIP REPORT

AltEn Facility Release
MEAD, NEBRASKA

Superfund Technical Assessment and Response Team (START) 5
Contract No. 68HE0719D0001, Task Order 19F0027.015

Prepared For:

U.S. Environmental Protection Agency
Region 7
11201 Renner Boulevard
Lenexa, Kansas 66219

March 22, 2021

Prepared By:

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1.0 INCIDENT DESCRIPTION

On February 13, 2021, the U.S. Environmental Protection Agency (EPA) Region 7 Superfund Division tasked Tetra Tech, Inc. (Tetra Tech), under Superfund Technical Assessment and Response Team (START) 5 Contract No. 68HE0719D0001, Task Order 19F0027.015, to provide technical support for an emergency response (ER) at the AltEn ethanol production facility (the site) at 1344 County Road 10 in Mead, Nebraska. Facility representatives reported release of an unknown quantity of stillage (waste remaining after ethanol distillation) mixed with animal manure liquid from a large aboveground digester tank at the site. Reportedly, the release resulted from burst of a frozen sub-surface pipe at the base of the tank in the early morning hours of February 12, 2021.

Primary goals of the ER were to: (1) assist with overall site assessment, including investigation of the surrounding area, to determine the trajectory and extent of the release; (2) assist air quality monitoring to detect presence of contaminants and possible migration of air contaminants to local communities; and (3) aid collection of soil and water samples to identify potentially hazardous substances present in released materials.

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2.0 PROPERTY LOCATION AND DESCRIPTION

The site, at 1344 County Road 10, hosts an active ethanol facility that utilizes treated (i.e., fungicides, pesticides) corn seed in the production process. The site includes two aboveground ethanol tanks, two digester tanks, and one tank of natural gasoline used as denaturant (see Appendix A, Figure 2). The site is bounded north by farm fields, two large lagoons containing waste, and County Road K. East of the production facility are smaller ponds/lagoons and open fields adjacent to County Road 9. The site is bounded south by eight 20-acre livestock enclosures managed by the Mead Cattle Company LLC. The main facility entrance is on County Road 10, the west boundary of the site. The site and neighboring livestock operation are traversed by a grid of access roads and interconnect ditches that generally drain southeast toward County Road 9. Geographic coordinates at the site's main entrance are 41.195007 degrees north latitude (lat) and -96.483582 degrees west longitude (long). Coordinates at the spill location are 41.195358 degrees lat and -96.476611 degrees long.

The facility has a history compliance issues, and had undergone 36 inspections in 2020 by Nebraska Department of Environment and Energy (NDEE). NDEE officials reported that recent inspections had resulted in issuances of dozens of violations and non-compliance orders. On February 8, 2021, NDEE ordered the facility temporarily shut down (4 days before the accidental release of stillage and manure liquid). See NDEE Director's public comments at: https://www.ketv.com/article/senators-seek-answers-on-mead-ethanol-leak/35637986.

At the time of the ER, the site was covered in 2 to 4 inches of snow with drifts of 2 to 3 feet at some locations. Upon START's arrival, EPA Federal On-Scene Coordinator (FOSC) Doug Ferguson and State On-Scene Coordinator (SOSC) Kirk Morrow of NDEE were meeting with representatives of AltEn facility, the potentially responsible party (PRP), to prepare for site assessment activities. Two dams had been constructed along the spill's flow path, and clean-up contractors were observed moving pumps and stringing 4-inch hose between a dammed location and the southernmost retention pond. The temperature was approximately 3 degrees Fahrenheit at 1650 hours as site assessment activities began.

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3.0 EMERGENCY RESPONSE ACTIVITIES

During the response, START documented ER activities in a site logbook (see Appendix C). In addition, EPA and START photo-documented progress of site activities (see Appendix B). The following sections discuss response activities by EPA and/or START during the ER on February 13-14, 2021.

3.1 MOBILIZATION ACTIVITIES

At approximately 0900 hours on February 13, 2021, START received an alert from EPA informing START Project Manager (PM) Eric Deselich about some details of the release. START PM Deselich alerted START Member (SM) Ryan Slanczka of the developing incident, and subsequently (at 0951 hours) received a request from EPA to mobilize to the site. START contacted EPA FOSC Doug Ferguson to discuss equipment needs, obtain additional information pertinent to the ER, and coordinate deployment activities. START gathered appropriate equipment/supplies at the EPA Region 7 Training and Logistics Center and START office/garage for the response, and departed the Kansas City area at 1300 hours. START arrived at the site at 1640 hours and met EPA FOSC Doug Ferguson and SOSC Kirk Morrow in the parking lot of the facility's offices to discuss response activities.

3.2 ON-SITE ASSESSMENT

START, EPA, and NDEE loaded into separate vehicles at 1650 hours and were led by the PRP to a dam constructed of bio-char totes (lat/long: 41.1957501/-96.4716557) approximately 550 meters east of the damaged digester tank. START initiated air monitoring for contaminants consistent with the types of waste reportedly released—including volatile organic compounds (VOC), ammonia, and hydrogen sulfide. Each of three air monitors failed to register stable measurements, rapidly fluctuating and then displaying unintelligible readings. Presumably, air monitoring difficulties were due to low-temperature conditions. Air monitoring activities were discontinued as water and soil samples were collected. The group then moved to the damaged tank (lat/long: 41.1953694/-96.4767279) where START collected water and soil samples.

3.3 OFF-SITE ASSESSMENT (February 13, 2021)

On February 13, 2021, START, EPA, and NDEE mobilized to a second dam near the intersection of County Road 9 and County Road J at the southeast corner of the site (lat/long: 41.1862846/-96.46387) identified in State records as property of the Mead Cattle Company. The PRP's contractor personnel had constructed the dam of loose soil, and one of those personnel was present as EPA, NDEE, and START arrived. After a short conversation between EPA and the contractor, EPA and NDEE examined the dam

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as START collected water and soil samples at the northwest side of the dam (lat/long: 41.1862846/-96.46387). START, EPA, and NDEE then mobilized approximately 1.6 miles southeast to a stream crossing on County Road 8 for collection of additional water and soil samples.

3.4 OFF-SITE ASSESSMENT (February 14, 2021)

Off-site assessment activities continued February 14, 2021, with EPA and START investigating another downgradient stream crossing for appropriate locations to sample. Several locations were identified for investigation; however, roads necessary to access two stream crossings were impassable due to drifting snow. Ultimately, EPA and START moved southeast downgradient and met with the PRP at 0900 hours to assess a location along State Highway 66 for construction of a third dam. EPA and PRP discussed dam construction options while START collected water samples. Surface water at this location (lat/long: 41.1385839/-96.4257193) was visibly clearer than at the upgradient location where sampling had occurred during the previous day. EPA and START then moved north (upgradient) on State Highway 66 to the last assessment location where water samples were collected. Outside temperatures ranged from -5 to -2 degrees Fahrenheit during off-site assessment activities.

3.5 POST-ASSESSMENT MEETING

EPA, START, and PRP staff met on site at the PRP's office at 0905 hours on February 14, 2021, to discuss clean-up actions and prevention of additional accidental releases at the facility. Specifically, EPA FOSC Doug Ferguson conveyed the importance of preventing a similar release from a second on-site digester tank. The PRP described certain steps necessary to prevent another accidental release from the second digester tank. Additionally, the group reached consensus on construction of a dam at the culvert along State Highway 66 where the group had met that morning. The group discussed several other aspects of clean-up operations, including sampling that the PRP could conduct for its own use, and responsibilities for oversight of pending clean-up activities. PRP representatives agreed to provide a spill prevention plan and response plan for the clean-up to EPA FOSC Doug Ferguson by February 19, 2021. The meeting concluded at 1046 hours. Immediately afterward, meeting attendees moved in separate vehicles to a nearby on-site location to inspect an aboveground storage tank containing natural gasoline used to denature ethanol.

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3.6 DEMOBILIZATION ACTIVITIES

START and EPA departed the site at 1050 hours and subsequently met off site in a parking lot at 999 County Road M to debrief the incident and discuss post-response activities. At conclusion of the meeting, START was instructed to demobilize, and departed for Kansas City at 1147 hours.

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4.0 LABORATORY ANALYTICAL PARAMETERS

On February 15, 2021, START delivered samples collected during the ER to Pace Analytical Services, LLC (Pace) in Lenexa, Kansas. Based on the facility's regular use of treated seed grain for ethanol production, START coordinated with EPA to identify analytical parameters consistent with known treatments for seed corn and other seed grains. Samples were analyzed at three laboratories, including one laboratory outside Pace's network, for the following parameters via associated analytical methods:

- pH via Methods 9045 and 4500-H+B (electrometric)
- VOCs via Method 5030B/8260
- Ammonia (nitrogen) and ammonium (ion, dissolved) via Method 350.1
- Sulfide, total dissolved via Method 4500-S-2 B,C,D
- **Chlorpyrifos** (organophosphorus pesticide [OP]) via Method OP 8141B
- Carbon disulfide via Method 630.1 (gas chromatography [GC] – flame photometric detector [FPD])
- Fungicides and similar analytes of interest via Methods 8270D (GC – mass spectrometry [MS]/MS), 8321B (liquid chromatography [LC] – MS/MS), and JAOAC, Vol. 78, #5 (GC-FPD):

  Abamectin, azoxystrobin, **captan**, **carbendazim**, carbon disulfide, carboxin, chlorantraniliprole, **clothianidin**, cyantraniliprole, difenoconazole, fludioxonil, fluoxastrobin, **imidacloprid**, mancozeb, mefenoxam, metconazole, picoxystrobin, propiconazole, prothioconazole, pyraclostrobin, tebuconazole, thiabendazole, **thiamethoxam**, thiophanate methyl, **thiram**, and trifloxystrobin.

Note: EPA identified analytes listed in bold font above as priority parameters (analytes).

On February 18, 2021, Pace's Lenexa laboratory conveyed preliminary results for pH, VOCs, ammonia, ammonium, and total dissolved sulfides. On February 22, 2021, results for OP pesticides came from Pace's laboratory in Mount Juliet, Tennessee. On February 26, 2021, results for fungicides and other analytes of interest arrived from Pace's Pacific Agriculture Laboratory.

Before submitting samples to Pace, START had requested that a revised results package include all Quality Assurance/Quality Control (QA/QC) data for the purpose of developing a Level II Data Validation Report (DVR). The data package is in Appendix D1, although the Level II DVR had not been completed at the time of this report. The DVR will be appended to this report and submitted to EPA when completed by START.

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5.0 SUMMARY LABORATORY ANALYTICAL RESULTS

pH Analytical Results. Laboratory results (Figure 1 and Table 1) generally indicate a drop in pH of surface water with movement of sample locations downgradient from the spill source (digester tank). Over 5.7 miles and six sample locations, pH of sampled water decreased slightly by 0.4 standard units. However, pH significantly increased at Sample Location #2, where a dam of bio-char totes had been constructed. Samples were collected at the downgradient side of the dam where water pH may have been altered by damming materials.

Figure 1: pH Analytical Results

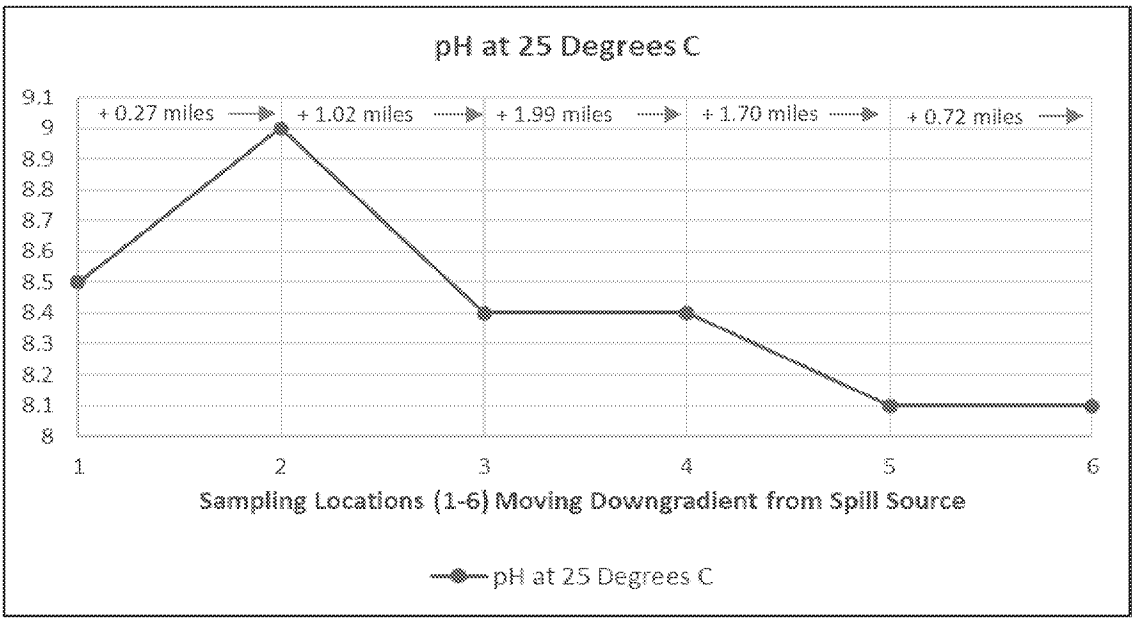

Table 1: pH Analytical Results

Sample Location	Collection Date	Matrix	Sample Identification	Result (standard units)
1	2/13/2021	Water	2	8.5
2	2/13/2021	Water	1	9.0
2	2/13/2021	Solid	1S	9.0
3	2/13/2021	Water	3	8.4
4	2/13/2021	Water	5	8.4
5	2/14/2021	Water	6	8.1
6	2/14/2021	Water	4	8.1

VOC Analytical Results. Preserved water samples were collected at the four locations for VOC analysis, including surface water at the digester tank and the next three sample locations. Moving downgradient along this 3.3-mile segment of the spill path, lab results (Figure 2 and Table 2) indicate that of 63 VOCs analyzed, only methyl ethyl ketone (MEK) was present at levels above the practical

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quantitation limit (PQL) in each of the four water samples. Preserved samples for VOC analysis were not collected at two sites farther downgradient due to ice in surface water.

Figure 2: VOC Analytical Results

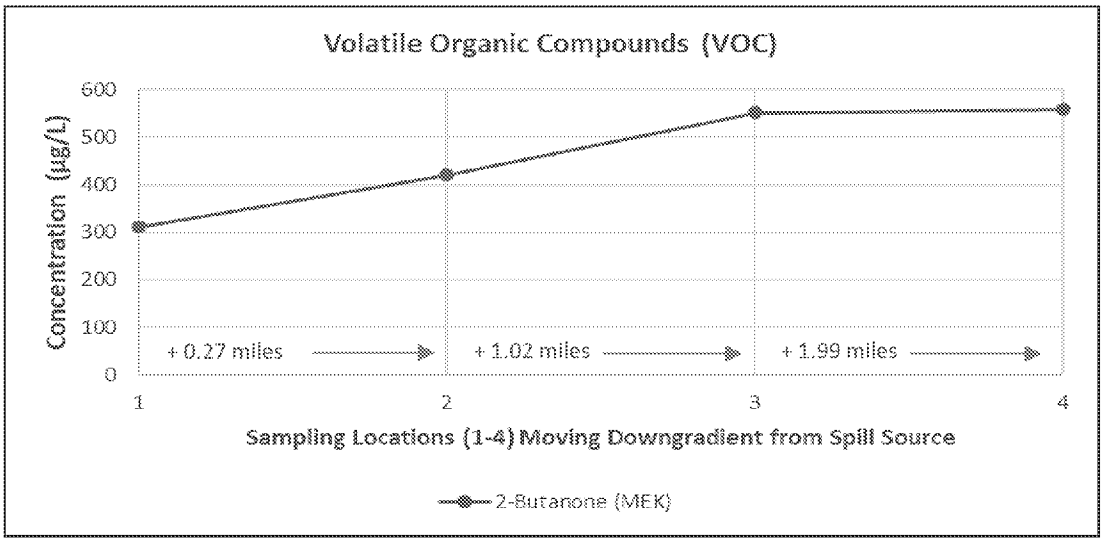

Table 2: VOC Analytical Results

Sample Location	Collection Date	Matrix	Sample ID	VOC Parameter	Result (µg/L)
1	2/13/2021	Water	2A	MEK	311
2	2/13/2021	Water	1A	MEK	420
3	2/13/2021	Water	3A	MEK	551
4	2/13/2021	Water	5A	MEK	558

Notes:

µg/L Micrograms per liter
ID Identification
MEK Methyl ethyl ketone (2-butanone)
VOC Volatile organic compound

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Ammonium/Ammonia Analytical Results. Lab results (Figure 3 and Table 3) indicate that ammonium ion (NH_4+) and ammonia (NH_3) were present at comparable levels at each sampling location along the spill path, with concentrations decreasing inversely with distance from the spill source.

Figure 3: Ammonium/Ammonia Analytical Results

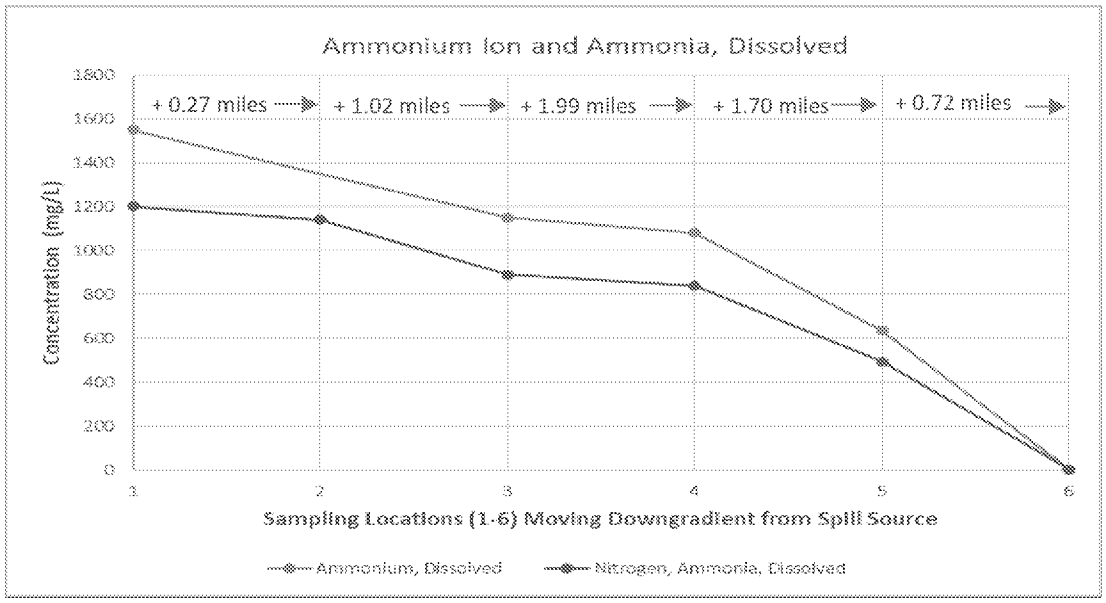


Table 3: Ammonium/Ammonia Analytical Results

Sample Location	Collection Date	Matrix	Sample ID	Parameter	Result (mg/L)
1	02/13/2021	Water	2	Ammonium	1550
3	02/13/2021	Water	3	Ammonium	1150
4	02/13/2021	Water	5	Ammonium	1080
5	02/14/2021	Water	6	Ammonium	637
6	02/14/2021	Water	4	Ammonium	2
1	02/13/2021	Water	2	Ammonia	1200
2	02/13/2021	Soil	1S	Ammonia	1140*
3	02/13/2021	Water	3	Ammonia	890
4	02/14/2021	Water	5	Ammonia	840
5	02/13/2021	Water	6	Ammonia	494
6	02/14/2021	Water	4	Ammonia	1.5

Notes:

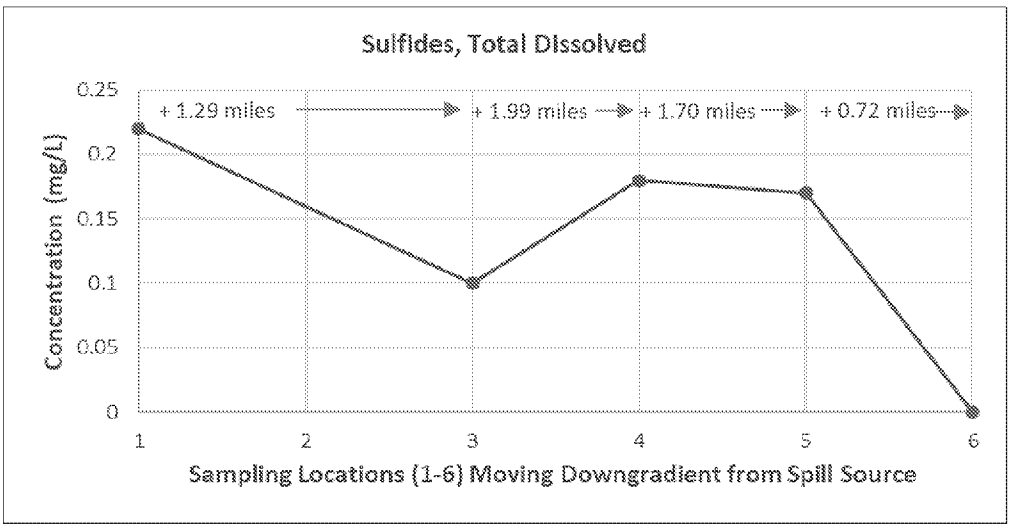
* Result reported on a "wet-weight" basis in milligrams/kilogram.

