PIMA COUNTY

ANNUAL BIOSOLIDS REPORT

CALENDAR YEAR 2018

Sustainable Resource
BIOSOLIDS

Volume 1 of 2

REGIONAL WATER
RECLAMATION DEPARTMENT

TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

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ANNUAL BIOSOLIDS REPORT 2018

REGIONAL WATER
RECLAMATION DEPARTMENT

TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

PIMA COUNTY
WASTEWATER RECLAMATION

Jackson Jenkins
Director

201 North Stone Avenue
Tucson, Arizona 85701-1207

Phone (520)724-6500
Fax (520) 724-9635

February 19, 2019

Mr. Andy Koester
ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION, PERMITS: BIOSOLIDS (MO5415B-3)
1110 West Washington Street, 5415-B-3
Phoenix, Arizona 85007

Dear Mr. Koester,

RE: BIOSOLIDS ANNUAL REPORT 2018

As required by AAC R18-9-1014(F), and/or in accordance with the Arizona Pollutant Discharge Elimination System (AZPDES) Permits issued to the following facilities, we are transmitting herewith the Pima County Regional Wastewater Reclamation Department's Biosolids Annual Report for Calendar Year 2018.

- Tres Rios Wastewater Reclamation Facility, AZPDES Permit No. AZ0020001
- Agua Nueva Wastewater Reclamation Facility (WRF), AZPDES Permit No. AZ0026107
- Green Valley Biological Nutrient Removal Oxidation Ditch, AZPDES Permit No. AZ0024937
- Avra Valley WRF, AZPDES Permit No. AZ0024121

Pima County Tres Rios WRF produced 11,398 metric dry tons of Class B Biosolids in 2018. The Biosolids were hauled from Tres Rios WRF in trucks; a total of 9,385 dry tons were land applied on registered agricultural fields; and 2,013 dry tons were staged on the fields JK-9 and JK-42 pending land application on agricultural land during 2019.

Pima County Agua Nueva Wastewater Reclamation Facility (WRF), AZPDES Permit No. AZ0026107, pumped 4,604 metric dry tons of its Waste Activated Sludge (WAS) sludge via the sludge pipeline to the Tres Rios WRF WAS Tank for thickening and digestion after mixing with the WAS sludge from Tres Rios WRF. The sludge mix was digested in the mesophilic anaerobic digesters and met the Class B pathogen reduction and the vector attraction reduction requirements as set in A.A.C. R18-9-10. Agua Nueva WRF directed 4,828 metric dry tons of its primary sludge from the Dissolved Air Flotation unit process into the sewer interconnect between Agua Nueva WRF and Tres Rios WRF, where they became part of the influent to Tres Rios WRF.

The Avra Valley WRF, AZPDES Permit No. AZ0024121, the Corona de Tucson WRF, APP Permit No. P-100644, the Green Valley WRF, AZPDES NO. AZ0024937 and the Mt. Lemmon WRF, AZPDES Permit No. AZ0022250 trucked their solids to the Pima County Wastewater Collection System.

Pima County Regional Water Reclamation Department
Pima County, Arizona

2018 Annual Sludge and Biosolids Production and Disposal

	Metric Dry Tons		
	WAS	**Primary Sludge**	**Disposal**
Agua Nueva WRF	**4,604**	Not Applicable	Tres Rios WRF WAS Receiving Facility
Agua Nueva WRF	Not Applicable	**4,828**	Pima County Wastewater Collection System
Avra Valley WRF	**442**	Not Applicable	Pima County Wastewater Collection System
Corona de Tucson WRF	**112**	Not Applicable	Pima County Wastewater Collection System
Green Valley WRF	**473**	Not Applicable	Pima County Wastewater Collection System
Mt. Lemmon WRF	**1.5**	Not Applicable	Pima County Wastewater Collection System
Tres Rios WRF	**11,398**	Not Applicable	Land Application

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

As you review this report, if you have any questions, please contact Houssam Eljerdi, Technical Services Manager, at (520)724-6077.

Sincerely,

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT

Jeff F. Prevatt, Deputy Director
Treatment Division

JFP: hbe
Attachment – Annual Biosolids Report 2018
Electronic copy:
Charles Wesselhoft, Deputy County Attorney, Civil Division
Arturo Norzagaray, Wastewater Treatment Plant Manager, Tres Rios WRF
Ken Weber, Wastewater Treatment Plant Manager, Sub-Regional Facilities
David Garrett, Operations Supervisor, Agua Nueva WRF

CONTENTS

Cover Letter

Preparer Forms, Tres Rios WRF AZPDES No. AZ0020001; Corona de Tucson WRF, APP No. AZ100644; Mt. Lemmon WRF, AZPDES No. AZ0022250; and Summary Land Application; and Analyses Results Priority Pollutants, TCLP and Hazardousness; AZPDES NO. AZ0026107

Tres Rios WRF Vector Attraction Reduction, Pathogen Reduction and Pollutant Concentration

Agua Nueva WRF Preparer Form and Sampling and Analyses Results Priority Pollutants, TCLP and Hazardousness; AZPDES NO. AZ0026107

Avra Valley WRF Preparer Form and Sampling and Analyses Results Priority Pollutants, TCLP and Hazardousness; AZPDES NO. AZ0024121

Green Valley BNROD Preparer Form and Sampling and Analyses Results Priority Pollutants, TCLP, Hazardousness and Dioxin; AZPDES No. AZ0024937

BIOSOLIDS ANNUAL REPORT 2018

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REGIONAL WATER
RECLAMATION DEPARTMENT

TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

SECTION 1

PREPARER FORMS

TRES RIOS WRF AZPDES NO. AZ0020001

CORONA DE TUCSON WRF, APP NO. P - 100644

MT. LEMMON WRF, AZPDES NO. AZ0022250

SUMMARY LAND APPLICATION

BIOSOLIDS ANNUAL REPORT 2018

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ANNUAL BIOSOLIDS REPORT 2018

REGIONAL WATER
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TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

ARIZONA
DEPARTMENT OF ENVIRONMENTAL QUALITY
AZPDES Individual Permits Unit
1110 W Washington Street
Phoenix, Arizona 85007
(602) 771-4689 (voicemail) (602) 771-4505 (fax)
Email to: biosolids@azdeq.gov

BIOSOLIDS OR SEWAGE SLUDGE ANNUAL REPORT FORM

1. Program Information: All preparers (Generators) and Land Applicators Must complete the following.

Reporting Start Date:1/1/2018	**Reporting End Date: 12/31/2018**
Date:2/19/2018	**AZPDES Permit # (if applicable):AZ00020001** **Pima County Tres Rios WRF** **7101 N. Casa Grande Hwy., Tucson AZ 85743**
Company name (Preparer / Applicator): Preparer - Pima Regional Water Reclamation Department; Pima County, Arizona	
Contact Name: Houssam Eljerdi	**Title: Technical Services Manager**
Address: 7101 N. Casa Grande Highway **Phone:** (520) 724 - 6100	Tucson, AZ 85743 - 8618 **E-mail: Houssam.eljerdi@pima.gov**

Please select one of the following options pertaining to your obligation to submit a Biosolids Annual Report. My facility is a:

☒ POTW with a design flow equal to or greater than 1 MGD Per Day

☐ POTW that serves 10,000 people or more

☒ Class I Sludge Management Facility as defined by 40 CFR 503.9

☐ Biosolids Applicator (Complete Section 5 only)

☐Other Click here to enter text.