ID Identification

mg/L Milligrams per liter

Figure 4 on the next page illustrates concentrations of total dissolved sulfides present in surface water at sample locations along the spill path. Companion Table 4 lists analyte concentrations reported in laboratory results moving downgradient from the spill source.

Figure 4: Sulfide Analytical Results



Note: Water samples collected at Sample Location #2 were not analyzed for this parameter.

Table 4: Sulfide (Total Dissolved) Analytical Results

Sample Location	Collection Date	Matrix	Sample ID	Result (mg/L)
1	02/13/2021	Water	2	0.22
3	02/13/2021	Water	3	0.10
4	02/13/2021	Water	5	0.18
5	02/14/2021	Water	6	0.17
6	02/14/2021	Water	4	ND

Notes:

ID Identification
mg/L Milligrams per liter
ND Not detected

Pesticide Analytical Results. Chlorpyrifos, an OP pesticide and long-standing seed treatment, was identified as a priority parameter for analysis. Water and soil sampled were collected at the three locations nearest the spill source (Sample Locations 1, 2, and 3). However, only water samples were collected at the three locations most distant from the spill source (Sample Locations 4, 5, and 6). Laboratory results indicate no detection of Chlorpyrifos in water (six samples) and soil (three samples) at six locations along the spill path.

Fungicide and Similar Analyte Analytical Results. Samples from each location were analyzed for 27 substances commonly used as fungicides in agriculture activities, although several of these analytes are used for multiple purposes. Of the 27 parameters analyzed, 11 fungicides and similar analytes were detected at various concentrations in samples collected along the spill path. Among the 11 substances detected, laboratory results indicated presence of three priority parameters (analytes) in samples: abamectin, clothianidin, and thiamethoxam. Figures 5 through 7 on the following pages illustrate analyte

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concentrations at each sampling location. Companion Tables 5 through 7 list analyte concentrations reported in laboratory results.

Figure 5: Fungicide Analytical Results – 1

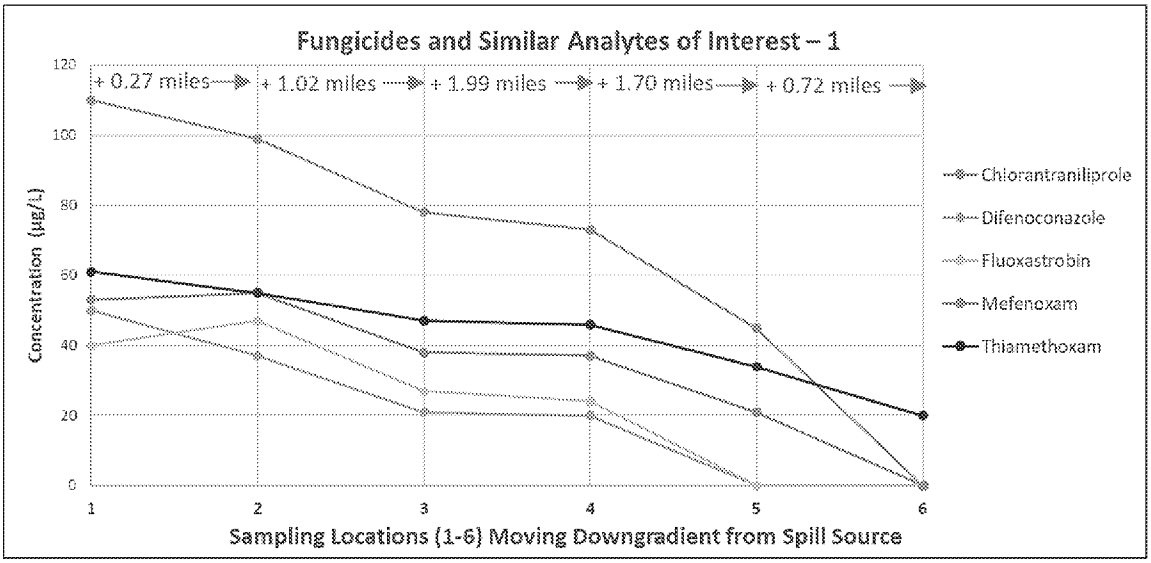

Table 5: Fungicide Analytical Results – 1

Sample Location	Collection Date	Matrix	Sample ID	Parameter	Result (µg/L)
1	02/13/2021	Water	2B	Chlorantraniliprole	53
2	02/13/2021	Water	IB		55
3	02/13/2021	Water	3B		38
4	02/13/2021	Water	5B		37
5	02/14/2021	Water	6A		21
6	02/14/2021	Water	4A		ND
1	02/13/2021	Water	2B	Difenoconazole	50
2	02/13/2021	Water	IB		37
3	02/13/2021	Water	3B		21
4	02/13/2021	Water	5B		20
5	02/14/2021	Water	6A		ND
6	02/14/2021	Water	4A		ND
1	02/13/2021	Water	2B	Fluoxastrobin	40
2	02/13/2021	Water	IB		47
3	02/13/2021	Water	3B		27
4	02/13/2021	Water	5B		24
5	02/14/2021	Water	6A		ND
6	02/14/2021	Water	4A		ND
1	02/13/2021	Water	2B	Mefenoxam	110
2	02/13/2021	Water	IB		99
3	02/13/2021	Water	3B		78
4	02/13/2021	Water	5B		73

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Sample Location	Collection Date	Matrix	Sample ID	Parameter	Result (µg/L)
5	02/14/2021	Water	6A		45
6	02/14/2021	Water	4A		ND
1	02/13/2021	Soil	2C	Thiamethoxam (priority analyte)	61*
2	02/13/2021	Water	IB		55
3	02/13/2021	Water	3B		47
4	02/13/2021	Water	5B		46
5	02/14/2021	Water	6A		34
6	02/14/2021	Water	4A		20

Notes:

* Micrograms/kilogram

µg/L Micrograms per liter

ID Identification

ND Not detected

Figure 6: Fungicide Analytical Results – 2

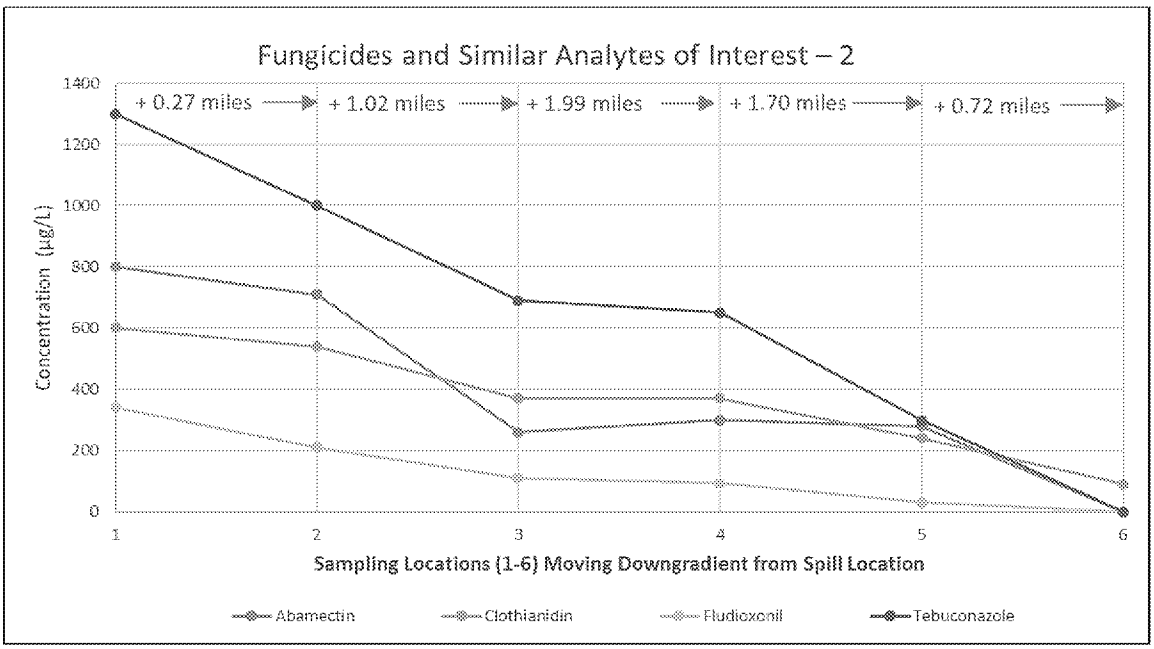

Table 6: Fungicide Analytical Results – 2

Sample Location	Collection Date	Matrix	Sample ID	Parameter	Result (µg/L)
1	02/13/2021	Water	2B	Abamectin (priority analyte)	800
2	02/13/2021	Water	IB		710
3	02/13/2021	Water	3B		260
4	02/13/2021	Water	5B		300
5	02/14/2021	Water	6A		280
6	02/14/2021	Water	4A		ND
1	02/13/2021	Soil	2C	Clothianidin (priority analyte)	600*
2	02/13/2021	Water	IB		540
3	02/13/2021	Water	3B		370

Sample Location	Collection Date	Matrix	Sample ID	Parameter	Result (µg/L)
4	02/13/2021	Water	5B		370
5	02/14/2021	Water	6A		240
6	02/14/2021	Water	4A		90
1	02/13/2021	Water	2B	Fludioxonil	340
2	02/13/2021	Water	IB		210
3	02/13/2021	Water	3B		110
4	02/13/2021	Water	5B		94
5	02/14/2021	Water	6A		30
6	02/14/2021	Water	4A		ND
1	02/13/2021	Water	2B	Tebuconazole	1300
2	02/13/2021	Water	IB		1000
3	02/13/2021	Water	3B		690
4	02/13/2021	Water	5B		650
5	02/14/2021	Water	6A		300
6	02/14/2021	Water	4A		ND

Notes:

* Micrograms/kilogram

µg/L Micrograms per liter

ID Identification

ND Not detected

Figure 7: Fungicide Analytical Results – 3

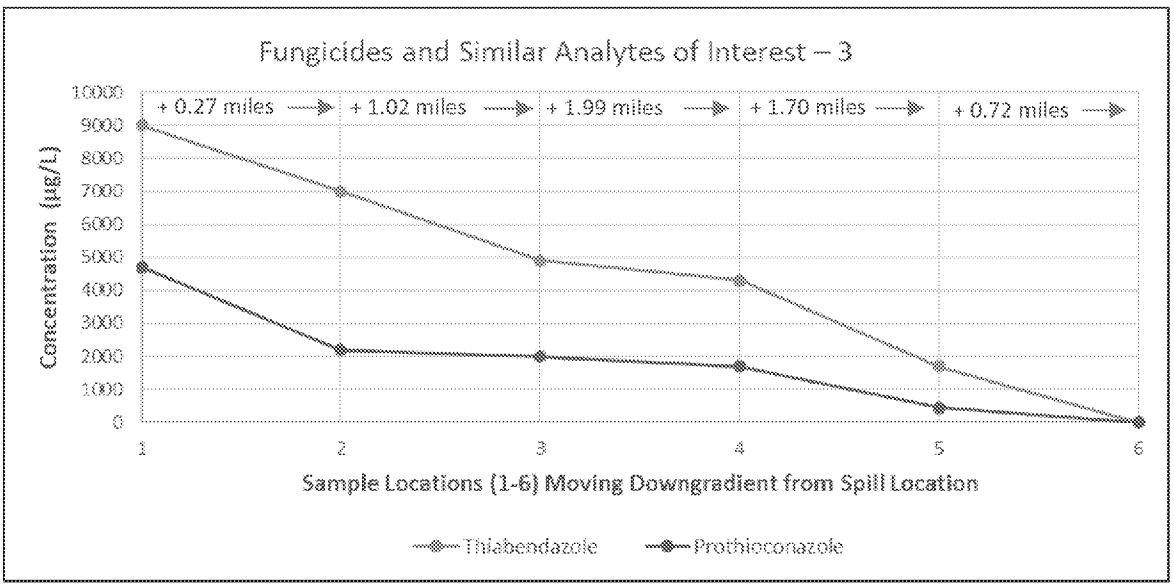

Table 7: Fungicide Analytical Results – 3

Sample Location	Collection Date	Matrix	Sample ID	Parameter	Result (µg/L)
1	02/13/2021	Water	2B	Prothioconazole	4700
2	02/13/2021	Water	IB		2200
3	02/13/2021	Water	3B		2000
4	02/13/2021	Water	5B		1700
5	02/14/2021	Water	6A		440

Sample Location	Collection Date	Matrix	Sample ID	Parameter	Result (µg/L)
6	02/14/2021	Water	4A		ND
1	02/13/2021	Water	2B	Thiabendazole	9000
2	02/13/2021	Water	IB		7000
3	02/13/2021	Water	3B		4900
4	02/13/2021	Water	5B		4300
5	02/14/2021	Water	6A		1700
6	02/14/2021	Water	4A		ND

Notes:

µg/L Micrograms per liter
ID Identification
ND Not detected

Presence of the following fungicides and similar analytes of interest was not detected during laboratory analysis of water and soil samples: captan, carbendazim, carboxin, imidacloprid, mancozeb, metconazole, picoxystrobin, propiconazole, pyraclostrobin, thiophanate methyl, thiram, and trifloxystrobin.

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6.0 SUMMARY

On February 13, 2021, EPA Region 7 Superfund Division tasked Tetra Tech START, under the START 5 contract, to provide technical support for an emergency response at the site. At the site, an unknown quantity of stillage mixed with animal manure liquid had been released from a large aboveground digester tank. The release resulted from burst of a frozen sub-surface pipe at the tank in the early morning hours of the previous day. During the response, START and EPA worked with NDEE to assess the site, investigate the extent of the release, collect water and soil samples, and coordinate with the PRP on near-term clean-up actions. START's response concluded on February 14, 2021, at about 1200 hours.

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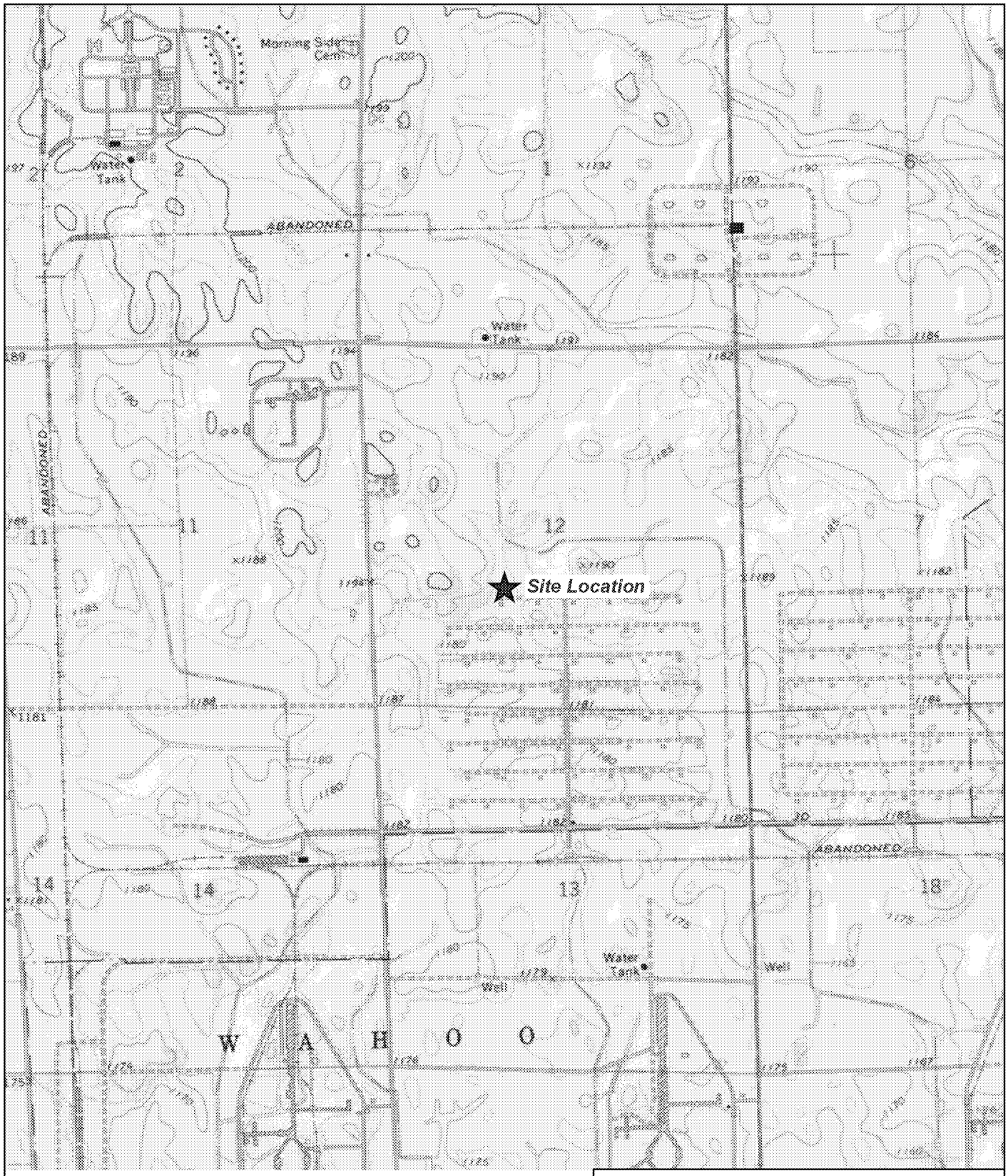
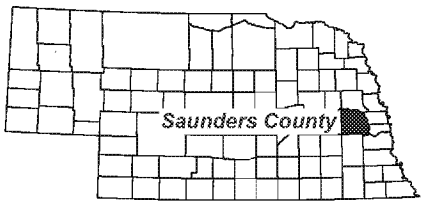
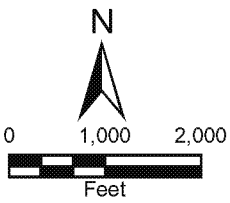
APPENDIX A

FIGURES







Source: USGS Mead, NE 7.5 Minute Topo Quad, 1981; USGS Wahoo East, NE 7.5 Minute Topo Quad, 1983

AltEn Facility Release
1344 County Road 10
Mead, Nebraska

Figure 1

Site Location Map

TETRA TECH

Date: 3/11/2021 | Drawn By: Nick Wiederholt | Project No: X903019F0027.015

X:\G903\0027015\Projects\mxd\Figure1.mxd

Legend

- Dam location
- Spill location
- Surface soil/surface water sample location
- Surface water sample location
- Spill pathway
- Approximate site boundary

N

0 1,000 2,000
Feet

Source: Esri, ArcGIS Online, World Imagery (Clarity)

AltEn Facility Release
1344 County Road 10
Mead, Nebraska

Figure 2

Sample Location Map

TETRA TECH

Date: 3/11/2021 Drawn By: Nick Wiederholt Project No: X003019F0027.015

X:\G003\0027\015\Projects\mxd\Figure2.mxd

APPENDIX B

PHOTOGRAPHIC LOG

AltEn Facility Release
Mead, Nebraska

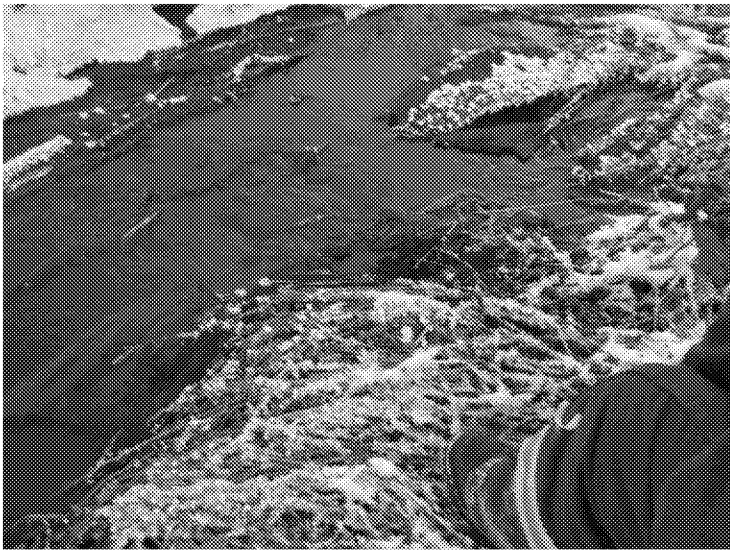
TETRA TECH PROJECT NO. X903019F0027.015 DIRECTION: Southwest	DESCRIPTION	This photograph shows Sample Location #2 and the source of the release. The pipe burst at the base of the digester tank at 1344 County Road 10 in Mead, Nebraska.	1
	CLIENT	Environmental Protection Agency - Region 7	DATE 02/13/2021
	PHOTOGRAPHER	FOSC Doug Ferguson	

TETRA TECH PROJECT NO. X903019F0027.015 DIRECTION: Northeast	DESCRIPTION	This photograph shows the spill path where product flowed south from the digester tank onto an access road within the facility. The spill then flowed east along the access road to a dam.	2
	CLIENT	Environmental Protection Agency - Region 7	DATE 02/13/2021
	PHOTOGRAPHER	FOSC Doug Ferguson	

ED_006145_00000256-00024

AltEn Facility Release
Mead, Nebraska

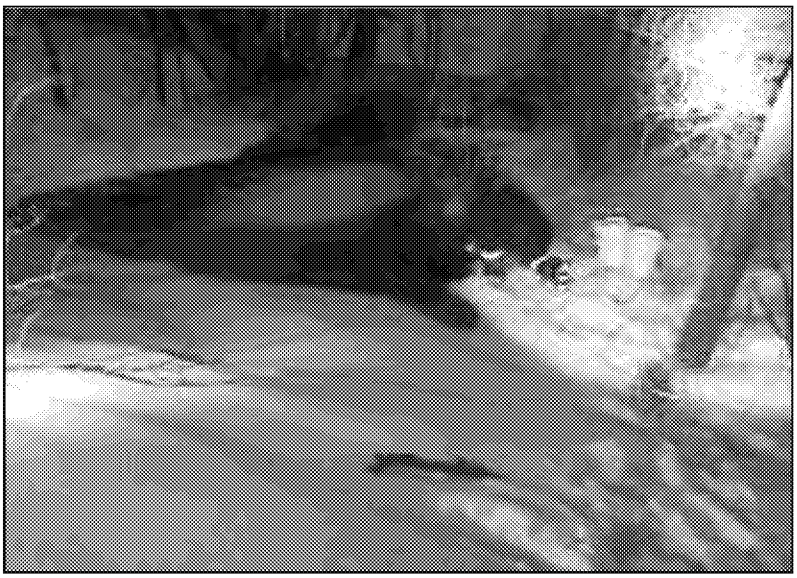
TETRA TECH PROJECT NO. X903019F0027.015 DIRECTION: Southeast	DESCRIPTION	This photograph shows a dam that had been constructed of bio-char totes about 550 meters east of the damaged tank. Product was observed running through and around the totes. Livestock enclosures are shown in the background. This is Sample Location #2.	3
	CLIENT	Environmental Protection Agency - Region 7	DATE 02/13/2021
	PHOTOGRAPHER	Eric Deselich	



TETRA TECH PROJECT NO. X903019F0027.015 DIRECTION: Northeast	DESCRIPTION	This photograph shows Sample Location #2 at the downgradient side of the dam where product was actively flowing through the bio-char totes.	4
	CLIENT	Environmental Protection Agency - Region 7	DATE 02/13/2021
	PHOTOGRAPHER	SOSC Kirk Morrow	

AltEn Facility Release
Mead, Nebraska

TETRA TECH PROJECT NO. X903019F0027.015 DIRECTION: Northwest	DESCRIPTION	This photograph shows Sample Location #3 where product pooled at the upgradient side of a second dam constructed of soil near the intersection of County Road J and County Road 9.	5
	CLIENT	Environmental Protection Agency - Region 7	DATE 02/13/2021
	PHOTOGRAPHER	FOSC Doug Ferguson	



TETRA TECH PROJECT NO. X903019F0027.015 DIRECTION: East	DESCRIPTION	This photo shows Sample Location #5 along County Road 8 about 1.6 miles downgradient of the earthen dam. The unnamed stream was noticeably wider and deeper here than at other sample locations.	6
	CLIENT	Environmental Protection Agency - Region 7	DATE 02/13/2021
	PHOTOGRAPHER	FOSC Doug Ferguson	

AltEn Facility Release
Mead, Nebraska

TETRA TECH PROJECT NO. X903019F0027.015	DESCRIPTION	This photograph shows Sample Location #6 at a culvert on State Highway 66. The unnamed stream flows directly south from this point and is shown partially obstructed by drifting snow.	5
DIRECTION: Southwest	CLIENT	Environmental Protection Agency - Region 7	DATE 02/14/2021
	PHOTOGRAPHER	FOSC Doug Ferguson	

TETRA TECH PROJECT NO. X903019F0027.015	DESCRIPTION	This photo shows Sample Location #4 along State Highway 66, downgradient of all other accessed locations. Water was visibly clearer here, and this was identified as a location to construct a third dam.	6
DIRECTION: West	CLIENT	Environmental Protection Agency - Region 7	DATE 02/14/2021
	PHOTOGRAPHER	Eric Deselich	

APPENDIX C

LOGBOOK RECORD

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Rite in the Rain
A patented, environmentally responsible, all-weather writing paper that sheds water and enables you to write anywhere, in any weather.

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Rite in the Rain
ALL-WEATHER
LEVEL
№ 311FX

103X903019F0027.015

AFEN Release
MEAD, NE

ED_006145_00000256-00029

2/13/21 AltEn Ethanol Fac

0900 Tim Curry provides initial Alert
0916 Deselich Alerts Ryan Slanezka of incident
0951 Curry notifies Deselich to Deploy
0959 Deselich notifies Simpson
1005 Call w/ Ferguson to Discuss equipment + deployment Schedule. Ferguson provides Documents and asks Deselich to print
1024 Deselich Notifies Caples
1034 Deselich Rents Vehicle At Enterprise - Vehicle is Refused - Not 4-WD.
1103 Deploy to TLC
1138 Arrive At TLC and load equipment
1149 Deploy to office for sampling supplies
1301 Deploy to Mead, NE
1640 Arrive @ AltEn in Mead
1648 Meet w/ Ferguson + NDEE

1655 Begin sampling + Air monitoring At site 1
1659 Ammonia ToxiRae 571977 malfunction - Redings Fluctuate wildly + screen goes blank - presumably due to cold (~3°F) Same issue/Result w/ H_2S ToxiRae 571980 - Stop Air monitoring
1701 Samples taken a location 1 east of plant - make shift dam built w/ sacks of char material
1726 1g, 5 VOC Samples
~~1726~~ Sampling ~~further east of~~ At tank At site 2
1g, 5 VOC Sample - ToxiRae Not working
1758 Sampling At site 3 (earth dam) intersection of J + 9 Hwy
1830 Sampling At site 4 on 8 Hwy (Sample #5)
1859 Confer w/ NDEE and leave site - Deploy to hotel -

1929 Arrive A hotel - load
All samples + electronic equip
to hotel Room - Samples
placed on ice in cooler
2040 Make sampling map for
2200 Next Day + ~~Assist~~ Assist
w/ Draft report - END

2/14/21 AltEn Eth. Facility
0640 Temp (-7°F at hotel)
0700 load equipment + sample cooler
0728 Deploy to AltEn and then
observation point B -
meet w/ PRP
0904 Sampling At OP B
(Sample ID #4) where
PRP will build Dam - Sample
liquid visually clear
0925 Arrive At OP A - take
1g sample (Sample ID #6)
0944 Arrive At AltEn to
meet w/ PRP - Ferguson
Reviews Clean up Strategies
And collects information
About existing plans -
No SPCC, No Samples of

what's in various tanks -
PRP will provide plan by
2/19 for Clean up - other
Digestor has been heated
And insulated
1046 Meeting ended - START
EPA, PRP move to Nat.
gasoline tank - take
photos + discuss
1057 Deselich + Ferguson meet
At Country Store to
Review Next steps
1147 Deselich departs for
home - END
1543 Deselich Arrives At home
load equipment into Store
Room At Residence +
places Samples in Refrig. -
to be Delivered to lab
on 2/15

ED_006145_00000256-00031

APPENDIX D1

LABORATORY RESULTS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

February 26, 2021

Eric Deselich
Tetra Tech EMI
415 Oak St
Kansas City, MO 64106

RE: Project: 68HE0719F0027.015
Pace Project No.: 60361311

Dear Eric Deselich:

Enclosed are the analytical results for sample(s) received by the laboratory on February 15, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National - Mt. Juliet
- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nolie Wood
nolie.wood@pacelabs.com
1(913)563-1401
Project Manager

Enclosures

cc: Emily Fisher, TETRA TECH EMI

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ED_006145_00000256-00033

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: 68HE0719F0027.015
Pace Project No.: 60361311

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 20-020-0
Arkansas Drinking Water
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212019-9
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

Pace Analytical Services National
12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 998093910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

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ED_006145_00000256-00034

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: 68HE0719F0027.015
Pace Project No.: 60361311

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60361311001	1	Water	02/13/21 17:01	02/15/21 14:38
60361311002	1A	Water	02/13/21 17:01	02/15/21 14:38
60361311003	1B	Water	02/13/21 17:07	02/15/21 14:38
60361311004	1C	Solid	02/13/21 17:12	02/15/21 14:38
60361311005	1S	Solid	02/13/21 17:12	02/15/21 14:38
60361311006	2	Water	02/13/21 17:26	02/15/21 14:38
60361311007	2A	Water	02/13/21 17:26	02/15/21 14:38
60361311008	2B	Water	02/13/21 17:36	02/15/21 14:38
60361311009	2C	Solid	02/13/21 17:41	02/15/21 14:38
60361311010	2S	Solid	02/13/21 17:41	02/15/21 14:38
60361311011	3A	Water	02/13/21 17:58	02/15/21 14:38
60361311012	3B	Water	02/13/21 17:59	02/15/21 14:38
60361311013	3C	Solid	02/13/21 18:03	02/15/21 14:38
60361311014	4	Water	02/14/21 09:04	02/15/21 14:38
60361311015	4A	Water	02/14/21 09:04	02/15/21 14:38
60361311016	5	Water	02/13/21 18:30	02/15/21 14:38
60361311017	5A	Water	02/13/21 18:30	02/15/21 14:38
60361311018	5B	Water	02/13/21 18:25	02/15/21 14:38
60361311019	6	Water	02/14/21 09:32	02/15/21 14:38
60361311020	6A	Water	02/14/21 09:32	02/15/21 14:38
60361311021	3	Water	02/13/21 17:57	02/15/21 14:38

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SAMPLE ANALYTE COUNT

Project: 68HE0719F0027.015
Pace Project No.: 60361311

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60361311001	**1**	EPA 8141B	MTJ	2	PAN
60361311002	**1A**	EPA 5030B/8260	PGH	69	PASI-K
60361311004	**1C**	EPA 8141B	MTJ	2	PAN
60361311005	**1S**	EPA 9045	BLA	1	PASI-K
		EPA 350.1	AJS	1	PASI-K
60361311006	**2**	EPA 8141B	MTJ	2	PAN
		SM 4500-H+B	MJK	1	PASI-K
		SM 4500-S-2 B,C,D	CRN2	1	PASI-K
		EPA 350.1	AJS	2	PASI-K
60361311007	**2A**	EPA 5030B/8260	PGH	69	PASI-K
60361311010	**2S**	EPA 8141B	MTJ	2	PAN
60361311011	**3A**	EPA 5030B/8260	PGH	69	PASI-K
60361311013	**3C**	EPA 8141B	MTJ	2	PAN
60361311014	**4**	EPA 8141B	MTJ	2	PAN
		SM 4500-H+B	MJK	1	PASI-K
		SM 4500-S-2 B,C,D	CRN2	1	PASI-K
		EPA 350.1	AJS	2	PASI-K
60361311016	**5**	EPA 8141B	MTJ	2	PAN
		SM 4500-H+B	MJK	1	PASI-K
		SM 4500-S-2 B,C,D	CRN2	1	PASI-K
		EPA 350.1	AJS	2	PASI-K
60361311017	**5A**	EPA 5030B/8260	PGH	69	PASI-K
60361311019	**6**	EPA 8141B	MTJ	2	PAN
		SM 4500-H+B	MJK	1	PASI-K
		SM 4500-S-2 B,C,D	CRN2	1	PASI-K
		EPA 350.1	AJS	2	PASI-K
60361311021	**3**	EPA 8141B	MTJ	2	PAN
		SM 4500-H+B	MJK	1	PASI-K
		SM 4500-S-2 B,C,D	CRN2	1	PASI-K
		EPA 350.1	AJS	2	PASI-K

PAN = Pace National - Mt. Juliet
PASI-K = Pace Analytical Services - Kansas City

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ANALYTICAL RESULTS

Project: 68HE0719F0027.015
Pace Project No.: 60361311

Sample: 1 **Lab ID: 60361311001** Collected: 02/13/21 17:01 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141B	Analytical Method: EPA 8141B Preparation Method: 3510C Pace National - Mt. Juliet							
Chlorpyrifos	ND	mg/L	0.00100	1	02/20/21 13:12	02/21/21 08:07	2921-88-2	C4
Surrogates								
Triphenylphosphate (S)	25.6	%	42.0-129	1	02/20/21 13:12	02/21/21 08:07	115-86-6	SR

Sample: 1A **Lab ID: 60361311002** Collected: 02/13/21 17:01 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260 Pace Analytical Services - Kansas City							
Acetone	ND	ug/L	250	25		02/17/21 08:50	67-64-1	
Benzene	ND	ug/L	25.0	25		02/17/21 08:50	71-43-2	
Bromobenzene	ND	ug/L	25.0	25		02/17/21 08:50	108-86-1	
Bromochloromethane	ND	ug/L	25.0	25		02/17/21 08:50	74-97-5	
Bromodichloromethane	ND	ug/L	25.0	25		02/17/21 08:50	75-27-4	
Bromoform	ND	ug/L	25.0	25		02/17/21 08:50	75-25-2	
Bromomethane	ND	ug/L	125	25		02/17/21 08:50	74-83-9	
2-Butanone (MEK)	**420**	ug/L	250	25		02/17/21 08:50	78-93-3	
n-Butylbenzene	ND	ug/L	25.0	25		02/17/21 08:50	104-51-8	
sec-Butylbenzene	ND	ug/L	25.0	25		02/17/21 08:50	135-98-8	
tert-Butylbenzene	ND	ug/L	25.0	25		02/17/21 08:50	98-06-6	
Carbon disulfide	ND	ug/L	125	25		02/17/21 08:50	75-15-0	
Carbon tetrachloride	ND	ug/L	25.0	25		02/17/21 08:50	56-23-5	
Chlorobenzene	ND	ug/L	25.0	25		02/17/21 08:50	108-90-7	
Chloroethane	ND	ug/L	25.0	25		02/17/21 08:50	75-00-3	
Chloroform	ND	ug/L	25.0	25		02/17/21 08:50	67-66-3	
Chloromethane	ND	ug/L	25.0	25		02/17/21 08:50	74-87-3	
2-Chlorotoluene	ND	ug/L	25.0	25		02/17/21 08:50	95-49-8	
4-Chlorotoluene	ND	ug/L	25.0	25		02/17/21 08:50	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	62.5	25		02/17/21 08:50	96-12-8	
Dibromochloromethane	ND	ug/L	25.0	25		02/17/21 08:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	25.0	25		02/17/21 08:50	106-93-4	
Dibromomethane	ND	ug/L	25.0	25		02/17/21 08:50	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	25.0	25		02/17/21 08:50	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	25.0	25		02/17/21 08:50	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	25.0	25		02/17/21 08:50	106-46-7	
Dichlorodifluoromethane	ND	ug/L	25.0	25		02/17/21 08:50	75-71-8	
1,1-Dichloroethane	ND	ug/L	25.0	25		02/17/21 08:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	25.0	25		02/17/21 08:50	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	25.0	25		02/17/21 08:50	540-59-0	
1,1-Dichloroethene	ND	ug/L	25.0	25		02/17/21 08:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	25.0	25		02/17/21 08:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	25.0	25		02/17/21 08:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	25.0	25		02/17/21 08:50	78-87-5	
1,3-Dichloropropane	ND	ug/L	25.0	25		02/17/21 08:50	142-28-9	

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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 68HE0719F0027.015
Pace Project No.: 60361311

Sample: 1A **Lab ID: 60361311002** Collected: 02/13/21 17:01 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
	Pace Analytical Services - Kansas City							
2,2-Dichloropropane	ND	ug/L	25.0	25		02/17/21 08:50	594-20-7	
1,1-Dichloropropene	ND	ug/L	25.0	25		02/17/21 08:50	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	25.0	25		02/17/21 08:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	25.0	25		02/17/21 08:50	10061-02-6	
Ethylbenzene	ND	ug/L	25.0	25		02/17/21 08:50	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	25.0	25		02/17/21 08:50	87-68-3	L1
2-Hexanone	ND	ug/L	250	25		02/17/21 08:50	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	25.0	25		02/17/21 08:50	98-82-8	
p-Isopropyltoluene	ND	ug/L	25.0	25		02/17/21 08:50	99-87-6	
Methylene Chloride	ND	ug/L	25.0	25		02/17/21 08:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	250	25		02/17/21 08:50	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	25.0	25		02/17/21 08:50	1634-04-4	
Naphthalene	ND	ug/L	250	25		02/17/21 08:50	91-20-3	
n-Propylbenzene	ND	ug/L	25.0	25		02/17/21 08:50	103-65-1	
Styrene	ND	ug/L	25.0	25		02/17/21 08:50	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	25.0	25		02/17/21 08:50	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	25.0	25		02/17/21 08:50	79-34-5	
Tetrachloroethene	ND	ug/L	25.0	25		02/17/21 08:50	127-18-4	
Toluene	ND	ug/L	25.0	25		02/17/21 08:50	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	25.0	25		02/17/21 08:50	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	25.0	25		02/17/21 08:50	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	25.0	25		02/17/21 08:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	25.0	25		02/17/21 08:50	79-00-5	
Trichloroethene	ND	ug/L	25.0	25		02/17/21 08:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	25.0	25		02/17/21 08:50	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	62.5	25		02/17/21 08:50	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	25.0	25		02/17/21 08:50	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	25.0	25		02/17/21 08:50	108-67-8	
Vinyl chloride	ND	ug/L	25.0	25		02/17/21 08:50	75-01-4	
Xylene (Total)	ND	ug/L	75.0	25		02/17/21 08:50	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	105	%	80-120	25		02/17/21 08:50	460-00-4	F1,HS
Toluene-d8 (S)	100	%	80-120	25		02/17/21 08:50	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	101	%	80-120	25		02/17/21 08:50	2199-69-1	
Preservation pH	**1.0**		0.10	25		02/17/21 08:50		