What is the estimated total of volume of biosolids or sewage sludge generated at your facility (in dry metric tons)?

11,398 metric dry tons

Were all biosolids removed from your facility sent to a landfill for disposal? No

If yes, provide the name and address of the landfill(s). Not Applicable

If all biosolids or sewage sludge was sent to a landfill for disposal, you do not need to complete the remainder of this form, as it is only applicable to facilities preparing Biosolids or sewage sludge for land application.

Certification: I certify, under penalty of law, that the information and descriptions, have been made under my direction and supervision and under a system designed to ensure that qualified personnel properly gather and evaluate the information used to determine whether the applicable biosolids requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

Signature:	Date:
Title: Jeff P. Prevatt; Deputy Director - Treatment	February 19, 2018

2. Generator/Preparers – Biosolids Storage and Treatment Processes

2.1 Please check the box next to the following biosolids or sewage sludge storage practices and treatment processes used on the sewage sludge or biosolids generated or produced at your facility during the reporting period.

Storage Practices

☐ Biosolids are stored in lined lagoons or impoundments

☐ Biosolids stored directly on the ground

Physical Treatment Processes

☒ Preliminary Operations (e.g. sludge grinding, degritting, blending

☒ Thickening (e.g. gravity floatation, centrifugation, belt filter press, vacuum filter)

☐ Sludge lagoon

Pathogen Reduction Operations (PSRP)

☐ Aerobic Digestion

☐ Air Drying (or "sludge drying beds")

☒ Anaerobic Digestion Volatile Solids Reduction R18-9-1010-A.1; Pathogen reduction R18-9-1006-E Alternative 5.

☐ Lower Temperature Composting

☐ Lime Stabilization

Process to Further Reduce Pathogens (PFRP)

☐ Higher Temperature Composting

☐ Heat Drying (e.g. flash dryer, spray dryer, rotary dryer)

☐ Heat Treatment (Liquid sewage sludge is heated to temp of 356 °F (180 °C) or higher for 30 minutes

☐ Thermophilic Aerobic Digestion

☐ Beta Ray Irradiation

☐ Gamma Ray Irradiation

☐ Pasteurization

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

3. Generators/Preparers: Disposition of Biosolids or Sewage Treatment Sludge:

3.1 At the beginning of the year, did you have any biosolids or sewage sludge stored on site or remaining from previous years? Include any amount that is being stored anywhere. No

If yes provide the following information:

	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not Applicable	Not Applicable
Pathogen Reduction Method	Not Applicable	Not Applicable
Vector Attraction Reduction Method	Not Applicable	Not Applicable
Storage Locations	Not Applicable	Not Applicable

3.2 At the end of the year, are any biosolids or sewage sludge stored on site? No

If yes, provide the following information:

	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not Applicable	Not Applicable
Pathogen Reduction Method	Not Applicable	Not Applicable
Vector Attraction Reduction Method	Not Applicable	Not Applicable
Storage Locations	Not Applicable	Not Applicable

3.3 Were biosolids or sewage sludge received from another facility during the year, such as another wastewater treatment plant or another APP permitted facility for further processing? Yes

If yes provide the following information for each facility. Click the plus sign to create as many tables as needed.

Name of Facility	**Pima County Agua Nueva WRF**			
Location:	**2947 W. Calle Agua Nueva, Tucson, AZ 85745** **AZPDES: AZ0026107; APP: P-100655**			
	Untreated Sludge		CLASS A Biosolids	Class B Biosolids
Dry Ton Weight Metric Dry Tons	**Primary Sludge** **4,828**	**Waste Activated Sludge** **4,604**	Not applicable	Not applicable
Pathogen Testing	**Not Applicable**		Not applicable	Not applicable
Pathogen Reduction Method	**Not Applicable**		Not Applicable	Not Applicable
Vector Attraction Reduction Method	**Not Applicable**		Not Applicable	Not Applicable
Storage Locations	**No Storage** **Pima County Agua Nueva WRF Pumps the Primary Sludge into Pima County**		Not Applicable	Not Applicable

Name of Facility	**Pima County Agua Nueva WRF**		
Storage Locations (Continued)	**Wastewater Collection System where it becomes part of the Influent to Pima County Tres Rios WRF.** **Pima County Agua Nueva WRF Pumps the WAS via Dedicated Pipeline into Pima County Tres Rios WRF WAS Tank where it becomes part of the Process.**		

Name of Facility	**Pima County Green Valley WRF**		
Location:	**19600 S. Old Nogales Hwy., Tucson AZ 85614** **AZPDES: AZ0024937; APP P-100629**		
	Untreated Waste Activated Sludge	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight Metric Dry Tons	**473** **Four Hundred and Seventy Three**	Not applicable	Not applicable
Pathogen Testing	**Not Applicable**	Not Applicable	Not applicable
Pathogen Reduction Method	**Not Applicable**	Not applicable	Not applicable
Vector Attraction Reduction Method	**Not Applicable**	Not Applicable	Not Applicable
Storage Locations	**No Storage;** **Pima County Transports Green Valley WRF Waste Activated Sludge by Truck to Tres Rios WRF Wastewater Collection System, where it Becomes Part of the Influent.**	Not Applicable	Not Applicable

Name of Facility	**Pima County Mt. Lemmon WRF**		
Location:	**12633 N Sabino Canyon Park, Tucson, AZ 85619** **AZPDES: AZ0022250, Type I - General Permit**		
	Untreated Waste Activated Sludge	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight Metric Dry Tons	**1.5** **One and Three Tenth**	Not applicable	Not applicable
Pathogen Testing	**Not Applicable**	Not Applicable	Not applicable
Pathogen Reduction Method	**Not Applicable**	Not applicable	Not applicable
Vector Attraction Reduction Method	**Not Applicable**	Not Applicable	Not Applicable
Storage Locations	**No Storage;** **Pima County Transports Mt. Lemmon WRF Waste Activated Sludge by Truck to Tres Rios WRF Wastewater Collection System, where it Becomes Part of the Influent.**	Not Applicable	Not Applicable

3.4. Were biosolids removed from your facility for land application? Include all recipients, including haulers, name, phone number, land applicators, composters, drying facilities, EQB bagging facilities, bulk composting, etc.

Name of Facility	Avra Gro Systems, Inc. PO Box 91708; Tucson, AZ 85752 Tel (520) 271-7736	
Management Practice Type:	Land Application	
Handler or Preparer Type:	Land Applier	
Management Practice Detail:	Transport, Land Apply, Manage Field and Records	
Bag or Bulk Container:	Bulk Container	
	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	Not applicable	11,398 metric dry tons
Pathogen Testing	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Alternate 5 - anaerobic digestion
Vector Attraction Reduction Method	Not applicable	Option 1 - mass reduction
Storage Locations Thickened Biosolids, 7% Solids Content are immediately injected using sub-surface injectors. Cake Biosolids, 15% solids content, are staged in the field and subsequently incorporated.	Not Applicable	As of December 31, 2018, the unincorporated Biosolids were as follows at fields JK-9 and JK-42: Filed JK-9: 1,979 metric dry tons Field JK-42: 34 metric dry tons

4. Generators/Preparers : Biosolids or Sewage Sludge Analytical Methods

Arizona regulations specify that representative samples of sewage sludge that is land applied, placed on a surface disposal site, or fired in s sewage sludge incinerator, must be collected and analyzed. These regulations specify the analytical methods that must be used to analyzed samples of sewage sludge.