Sample: 1C **Lab ID: 60361311004** Collected: 02/13/21 17:12 Received: 02/15/21 14:38 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141B	Analytical Method: EPA 8141B Preparation Method: 3546							
	Pace National - Mt. Juliet							
Chlorpyrifos	ND	mg/kg	0.100	1	02/20/21 12:48	02/21/21 04:48	2921-88-2	R1

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ANALYTICAL RESULTS

Project: 68HE0719F0027.015
Pace Project No.: 60361311

Sample: 1C **Lab ID: 60361311004** Collected: 02/13/21 17:12 Received: 02/15/21 14:38 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141B	Analytical Method: EPA 8141B Preparation Method: 3546							
	Pace National - Mt. Juliet							
Surrogates								
Triphenylphosphate (S)	110	%	36.0-121	1	02/20/21 12:48	02/21/21 04:48	115-86-6	

Sample: 1S **Lab ID: 60361311005** Collected: 02/13/21 17:12 Received: 02/15/21 14:38 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9045 pH Soil	Analytical Method: EPA 9045							
	Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**9.0**	Std. Units	0.10	1		02/18/21 09:43		
350.1 Ammonia	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1							
	Pace Analytical Services - Kansas City							
Nitrogen, Ammonia	**1140**	mg/kg	10	10	02/17/21 13:51	02/18/21 11:29	7664-41-7	

Sample: 2 **Lab ID: 60361311006** Collected: 02/13/21 17:26 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141B	Analytical Method: EPA 8141B Preparation Method: 3510C							
	Pace National - Mt. Juliet							
Chlorpyrifos	ND	mg/L	0.00100	1	02/20/21 13:12	02/22/21 08:11	2921-88-2	
Surrogates								
Triphenylphosphate (S)	20.1	%	42.0-129	1	02/20/21 13:12	02/22/21 08:11	115-86-6	SR
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**8.5**	Std. Units	0.10	1		02/17/21 14:09		H6
4500S2D Sulfide, Dissolved	Analytical Method: SM 4500-S-2 B,C,D							
	Pace Analytical Services - Kansas City							
Sulfide, Dissolved	**0.22**	mg/L	0.050	1		02/17/21 15:58		
350.1 Ammonia, Dissolved LF	Analytical Method: EPA 350.1							
	Pace Analytical Services - Kansas City							
Ammonium, Dissolved	**1550**	mg/L	10.0	100		02/18/21 11:34		
Nitrogen, Ammonia, Dissolved	**1200**	mg/L	10.0	100		02/18/21 11:34	7664-41-7	

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ANALYTICAL RESULTS

Project: 68HE0719F0027.015
Pace Project No.: 60361311

Sample: 2A **Lab ID: 60361311007** Collected: 02/13/21 17:26 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
	Pace Analytical Services - Kansas City							
Acetone	ND	ug/L	250	25		02/17/21 09:03	67-64-1	
Benzene	ND	ug/L	25.0	25		02/17/21 09:03	71-43-2	
Bromobenzene	ND	ug/L	25.0	25		02/17/21 09:03	108-86-1	
Bromochloromethane	ND	ug/L	25.0	25		02/17/21 09:03	74-97-5	
Bromodichloromethane	ND	ug/L	25.0	25		02/17/21 09:03	75-27-4	
Bromoform	ND	ug/L	25.0	25		02/17/21 09:03	75-25-2	
Bromomethane	ND	ug/L	125	25		02/17/21 09:03	74-83-9	
2-Butanone (MEK)	**311**	ug/L	250	25		02/17/21 09:03	78-93-3	
n-Butylbenzene	ND	ug/L	25.0	25		02/17/21 09:03	104-51-8	
sec-Butylbenzene	ND	ug/L	25.0	25		02/17/21 09:03	135-98-8	
tert-Butylbenzene	ND	ug/L	25.0	25		02/17/21 09:03	98-06-6	
Carbon disulfide	ND	ug/L	125	25		02/17/21 09:03	75-15-0	
Carbon tetrachloride	ND	ug/L	25.0	25		02/17/21 09:03	56-23-5	
Chlorobenzene	ND	ug/L	25.0	25		02/17/21 09:03	108-90-7	
Chloroethane	ND	ug/L	25.0	25		02/17/21 09:03	75-00-3	
Chloroform	ND	ug/L	25.0	25		02/17/21 09:03	67-66-3	
Chloromethane	ND	ug/L	25.0	25		02/17/21 09:03	74-87-3	
2-Chlorotoluene	ND	ug/L	25.0	25		02/17/21 09:03	95-49-8	
4-Chlorotoluene	ND	ug/L	25.0	25		02/17/21 09:03	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	62.5	25		02/17/21 09:03	96-12-8	
Dibromochloromethane	ND	ug/L	25.0	25		02/17/21 09:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	25.0	25		02/17/21 09:03	106-93-4	
Dibromomethane	ND	ug/L	25.0	25		02/17/21 09:03	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	25.0	25		02/17/21 09:03	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	25.0	25		02/17/21 09:03	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	25.0	25		02/17/21 09:03	106-46-7	
Dichlorodifluoromethane	ND	ug/L	25.0	25		02/17/21 09:03	75-71-8	
1,1-Dichloroethane	ND	ug/L	25.0	25		02/17/21 09:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	25.0	25		02/17/21 09:03	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	25.0	25		02/17/21 09:03	540-59-0	
1,1-Dichloroethene	ND	ug/L	25.0	25		02/17/21 09:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	25.0	25		02/17/21 09:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	25.0	25		02/17/21 09:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	25.0	25		02/17/21 09:03	78-87-5	
1,3-Dichloropropane	ND	ug/L	25.0	25		02/17/21 09:03	142-28-9	
2,2-Dichloropropane	ND	ug/L	25.0	25		02/17/21 09:03	594-20-7	
1,1-Dichloropropene	ND	ug/L	25.0	25		02/17/21 09:03	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	25.0	25		02/17/21 09:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	25.0	25		02/17/21 09:03	10061-02-6	
Ethylbenzene	ND	ug/L	25.0	25		02/17/21 09:03	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	25.0	25		02/17/21 09:03	87-68-3	L1
2-Hexanone	ND	ug/L	250	25		02/17/21 09:03	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	25.0	25		02/17/21 09:03	98-82-8	
p-Isopropyltoluene	ND	ug/L	25.0	25		02/17/21 09:03	99-87-6	
Methylene Chloride	ND	ug/L	25.0	25		02/17/21 09:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	250	25		02/17/21 09:03	108-10-1	

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ANALYTICAL RESULTS

Project: 68HE0719F0027.015
Pace Project No.: 60361311

Sample: 2A **Lab ID: 60361311007** Collected: 02/13/21 17:26 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
	Pace Analytical Services - Kansas City							
Methyl-tert-butyl ether	ND	ug/L	25.0	25		02/17/21 09:03	1634-04-4	
Naphthalene	ND	ug/L	250	25		02/17/21 09:03	91-20-3	
n-Propylbenzene	ND	ug/L	25.0	25		02/17/21 09:03	103-65-1	
Styrene	ND	ug/L	25.0	25		02/17/21 09:03	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	25.0	25		02/17/21 09:03	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	25.0	25		02/17/21 09:03	79-34-5	
Tetrachloroethene	ND	ug/L	25.0	25		02/17/21 09:03	127-18-4	
Toluene	ND	ug/L	25.0	25		02/17/21 09:03	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	25.0	25		02/17/21 09:03	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	25.0	25		02/17/21 09:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	25.0	25		02/17/21 09:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	25.0	25		02/17/21 09:03	79-00-5	
Trichloroethene	ND	ug/L	25.0	25		02/17/21 09:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	25.0	25		02/17/21 09:03	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	62.5	25		02/17/21 09:03	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	25.0	25		02/17/21 09:03	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	25.0	25		02/17/21 09:03	108-67-8	
Vinyl chloride	ND	ug/L	25.0	25		02/17/21 09:03	75-01-4	
Xylene (Total)	ND	ug/L	75.0	25		02/17/21 09:03	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102	%	80-120	25		02/17/21 09:03	460-00-4	F1,HS
Toluene-d8 (S)	100	%	80-120	25		02/17/21 09:03	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	100	%	80-120	25		02/17/21 09:03	2199-69-1	
Preservation pH	**6.0**		0.10	25		02/17/21 09:03		pH

Sample: 2S **Lab ID: 60361311010** Collected: 02/13/21 17:41 Received: 02/15/21 14:38 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141B	Analytical Method: EPA 8141B Preparation Method: 3546							
	Pace National - Mt. Juliet							
Chlorpyrifos	ND	mg/kg	0.786	7.86	02/20/21 12:48	02/21/21 06:28	2921-88-2	
Surrogates								
Triphenylphosphate (S)	123	%	36.0-121	7.86	02/20/21 12:48	02/21/21 06:28	115-86-6	ST

Sample: 3A **Lab ID: 60361311011** Collected: 02/13/21 17:58 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
	Pace Analytical Services - Kansas City							
Acetone	ND	ug/L	250	25		02/17/21 09:18	67-64-1	
Benzene	ND	ug/L	25.0	25		02/17/21 09:18	71-43-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 68HE0719F0027.015
Pace Project No.: 60361311

Sample: 3A **Lab ID: 60361311011** Collected: 02/13/21 17:58 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
	Pace Analytical Services - Kansas City							
Bromobenzene	ND	ug/L	25.0	25		02/17/21 09:18	108-86-1	
Bromochloromethane	ND	ug/L	25.0	25		02/17/21 09:18	74-97-5	
Bromodichloromethane	ND	ug/L	25.0	25		02/17/21 09:18	75-27-4	
Bromoform	ND	ug/L	25.0	25		02/17/21 09:18	75-25-2	
Bromomethane	ND	ug/L	125	25		02/17/21 09:18	74-83-9	
2-Butanone (MEK)	**551**	ug/L	250	25		02/17/21 09:18	78-93-3	
n-Butylbenzene	ND	ug/L	25.0	25		02/17/21 09:18	104-51-8	
sec-Butylbenzene	ND	ug/L	25.0	25		02/17/21 09:18	135-98-8	
tert-Butylbenzene	ND	ug/L	25.0	25		02/17/21 09:18	98-06-6	
Carbon disulfide	ND	ug/L	125	25		02/17/21 09:18	75-15-0	
Carbon tetrachloride	ND	ug/L	25.0	25		02/17/21 09:18	56-23-5	
Chlorobenzene	ND	ug/L	25.0	25		02/17/21 09:18	108-90-7	
Chloroethane	ND	ug/L	25.0	25		02/17/21 09:18	75-00-3	
Chloroform	ND	ug/L	25.0	25		02/17/21 09:18	67-66-3	
Chloromethane	ND	ug/L	25.0	25		02/17/21 09:18	74-87-3	
2-Chlorotoluene	ND	ug/L	25.0	25		02/17/21 09:18	95-49-8	
4-Chlorotoluene	ND	ug/L	25.0	25		02/17/21 09:18	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	62.5	25		02/17/21 09:18	96-12-8	
Dibromochloromethane	ND	ug/L	25.0	25		02/17/21 09:18	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	25.0	25		02/17/21 09:18	106-93-4	
Dibromomethane	ND	ug/L	25.0	25		02/17/21 09:18	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	25.0	25		02/17/21 09:18	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	25.0	25		02/17/21 09:18	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	25.0	25		02/17/21 09:18	106-46-7	
Dichlorodifluoromethane	ND	ug/L	25.0	25		02/17/21 09:18	75-71-8	
1,1-Dichloroethane	ND	ug/L	25.0	25		02/17/21 09:18	75-34-3	
1,2-Dichloroethane	ND	ug/L	25.0	25		02/17/21 09:18	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	25.0	25		02/17/21 09:18	540-59-0	
1,1-Dichloroethene	ND	ug/L	25.0	25		02/17/21 09:18	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	25.0	25		02/17/21 09:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	25.0	25		02/17/21 09:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	25.0	25		02/17/21 09:18	78-87-5	
1,3-Dichloropropane	ND	ug/L	25.0	25		02/17/21 09:18	142-28-9	
2,2-Dichloropropane	ND	ug/L	25.0	25		02/17/21 09:18	594-20-7	
1,1-Dichloropropene	ND	ug/L	25.0	25		02/17/21 09:18	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	25.0	25		02/17/21 09:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	25.0	25		02/17/21 09:18	10061-02-6	
Ethylbenzene	ND	ug/L	25.0	25		02/17/21 09:18	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	25.0	25		02/17/21 09:18	87-68-3	L1
2-Hexanone	ND	ug/L	250	25		02/17/21 09:18	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	25.0	25		02/17/21 09:18	98-82-8	
p-Isopropyltoluene	ND	ug/L	25.0	25		02/17/21 09:18	99-87-6	
Methylene Chloride	ND	ug/L	25.0	25		02/17/21 09:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	250	25		02/17/21 09:18	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	25.0	25		02/17/21 09:18	1634-04-4	
Naphthalene	ND	ug/L	250	25		02/17/21 09:18	91-20-3	

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ANALYTICAL RESULTS

Project: 68HE0719F0027.015
Pace Project No.: 60361311

Sample: 3A **Lab ID: 60361311011** Collected: 02/13/21 17:58 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
	Pace Analytical Services - Kansas City							
n-Propylbenzene	ND	ug/L	25.0	25		02/17/21 09:18	103-65-1	
Styrene	ND	ug/L	25.0	25		02/17/21 09:18	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	25.0	25		02/17/21 09:18	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	25.0	25		02/17/21 09:18	79-34-5	
Tetrachloroethene	ND	ug/L	25.0	25		02/17/21 09:18	127-18-4	
Toluene	ND	ug/L	25.0	25		02/17/21 09:18	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	25.0	25		02/17/21 09:18	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	25.0	25		02/17/21 09:18	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	25.0	25		02/17/21 09:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	25.0	25		02/17/21 09:18	79-00-5	
Trichloroethene	ND	ug/L	25.0	25		02/17/21 09:18	79-01-6	
Trichlorofluoromethane	ND	ug/L	25.0	25		02/17/21 09:18	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	62.5	25		02/17/21 09:18	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	25.0	25		02/17/21 09:18	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	25.0	25		02/17/21 09:18	108-67-8	
Vinyl chloride	ND	ug/L	25.0	25		02/17/21 09:18	75-01-4	
Xylene (Total)	ND	ug/L	75.0	25		02/17/21 09:18	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100	%	80-120	25		02/17/21 09:18	460-00-4	F1,HS
Toluene-d8 (S)	100	%	80-120	25		02/17/21 09:18	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	96	%	80-120	25		02/17/21 09:18	2199-69-1	
Preservation pH	**1.0**		0.10	25		02/17/21 09:18		

Sample: 3C **Lab ID: 60361311013** Collected: 02/13/21 18:03 Received: 02/15/21 14:38 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141B	Analytical Method: EPA 8141B Preparation Method: 3546							
	Pace National - Mt. Juliet							
Chlorpyrifos	ND	mg/kg	0.100	1	02/20/21 12:48	02/21/21 07:01	2921-88-2	
Surrogates								
Triphenylphosphate (S)	87.3	%	36.0-121	1	02/20/21 12:48	02/21/21 07:01	115-86-6	

Sample: 4 **Lab ID: 60361311014** Collected: 02/14/21 09:04 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141B	Analytical Method: EPA 8141B Preparation Method: 3510C							
	Pace National - Mt. Juliet							
Chlorpyrifos	ND	mg/L	0.00100	1	02/20/21 13:12	02/22/21 08:44	2921-88-2	
Surrogates								
Triphenylphosphate (S)	107	%	42.0-129	1	02/20/21 13:12	02/22/21 08:44	115-86-6	

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ANALYTICAL RESULTS

Project: 68HE0719F0027.015
Pace Project No.: 60361311

Sample: 4 **Lab ID: 60361311014** Collected: 02/14/21 09:04 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**8.1**	Std. Units	0.10	1		02/17/21 14:11		H6
4500S2D Sulfide, Dissolved	Analytical Method: SM 4500-S-2 B,C,D Pace Analytical Services - Kansas City							
Sulfide, Dissolved	ND	mg/L	0.050	1		02/17/21 15:58		
350.1 Ammonia, Dissolved LF	Analytical Method: EPA 350.1 Pace Analytical Services - Kansas City							
Ammonium, Dissolved	**2.0**	mg/L	0.10	1		02/18/21 11:36		
Nitrogen, Ammonia, Dissolved	**1.5**	mg/L	0.10	1		02/18/21 11:36	7664-41-7	

Sample: 5 **Lab ID: 60361311016** Collected: 02/13/21 18:30 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141B	Analytical Method: EPA 8141B Preparation Method: 3510C Pace National - Mt. Juliet							
Chlorpyrifos	ND	mg/L	0.00100	1	02/20/21 13:12	02/22/21 09:17	2921-88-2	
Surrogates								
Triphenylphosphate (S)	27.7	%	42.0-129	1	02/20/21 13:12	02/22/21 09:17	115-86-6	SR
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**8.4**	Std. Units	0.10	1		02/17/21 14:13		H6
4500S2D Sulfide, Dissolved	Analytical Method: SM 4500-S-2 B,C,D Pace Analytical Services - Kansas City							
Sulfide, Dissolved	**0.18**	mg/L	0.050	1		02/17/21 15:58		
350.1 Ammonia, Dissolved LF	Analytical Method: EPA 350.1 Pace Analytical Services - Kansas City							
Ammonium, Dissolved	**1080**	mg/L	5.0	50		02/18/21 10:55		
Nitrogen, Ammonia, Dissolved	**840**	mg/L	5.0	50		02/18/21 10:55	7664-41-7	

Sample: 5A **Lab ID: 60361311017** Collected: 02/13/21 18:30 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260 Pace Analytical Services - Kansas City							
Acetone	ND	ug/L	250	25		02/17/21 09:32	67-64-1	
Benzene	ND	ug/L	25.0	25		02/17/21 09:32	71-43-2	
Bromobenzene	ND	ug/L	25.0	25		02/17/21 09:32	108-86-1	

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ANALYTICAL RESULTS

Project: 68HE0719F0027.015
Pace Project No.: 60361311

Sample: 5A **Lab ID: 60361311017** Collected: 02/13/21 18:30 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260 Pace Analytical Services - Kansas City							
Bromochloromethane	ND	ug/L	25.0	25		02/17/21 09:32	74-97-5	
Bromodichloromethane	ND	ug/L	25.0	25		02/17/21 09:32	75-27-4	
Bromoform	ND	ug/L	25.0	25		02/17/21 09:32	75-25-2	
Bromomethane	ND	ug/L	125	25		02/17/21 09:32	74-83-9	
2-Butanone (MEK)	**558**	ug/L	250	25		02/17/21 09:32	78-93-3	
n-Butylbenzene	ND	ug/L	25.0	25		02/17/21 09:32	104-51-8	
sec-Butylbenzene	ND	ug/L	25.0	25		02/17/21 09:32	135-98-8	
tert-Butylbenzene	ND	ug/L	25.0	25		02/17/21 09:32	98-06-6	
Carbon disulfide	ND	ug/L	125	25		02/17/21 09:32	75-15-0	
Carbon tetrachloride	ND	ug/L	25.0	25		02/17/21 09:32	56-23-5	
Chlorobenzene	ND	ug/L	25.0	25		02/17/21 09:32	108-90-7	
Chloroethane	ND	ug/L	25.0	25		02/17/21 09:32	75-00-3	
Chloroform	ND	ug/L	25.0	25		02/17/21 09:32	67-66-3	
Chloromethane	ND	ug/L	25.0	25		02/17/21 09:32	74-87-3	
2-Chlorotoluene	ND	ug/L	25.0	25		02/17/21 09:32	95-49-8	
4-Chlorotoluene	ND	ug/L	25.0	25		02/17/21 09:32	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	62.5	25		02/17/21 09:32	96-12-8	
Dibromochloromethane	ND	ug/L	25.0	25		02/17/21 09:32	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	25.0	25		02/17/21 09:32	106-93-4	
Dibromomethane	ND	ug/L	25.0	25		02/17/21 09:32	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	25.0	25		02/17/21 09:32	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	25.0	25		02/17/21 09:32	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	25.0	25		02/17/21 09:32	106-46-7	
Dichlorodifluoromethane	ND	ug/L	25.0	25		02/17/21 09:32	75-71-8	
1,1-Dichloroethane	ND	ug/L	25.0	25		02/17/21 09:32	75-34-3	
1,2-Dichloroethane	ND	ug/L	25.0	25		02/17/21 09:32	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	25.0	25		02/17/21 09:32	540-59-0	
1,1-Dichloroethene	ND	ug/L	25.0	25		02/17/21 09:32	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	25.0	25		02/17/21 09:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	25.0	25		02/17/21 09:32	156-60-5	
1,2-Dichloropropane	ND	ug/L	25.0	25		02/17/21 09:32	78-87-5	
1,3-Dichloropropane	ND	ug/L	25.0	25		02/17/21 09:32	142-28-9	
2,2-Dichloropropane	ND	ug/L	25.0	25		02/17/21 09:32	594-20-7	
1,1-Dichloropropene	ND	ug/L	25.0	25		02/17/21 09:32	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	25.0	25		02/17/21 09:32	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	25.0	25		02/17/21 09:32	10061-02-6	
Ethylbenzene	ND	ug/L	25.0	25		02/17/21 09:32	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	25.0	25		02/17/21 09:32	87-68-3	L1
2-Hexanone	ND	ug/L	250	25		02/17/21 09:32	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	25.0	25		02/17/21 09:32	98-82-8	
p-Isopropyltoluene	ND	ug/L	25.0	25		02/17/21 09:32	99-87-6	
Methylene Chloride	ND	ug/L	25.0	25		02/17/21 09:32	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	250	25		02/17/21 09:32	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	25.0	25		02/17/21 09:32	1634-04-4	
Naphthalene	ND	ug/L	250	25		02/17/21 09:32	91-20-3	
n-Propylbenzene	ND	ug/L	25.0	25		02/17/21 09:32	103-65-1	

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ANALYTICAL RESULTS

Project: 68HE0719F0027.015
Pace Project No.: 60361311

Sample: 5A **Lab ID: 60361311017** Collected: 02/13/21 18:30 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
	Pace Analytical Services - Kansas City							
Styrene	ND	ug/L	25.0	25		02/17/21 09:32	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	25.0	25		02/17/21 09:32	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	25.0	25		02/17/21 09:32	79-34-5	
Tetrachloroethene	ND	ug/L	25.0	25		02/17/21 09:32	127-18-4	
Toluene	ND	ug/L	25.0	25		02/17/21 09:32	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	25.0	25		02/17/21 09:32	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	25.0	25		02/17/21 09:32	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	25.0	25		02/17/21 09:32	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	25.0	25		02/17/21 09:32	79-00-5	
Trichloroethene	ND	ug/L	25.0	25		02/17/21 09:32	79-01-6	
Trichlorofluoromethane	ND	ug/L	25.0	25		02/17/21 09:32	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	62.5	25		02/17/21 09:32	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	25.0	25		02/17/21 09:32	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	25.0	25		02/17/21 09:32	108-67-8	
Vinyl chloride	ND	ug/L	25.0	25		02/17/21 09:32	75-01-4	
Xylene (Total)	ND	ug/L	75.0	25		02/17/21 09:32	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101	%	80-120	25		02/17/21 09:32	460-00-4	F1,HS
Toluene-d8 (S)	99	%	80-120	25		02/17/21 09:32	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	98	%	80-120	25		02/17/21 09:32	2199-69-1	
Preservation pH	**1.0**		0.10	25		02/17/21 09:32		

Sample: 6 **Lab ID: 60361311019** Collected: 02/14/21 09:32 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141B	Analytical Method: EPA 8141B Preparation Method: 3510C							
	Pace National - Mt. Juliet							
Chlorpyrifos	ND	mg/L	0.00100	1	02/20/21 13:12	02/22/21 09:50	2921-88-2	
Surrogates								
Triphenylphosphate (S)	33.0	%	42.0-129	1	02/20/21 13:12	02/22/21 09:50	115-86-6	SR
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
	Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**8.1**	Std. Units	0.10	1		02/17/21 14:14		H6
4500S2D Sulfide, Dissolved	Analytical Method: SM 4500-S-2 B,C,D							
	Pace Analytical Services - Kansas City							
Sulfide, Dissolved	**0.17**	mg/L	0.050	1		02/17/21 15:59		
350.1 Ammonia, Dissolved LF	Analytical Method: EPA 350.1							
	Pace Analytical Services - Kansas City							
Ammonium, Dissolved	**637**	mg/L	5.0	50		02/18/21 10:57		
Nitrogen, Ammonia, Dissolved	**494**	mg/L	5.0	50		02/18/21 10:57	7664-41-7	

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ANALYTICAL RESULTS

Project: 68HE0719F0027.015
Pace Project No.: 60361311

Sample: 3 **Lab ID: 60361311021** Collected: 02/13/21 17:57 Received: 02/15/21 14:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
OP Pesticides 8141B	Analytical Method: EPA 8141B Preparation Method: 3510C Pace National - Mt. Juliet							
Chlorpyrifos	ND	mg/L	0.00100	1	02/20/21 13:12	02/22/21 10:23	2921-88-2	
Surrogates								
Triphenylphosphate (S)	28.6	%	42.0-129	1	02/20/21 13:12	02/22/21 10:23	115-86-6	SR
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**8.4**	Std. Units	0.10	1		02/17/21 14:15		H6
4500S2D Sulfide, Dissolved	Analytical Method: SM 4500-S-2 B,C,D Pace Analytical Services - Kansas City							
Sulfide, Dissolved	**0.10**	mg/L	0.050	1		02/17/21 15:59		
350.1 Ammonia, Dissolved LF	Analytical Method: EPA 350.1 Pace Analytical Services - Kansas City							
Ammonium, Dissolved	**1150**	mg/L	5.0	50		02/18/21 10:58		
Nitrogen, Ammonia, Dissolved	**890**	mg/L	5.0	50		02/18/21 10:58	7664-41-7	

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QUALITY CONTROL DATA

Project: 68HE0719F0027.015
Pace Project No.: 60361311

QC Batch: 1622820
QC Batch Method: 3510C
Analysis Method: EPA 8141B
Analysis Description: OP Pesticides 8141B
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 60361311001, 60361311006, 60361311014, 60361311016, 60361311019, 60361311021

METHOD BLANK: R3623835-1 Matrix: Water
Associated Lab Samples: 60361311001, 60361311006, 60361311014, 60361311016, 60361311019, 60361311021

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chlorpyrifos	mg/L	ND	0.00100	02/21/21 00:56	
Triphenylphosphate (S)	%	84.8	42.0-129	02/21/21 00:56	

LABORATORY CONTROL SAMPLE & LCSD: R3623835-2 R3623835-3

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Chlorpyrifos	mg/L	0.00500	0.00452	0.00446	90.4	89.2	50.0-126	1.34	20	
Triphenylphosphate (S)	%				95.4	94.0	42.0-129			

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QUALITY CONTROL DATA

Project: 68HE0719F0027.015
Pace Project No.: 60361311

QC Batch: 1622812
QC Batch Method: 3546
Analysis Method: EPA 8141B
Analysis Description: OP Pesticides 8141B
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 60361311004, 60361311010, 60361311013

METHOD BLANK: R3623834-1 Matrix: Solid
Associated Lab Samples: 60361311004, 60361311010, 60361311013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chlorpyrifos	mg/kg	ND	0.100	02/20/21 23:50	
Triphenylphosphate (S)	%	102	36.0-121	02/20/21 23:50	

LABORATORY CONTROL SAMPLE: R3623834-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorpyrifos	mg/kg	0.333	0.376	113	62.0-120	
Triphenylphosphate (S)	%			106	36.0-121	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3623834-3 R3623834-4

Parameter	Units	60361311004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chlorpyrifos	mg/kg	ND	0.855	1.13	1.05	1.36	123	120	12.0-149	25.7	20	R1
Triphenylphosphate (S)	%						129	115	36.0-121			ST

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 68HE0719F0027.015
Pace Project No.: 60361311

QC Batch: 704583
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60361311002, 60361311007, 60361311011, 60361311017

METHOD BLANK: 2838397
Matrix: Water
Associated Lab Samples: 60361311002, 60361311007, 60361311011, 60361311017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	02/17/21 08:36	
1,1,1-Trichloroethane	ug/L	ND	1.0	02/17/21 08:36	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	02/17/21 08:36	
1,1,2-Trichloroethane	ug/L	ND	1.0	02/17/21 08:36	
1,1-Dichloroethane	ug/L	ND	1.0	02/17/21 08:36	
1,1-Dichloroethene	ug/L	ND	1.0	02/17/21 08:36	
1,1-Dichloropropene	ug/L	ND	1.0	02/17/21 08:36	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	02/17/21 08:36	
1,2,3-Trichloropropane	ug/L	ND	2.5	02/17/21 08:36	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	02/17/21 08:36	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	02/17/21 08:36	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.5	02/17/21 08:36	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	02/17/21 08:36	
1,2-Dichlorobenzene	ug/L	ND	1.0	02/17/21 08:36	
1,2-Dichloroethane	ug/L	ND	1.0	02/17/21 08:36	
1,2-Dichloroethene (Total)	ug/L	ND	1.0	02/17/21 08:36	
1,2-Dichloropropane	ug/L	ND	1.0	02/17/21 08:36	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	02/17/21 08:36	
1,3-Dichlorobenzene	ug/L	ND	1.0	02/17/21 08:36	
1,3-Dichloropropane	ug/L	ND	1.0	02/17/21 08:36	
1,4-Dichlorobenzene	ug/L	ND	1.0	02/17/21 08:36	
2,2-Dichloropropane	ug/L	ND	1.0	02/17/21 08:36	
2-Butanone (MEK)	ug/L	ND	10.0	02/17/21 08:36	
2-Chlorotoluene	ug/L	ND	1.0	02/17/21 08:36	
2-Hexanone	ug/L	ND	10.0	02/17/21 08:36	
4-Chlorotoluene	ug/L	ND	1.0	02/17/21 08:36	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	02/17/21 08:36	
Acetone	ug/L	ND	10.0	02/17/21 08:36	
Benzene	ug/L	ND	1.0	02/17/21 08:36	
Bromobenzene	ug/L	ND	1.0	02/17/21 08:36	
Bromochloromethane	ug/L	ND	1.0	02/17/21 08:36	
Bromodichloromethane	ug/L	ND	1.0	02/17/21 08:36	
Bromoform	ug/L	ND	1.0	02/17/21 08:36	
Bromomethane	ug/L	ND	5.0	02/17/21 08:36	
Carbon disulfide	ug/L	ND	5.0	02/17/21 08:36	
Carbon tetrachloride	ug/L	ND	1.0	02/17/21 08:36	
Chlorobenzene	ug/L	ND	1.0	02/17/21 08:36	
Chloroethane	ug/L	ND	1.0	02/17/21 08:36	
Chloroform	ug/L	ND	1.0	02/17/21 08:36	
Chloromethane	ug/L	ND	1.0	02/17/21 08:36	

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QUALITY CONTROL DATA

Project: 68HE0719F0027.015
Pace Project No.: 60361311

METHOD BLANK: 2838397 Matrix: Water
Associated Lab Samples: 60361311002, 60361311007, 60361311011, 60361311017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/L	ND	1.0	02/17/21 08:36	
cis-1,3-Dichloropropene	ug/L	ND	1.0	02/17/21 08:36	
Dibromochloromethane	ug/L	ND	1.0	02/17/21 08:36	
Dibromomethane	ug/L	ND	1.0	02/17/21 08:36	
Dichlorodifluoromethane	ug/L	ND	1.0	02/17/21 08:36	
Ethylbenzene	ug/L	ND	1.0	02/17/21 08:36	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	02/17/21 08:36	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	02/17/21 08:36	
Methyl-tert-butyl ether	ug/L	ND	1.0	02/17/21 08:36	
Methylene Chloride	ug/L	ND	1.0	02/17/21 08:36	
n-Butylbenzene	ug/L	ND	1.0	02/17/21 08:36	
n-Propylbenzene	ug/L	ND	1.0	02/17/21 08:36	
Naphthalene	ug/L	ND	10.0	02/17/21 08:36	
p-Isopropyltoluene	ug/L	ND	1.0	02/17/21 08:36	
sec-Butylbenzene	ug/L	ND	1.0	02/17/21 08:36	
Styrene	ug/L	ND	1.0	02/17/21 08:36	
tert-Butylbenzene	ug/L	ND	1.0	02/17/21 08:36	
Tetrachloroethene	ug/L	ND	1.0	02/17/21 08:36	
Toluene	ug/L	ND	1.0	02/17/21 08:36	
trans-1,2-Dichloroethene	ug/L	ND	1.0	02/17/21 08:36	
trans-1,3-Dichloropropene	ug/L	ND	1.0	02/17/21 08:36	
Trichloroethene	ug/L	ND	1.0	02/17/21 08:36	
Trichlorofluoromethane	ug/L	ND	1.0	02/17/21 08:36	
Vinyl chloride	ug/L	ND	1.0	02/17/21 08:36	
Xylene (Total)	ug/L	ND	3.0	02/17/21 08:36	
1,2-Dichlorobenzene-d4 (S)	%	99	80-120	02/17/21 08:36	
4-Bromofluorobenzene (S)	%	99	80-120	02/17/21 08:36	
Toluene-d8 (S)	%	98	80-120	02/17/21 08:36	

LABORATORY CONTROL SAMPLE: 2838398

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	22.0	110	85-118	
1,1,1-Trichloroethane	ug/L	20	20.2	101	85-118	
1,1,2,2-Tetrachloroethane	ug/L	20	17.9	89	78-118	
1,1,2-Trichloroethane	ug/L	20	19.3	96	82-117	
1,1-Dichloroethane	ug/L	20	19.8	99	85-120	
1,1-Dichloroethene	ug/L	20	21.8	109	81-124	
1,1-Dichloropropene	ug/L	20	20.7	104	71-119	
1,2,3-Trichlorobenzene	ug/L	20	19.9	99	76-120	
1,2,3-Trichloropropane	ug/L	20	19.4	97	78-123	
1,2,4-Trichlorobenzene	ug/L	20	20.7	103	77-117	
1,2,4-Trimethylbenzene	ug/L	20	22.5	113	85-120	
1,2-Dibromo-3-chloropropane	ug/L	20	17.3	87	68-125	

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(913)599-5665

QUALITY CONTROL DATA

Project: 68HE0719F0027.015
Pace Project No.: 60361311

LABORATORY CONTROL SAMPLE: 2838398

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	20	19.5	98	83-120	
1,2-Dichlorobenzene	ug/L	20	19.6	98	80-120	
1,2-Dichloroethane	ug/L	20	18.2	91	79-118	
1,2-Dichloroethene (Total)	ug/L	40	41.6	104	84-118	
1,2-Dichloropropane	ug/L	20	20.3	101	85-117	
1,3,5-Trimethylbenzene	ug/L	20	22.4	112	80-118	
1,3-Dichlorobenzene	ug/L	20	21.7	108	80-120	
1,3-Dichloropropane	ug/L	20	18.8	94	85-120	
1,4-Dichlorobenzene	ug/L	20	20.9	104	84-115	
2,2-Dichloropropane	ug/L	20	21.3	106	60-129	
2-Butanone (MEK)	ug/L	100	78.7	79	70-125	
2-Chlorotoluene	ug/L	20	21.1	105	84-115	
2-Hexanone	ug/L	100	85.4	85	76-126	
4-Chlorotoluene	ug/L	20	20.9	104	83-116	
4-Methyl-2-pentanone (MIBK)	ug/L	100	75.6	76	73-131	
Acetone	ug/L	100	80.3	80	59-135	
Benzene	ug/L	20	20.6	103	82-115	
Bromobenzene	ug/L	20	21.5	107	84-115	
Bromochloromethane	ug/L	20	21.2	106	85-125	
Bromodichloromethane	ug/L	20	21.9	110	82-123	
Bromoform	ug/L	20	20.4	102	66-133	
Bromomethane	ug/L	20	23.1	115	27-179	
Carbon disulfide	ug/L	20	26.0	130	72-134	
Carbon tetrachloride	ug/L	20	22.0	110	80-121	
Chlorobenzene	ug/L	20	21.2	106	80-120	
Chloroethane	ug/L	20	19.1	95	78-145	
Chloroform	ug/L	20	20.3	102	84-116	
Chloromethane	ug/L	20	20.0	100	48-160	
cis-1,2-Dichloroethene	ug/L	20	20.6	103	85-115	
cis-1,3-Dichloropropene	ug/L	20	20.7	103	85-117	
Dibromochloromethane	ug/L	20	18.8	94	82-122	
Dibromomethane	ug/L	20	17.9	90	81-122	
Dichlorodifluoromethane	ug/L	20	22.8	114	50-173	
Ethylbenzene	ug/L	20	20.9	105	79-115	
Hexachloro-1,3-butadiene	ug/L	20	25.4	127	75-120	L1
Isopropylbenzene (Cumene)	ug/L	20	22.5	112	84-117	
Methyl-tert-butyl ether	ug/L	20	16.8	84	77-126	
Methylene Chloride	ug/L	20	19.6	98	80-126	
n-Butylbenzene	ug/L	20	21.8	109	81-120	
n-Propylbenzene	ug/L	20	21.8	109	80-116	
Naphthalene	ug/L	20	17.7	88	73-126	
p-Isopropyltoluene	ug/L	20	22.6	113	74-121	
sec-Butylbenzene	ug/L	20	21.8	109	75-130	
Styrene	ug/L	20	21.1	105	80-117	
tert-Butylbenzene	ug/L	20	21.7	109	84-116	
Tetrachloroethene	ug/L	20	22.4	112	83-119	
Toluene	ug/L	20	20.5	102	83-115	

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QUALITY CONTROL DATA

Project: 68HE0719F0027.015
Pace Project No.: 60361311

LABORATORY CONTROL SAMPLE: 2838398

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
trans-1,2-Dichloroethene	ug/L	20	21.0	105	80-124	
trans-1,3-Dichloropropene	ug/L	20	19.5	97	83-117	
Trichloroethene	ug/L	20	20.7	104	80-118	
Trichlorofluoromethane	ug/L	20	23.0	115	83-133	
Vinyl chloride	ug/L	20	20.1	101	76-144	
Xylene (Total)	ug/L	60	63.3	105	82-120	
1,2-Dichlorobenzene-d4 (S)	%			99	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			97	80-120	

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QUALITY CONTROL DATA

Project: 68HE0719F0027.015
Pace Project No.: 60361311

QC Batch: 704631
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60361311006, 60361311014, 60361311016, 60361311019, 60361311021

SAMPLE DUPLICATE: 2838486

Parameter	Units	60360278002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.76	6.8	0	5	H6

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QUALITY CONTROL DATA

Project: 68HE0719F0027.015
Pace Project No.: 60361311

QC Batch: 704688
QC Batch Method: SM 4500-S-2 B,C,D
Analysis Method: SM 4500-S-2 B,C,D
Analysis Description: 4500S2D Sulfide, Dissolved
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60361311006, 60361311014, 60361311016, 60361311019, 60361311021

METHOD BLANK: 2838603
Matrix: Water
Associated Lab Samples: 60361311006, 60361311014, 60361311016, 60361311019, 60361311021

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Dissolved	mg/L	ND	0.050	02/17/21 15:04	

LABORATORY CONTROL SAMPLE: 2838604

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Dissolved	mg/L	0.5	0.51	101	80-120	

MATRIX SPIKE SAMPLE: 2838605

Parameter	Units	60361311006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Dissolved	mg/L	0.22	0.5	0.62	80	75-125	