Parameter	*Method Number or Author*	*Results (if tested)*	*Comments (required if other)*
Pathogens			
Ascaris ova.	Not applicable	Not applicable	Not applicable
Fecal Coliform	Not Applicable	Not Applicable	Not Applicable
Helminth ova.	Not Applicable	Not Applicable	Not Applicable
Salmonella sp. Bacteria	Not Applicable	Not Applicable	Not Applicable
Total Cultural Viruses	Not Applicable	Not Applicable	Not Applicable

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

Parameter	*Method Number or Author*	*Results (if tested)*	*Comments (required if other)*
Metals			
Arsenic	EPA Method 6010 - Arsenic (ICP-OES)	11.1 / 17.5 / 6.3	Mean / Maximum / Minimum
Beryllium	Choose an item.	4.4 / 7.0 / 2.5	Mean / Maximum / Minimum
Cadmium	EPA Method 6010 - Cadmium (ICP-OES)	29.7 / 34.9 / 26.1	Mean / Maximum / Minimum
Chromium	EPA Method 6010 - Chromium (ICP-OES)	376 / 441 / 333	Mean / Maximum / Minimum
Copper	EPA Method 6010 - Copper (ICP-OES)	12.6 / 17.5 / 9.0	Mean / Maximum / Minimum
Lead	EPA Method 6010 - Lead (ICP-OES)	0.9 / 1.5 / 0.6	Mean / Maximum / Minimum
Mercury	EPA Method 7471 - Mercury (CVAA)	12.3 / 13.8 / 10.6	Mean / Maximum / Minimum
Molybdenum	EPA Method 6010 - Molybdenum (ICP-OES)	23.4 / 31.1 / 19.6	Mean / Maximum / Minimum
Nickel	EPA Method 6010 - Nickel (ICP-OES)	21.9 / 34.9 / 12.4	Mean / Maximum / Minimum
Selenium	EPA Method 6010 - Selenium (ICP-OES)	3.0 / 3.6 / 2.2	Mean / Maximum / Minimum
Zinc	EPA Method 6010 - Zinc (ICP-OES)	700 / 790 / 644	Mean / Maximum / Minimum
Nitrogen Compounds			
Ammonia Nitrogen	EPA Method 350.1 - Ammonia Nitrogen	9,913 / 17,300 / 7,420	Mean / Maximum / Minimum
Nitrate Nitrogen	EPA353.2; SM4500-NO2	0.6 / 3.0 / 0.0	Mean / Maximum / Minimum
Nitrogen	Calculated	64,775 / 77,068 / 53,132	Mean / Maximum / Minimum
Organic Nitrogen	Calculated EPA Method 350.1, 350.2	54,859 / 69,646 / 43,611	Mean / Maximum / Minimum
Total Kjeldahl Nitrogen	Calculated EPA Method 350.2	64,771 / 77,066 / 53,131	Mean / Maximum / Minimum
Other Analytes			
Fixed Solids	Not applicable	Not applicable	Not applicable
Paint Filter Test	Not Applicable	Not applicable	Not applicable
pH	Not Applicable	Not applicable	Not applicable
Specific Oxygen Uptake Rate	Not applicable	Not applicable	Not applicable

Parameter	*Method Number or Author*	*Results (if tested)*	*Comments (required if other)*
TCLP	Other TCLP Analytical Method	Sample Analysis Results Included in this Report	Total Amount Does Not Exceed the 20X TCLP Screening Value, Part III – I.5
Temperature	Not applicable	Not applicable	Not applicable
Total Solids	Standard Method 2540 - Total Solids	Cake Biosolids, % Solids Content **15.0 / 17.9 / 10.3** Thickened Biosolids, % Solids Content **6.3 / 8.1 / 4.8**	Mean / Maximum / Minimum
Volatile Solids	Not applicable	Not applicable	Not applicable
No Analytical Methods Used	Sample Analysis Results Included in this Report	Sample Analysis Results Included in this Report	Sample Analysis Results Included in this Report

Active Production of Biosolids and Hauling of Sludge, Pima County Wastewater Reclamation Facilities
Class B Biosolids
R18-9-1006-E
ALTERNATIVE 5
Mt. Lemmon WRF
9
Hauled Sludge to Collection System of Tres Rios WRF
2
TRES RIOS WRF
Agua Nueva WRF
1
8
Randolph Park WRF
Hauled Sludge to Collection System of Agua Nueva WRF
5
Avra Valley WRF
4
DAF and WAS Sludge to Tres Rios WRF
6
Corona de Tucson WRF
Biosolids to Land Application
3
Green Valley WRF
7
Oro Valley
Tucson
Three Points
Sahuarita
Green Valley
Arivaca Junction
1 Agua Nueva WRF
2 Tres Rios WRF
3 Green Valley WRF
4 Fairgrounds WRF
9 Mt. Lemmon WRF
5 Avra Valley WRF
6 Corona de Tucson WRF
7 Arivaca WRF
8 Randolph Park WRF
Temporary Cease-Operation, December 2014

BIOSOLIDS OR SEWAGE SLUDGE ANNUAL REPORT FORM

1. Program Information: All preparers (Generators) and Land Applicators Must complete the following.

Reporting Start Date:1/1/2018	**Reporting End Date: 12/31/2018**
Date:2/19/2018	**AZPDES Permit # (if applicable) Not Applicable** **Pima County Corona de Tucson WRF, APP # P - 100644** **1100 S. Sahuarita Road, Corona de Tucson AZ 85711**
Company name (Preparer / Applicator): Preparer, Pima County Regional Water Reclamation Department	
Contact Name: Houssam Eljerdi	**Title: Technical Services Manager**
Address: 7101 N. Casa Grande Highway **Phone:** (520) 724 - 6100	Tucson, AZ 85743 - 8618 **E-mail: Houssam.eljerdi@pima.gov**

Please select one of the following options pertaining to your obligation to submit a Biosolids Annual Report. My facility is a:

☒ POTW with a design flow equal to or greater than 1 MGD Per Day

☐ POTW that serves 10,000 people or more

☐ Class I Sludge Management Facility as defined by 40 CFR 503.9

☐ Biosolids Applicator (Complete Section 5 only)

☒Other APP Permit # 100644

What is the estimated total of volume of biosolids or sewage sludge generated at your facility (in dry metric tons)?

112 (One Hundred and Twelve) metric dry tons

No Storage

Pima County Transports the Corona de Tucson WRF sludge by tanker truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Agua Nueva WRF

Were all biosolids removed from your facility sent to a landfill for disposal? No

If yes, provide the name and address of the landfill(s). Not Applicable

If all biosolids or sewage sludge was sent to a landfill for disposal, you do not need to complete the remainder of this form, as it is only applicable to facilities preparing Biosolids or sewage sludge for land application.

Certification: I certify, under penalty of law, that the information and descriptions, have been made under my direction and supervision and under a system designed to ensure that qualified personnel properly gather and evaluate the information used to determine whether the applicable biosolids requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

Signature:	Date:
Title: Jeff P. Prevatt; Deputy Director - Treatment	February 19, 2018

2. Generator/Preparers - Biosolids Storage and Treatment Processes

2.1 Please check the box next to the following biosolids or sewage sludge storage practices and treatment processes used on the sewage sludge or biosolids generated or produced at your facility during the reporting period.