SAMPLE DUPLICATE: 2838606

Parameter	Units	60361311016 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Dissolved	mg/L	0.18	0.18	0	20	

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QUALITY CONTROL DATA

Project: 68HE0719F0027.015
Pace Project No.: 60361311

QC Batch: 704683
QC Batch Method: EPA 9045
Analysis Method: EPA 9045
Analysis Description: 9045 pH
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60361311005

SAMPLE DUPLICATE: 2838598

Parameter	Units	60361272001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.8	6.8	0	3	

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QUALITY CONTROL DATA

Project: 68HE0719F0027.015
Pace Project No.: 60361311

QC Batch: 704674
QC Batch Method: EPA 350.1
Analysis Method: EPA 350.1
Analysis Description: 350.1 Ammonia
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60361311005

METHOD BLANK: 2838564 Matrix: Solid
Associated Lab Samples: 60361311005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/kg	ND	1.0	02/18/21 10:32	

LABORATORY CONTROL SAMPLE: 2838565

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/kg	50	50.8	102	90-110	

MATRIX SPIKE SAMPLE: 2838566

Parameter	Units	60361139001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/kg	378	3640	4080	102	80-120	

SAMPLE DUPLICATE: 2838567

Parameter	Units	60361143001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/kg	10500	10500	0	20	

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QUALITY CONTROL DATA

Project: 68HE0719F0027.015
Pace Project No.: 60361311

QC Batch: 704677
QC Batch Method: EPA 350.1
Analysis Method: EPA 350.1
Analysis Description: 350.1 Ammonia, Dissolved
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60361311006, 60361311014, 60361311016, 60361311019, 60361311021

METHOD BLANK: 2838568
Matrix: Water
Associated Lab Samples: 60361311006, 60361311014, 60361311016, 60361311019, 60361311021

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Ammonium, Dissolved	mg/L	ND	0.10	02/18/21 10:49	
Nitrogen, Ammonia, Dissolved	mg/L	ND	0.10	02/18/21 10:49	

LABORATORY CONTROL SAMPLE: 2838569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ammonium, Dissolved	mg/L		6.6			
Nitrogen, Ammonia, Dissolved	mg/L	5	5.1	102	90-110	

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QUALIFIERS

Project: 68HE0719F0027.015
Pace Project No.: 60361311

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

SAMPLE QUALIFIERS

Sample: 60361311001

[1] OP Pesticides by Method 8141B - Sample produced heavy emulsion during Extraction process, low surr/spike recoveries due to matrix

Sample: 60361311006

[1] OP Pesticides by Method 8141B - Sample produced medium emulsion during Extraction process, low surr/spike recoveries due to matrix

Sample: 60361311016

[1] OP Pesticides by Method 8141B - Sample produced medium emulsion during Extraction process, low surr/spike recoveries due to matrix

Sample: 60361311019

[1] OP Pesticides by Method 8141B - Sample produced medium emulsion during Extraction process, low surr/spike recoveries due to matrix

Sample: 60361311021

[1] OP Pesticides by Method 8141B - Sample produced medium emulsion during Extraction process, low surr/spike recoveries due to matrix

BATCH QUALIFIERS

Batch: 704583

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

C4 Sample container did not meet EPA or method requirements.

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QUALIFIERS

Project: 68HE0719F0027.015
Pace Project No.: 60361311

ANALYTE QUALIFIERS

F1	The sample was analyzed at a dilution due to foaming of the sample in the purge vessel.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
R1	RPD value was outside control limits.
SR	Surrogate recovery was below laboratory control limits. Results may be biased low.
ST	Surrogate recovery was above laboratory control limits. Results may be biased high.
pH	Post-analysis pH measurement indicates insufficient VOA sample preservation.

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ED_006145_00000256-00060

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 68HE0719F0027.015
Pace Project No.: 60361311

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60361311001	**1**	3510C	1622820	EPA 8141B	1622820
60361311006	**2**	3510C	1622820	EPA 8141B	1622820
60361311014	**4**	3510C	1622820	EPA 8141B	1622820
60361311016	**5**	3510C	1622820	EPA 8141B	1622820
60361311019	**6**	3510C	1622820	EPA 8141B	1622820
60361311021	**3**	3510C	1622820	EPA 8141B	1622820
60361311004	**1C**	3546	1622812	EPA 8141B	1622812
60361311010	**2S**	3546	1622812	EPA 8141B	1622812
60361311013	**3C**	3546	1622812	EPA 8141B	1622812
60361311002	**1A**	EPA 5030B/8260	704583		
60361311007	**2A**	EPA 5030B/8260	704583		
60361311011	**3A**	EPA 5030B/8260	704583		
60361311017	**5A**	EPA 5030B/8260	704583		
60361311006	**2**	SM 4500-H+B	704631		
60361311014	**4**	SM 4500-H+B	704631		
60361311016	**5**	SM 4500-H+B	704631		
60361311019	**6**	SM 4500-H+B	704631		
60361311021	**3**	SM 4500-H+B	704631		
60361311006	**2**	SM 4500-S-2 B,C,D	704688		
60361311014	**4**	SM 4500-S-2 B,C,D	704688		
60361311016	**5**	SM 4500-S-2 B,C,D	704688		
60361311019	**6**	SM 4500-S-2 B,C,D	704688		
60361311021	**3**	SM 4500-S-2 B,C,D	704688		
60361311005	**1S**	EPA 9045	704683		
60361311005	**1S**	EPA 350.1	704674	EPA 350.1	704869
60361311006	**2**	EPA 350.1	704677		
60361311014	**4**	EPA 350.1	704677		
60361311016	**5**	EPA 350.1	704677		
60361311019	**6**	EPA 350.1	704677		
60361311021	**3**	EPA 350.1	704677		

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CHAIN-OF-CUSTODY Analytical Request Document

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf
Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB

WO# : 60361311

60361311

Company: Tetra Tech, In.
Address: 415 Oak St., Kansas City, MO 64106
Report To: Eric Deselich
Copy To: Emily Fisher
Emily.Fisher@tetratech.com
Customer Project Name/Number: 68HE0719F0027.015

Billing Information:
Project #: 68HE0719F0027.015
Email To: eric.deselich@tetratech.com
Site Collection Info/Address:
1332 County Rd 10, Mead, NE 68041
State: NE / County/City: Mead / Time Zone Collected: [ ]PT [ ]MT [X]CT [ ]ET

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Phone:
Email:
Site/Facility ID #:
Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Eric Deselich
Purchase Order # : 68HE0719F0027.015
Quote #:
DW PWS ID #:
DW Location Code:
Collected By (signature):
Turnaround Date Required: ASAP
Immediately Packed on Ice: [ ] Yes [X] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold:
Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [X] 3 Day [ ] 4 Day [ ] 5 Day
Field Filtered (if applicable): [ ] Yes [ ] No
Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	EPA 8081 (organochlorine pesticide)	EPA 8141 (organophosphorus pesticide)	Fungicide	Dissolved Sulfides, Total	Dissolved Ammonium	VOCs	pH			
1	P/WW	Grab	2/13/21	17:01					G	X	X	X	X	X		X			
1A	P/WW	Grab	2/13/21	17:01					G						X				
1B	P/WW	Grab	2/13/21	17:07					G	X	X	X	X	X		X			
1C	SL	Grab	2/13/21	17:12					G	X	X	X	X	X		X			
1S	SL	Grab	2/13/21	17:12					P	X	X	X	X	X		X			
2	P/WW	Grab	2/13/21	17:26					G	X	X	X	X	X		X			
2A	P/WW	Grab	2/13/21	17:26					G						X				
2B	P/WW	Grab	2/13/21	17:36					G	X	X	X	X	X		X			
2C	SL	Grab	2/13/21	17:41					G	X	X	X	X	X		X			
2S	SL	Grab	2/13/21	17:41					P	X	X	X	X	X		X			
3A	P/WW	Grab	2/13/21	17:58					G						X				
3B	P/WW	Grab	2/13/21	17:59					G	X	X	X	X	X		X			
3C	SL	Grab	2/13/21	18:03					G	X	X	X	X	X		X			
4	P/WW	Grab	2/14/21	9:04					G	X	X	X	X	X		X			
4A	P/WW	Grab	2/14/21	9:04					G	X	X	X	X	X		X			
5	P/WW	Grab	2/13/21	18:30					G	X	X	X	X	X		X			
5A	P/WW	Grab	2/13/21	18:30					G						X				
5B	P/WW	Grab	2/13/21	18:25					G	X	X	X	X	X		X			
6	P/WW	Grab	2/14/21	9:32					G	X	X	X	X	X		X			
6A	P/WW	Grab	2/14/21	9:32					G	X	X	X	X	X		X			

Lab Profile/Line:
Lab Sample Receipt Checklist:
Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N
Cl Strips: _____
Sample pH Acceptable Y N
pH Strips: _____
Sulfide Present Y N
Lead Acetate Strips: _____
LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:
- See PM at lab for list
- All samples collected in extremely cold conditions and maintained at/near 40°F thereafter
- Sample IDs 1, 1S, 2, 2S, 3, 4, 5, and 6 are packed separately and are the orginal sample containers from which other samples were allocated by matrix type

Type of Ice Used: Wet Blue Dry None
Packing Material Used: cardboard
Radchem sample(s) screened (<500 cpm): Y N NA
SHORT HOLDS PRESENT (<72 hours): Y N N/A
Lab Tracking #:
Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 1298
Cooler 1 Temp Upon Receipt: 3.1 °C 2.1
Cooler 1 Therm Corr. Factor: 0.2 °C
Cooler 1 Corrected Temp: 4.9 °C 1.9
Comments:

Relinquished by/Company: (Signature)	Date/Time: 2/15/21 1438	Received by/Company: (Signature)	Date/Time: 2-15-21 1438
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

2/15/21 SR

Trip Blank Received: Y N
HCL MeOH TSP Other

Non Conformance(s): YES / NO
Page: 1 of: 1

Pace Analytical

Sample Receiving Non-Conformance Form (NCF)

Date: 2/15/21	**Evaluated by:** Sheri R
Client: Tetra Tech	

Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. If COC is incomplete, check applicable issues below and add details where appropriate:

	Collection date/time missing or incorrect		Analyses or analytes: missing or clarification needed	X	Samples listed on COC do not match samples received (missing, additional, etc.)
	Sample IDs on COC do not match sample labels		Required trip blanks were not received		Required signatures are missing

Comments/Details/Other Issues not listed above:

Rcvd sample 3 not listed on COC - Collection Date & time not on label.

3. Sample integrity issues: check applicable issues below and add details where appropriate:

	Samples: Past holding time		Samples: Condition needs to be brought to lab personnel's attention (details below)		Preservation: Improper
	Samples: Not field filtered		Containers: Broken or compromised		Temperature: not within acceptance criteria (typically 0-6C)
	Samples: Insufficient volume received		Containers: Incorrect		Temperature: Samples arrived frozen
	Samples: Cooler damaged or compromised		Custody Seals: Missing or compromised on samples, trip blanks or coolers		Vials received with improper headspace
	Samples: contain chlorine or sulfides		Packing Material: Insufficient/Improper		Other:

Comments/Details:

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:	
PM Initials:	Date/Time:	

Client Comments/Instructions:

ANALYTICAL REPORT

February 22, 2021

GP
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

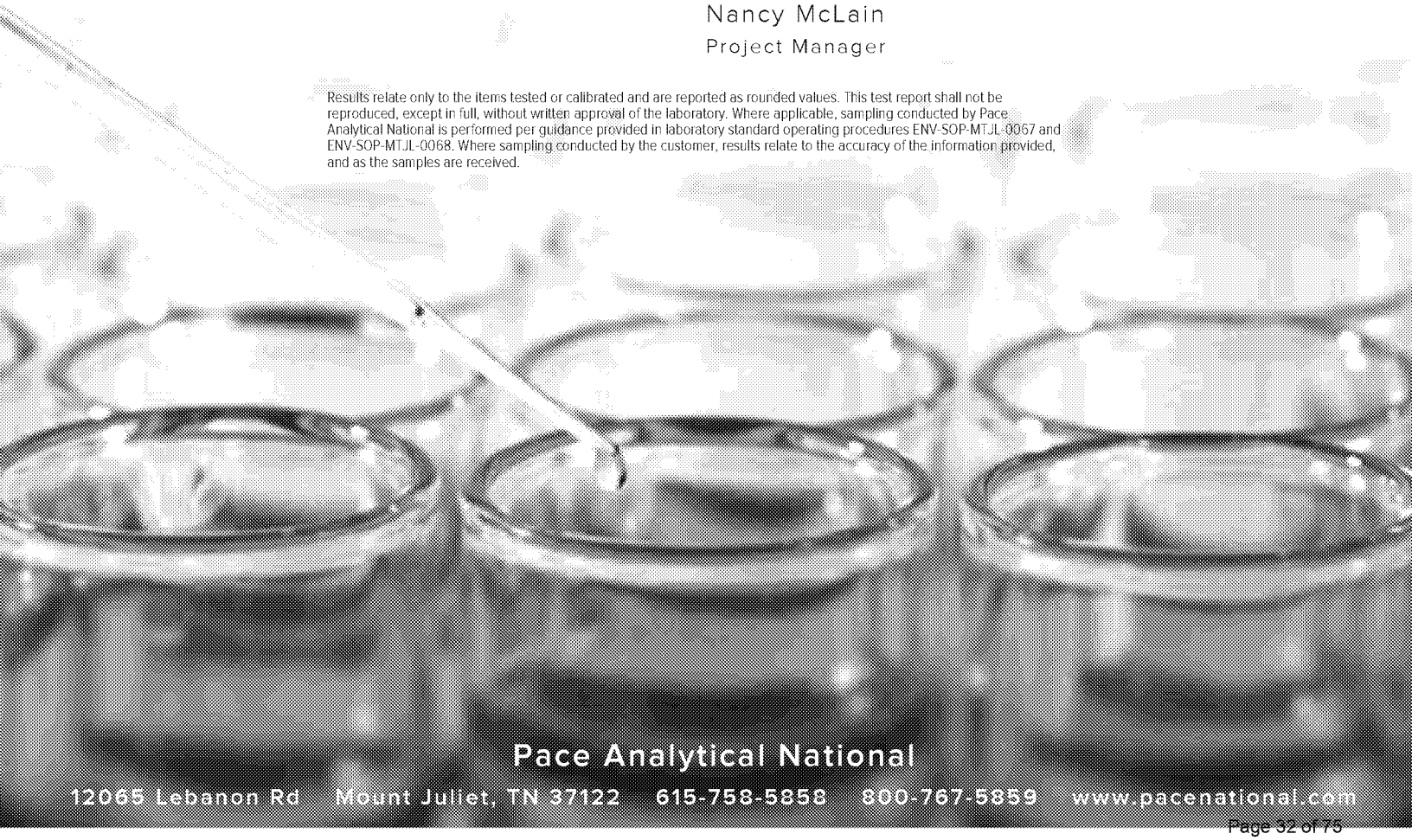
Pace Analytical - Lenexa, KS

Sample Delivery Group:	L1317569
Samples Received:	02/19/2021
Project Number:	60361311
Description:	68HE0719F0027.015
Site:	001
Report To:	Nolie Wood 9608 Loiret Boulevard Lenexa, KS 66219

Entire Report Reviewed By: Nancy F. McLain

Nancy McLain
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



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1 L1317569-01 GW

Collected by	Collected date/time	Received date/time
	02/13/21 17:01	02/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
OP Pesticides by Method 8141B	WG1622820	1	02/20/21 13:12	02/21/21 08:07	MTJ	Mt. Juliet, TN

1C L1317569-02 Solid

Collected by	Collected date/time	Received date/time
	02/13/21 17:12	02/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
OP Pesticides by Method 8141B	WG1622812	1	02/20/21 12:48	02/21/21 04:48	MTJ	Mt. Juliet, TN

2 L1317569-03 GW

Collected by	Collected date/time	Received date/time
	02/13/21 17:26	02/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
OP Pesticides by Method 8141B	WG1622820	1	02/20/21 13:12	02/22/21 08:11	MTJ	Mt. Juliet, TN

2S L1317569-04 Solid

Collected by	Collected date/time	Received date/time
	02/13/21 17:41	02/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
OP Pesticides by Method 8141B	WG1622812	7.86	02/20/21 12:48	02/21/21 06:28	MTJ	Mt. Juliet, TN

3C L1317569-05 Solid

Collected by	Collected date/time	Received date/time
	02/13/21 18:03	02/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
OP Pesticides by Method 8141B	WG1622812	1	02/20/21 12:48	02/21/21 07:01	MTJ	Mt. Juliet, TN

4 L1317569-06 GW

Collected by	Collected date/time	Received date/time
	02/14/21 09:04	02/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
OP Pesticides by Method 8141B	WG1622820	1	02/20/21 13:12	02/22/21 08:44	MTJ	Mt. Juliet, TN

5 L1317569-07 GW

Collected by	Collected date/time	Received date/time
	02/13/21 18:30	02/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
OP Pesticides by Method 8141B	WG1622820	1	02/20/21 13:12	02/22/21 09:17	MTJ	Mt. Juliet, TN

6 L1317569-08 GW

Collected by	Collected date/time	Received date/time
	02/14/21 09:32	02/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
OP Pesticides by Method 8141B	WG1622820	1	02/20/21 13:12	02/22/21 09:50	MTJ	Mt. Juliet, TN

	Collected by	Collected date/time	Received date/time
3 L1317569-09 GW		02/13/21 17:57	02/19/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
OP Pesticides by Method 8141B	WG1622820	1	02/20/21 13:12	02/22/21 10:23	MTJ	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Nancy F. McLain

Nancy McLain
Project Manager

Sample Delivery Group (SDG) Narrative

Analysis was performed from an improper container for the following samples.

Lab Sample ID	Project Sample ID	Method
L1317569-01	1	8141B

SAMPLE RESULTS - 01

L1317569

OP Pesticides by Method 8141B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Chlorpyrifos	U		0.000320	0.00100	1	02/21/2021 08:07	WG1622820
(S) Triphenyl Phosphate	*25.6*	J2		*42.0-129*		*02/21/2021 08:07*	WG1622820

Sample Narrative:

L1317569-01 WG1622820: Sample produced heavy emulsion during Extraction process, low surr/spike recoveries due to matrix

OP Pesticides by Method 8141B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chlorpyrifos	U	J3	0.0157	0.100	1	02/21/2021 04:48	WG1622812
(S) Triphenyl Phosphate	*110*			*36.0-121*		*02/21/2021 04:48*	WG1622812

SAMPLE RESULTS - 03

L1317569

OP Pesticides by Method 8141B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Chlorpyrifos	U		0.000320	0.00100	1	02/22/2021 08:11	WG1622820
(S) Triphenyl Phosphate	*20.1*	J2		*42.0-129*		*02/22/2021 08:11*	WG1622820

Sample Narrative:

L1317569-03 WG1622820: Sample produced medium emulsion during Extraction process, low surr/spike recoveries due to matrix

OP Pesticides by Method 8141B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chlorpyrifos	U		0.123	0.786	7.86	02/21/2021 06:28	WG1622812
(S) Triphenyl Phosphate	*123*	J1		*36.0-121*		*02/21/2021 06:28*	WG1622812

OP Pesticides by Method 8141B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chlorpyrifos	U		0.0157	0.100	1	02/21/2021 07:01	WG1622812
(S) Triphenyl Phosphate	*87.3*			*36.0-121*		*02/21/2021 07:01*	WG1622812

SAMPLE RESULTS - 06

L1317569

OP Pesticides by Method 8141B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Chlorpyrifos	U		0.000320	0.00100	1	02/22/2021 08:44	WG1622820
(S) Triphenyl Phosphate	*107*			*42.0-129*		*02/22/2021 08:44*	WG1622820

SAMPLE RESULTS - 07

L1317569

OP Pesticides by Method 8141B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Chlorpyrifos	U		0.000320	0.00100	1	02/22/2021 09:17	WG1622820
(S) Triphenyl Phosphate	*27.7*	J2		*42.0-129*		*02/22/2021 09:17*	WG1622820

Sample Narrative:

L1317569-07 WG1622820: Sample produced medium emulsion during Extraction process, low surr/spike recoveries due to matrix

SAMPLE RESULTS - 08

L1317569

OP Pesticides by Method 8141B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Chlorpyrifos	U		0.000320	0.00100	1	02/22/2021 09:50	WG1622820
(S) Triphenyl Phosphate	*33.0*	J2		*42.0-129*		*02/22/2021 09:50*	WG1622820

Sample Narrative:

L1317569-08 WG1622820: Sample produced medium emulsion during Extraction process, low surr/spike recoveries due to matrix

SAMPLE RESULTS - 09

L1317569

OP Pesticides by Method 8141B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Chlorpyrifos	U		0.000320	0.00100	1	02/22/2021 10:23	WG1622820
(S) Triphenyl Phosphate	*28.6*	J2		*42.0-129*		*02/22/2021 10:23*	WG1622820

Sample Narrative:

L1317569-09 WG1622820: Sample produced medium emulsion during Extraction process, low surr/spike recoveries due to matrix

QUALITY CONTROL SUMMARY

L1317569-02,04,05

Method Blank (MB)

(MB) R3623834-1 02/20/21 23:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chlorpyrifos	U		0.0157	0.100
(S) Triphenyl Phosphate	*102*			*36.0-121*

Laboratory Control Sample (LCS)

(LCS) R3623834-2 02/21/21 00:23

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chlorpyrifos	0.333	0.376	113	62.0-120	
(S) Triphenyl Phosphate			*106*	*36.0-121*	

L1317569-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1317569-02 02/21/21 04:48 • (MS) R3623834-3 02/21/21 05:22 • (MSD) R3623834-4 02/21/21 05:55

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chlorpyrifos	0.855	U	1.05	1.36	123	120	2.57	12.0-149		J3	25.7	20
(S) Triphenyl Phosphate					*129*	*115*		*36.0-121*	J1			

QUALITY CONTROL SUMMARY

L1317569-01,03,06,07,08,09

Method Blank (MB)

(MB) R3623835-1 02/21/21 00:56

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chlorpyrifos	U		0.000320	0.00100
(S) Triphenyl Phosphate	*84.8*			*42.0-129*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3623835-2 02/21/21 01:29 • (LCSD) R3623835-3 02/21/21 02:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chlorpyrifos	0.00500	0.00452	0.00446	90.4	89.2	50.0-126			1.34	20
(S) Triphenyl Phosphate				*95.4*	*94.0*	*42.0-129*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN, 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

Pace Analytical National 1313 Point Mallard Parkway SE Suite B Decatur, AL, 35601

Alabama	40160
ANSI National Accreditation Board	L2239

Pace Analytical National 660 Bercut Dr. Ste. C Sacramento, CA, 95811

California	2961	Oregon	CA300002
Minnesota	006-999-465	Washington	C926
North Dakota	R-214		

Pace Analytical National 6000 South Eastern Avenue Ste 9A Las Vegas, NV, 89119

Nevada	NV009412021-1

Pace Analytical National 1606 E. Brazos Street Suite D Victoria, TX, 77901

Texas	T104704328-20-18

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Internal Transfer Chain of Custody

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☐ Samples Pre-Logged into eCOC.

State Of Origin: NE
Cert. Needed: ☐ Yes ☐ No

Workorder: 60361311 Workorder Name: 68HE0719F0027.015 Owner Received Date: 2/15/2021 Results Requested By: 2/18/2021

Report To	Subcontract To
Nolie Wood Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 1(913)563-1401	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

Requested Analysis

LB17569

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	~~8081 Pesticides~~ 8121 PCK	8141 Pesticides	LAB USE ONLY
1	1	PS	2/13/2021 17:01	60361311001	Water	1	X	X	-01
2	1C	PS	2/13/2021 17:12	60361311004	Solid	1	X	X	-02
3	2	PS	2/13/2021 17:26	60361311006	Water	2	X	X	-03
4	2S	PS	2/13/2021 17:41	60361311010	Solid	1	X	X	-04
5	3C	PS	2/13/2021 18:03	60361311013	Solid	1	X	X	-05
6	4	PS	2/14/2021 09:04	60361311014	Water	2	X	X	-06
7	5	PS	2/13/2021 18:30	60361311016	Water	2	X	X	-07
8	6	PS	2/14/2021 09:32	60361311019	Water	2	X	X	-08
9	3	PS	2/13/2021 17:57	60361311021	Water	2	X	X	-09

Transfers	Released By	Date/Time	Received By	Date/Time
1			K. Holden	2/19/21 9:45
2				
3				

Comments: OK

Cooler Temperature on Receipt 16 K/°C 1.7 Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Receipt Checklist

COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
RAD Screen <0.5 mR/hr: Y N

If Applicable
VOA Zero Headspace: Y N
Pres.Correct/Check: Y N

Internal Transfer Chain of Custody

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☐ Samples Pre-Logged into eCOC.

State Of Origin: NE
Cert. Needed: ☐ Yes ☐ No

Workorder: 60361311 Workorder Name: 68HE0719F0027.015 Owner Received Date: 2/15/2021 Results Requested By: 2/22/2021

Report To

Nolie Wood
Pace Analytical Kansas
9608 Loiret Blvd.
Lenexa, KS 66219
Phone 1(913)563-1401

Subcontract To

Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122
Phone (615) 758-5858

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved						Requested Analysis: 8141 Pesticides *												LAB USE ONLY
1	1	PS	2/13/2021 17:01	60361311001	Water	1						X												
2	1C	PS	2/13/2021 17:12	60361311004	Solid	1						X												
3	2	PS	2/13/2021 17:26	60361311006	Water	1						X												
4	2S	PS	2/13/2021 17:41	60361311010	Solid	1						X												
5	3C	PS	2/13/2021 18:03	60361311013	Solid	1						X												
6	4	PS	2/14/2021 09:04	60361311014	Water	1						X												
7	5	PS	2/13/2021 18:30	60361311016	Water	1						X												
8	6	PS	2/14/2021 09:32	60361311019	Water	1						X												
9	3	PS	2/13/2021 17:57	60361311021	Water	1						X												

Transfers	Released By	Date/Time	Received By	Date/Time
1				
2				
3				

Comments

*Chlorpyrifos

Cooler Temperature on Receipt _____ °C | **Custody Seal Y or N** | **Received on Ice Y or N** | **Samples Intact Y or N**

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

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Sherwood, OR 97140

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219

Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 1B
Matrix: water

PAL Sample ID: P210195-01
Sample Date: 2/13/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 630.1 (GC-FPD)					
2/25/21	2/25/21	Carbon Disulfide	14 ug/L	10 ug/L	
Method: Modified EPA 8270D (GC-MS/MS)					
2/25/21	2/25/21	Captan	ND	200 ug/L	
2/25/21	2/25/21	Fludioxonil	210 ug/L	10 ug/L	
2/25/21	2/25/21	Mefenoxam	99 ug/L	10 ug/L	
Surrogate Recovery: 91 %					
Surrogate Recovery Range: 52-149					
(TPP-d15 used as Surrogate)					
Method: Modified EPA 8321B (LC-MS/MS)					
2/25/21	2/26/21	Abamectin	710 ug/L	100 ug/L	
2/25/21	2/26/21	Azoxystrobin	ND	10 ug/L	
2/25/21	2/26/21	Carbendazim	ND	10 ug/L	
2/25/21	2/26/21	Carboxin	ND	10 ug/L	
2/25/21	2/26/21	Chlorantraniliprole	55 ug/L	10 ug/L	
2/25/21	2/26/21	Clothianidin	540 ug/L	100 ug/L	
2/25/21	2/26/21	Cyantraniliprole	ND	10 ug/L	
2/25/21	2/26/21	Difenoconazole	37 ug/L	10 ug/L	
2/25/21	2/26/21	Fluoxastrobin	47 ug/L	10 ug/L	
2/25/21	2/26/21	Imidacloprid	ND	10 ug/L	
2/25/21	2/26/21	Metconazole	ND	10 ug/L	
2/25/21	2/26/21	Picoxystrobin	ND	10 ug/L	
2/25/21	2/26/21	Propiconazole	ND	20 ug/L	
2/25/21	2/26/21	Prothioconazole	2200 ug/L	200 ug/L	
2/25/21	2/26/21	Pyraclostrobin	ND	10 ug/L	
2/25/21	2/26/21	Tebuconazole	1000 ug/L	100 ug/L	
2/25/21	2/26/21	Thiabendazole	7000 ug/L	1000 ug/L	
2/25/21	2/26/21	Thiamethoxam	55 ug/L	10 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 1B
Matrix: water

PAL Sample ID: P210195-01
Sample Date: 2/13/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
2/25/21	2/26/21	Thiophanate methyl	ND	10 ug/L	
2/25/21	2/26/21	Trifloxystrobin	ND	10 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 1C
Matrix: soil

PAL Sample ID: P210195-02
Sample Date: 2/13/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: JAOAC Method, Vol. 78, #5 (GC-FPD)					
2/24/21	2/24/21	Carbon Disulfide	0.12 mg/kg	0.040 mg/kg	
Method: Modified EPA 8270D (GC-MS/MS)					
2/24/21	2/25/21	Captan	ND	0.57 mg/kg	
2/24/21	2/25/21	Fludioxonil	0.71 mg/kg	0.028 mg/kg	
2/24/21	2/25/21	Mefenoxam	0.067 mg/kg	0.028 mg/kg	

Surrogate Recovery: 85 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 1C
Matrix: soil

PAL Sample ID: P210195-02
Sample Date: 2/13/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
2/24/21	2/25/21	Abamectin	0.55 mg/kg	0.28 mg/kg	
2/24/21	2/25/21	Azoxystrobin	ND	0.028 mg/kg	
2/24/21	2/25/21	Carbendazim	ND	0.028 mg/kg	
2/24/21	2/25/21	Carboxin	ND	0.028 mg/kg	
2/24/21	2/25/21	Chlorantraniliprole	0.28 mg/kg	0.028 mg/kg	
2/24/21	2/25/21	Clothianidin	0.44 mg/kg	0.028 mg/kg	
2/24/21	2/25/21	Cyantraniliprole	ND	0.028 mg/kg	
2/24/21	2/25/21	Difenoconazole	0.087 mg/kg	0.028 mg/kg	
2/24/21	2/25/21	Fluoxastrobin	0.20 mg/kg	0.028 mg/kg	
2/24/21	2/25/21	Imidacloprid	ND	0.028 mg/kg	
2/24/21	2/25/21	Metconazole	ND	0.028 mg/kg	
2/24/21	2/25/21	Picoxystrobin	ND	0.028 mg/kg	
2/24/21	2/25/21	Propiconazole	ND	0.057 mg/kg	
2/24/21	2/25/21	Prothioconazole	0.54 mg/kg	0.057 mg/kg	
2/24/21	2/25/21	Pyraclostrobin	ND	0.028 mg/kg	
2/24/21	2/25/21	Tebuconazole	1.4 mg/kg	0.028 mg/kg	
2/24/21	2/25/21	Thiabendazole	8.5 mg/kg	0.28 mg/kg	
2/24/21	2/25/21	Thiamethoxam	0.036 mg/kg	0.028 mg/kg	
2/24/21	2/25/21	Thiophanate methyl	ND	0.028 mg/kg	
2/24/21	2/25/21	Trifloxystrobin	ND	0.028 mg/kg	

Surrogate Recovery: 82 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 2B
Matrix: water

PAL Sample ID: P210195-03
Sample Date: 2/13/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 630.1 (GC-FPD)					
2/25/21	2/25/21	Carbon Disulfide	17 ug/L	10 ug/L	
Method: Modified EPA 8270D (GC-MS/MS)					
2/25/21	2/25/21	Captan	ND	200 ug/L	
2/25/21	2/25/21	Fludioxonil	340 ug/L	10 ug/L	
2/25/21	2/25/21	Mefenoxam	110 ug/L	10 ug/L	

Surrogate Recovery: 94 %
Surrogate Recovery Range: 52-149
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 2B
Matrix: water

PAL Sample ID: P210195-03
Sample Date: 2/13/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
2/25/21	2/26/21	Abamectin	800 ug/L	100 ug/L	E
2/25/21	2/26/21	Azoxystrobin	ND	10 ug/L	
2/25/21	2/26/21	Carbendazim	ND	10 ug/L	
2/25/21	2/26/21	Carboxin	ND	10 ug/L	
2/25/21	2/26/21	Chlorantraniliprole	53 ug/L	10 ug/L	
2/25/21	2/26/21	Clothianidin	ND	10 ug/L	
2/25/21	2/26/21	Cyantraniliprole	ND	10 ug/L	
2/25/21	2/26/21	Difenoconazole	50 ug/L	10 ug/L	
2/25/21	2/26/21	Fluoxastrobin	40 ug/L	10 ug/L	
2/25/21	2/26/21	Imidacloprid	ND	10 ug/L	
2/25/21	2/26/21	Metconazole	ND	10 ug/L	
2/25/21	2/26/21	Picoxystrobin	ND	10 ug/L	
2/25/21	2/26/21	Propiconazole	ND	20 ug/L	
2/25/21	2/26/21	Prothioconazole	4700 ug/L	2000 ug/L	
2/25/21	2/26/21	Pyraclostrobin	ND	10 ug/L	
2/25/21	2/26/21	Tebuconazole	1300 ug/L	1000 ug/L	
2/25/21	2/26/21	Thiabendazole	9000 ug/L	1000 ug/L	
2/25/21	2/26/21	Thiamethoxam	ND	10 ug/L	
2/25/21	2/26/21	Thiophanate methyl	ND	10 ug/L	
2/25/21	2/26/21	Trifloxystrobin	ND	10 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 2C
Matrix: soil

PAL Sample ID: P210195-04
Sample Date: 2/13/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: JAOAC Method, Vol. 78, #5 (GC-FPD)					
2/24/21	2/24/21	Mancozeb	ND	0.040 mg/kg	
2/24/21	2/24/21	Thiram	ND	0.040 mg/kg	
Method: Modified EPA 8270D (GC-MS/MS)					
2/24/21	2/25/21	Captan	ND	0.60 mg/kg	
2/24/21	2/25/21	Fludioxonil	0.99 mg/kg	0.030 mg/kg	
2/24/21	2/25/21	Mefenoxam	0.070 mg/kg	0.030 mg/kg	

Surrogate Recovery: 85 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Lenexa, KS 66219

Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 2C
Matrix: soil

PAL Sample ID: P210195-04
Sample Date: 2/13/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
2/24/21	2/25/21	Abamectin	0.77 mg/kg	0.30 mg/kg	
2/24/21	2/25/21	Azoxystrobin	ND	0.030 mg/kg	
2/24/21	2/25/21	Carbendazim	ND	0.030 mg/kg	
2/24/21	2/25/21	Carboxin	ND	0.030 mg/kg	
2/24/21	2/25/21	Chlorantraniliprole	0.20 mg/kg	0.030 mg/kg	
2/24/21	2/25/21	Clothianidin	0.60 mg/kg	0.030 mg/kg	
2/24/21	2/25/21	Cyantraniliprole	ND	0.030 mg/kg	
2/24/21	2/25/21	Difenoconazole	0.11 mg/kg	0.030 mg/kg	
2/24/21	2/25/21	Fluoxastrobin	0.17 mg/kg	0.030 mg/kg	
2/24/21	2/25/21	Imidacloprid	ND	0.030 mg/kg	
2/24/21	2/25/21	Metconazole	ND	0.030 mg/kg	
2/24/21	2/25/21	Picoxystrobin	ND	0.030 mg/kg	
2/24/21	2/25/21	Propiconazole	ND	0.060 mg/kg	
2/24/21	2/25/21	Prothioconazole	0.93 mg/kg	0.060 mg/kg	
2/24/21	2/25/21	Pyraclostrobin	ND	0.030 mg/kg	
2/24/21	2/25/21	Tebuconazole	2.0 mg/kg	0.30 mg/kg	
2/24/21	2/25/21	Thiabendazole	14 mg/kg	0.30 mg/kg	
2/24/21	2/25/21	Thiamethoxam	0.061 mg/kg	0.030 mg/kg	
2/24/21	2/25/21	Thiophanate methyl	ND	0.030 mg/kg	
2/24/21	2/25/21	Trifloxystrobin	ND	0.030 mg/kg	

Surrogate Recovery: 80 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Pace Analytical Services, Inc.
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Lenexa, KS 66219

Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 3B
Matrix: water

PAL Sample ID: P210195-05
Sample Date: 2/13/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 630.1 (GC-FPD)					
2/25/21	2/25/21	Carbon Disulfide	16 ug/L	10 ug/L	
Method: Modified EPA 8270D (GC-MS/MS)					
2/25/21	2/25/21	Captan	ND	200 ug/L	
2/25/21	2/25/21	Fludioxonil	110 ug/L	10 ug/L	
2/25/21	2/25/21	Mefenoxam	78 ug/L	10 ug/L	

Surrogate Recovery: 94 %
Surrogate Recovery Range: 52-149
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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9608 Loiret Blvd.
Lenexa, KS 66219

Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 3B
Matrix: water

PAL Sample ID: P210195-05
Sample Date: 2/13/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
2/25/21	2/26/21	Abamectin	260 ug/L	100 ug/L	
2/25/21	2/26/21	Azoxystrobin	ND	10 ug/L	
2/25/21	2/26/21	Carbendazim	ND	10 ug/L	
2/25/21	2/26/21	Carboxin	ND	10 ug/L	
2/25/21	2/26/21	Chlorantraniliprole	38 ug/L	10 ug/L	
2/25/21	2/26/21	Clothianidin	370 ug/L	10 ug/L	
2/25/21	2/26/21	Cyantraniliprole	ND	10 ug/L	
2/25/21	2/26/21	Difenoconazole	21 ug/L	10 ug/L	
2/25/21	2/26/21	Fluoxastrobin	27 ug/L	10 ug/L	
2/25/21	2/26/21	Imidacloprid	ND	10 ug/L	
2/25/21	2/26/21	Metconazole	ND	10 ug/L	
2/25/21	2/26/21	Picoxystrobin	ND	10 ug/L	
2/25/21	2/26/21	Propiconazole	ND	20 ug/L	
2/25/21	2/26/21	Prothioconazole	2000 ug/L	200 ug/L	
2/25/21	2/26/21	Pyraclostrobin	ND	10 ug/L	
2/25/21	2/26/21	Tebuconazole	690 ug/L	100 ug/L	
2/25/21	2/26/21	Thiabendazole	4900 ug/L	100 ug/L	
2/25/21	2/26/21	Thiamethoxam	47 ug/L	10 ug/L	
2/25/21	2/26/21	Thiophanate methyl	ND	10 ug/L	
2/25/21	2/26/21	Trifloxystrobin	ND	10 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

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21830 S.W. Alexander Ln
Sherwood, OR 97140

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219

Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 3C
Matrix: soil

PAL Sample ID: P210195-06
Sample Date: 2/13/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: JAOAC Method, Vol. 78, #5 (GC-FPD)					
2/24/21	2/24/21	Mancozeb	ND	0.040 mg/kg	
2/24/21	2/24/21	Thiram	ND	0.040 mg/kg	
Method: Modified EPA 8270D (GC-MS/MS)					
2/24/21	2/25/21	Captan	ND	0.59 mg/kg	
2/24/21	2/25/21	Fludioxonil	0.74 mg/kg	0.029 mg/kg	
2/24/21	2/25/21	Mefenoxam	0.067 mg/kg	0.029 mg/kg	

Surrogate Recovery: 86 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 3C
Matrix: soil