Storage Practices

☐ Biosolids are stored in lined lagoons or impoundments

☐ Biosolids stored directly on the ground

Physical Treatment Processes

☒ Preliminary Operations (e.g. sludge grinding, degritting, blending)

☒ Thickening (e.g. gravity floatation, centrifugation, belt filter press, vacuum filter)

☐ Sludge lagoon

Pathogen Reduction Operations (PSRP)

☐ Aerobic Digestion

☐ Air Drying (or "sludge drying beds")

☐ Anaerobic Digestion

☐ Lower Temperature Composting

☐ Lime Stabilization

Process to Further Reduce Pathogens (PFRP)

☐ Higher Temperature Composting

☐ Heat Drying (e.g. flash dryer, spray dryer, rotary dryer)

☐ Heat Treatment (Liquid sewage sludge is heated to temp of 356 °F (180 °C) or higher for 30 minutes

☐ Thermophilic Aerobic Digestion

☐ Beta Ray Irradiation

☐ Gamma Ray Irradiation

☐ Pasteurization

3. Generators/Preparers: Disposition of Biosolids or Sewage Treatment Sludge:

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

3.1 At the beginning of the year, did you have any biosolids or sewage sludge stored on site or remaining from previous years? Include any amount that is being stored anywhere. No

If yes provide the following information:

	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable
Storage Locations	**No Storage** **Pima County Transports the Sludge from Corona de Tucson WRF by Tanker Truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Agua Nueva WRF**	Not applicable

3.2 At the end of the year, are any biosolids or sewage sludge stored on site? No

If yes, provide the following information:

	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable
Storage Locations	**No Storage** **Pima County Transports the Sludge from Corona de Tucson WRF by Tanker Truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Agua Nueva WRF**	Not applicable

3.3 Were biosolids or sewage sludge received from another facility during the year, such as another wastewater treatment plant or another APP permitted facility for further processing? No

If yes provide the following information for each facility. Click the plus sign to create as many tables as needed.

Name of Facility	Not Applicable	
Location:	Not Applicable	
	CLASS A Biosolids	Class B Biosolids

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

Name of Facility	Not Applicable	
Location:	Not Applicable	
Dry Ton Weight	Not Applicable	Not applicable
Pathogen Testing	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable
Storage Locations	Not applicable	Not applicable

Enter any content that you want to repeat, including other content controls. You can also insert this control around table rows in order to repeat parts of a table.

3.4. Were biosolids removed from your facility for land application? Include all recipients, including haulers, name, phone number, land applicators, composters, drying facilities, EQB bagging facilities, bulk composting, etc.

Name of Facility	**None; Biosolids are not prepared at Corona de Tucson WRF. Pima County Transports the Sludge from Corona de Tucson WRF by Tanker Truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Agua Nueva WRF**	
Management Practice Type:	Not Applicable	
Handler or Preparer Type:	Not Applicable	
Management Practice Detail:	Not Applicable	
Bag or Bulk Container:	Not Applicable	
	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not Applicable	Not applicable
Pathogen Reduction Method	Not Applicable	Not Applicable
Vector Attraction Reduction Method	Not Applicable	Not Applicable
Storage Locations	Not Applicable	Not Applicable

4. Generators/Preparers : Biosolids or Sewage Sludge Analytical Methods

Arizona regulations specify that representative samples of sewage sludge that is land applied, placed on a surface disposal site, or fired in s sewage sludge incinerator, must be collected and analyzed. These regulations specify the analytical methods that must be used to analyzed samples of sewage sludge.

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

Parameter	*Method Number or Author*	*Results (if tested)*	*Comments (required if other)*
Pathogens			
Ascaris ova.	Not applicable	Not applicable	Not applicable
Fecal Coliform	Not Applicable	Not Applicable	Not Applicable
Helminth ova.	Not Applicable	Not Applicable	Not Applicable
Salmonella sp. Bacteria	Not Applicable	Not Applicable	Not Applicable
Total Cultural Viruses	Not Applicable	Not Applicable	Not Applicable
Metals			
Arsenic	Not applicable	Not applicable	Not applicable
Beryllium	Not applicable	Not applicable	Not applicable
Cadmium	Not applicable	Not applicable	Not applicable
Chromium	Not applicable	Not applicable	Not applicable
Copper	Not applicable	Not applicable	Not applicable
Lead	Not applicable	Not applicable	Not applicable
Mercury	Not applicable	Not applicable	Not applicable
Molybdenum	Not applicable	Not applicable	Not applicable
Nickel	Not applicable	Not applicable	Not applicable
Selenium	Not applicable	Not applicable	Not applicable
Zinc	Not applicable	Not applicable	Not applicable
Nitrogen Compounds			
Ammonia Nitrogen	Not applicable	Not applicable	Not applicable
Nitrate Nitrogen	Not applicable	Not applicable	Not applicable
Nitrogen	Not applicable	Not applicable	Not applicable
Organic Nitrogen	Not applicable	Not applicable	Not applicable
Total Kjeldahl Nitrogen	Not applicable	Not applicable	Not applicable
Other Analytes			
Fixed Solids	Not applicable	Not applicable	Not applicable
Paint Filter Test	Not applicable	Not applicable	Not applicable
pH	Not applicable	Not applicable	Not applicable
Specific Oxygen Uptake Rate	Not applicable	Not applicable	Not applicable
TCLP	Not applicable	Not applicable	Not applicable
Temperature	Not applicable	Not applicable	Not applicable
Total Solids	Not applicable	1.1 / 2.3 / 0.49	Not applicable
Volatile Solids	Not applicable	79% / 86% / 62	Not applicable
No Analytical Methods Used	Not applicable	Not applicable	Not applicable

BIOSOLIDS OR SEWAGE SLUDGE ANNUAL REPORT FORM

1. **Program Information:** All preparers (Generators) and Land Applicators Must complete the following.

Reporting Start Date:1/1/2018	**Reporting End Date: 12/31/2018**
Date:2/16/2018	**AZPDES Permit # (if applicable):AZ00022250** **Pima County Mt. Lemmon WRF** **12633 N. Sabino Canyon Park; Summerhaven, AZ 85619**
Company name (Preparer / Applicator): Preparer, Pima County Regional Water Reclamation Department	
Contact Name: Houssam Eljerdi	**Title: Technical Services Manager**
Address: 7101 N. Casa Grande Highway **Phone:** (520) 724 - 6100	Tucson, AZ 85743 - 8618 **E-mail: Houssam.eljerdi@pima.gov**

Please select one of the following options pertaining to your obligation to submit a Biosolids Annual Report. My facility is a:

☒ POTW with a design flow equal to or greater than 1 MGD Per Day

☐ POTW that serves 10,000 people or more

☐ Class I Sludge Management Facility as defined by 40 CFR 503.9

☐ Biosolids Applicator (Complete Section 5 only)

☒Other AZPDES Permit # 22250; APP Permit # 100345

What is the estimated total of volume of biosolids or sewage sludge generated at your facility (in dry metric tons)?

1.5 (One and half) metric dry tons

No Storage

Pima County Transports the Mt. Lemmon WRF sludge by tanker truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Agua Nueva WRF

Were all biosolids removed from your facility sent to a landfill for disposal? No

If yes, provide the name and address of the landfill(s). Not Applicable

If all biosolids or sewage sludge was sent to a landfill for disposal, you do not need to complete the remainder of this form, as it is only applicable to facilities preparing Biosolids or sewage sludge for land application.

Certification: I certify, under penalty of law, that the information and descriptions, have been made under my direction and supervision and under a system designed to ensure that qualified personnel properly gather and evaluate the information used to determine whether the applicable biosolids requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

Signature:	Date:
Title: Jeff P. Prevatt; Deputy Director - Treatment	February 19, 2018

2. Generator/Preparers - Biosolids Storage and Treatment Processes

2.1 Please check the box next to the following biosolids or sewage sludge storage practices and treatment processes used on the sewage sludge or biosolids generated or produced at your facility during the reporting period.

Storage Practices

☐ Biosolids are stored in lined lagoons or impoundments

☐ Biosolids stored directly on the ground

Physical Treatment Processes

☒ Preliminary Operations (e.g. sludge grinding, degritting, blending

☒ Thickening (e.g. gravity floatation, centrifugation, belt filter press, vacuum filter)

☐ Sludge lagoon

Pathogen Reduction Operations (PSRP)

☐ Aerobic Digestion

☐ Air Drying (or "sludge drying beds")

☐ Anaerobic Digestion

☐ Lower Temperature Composting

☐ Lime Stabilization

Process to Further Reduce Pathogens (PFRP)

☐ Higher Temperature Composting

☐ Heat Drying (e.g. flash dryer, spray dryer, rotary dryer)

☐ Heat Treatment (Liquid sewage sludge is heated to temp of 356 °F (180 °C) or higher for 30 minutes

☐ Thermophilic Aerobic Digestion

☐ Beta Ray Irradiation

☐ Gamma Ray Irradiation

☐ Pasteurization

3. Generators/Preparers: Disposition of Biosolids or Sewage Treatment Sludge:

3.1 At the beginning of the year, did you have any biosolids or sewage sludge stored on site or remaining from previous years? Include any amount that is being stored anywhere. No

If yes provide the following information:

	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable
Storage Locations	**No Storage** **Pima County Transports the Sludge from Mt. Lemmon WRF by Tanker Truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Tres Rios WRF**	Not applicable

3.2 At the end of the year, are any biosolids or sewage sludge stored on site? No

If yes, provide the following information:

	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable
Storage Locations	**No Storage** **Pima County Transports the Sludge from Mt. Lemmon WRF by Tanker Truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Tres Rios WRF**	Not applicable

3.3 Were biosolids or sewage sludge received from another facility during the year, such as another wastewater treatment plant or another APP permitted facility for further processing? No

If yes provide the following information for each facility. Click the plus sign to create as many tables as needed.

Name of Facility	Not Applicable	
Location:	Not Applicable	
	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	Not Applicable	Not applicable

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

Name of Facility	Not Applicable	
Location:	Not Applicable	
Pathogen Testing	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable
Storage Locations	Not applicable	Not applicable

Enter any content that you want to repeat, including other content controls. You can also insert this control around table rows in order to repeat parts of a table.

3.4. Were biosolids removed from your facility for land application? Include all recipients, including haulers, name, phone number, land applicators, composters, drying facilities, EQB bagging facilities, bulk composting, etc.

Name of Facility	**None; Biosolids are not prepared at Mt. Lemmon WRF. Pima County Transports the Sludge from Mt. Lemmon WRF by Tanker Truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Agua Nueva WRF**	
Management Practice Type:	Not Applicable	
Handler or Preparer Type:	Not Applicable	
Management Practice Detail:	Not Applicable	
Bag or Bulk Container:	Not Applicable	
	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not Applicable	Not applicable
Pathogen Reduction Method	Not Applicable	Not Applicable
Vector Attraction Reduction Method	Not Applicable	Not Applicable
Storage Locations	Not Applicable	Not Applicable

4. Generators/Preparers : Biosolids or Sewage Sludge Analytical Methods

Arizona regulations specify that representative samples of sewage sludge that is land applied, placed on a surface disposal site, or fired in s sewage sludge incinerator, must be collected and analyzed. These regulations specify the analytical methods that must be used to analyzed samples of sewage sludge.

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

Parameter	*Method Number or Author*	*Results (if tested)*	*Comments (required if other)*
Pathogens			
Ascaris ova.	Not applicable	Not applicable	Not applicable
Fecal Coliform	Not Applicable	Not Applicable	Not Applicable
Helminth ova.	Not Applicable	Not Applicable	Not Applicable
Salmonella sp. Bacteria	Not Applicable	Not Applicable	Not Applicable
Total Cultural Viruses	Not Applicable	Not Applicable	Not Applicable
Metals			
Arsenic	Not Applicable	Not Applicable	Not Applicable
Beryllium	Not Applicable	Not Applicable	Not Applicable
Cadmium	Not Applicable	Not Applicable	Not Applicable
Chromium	Not Applicable	Not Applicable	Not Applicable
Copper	Not Applicable	Not Applicable	Not Applicable
Lead	Not Applicable	Not Applicable	Not Applicable
Mercury	Not Applicable	Not Applicable	Not Applicable
Molybdenum	Not Applicable	Not Applicable	Not Applicable
Nickel	Not Applicable	Not Applicable	Not Applicable
Selenium	Not Applicable	Not Applicable	Not Applicable
Zinc	Not Applicable	Not Applicable	Not Applicable
Nitrogen Compounds			
Ammonia Nitrogen	Not Applicable	Not Applicable	Not Applicable
Nitrate Nitrogen	Not Applicable	Not Applicable	Not Applicable
Nitrogen	Not Applicable	Not Applicable	Not Applicable
Organic Nitrogen	Not Applicable	Not Applicable	Not Applicable
Total Kjeldahl Nitrogen	Not Applicable	Not Applicable	Not Applicable
Other Analytes			
Fixed Solids	Not Applicable	Not Applicable	Not Applicable
Paint Filter Test	Not Applicable	Not Applicable	Not Applicable
pH	Not Applicable	Not Applicable	Not Applicable
Specific Oxygen Uptake Rate	Not Applicable	Not Applicable	Not Applicable
TCLP	Not Applicable	Not Applicable	Not Applicable
Temperature	Not Applicable	Not Applicable	Not Applicable
Total Solids	Not Applicable	049% / 0.78% / 0.25%	Not Applicable
Volatile Solids	Not applicable	78% / 87% / 69%	Not applicable
No Analytical Methods Used	Not applicable	Not applicable	Not applicable