PAL Sample ID: P210195-06
Sample Date: 2/13/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
2/24/21	2/25/21	Abamectin	1.2 mg/kg	0.29 mg/kg	
2/24/21	2/25/21	Azoxystrobin	ND	0.029 mg/kg	
2/24/21	2/25/21	Carbendazim	ND	0.029 mg/kg	
2/24/21	2/25/21	Carboxin	ND	0.029 mg/kg	
2/24/21	2/25/21	Chlorantraniliprole	0.20 mg/kg	0.029 mg/kg	
2/24/21	2/25/21	Clothianidin	0.45 mg/kg	0.029 mg/kg	
2/24/21	2/25/21	Cyantraniliprole	ND	0.029 mg/kg	
2/24/21	2/25/21	Difenoconazole	0.090 mg/kg	0.029 mg/kg	
2/24/21	2/25/21	Fluoxastrobin	0.18 mg/kg	0.029 mg/kg	
2/24/21	2/25/21	Imidacloprid	ND	0.029 mg/kg	
2/24/21	2/25/21	Metconazole	ND	0.029 mg/kg	
2/24/21	2/25/21	Picoxystrobin	ND	0.029 mg/kg	
2/24/21	2/25/21	Propiconazole	ND	0.059 mg/kg	
2/24/21	2/25/21	Prothioconazole	0.76 mg/kg	0.059 mg/kg	
2/24/21	2/25/21	Pyraclostrobin	ND	0.029 mg/kg	
2/24/21	2/25/21	Tebuconazole	1.3 mg/kg	0.29 mg/kg	
2/24/21	2/25/21	Thiabendazole	9.9 mg/kg	0.29 mg/kg	
2/24/21	2/25/21	Thiamethoxam	0.040 mg/kg	0.029 mg/kg	
2/24/21	2/25/21	Thiophanate methyl	ND	0.029 mg/kg	
2/24/21	2/25/21	Trifloxystrobin	ND	0.029 mg/kg	

Surrogate Recovery: 88 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 4A
Matrix: water

PAL Sample ID: P210195-07
Sample Date: 2/14/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 630.1 (GC-FPD)					
2/25/21	2/25/21	Mancozeb	ND	10 ug/L	
2/25/21	2/25/21	Thiram	ND	10 ug/L	
Method: Modified EPA 8270D (GC-MS/MS)					
2/25/21	2/25/21	Captan	ND	200 ug/L	
2/25/21	2/25/21	Fludioxonil	ND	10 ug/L	
2/25/21	2/25/21	Mefenoxam	ND	10 ug/L	

Surrogate Recovery: 97 %
Surrogate Recovery Range: 52-149
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 4A
Matrix: water

PAL Sample ID: P210195-07
Sample Date: 2/14/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
2/25/21	2/26/21	Abamectin	ND	10 ug/L	
2/25/21	2/26/21	Azoxystrobin	ND	10 ug/L	
2/25/21	2/26/21	Carbendazim	ND	10 ug/L	
2/25/21	2/26/21	Carboxin	ND	10 ug/L	
2/25/21	2/26/21	Chlorantraniliprole	ND	10 ug/L	
2/25/21	2/26/21	Clothianidin	90 ug/L	10 ug/L	
2/25/21	2/26/21	Cyantraniliprole	ND	10 ug/L	
2/25/21	2/26/21	Difenoconazole	ND	10 ug/L	
2/25/21	2/26/21	Fluoxastrobin	ND	10 ug/L	
2/25/21	2/26/21	Imidacloprid	ND	10 ug/L	
2/25/21	2/26/21	Metconazole	ND	10 ug/L	
2/25/21	2/26/21	Picoxystrobin	ND	10 ug/L	
2/25/21	2/26/21	Propiconazole	ND	20 ug/L	
2/25/21	2/26/21	Prothioconazole	ND	20 ug/L	
2/25/21	2/26/21	Pyraclostrobin	ND	10 ug/L	
2/25/21	2/26/21	Tebuconazole	ND	10 ug/L	
2/25/21	2/26/21	Thiabendazole	ND	10 ug/L	
2/25/21	2/26/21	Thiamethoxam	20 ug/L	10 ug/L	
2/25/21	2/26/21	Thiophanate methyl	ND	10 ug/L	
2/25/21	2/26/21	Trifloxystrobin	ND	10 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 5B
Matrix: water

PAL Sample ID: P210195-08
Sample Date: 2/13/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 630.1 (GC-FPD)					
2/25/21	2/25/21	Carbon Disulfide	15 ug/L	10 ug/L	
Method: Modified EPA 8270D (GC-MS/MS)					
2/25/21	2/25/21	Captan	ND	200 ug/L	
2/25/21	2/25/21	Fludioxonil	94 ug/L	10 ug/L	
2/25/21	2/25/21	Mefenoxam	73 ug/L	10 ug/L	

Surrogate Recovery: 93 %
Surrogate Recovery Range: 52-149
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 5B
Matrix: water

PAL Sample ID: P210195-08
Sample Date: 2/13/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
2/25/21	2/26/21	Abamectin	300 ug/L	100 ug/L	
2/25/21	2/26/21	Azoxystrobin	ND	10 ug/L	
2/25/21	2/26/21	Carbendazim	ND	10 ug/L	
2/25/21	2/26/21	Carboxin	ND	10 ug/L	
2/25/21	2/26/21	Chlorantraniliprole	37 ug/L	10 ug/L	
2/25/21	2/26/21	Clothianidin	370 ug/L	10 ug/L	
2/25/21	2/26/21	Cyantraniliprole	ND	10 ug/L	
2/25/21	2/26/21	Difenoconazole	20 ug/L	10 ug/L	
2/25/21	2/26/21	Fluoxastrobin	24 ug/L	10 ug/L	
2/25/21	2/26/21	Imidacloprid	ND	10 ug/L	
2/25/21	2/26/21	Metconazole	ND	10 ug/L	
2/25/21	2/26/21	Picoxystrobin	ND	10 ug/L	
2/25/21	2/26/21	Propiconazole	ND	20 ug/L	
2/25/21	2/26/21	Prothioconazole	1700 ug/L	200 ug/L	
2/25/21	2/26/21	Pyraclostrobin	ND	10 ug/L	
2/25/21	2/26/21	Tebuconazole	650 ug/L	100 ug/L	
2/25/21	2/26/21	Thiabendazole	4300 ug/L	100 ug/L	
2/25/21	2/26/21	Thiamethoxam	46 ug/L	10 ug/L	
2/25/21	2/26/21	Thiophanate methyl	ND	10 ug/L	
2/25/21	2/26/21	Trifloxystrobin	ND	10 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 6A
Matrix: water

PAL Sample ID: P210195-09
Sample Date: 2/14/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 630.1 (GC-FPD)					
2/25/21	2/25/21	Mancozeb	ND	10 ug/L	
2/25/21	2/25/21	Thiram	ND	10 ug/L	
Method: Modified EPA 8270D (GC-MS/MS)					
2/25/21	2/25/21	Captan	ND	200 ug/L	
2/25/21	2/25/21	Fludioxonil	30 ug/L	10 ug/L	
2/25/21	2/25/21	Mefenoxam	45 ug/L	10 ug/L	

Surrogate Recovery: 92 %
Surrogate Recovery Range: 52-149
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Analytical Report

Client Sample ID: 6A
Matrix: water

PAL Sample ID: P210195-09
Sample Date: 2/14/21
Recieved Date: 2/23/21

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
2/25/21	2/26/21	Abamectin	280 ug/L	10 ug/L	
2/25/21	2/26/21	Azoxystrobin	ND	10 ug/L	
2/25/21	2/26/21	Carbendazim	ND	10 ug/L	
2/25/21	2/26/21	Carboxin	ND	10 ug/L	
2/25/21	2/26/21	Chlorantraniliprole	21 ug/L	10 ug/L	
2/25/21	2/26/21	Clothianidin	240 ug/L	10 ug/L	
2/25/21	2/26/21	Cyantraniliprole	ND	10 ug/L	
2/25/21	2/26/21	Difenoconazole	ND	10 ug/L	
2/25/21	2/26/21	Fluoxastrobin	ND	10 ug/L	
2/25/21	2/26/21	Imidacloprid	ND	10 ug/L	
2/25/21	2/26/21	Metconazole	ND	10 ug/L	
2/25/21	2/26/21	Picoxystrobin	ND	10 ug/L	
2/25/21	2/26/21	Propiconazole	ND	20 ug/L	
2/25/21	2/26/21	Prothioconazole	440 ug/L	20 ug/L	
2/25/21	2/26/21	Pyraclostrobin	ND	10 ug/L	
2/25/21	2/26/21	Tebuconazole	300 ug/L	10 ug/L	
2/25/21	2/26/21	Thiabendazole	1700 ug/L	100 ug/L	
2/25/21	2/26/21	Thiamethoxam	34 ug/L	10 ug/L	
2/25/21	2/26/21	Thiophanate methyl	ND	10 ug/L	
2/25/21	2/26/21	Trifloxystrobin	ND	10 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Quality Assurance

Method Blank Data **Matrix:** soil

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
2/24/21	2/25/21	21B2406-BLK1	Abamectin	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Azoxystrobin	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Captan	Not Detected	< 0.60 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Carbendazim	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Carboxin	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Chlorantraniliprole	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Clothianidin	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Cyantraniliprole	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Difenoconazole	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Fludioxonil	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Fluoxastrobin	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Imidacloprid	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Mefenoxam	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Metconazole	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Picoxystrobin	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Propiconazole	Not Detected	< 0.060 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Prothioconazole	Not Detected	< 0.060 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Pyraclostrobin	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Tebuconazole	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Thiabendazole	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Thiamethoxam	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Thiophanate methyl	Not Detected	< 0.030 mg/kg	
2/24/21	2/25/21	21B2406-BLK1	Trifloxystrobin	Not Detected	< 0.030 mg/kg	

Method Blank Data **Matrix:** soil

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
2/24/21	2/24/21	21B2407-BLK1	Mancozeb	Not Detected	< 0.040 mg/kg	
2/24/21	2/24/21	21B2407-BLK1	Thiram	Not Detected	< 0.040 mg/kg	

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
2/25/21	2/25/21	21B2408-BLK1	Mancozeb	Not Detected	< 10 ug/L	
2/25/21	2/25/21	21B2408-BLK1	Thiram	Not Detected	< 10 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
2/25/21	2/26/21	21B2502-BLK1	Abamectin	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Azoxystrobin	Not Detected	< 10 ug/L	
2/25/21	2/25/21	21B2502-BLK1	Captan	Not Detected	< 200 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Carbendazim	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Carboxin	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Chlorantraniliprole	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Clothianidin	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Cyantraniliprole	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Difenoconazole	Not Detected	< 10 ug/L	
2/25/21	2/25/21	21B2502-BLK1	Fludioxonil	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Fluoxastrobin	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Imidacloprid	Not Detected	< 10 ug/L	
2/25/21	2/25/21	21B2502-BLK1	Mefenoxam	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Metconazole	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Picoxystrobin	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Propiconazole	Not Detected	< 20 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Prothioconazole	Not Detected	< 20 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Pyraclostrobin	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Tebuconazole	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Thiabendazole	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Thiamethoxam	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	Thiophanate methyl	Not Detected	< 10 ug/L	
2/25/21	2/26/21	21B2502-BLK1	TPP-d15	135 ug/L	< ug/L	
2/25/21	2/26/21	21B2502-BLK1	Trifloxystrobin	Not Detected	< 10 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
2/25/21	2/25/21	21B2408-BS1	Carbon Disulfide	154	58-177	
2/25/21	2/25/21	21B2408-BSD1	Carbon Disulfide	141	58-177	

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
2/25/21	2/26/21	21B2502-BS1	Abamectin	121	60-140	
2/25/21	2/26/21	21B2502-BSD1	Abamectin	98	60-140	
2/25/21	2/26/21	21B2502-BS1	Azoxystrobin	95	60-140	
2/25/21	2/26/21	21B2502-BSD1	Azoxystrobin	100	60-140	
2/25/21	2/25/21	21B2502-BS1	Captan	55	32-119	
2/25/21	2/25/21	21B2502-BSD1	Captan	59	32-119	
2/25/21	2/26/21	21B2502-BS1	Carbendazim	167	60-140	R3
2/25/21	2/26/21	21B2502-BSD1	Carbendazim	176	60-140	R3
2/25/21	2/26/21	21B2502-BS1	Chlorantraniliprole	90	60-140	
2/25/21	2/26/21	21B2502-BSD1	Chlorantraniliprole	97	60-140	
2/25/21	2/26/21	21B2502-BS1	Clothianidin	209	60-140	R1
2/25/21	2/26/21	21B2502-BSD1	Clothianidin	230	60-140	R1
2/25/21	2/26/21	21B2502-BS1	Cyantraniliprole	94	60-140	
2/25/21	2/26/21	21B2502-BSD1	Cyantraniliprole	100	60-140	
2/25/21	2/26/21	21B2502-BS1	Difenoconazole	96	60-140	
2/25/21	2/26/21	21B2502-BSD1	Difenoconazole	105	60-140	
2/25/21	2/25/21	21B2502-BS1	Fludioxonil	84	53-146	
2/25/21	2/25/21	21B2502-BSD1	Fludioxonil	87	53-146	
2/25/21	2/26/21	21B2502-BS1	Fluoxastrobin	92	60-140	
2/25/21	2/26/21	21B2502-BSD1	Fluoxastrobin	99	60-140	
2/25/21	2/26/21	21B2502-BS1	Imidacloprid	78	60-140	
2/25/21	2/26/21	21B2502-BSD1	Imidacloprid	81	60-140	
2/25/21	2/25/21	21B2502-BS1	Mefenoxam	102	62-128	
2/25/21	2/25/21	21B2502-BSD1	Mefenoxam	95	62-128	
2/25/21	2/26/21	21B2502-BS1	Metconazole	118	60-140	
2/25/21	2/26/21	21B2502-BSD1	Metconazole	122	60-140	
2/25/21	2/26/21	21B2502-BS1	Picoxystrobin	97	60-140	
2/25/21	2/26/21	21B2502-BSD1	Picoxystrobin	102	60-140	
2/25/21	2/26/21	21B2502-BS1	Propiconazole	115	60-140	
2/25/21	2/26/21	21B2502-BSD1	Propiconazole	119	60-140	R3
2/25/21	2/26/21	21B2502-BS1	Pyraclostrobin	97	60-140	
2/25/21	2/26/21	21B2502-BSD1	Pyraclostrobin	102	60-140	
2/25/21	2/26/21	21B2502-BS1	Tebuconazole	122	60-140	
2/25/21	2/26/21	21B2502-BSD1	Tebuconazole	127	60-140	
2/25/21	2/26/21	21B2502-BS1	Thiabendazole	107	60-140	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P210195
Report Date: February 26, 2021
Client Project ID: 60361311

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
2/25/21	2/26/21	21B2502-BSD1	Thiabendazole	112	60-140	
2/25/21	2/26/21	21B2502-BS1	Thiamethoxam	165	60-140	R1
2/25/21	2/26/21	21B2502-BSD1	Thiamethoxam	170	60-140	R1
2/25/21	2/26/21	21B2502-BS1	Thiophanate methyl	118	60-140	
2/25/21	2/26/21	21B2502-BSD1	Thiophanate methyl	122	60-140	
2/25/21	2/26/21	21B2502-BS1	TPP-d15	107	60-140	
2/25/21	2/26/21	21B2502-BSD1	TPP-d15	111	60-140	
2/25/21	2/26/21	21B2502-BS1	Trifloxystrobin	97	60-140	
2/25/21	2/26/21	21B2502-BSD1	Trifloxystrobin	102	60-140	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

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Matrix Spike Data **Matrix:** soil

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
2/24/21	2/25/21	21B2406-MS1	Abamectin	--	60-140	I1
2/24/21	2/25/21	21B2406-MSD1	Abamectin	--	60-140	I1
2/24/21	2/25/21	21B2406-MS1	Azoxystrobin	84	60-140	
2/24/21	2/25/21	21B2406-MSD1	Azoxystrobin	81	60-140	
2/24/21	2/25/21	21B2406-MS1	Captan	31	60-140	R1
2/24/21	2/25/21	21B2406-MSD1	Captan	27	60-140	R1
2/24/21	2/25/21	21B2406-MS1	Carbendazim	72	60-140	
2/24/21	2/25/21	21B2406-MSD1	Carbendazim	73	60-140	
2/24/21	2/25/21	21B2406-MS1	Chlorantraniliprole	53	60-140	R1
2/24/21	2/25/21	21B2406-MSD1	Chlorantraniliprole	83	60-140	
2/24/21	2/25/21	21B2406-MS1	Clothianidin	95	60-140	
2/24/21	2/25/21	21B2406-MSD1	Clothianidin	84	60-140	
2/24/21	2/25/21	21B2406-MS1	Cyantraniliprole	81	60-140	
2/24/21	2/25/21	21B2406-MSD1	Cyantraniliprole	79	60-140	
2/24/21	2/25/21	21B2406-MS1	Difenoconazole	80	60-140	
2/24/21	2/25/21	21B2406-MSD1	Difenoconazole	80	60-140	
2/24/21	2/25/21	21B2406-MS1	Fludioxonil	35	60-140	R4
2/24/21	2/25/21	21B2406-MSD1	Fludioxonil	51	60-140	R4
2/24/21	2/25/21	21B2406-MS1	Fluoxastrobin	89	60-140	
2/24/21	2/25/21	21B2406-MSD1	Fluoxastrobin	93	60-140	
2/24/21	2/25/21	21B2406-MS1	Imidacloprid	99	60-140	
2/24/21	2/25/21	21B2406-MSD1	Imidacloprid	93	60-140	
2/24/21	2/25/21	21B2406-MS1	Mefenoxam	78	60-140	
2/24/21	2/25/21	21B2406-MSD1	Mefenoxam	79	60-140	
2/24/21	2/25/21	21B2406-MS1	Metconazole	92	60-140	
2/24/21	2/25/21	21B2406-MSD1	Metconazole	89	60-140	
2/24/21	2/25/21	21B2406-MS1	Picoxystrobin	84	60-140	
2/24/21	2/25/21	21B2406-MSD1	Picoxystrobin	81	60-140	
2/24/21	2/25/21	21B2406-MS1	Propiconazole	80	60-140	
2/24/21	2/25/21	21B2406-MSD1	Propiconazole	74	60-140	
2/24/21	2/25/21	21B2406-MS1	Prothioconazole	127	60-140	
2/24/21	2/25/21	21B2406-MSD1	Prothioconazole	135	60-140	
2/24/21	2/25/21	21B2406-MS1	Pyraclostrobin	81	60-140	
2/24/21	2/25/21	21B2406-MSD1	Pyraclostrobin	80	60-140	
2/24/21	2/25/21	21B2406-MS1	Tebuconazole	79	60-140	
2/24/21	2/25/21	21B2406-MSD1	Tebuconazole	88	60-140	
2/24/21	2/25/21	21B2406-MS1	Thiabendazole	--	60-140	I1
2/24/21	2/25/21	21B2406-MSD1	Thiabendazole	--	60-140	I1
2/24/21	2/25/21	21B2406-MS1	Thiamethoxam	90	60-140	
2/24/21	2/25/21	21B2406-MSD1	Thiamethoxam	85	60-140	
2/24/21	2/25/21	21B2406-MS1	Thiophanate methyl	109	60-140	
2/24/21	2/25/21	21B2406-MSD1	Thiophanate methyl	106	60-140	
2/24/21	2/25/21	21B2406-MS1	Trifloxystrobin	85	60-140	
2/24/21	2/25/21	21B2406-MSD1	Trifloxystrobin	81	60-140	

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Matrix Spike Data **Matrix:** soil

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
2/24/21	2/24/21	21B2407-MS1	Carbon Disulfide	148	52-162	
2/24/21	2/24/21	21B2407-MSD1	Carbon Disulfide	137	52-162	

Analyte Information

Method: JAOAC Method, Vol. 78, #5 (GC-FPD)

This is a presumptive method for thiocarbamates. Residues are identified as carbon disulfide.

Method: Modified EPA 630.1 (GC-FPD)

This is a presumptive method for thiocarbamates. Residues are identified as carbon disulfide.

Project Notes

Notes	Definition
R4	Spike recovery outside of control limits due to high levels of target analyte present in the native sample.
R3	Spike recovery above control limit. Sample results are not detected, data quality has not been affected.
R1	Spike recovery is outside of control limits.
I1	Unable to calculate recovery due to high levels of target analyte present in the native sample.
E	Estimated value

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

APPENDIX D2

DATA VALIDATION REVIEW

(TO BE DELIVERED UPON COMPLETION)