2018 Land Application Sites – Land Applier Avra Gro Systems, Inc.; Preparer Pima County Tres Rios WRF

Application Site / Location	Field ID	Amount of Biosolids Applied (in dry tons)	Preparer	Pathogen Treatment Method	Vector Attraction Reduction Method	Loading Rate	Nitrogen Conc. (Organic + ammonium)	Type of Crop Grown After Application	Agronomic Rate of Crop Grown	The Cumulative Concentration of Pollutants in Soil (Kilogram per hectare)				
1. Kai Farms Marana, AZ	JK-7	706.02	Pima County WWTP	Class B, Alt 5	Option 1	.35	12.1	Barley	250	As=.7367	Cd=.3089	Cr=4.3659	Cu=57.4893	Pb=4.1724
										Hg=.1663	Mo=1.4547	Ni=2.6625	Se=.6003	Zn=114.6895
2. Kai Farms Marana, AZ	JK-9	3409.39	Pima County WWTP	Class B, Alt 5	Option 1	2.59	100.5	Pasture Grass	1000	As=.3620	Cd=.1816	Cr=2.7919	Cu=35.3587	Pb=2.4547
										Hg=.1093	Mo=.9074	Ni=1.6598	Se=.4669	Zn=69.4754
3. Kai Farms Marana, AZ	JK-13	276.22	Pima County WWTP	Class B, Alt 5	Option 1	2.33	101.3	Cotton	360	As=1.1956	Cd=.4395	Cr=6.3983	Cu=70.8622	Pb=4.622
										Hg=.2457	Mo=2.6003	Ni=3.6785	Se=.8583	Zn=129.0610
4. Charles Lawrence Casa Grande , AZ	C52-53, C39-40, Chapman 1A/2	897.22	Pima County WWTP	Class B, Alt 5	Option 1	6.00	52	Cotton	400	As=0	Cd=0	Cr=.2742	Cu=3.7258	Pb=.1973
										Hg=.0085	Mo=.1195	Ni=.2127	Se=0	Zn=6.7796
5. Thomas Hum Marana, AZ	TH3S	202.32	Pima County WWTP	Class B, Alt 5	Option 1	.35	12.1	Barley	250	As=0	Cd=0	Cr=.1533	Cu=2.0443	Pb=.0664
										Hg=.0049	Mo=.0664	Ni=.1175	Se=0	Zn=3.5775
6. Kai Farms Marana, AZ	JK-16	10.22	Pima County WWTP	Class B, Alt 5	Option 1	5.88	262.2	Wheat	360	As=.8844	Cd=.3691	Cr=5.319	Cu=65.1734	Pb=4.5001
										Hg=.193	Mo=2.1558	Ni=3.0351	Se=.682	Zn=121.8981
7. Kai Farms Marana, AZ	JK-26	805.40	Pima County WWTP	Class B, Alt 5	Option 1	6.74	276.7	Cotton	360	As=.7494	Cd=.3081	Cr=5.0309	Cu=53.6355	Pb=3.3567
										Hg=.1489	Mo=1.7439	Ni=3.1398	Se=.6848	Zn=100.6011
	JK-27	270.84		Class B, Alt 5	Option 1	3.94	154.23	Cotton	360	As=.8501	Cd=.3668	Cr=4.3646	Cu=55.3893	Pb=3.7569

2018 Land Application Sites – Land Applier Avra Gro Systems, Inc.; Preparer Pima County Tres Rios WRF

Application Site / Location	Field ID	Amount of Biosolids Applied (in dry tons)	Preparer	Pathogen Treatment Method	Vector Attraction Reduction Method	Loading Rate	Nitrogen Conc. (Organic + ammonium)	Type of Crop Grown After Application	Agronomic Rate of Crop Grown	The Cumulative Concentration of Pollutants in Soil (Kilogram per hectare)				
8. Kai Farms Marana, AZ			Pima County							Hg=.1461	Mo=1.516	Ni=2.6552	Se=.5979	Zn=92.35
9. Kai Farms Marana, AZ	JK-28	183.86	Pima County WWTP	Class B, Alt 5	Option 1	3.28	121.5	Cotton	360	As=.4468	Cd=.2208	Cr=3.355	Cu=37.0427	Pb=3.1921
										Hg=.1124	Mo=.911	Ni=1.8174	Se=.363	Zn=60.843
10. Kai Farms Marana, AZ	JK-29	1841.03	Pima County WWTP	Class B, Alt 5	Option 1	1.28	42.3	Cotton	360	As=1.2894	Cd=.4523	Cr=6.7173	Cu=75.4792	Pb=4.7265
										Hg=.2533	Mo=2.743	Ni=3.905	Se=.9536	Zn=135.938
11. Kai Farms Marana, AZ	JK-30	390.18	Pima County WWTP	Class B, Alt 5	Option 1	1.77	58.3	Cotton	360	As=.9055	Cd=.3739	Cr=5.3978	Cu=66.2612	Pb=4.53
										Hg=.1944	Mo=2.1933	Ni=3.1	Se=.7046	Zn=123.7967
12. Kai Farms Marana, AZ	JK-41	273.81	Pima County WWTP	Class B, Alt 5	Option 1	6.4	251.0	Wheat	360	As=.378	Cd=.1553	Cr=1.2714	Cu=15.6885	Pb=.8298
										Hg=.1064	Mo=.9415	Ni=.8543	Se=.3745	Zn=29.3692
13. Kai Farms Marana, AZ	JK-8	83.92	Pima County WWTP	Class B, Alt 5	Option 1	1.23	280	Wheat	360	As=1.0934	Cd=.4562	Cr=6.5236	Cu=89.0992	Pb=5.2449
										Hg=.2655	Mo=3.0478	Ni=4.4687	Se=1.033	Zn=155.2047
	GL-1	508.53		Class B, Alt 5	Option 1	1.89	69.9	Cotton	360	As=.6354	Cd=.2945	Cr=4.5713	Cu=48.8062	Pb=4.065

2018 Land Application Sites – Land Applier Avra Gro Systems, Inc.; Preparer Pima County Tres Rios WRF

Application Site / Location	Field ID	Amount of Biosolids Applied (in dry tons)	Preparer	Pathogen Treatment Method	Vector Attraction Reduction Method	Loading Rate	Nitrogen Conc. (Organic + ammonium)	Type of Crop Grown After Application	Agronomic Rate of Crop Grown	The Cumulative Concentration of Pollutants in Soil (Kilogram per hectare)				
14. T&T Farms			Pima County							Hg=.1628	Mo=1.3967	Ni=2.465	Se=.4898	Zn=84.4369
15. Farms Marana, AZ	LIM-1	436.25	Pima County WWTP	Class B, Alt 5	Option 1	1.86	74.12	Cotton	360	As=.7253	Cd=.2613	Cr=5.4131	Cu=49.707	Pb=3.0395
										Hg=.1561	Mo=1.4716	Ni=2.5755	Se=.6528	Zn=102.1848
16. Post Farms Marana, AZ	LDS-9	157.36	Pima County WWTP	Class B, Alt 5	Option 1	.35	12.1	Barley	250	As=.0476	Cd=.015	Cr=.1483	Cu=1.7146	Pb=.0781
										Hg=.004	Mo=.0526	Ni=.1011	Se=.0318	Zn=3.2078
17. Pima County Farms Marana, AZ	Pima-1	1551.78	Pima County WWTP	Class B, Alt 5	Option 1	.66	23.6	Pasture	1000	As=1.2458	Cd=.4142	Cr=6.2495	Cu=83.9092	Pb=4.9366
										Hg=.2705	Mo=3.0334	Ni=4.0389	Se=1.0558	Zn=159.5813

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ANNUAL BIOSOLIDS REPORT 2018

REGIONAL WATER
RECLAMATION DEPARTMENT

TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

SECTION 2

PREPARATION OF BIOSOLIDS

TRES RIOS WRF AZPDES NO. AZ0020001

VECTOR ATTRACTION REDUCTION

A.A.C. RULE 18.9.1010.A.1

PATHOGEN REDUCTION

A.A.C. RULE 18.9.1006.E ALTERNATIVE 5

POLLUTANT CONCENTRATION

A.A.C. RULE 18.9.1005 METALS

ANNUAL BIOSOLIDS REPORT 2018

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ANNUAL BIOSOLIDS REPORT 2018

REGIONAL WATER
RECLAMATION DEPARTMENT

TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

VECTOR ATTRACTION REDUCTION - LAND APPLICATION
ALTERNATIVE 1 IN 40 CFR 503.33(b)(1)
R18-9-1010-A.1

Facility Name: Pima County Regional Biosolids Management Facility
Address: 7101 North Casa Grande Highway
Tucson, Arizona 85743

Facility Owner's Name: Pima County Regional Wastewater Reclamation Department
Address: 201 North Stone Avenue
Tucson, Arizona 85701

Monitoring Period: From 01/01/18 Through 12/31/18

Reporting Period: From 01/01/18 Through 12/31/18

AZPDES Permit Number: AZ0020001 Sludge Permit Number: N/A

Facility Latitude: 32° 20' 06" N Facility Longitude: 111°04' 16" W

Site Map Attached? ☐ Yes ☒ No

Tres Rios WRF receives and treats the sludge from both Agua Nueva WRF and Tres Rios WRF. The floated sludge from the DAF clarifier and the waste activated sludge (WAS) at Agua Nueva WRF, and the WAS from Tres Rios WRF are mixed in a WAS tank at Tres Rios WRF. The mixed sludge from the WAS tank at Tres Rios WRF is thickened in the Gravity Belt Thickeners (GBT) complex. The primary sludge from Tres Rios WRF is thickened in the Gravity Thickeners (GT) complex at Tres Rios WRF. The thickened sludge is pumped from both the GBT complex and the GT complex into heated mesophilic digesters, part of the Regional Biosolids Management Facility (RBMF) located at Tres Rios WRF. The vector attraction reduction is achieved in the digesters at the RBMF located at Tres Rios WRF. The WAS from Avra Valley WRF, Green Valley WRF, Corona de Tucson WRF and Mt. Lemmon WRF are sometimes combined into the WAS mixing tank at Tres Rios WRF. The digested sludge is pumped to the Centrifuge Building at the RBMF for either thickening or dewatering. After moisture reduction, the biosolids are pumped into the temporary Biosolids Transfer Bladder. From the Biosolids Transfer Bladder, the land application contractor removes the biosolids for application as soil amendment and fertilizer on local area farms.

The vector attraction reduction is achieved in the digesters at the RBMF located at Tres Rios RBMF using Alternative 1 [40 CFR 503.33(b)(1)] Method, equivalently R18-9-1010-A.1; the latter states: "Reducing the mass of volatile solids by a minimum of 38% using the calculation procedures established in "Environmental Regulations and Technology—Control of Pathogens and Vector Attraction in Sewage Sludge," EPA/625/R-92-013, published by the U.S. Environmental Protection Agency, Cincinnati, Ohio 45268, 1999 Edition." To demonstrate the achievement of this requirement, biosolids data from Tres Rios WRF is provided. Table 1 reports Volatile Solids Reduction (%) at the Tres Rios WRF.

TABLE 1 - MONTHLY AVERAGE VOLATILE SOLIDS REDUCTION (%) AT TRES RIOS WRF

TRES RIOS WRF YEAR 2018	Volatile Solids Reduction (%)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Digester #1	44	48	48	48	48	48	40	40	43	43	47	55
Digester #2	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	51	44	50
Digester #3	41	51	48	48	51	48	43	43	46	46	50	53
Digester #4	44	48	48	46	48	48	43	43	46	46	47	53
Digester #5	44	48	48	48	51	48	43	43	43	43	47	53
Digester #6	44	51	46	48	48	48	40	43	43	46	47	53

O/S = Out of Service

The mass of volatile solids of the Tres Rios WRF biosolids was reduced by at least 38 percent.

The volatile solids reduction is greater than 38% for the plant. No further treatment is provided at the Regional Biosolids Management Facility, and the biosolids are routinely applied to the land within 48 hours of discharge from the digester. Therefore, the combined solids will meet Alternative 1 [40 CFR 503.33(b)(1)] Method, equivalently R18-9-1010-A.1.

The volatile solids reduction is measured at least two times per week at each digester.

CERTIFICATION [503.17 (a)(4)(i)(B)], equivalently R18-9-1013

I certify, under penalty of law, that the information that will be used to determine compliance with the vector attraction reduction requirement in § 503.33(b)(1), equivalently R18-9-1010-A.1, was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

Name and Official Title (type or print)	Area Code and Phone
F. Jeff Prevatt, Deputy Director Treatment Division Regional Wastewater Reclamation Department	(520) 724-6060
Signature	Date Signed
	2-19-19

PATHOGEN REDUCTION - CLASS B
ALTERNATIVE 2 IN 40 CFR 503.32(b)(3)
R18-9-1006-E ALTERNATIVE 5

Facility Name: Pima County Regional Biosolids Management Facility
Address: 7101 North Casa Grande Highway
Tucson, Arizona 85743

Facility Owner's Name: Pima County Regional Wastewater Reclamation Department
Address: 201 North Stone Avenue
Tucson, Arizona 85701

Monitoring Period: From 01/01/18 Through 12/31/18

Reporting Period: From 01/01/18 Through 12/31/18

AZDES Permit Number: AZ0020001 Sludge Permit Number: N/A

Facility Latitude: 32° 20' 06" N Facility Longitude: 111° 04' 16" W

Site Map Attached? ☐ Yes ☒ No

Tres Rios WRF receives and treats the sludge from both Agua Nueva WRF and Tres Rios WRF. The floated sludge from the DAF clarifier and the waste activated sludge (WAS) at Agua Nueva WRF, and the WAS from Tres Rios WRF are mixed in a WAS tank at Tres Rios WRF. The mixed sludge from the WAS tank at Tres Rios WRF is thickened in the Gravity Belt Thickeners (GBT) complex. The primary sludge from Tres Rios WRF is thickened in the Gravity Thickeners (GT) complex at Tres Rios WRF. The thickened sludge is pumped from both the GBT complex and the GT complex into heated mesophilic digesters, part of the Regional Biosolids Management Facility (RBMF) located at Tres Rios WRF. The pathogen reduction is achieved in the digesters at the RBMF located at Tres Rios WRF. The WAS from Avra Valley WRF, Green Valley WRF, Corona de Tucson WRF and Mt. Lemmon WRF are sometimes combined into the WAS mixing tank at Tres Rios WRF. The digested sludge is pumped to the Centrifuge Building at the RBMF for either thickening or dewatering. After moisture reduction, the biosolids are pumped into the temporary Biosolids Transfer Bladder. From the Biosolids Transfer Bladder, the land application contractor removes the biosolids for application as soil amendment and fertilizer on local area farms.

Pathogen reduction is achieved at the Tres Rios treatment plant prior to transfer to the Regional Biosolids Management Facility through the use of Class B, Alternative 2 [40 CFR 503.32(b)(3) Appendix B, No. 3] Methods, equivalently R18-9-1006-E Alternative 5. Pathogen reduction is accomplished by the anaerobic digestion process to achieve a residence time of greater than 15 days at a minimum temperature of 35°C. To demonstrate the achievement of the requirements under this alternative, biosolids data from Tres Rios WRF is provided in Tables 2 and 3.

The temperature in each digester was greater than or equal to 35°C and the detention time always exceeded 15 days, at Tres Rios WRF. The biosolids are treated in the absence of air for a specific mean cell residence time at a specific temperature between 15 days at 35°C to 55°C and 60 days at 20°C. The operating temperature of the digester is measured at a frequency of at least two (2) times per day. For this reporting period, the average detention time and digester operating temperature are as follows:

TABLE 2 - AVERAGE DIGESTER DETENTION TIME AT TRES RIOS WRF

TRES RIOS WRF YEAR 2018	AVERAGE DETENTION TIME (Days)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Digester #1	21.7	22.1	23.5	21.5	22.2	25.1	23.0	23.9	23.2	26.8	26.6	26.8
Digester #2	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	56.3	26.6	26.8
Digester #3	18.3	19.2	21.8	21.4	22.5	24.6	25.0	24.4	23.5	26.0	27.0	27.0
Digester #4	21.5	21.0	21.9	21.9	23.4	24.2	22.8	23.5	24.3	27.0	26.5	25.3
Digester #5	29.0	28.2	30.6	31.6	31.3	33.5	31.7	32.4	31.4	34.1	37.1	36.4
Digester #6	29.0	26.5	25.0	24.6	25.8	28.1	25.9	27.5	27.0	29.0	29.9	29.8

O/S = Out of Service

TABLE 3 - AVERAGE DIGESTER OPERATING TEMPERATURE AT TRES RIOS WRF

TRES RIOS WRF YEAR 2018	AVERAGE TEMPERATURE (°C)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Digester #1	36.00	35.44	36.00	36.56	36.44	36.61	37.00	37.00	36.78	36.17	35.89	36.33
Digester #2	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	36.61	36.61	36.44
Digester #3	36.33	36.50	36.06	36.78	36.44	36.78	36.83	37.06	36.72	36.44	36.50	36.61
Digester #4	36.28	36.61	36.72	36.61	36.56	36.83	36.94	37.11	36.83	36.67	36.61	36.67
Digester #5	36.39	36.28	36.72	36.61	36.39	36.72	36.39	36.50	36.72	36.83	37.17	36.56
Digester #6	36.67	36.28	36.56	36.50	36.39	36.72	36.56	36.56	36.61	36.83	36.94	36.39

O/S = Out of Service

CERTIFICATION [503.17 (a)(4)(i)(B)] , equivalently R18-9-1013

I certify, under penalty of law, that the information that will be used to determine compliance with the Class B pathogen requirements in § 503.32(b)(3), equivalently R18-9-1006-E Alternative 5, was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

Name and Official Title (type or print)	Area Code and Phone
F. Jeff Prevatt, Deputy Director Treatment Division Regional Wastewater Reclamation Department	(520) 724-6060
Signature	Date Signed 2-19-19

NITROGEN IN BIOSOLIDS

Combined biosolids generated from the Tres Rios is analyzed for Total Nitrogen. Table 4 displays the analyses results of samples collected from the combined biosolids generated from both reclamation facilities.

TABLE 4 - 2018 Summary Nitrogen Concentration, Units mg/Kg

Rule 18 Chapter 9 Article 10 Section 1007

	Ammonia Nitrogen	Nitrate/Nitrite	Nitrite	Total Kjeldahl Nitrogen	Total Nitrogen
Analysis Method	EPA 350.1	EPA 353.2	SM4500-NO2	EPA 351.2	Calculated
Mean	9,913	2.7	2.5	64,771	64,775
Max	17,300	10	7	77,066	77,068
Min	7,420	0.6	0.8	53,131	53,132

TABLE 5 – MONTHLY NITROGEN CONCENTRATION IN THE BIOSOLIDS, mg/Kg; 2018

YEAR 2018	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec
Ammonia Nitrogen	11,000	9,740	8,810	10,200	9,960	9,040	9,520	9,410	17,300	7,420	8,610	7,940
Nitrate/ Nitrite	0.99	1.41	0.6	1.03	1.97	1.27	1.58	1.41	10	2.12	3.54	6.23
Nitrite	1.64	1.79	3.52	1.56	1.93	1.27	0.81	1.42	6.98	2.92	2.25	3.86
Total Kjeldahl Nitrogen	56,616	61,280	69,707	69,219	70,928	56,430	53,131	53,469	67,817	77,066	68,295	73,298
Nitrogen, Total	56,617	61,281	69,708	69,233	70,930	56,431	53,132	53,470	67,827	77,068	68,298	73,304

TABLE 6 - 2017 BIOSOLIDS METALS CONCENTRATION, UNITS mg/Kg

METALS IN BIOSOLIDS PRODUCED AT PIMA COUNTY RBMF, 2018

	As	Cd	Cr	Cu	Pb	Hg	Mo	Ni	Se	Zn
Regulatory Requirement, [mg/kg]										
40 CFR, 503.13 Table 1	75	85	3000	4300	840	57	75	420	100	7500
40 CFR, 503.13 Table 3	41	39	N/A *(a)*	1500	300	17	N/A	420	100	2800
R18-9-1005, Table 1	75	85	3000	4300	840	57	75	420	100	7500
R18-9-1005, Table 2	41	39	N/A	1500	300	17	N/A	420	100	2800
Compilation Code *(b)*	12 / 0 / 0	12 / 0 / 0	12 / 0 / 0	12 / 0 / 0	12 / 0 / 0	12 / 0 / 0	12 / 0 / 0	12 / 0 / 0	12 / 0 / 0	12 / 0 / 0
Measured Concentration, [mg/kg]										
	As	**Cd**	**Cr**	**Cu**	**Pb**	**Hg**	**Mo**	**Ni**	**Se**	**Zn**
January-2018	< 12.5	< 5.0	29.3	344	12.8	0.55	12.5	19.6	< 25.0	687
February-2018	< 9.5	< 3.8	27	333	13.9	0.65	11.6	31.1	< 19.1	654
March-2018	< 11.4	< 4.5	26.7	354	13.7	1.08	12.1	29.4	< 22.7	644
April-2018	< 8.7	< 3.5	26.1	355	9.04	0.61	12.4	24.5	< 17.3	652
May-2018	< 11.0	< 4.4	29.2	346	11.1	0.8	12.6	22.8	< 22.1	663
June-2018	< 15.2	< 6.1	30.8	365	< 15.2	1.5	11.3	22.9	< 30.5	694
July-2018	9.08	< 3.5	34.9	418	10.9	0.82	13	22	< 17.5	749
August-2018	< 11.9	< 4.8	33.3	441	12.7	0.9	13.7	22.6	< 23.8	790
September-2018	< 17.5	< 7.0	29.9	427	< 17.5	0.9	13.8	21.9	< 34.9	774
October-2018	< 12.5	< 5.0	32.2	433	< 12.5	1.47	12.8	22.9	< 25.0	749
November-2018	< 6.3	< 2.5	29	359	10.3	0.74	11.5	21.1	< 12.7	688
December-2018	7.8	< 2.5	28.2	340	11	1.21	10.6	20.2	< 12.4	655
ANNUAL AVERAGE	**< 11.1**	**< 4.4**	**29.7**	**376**	**< 12.6**	**0.9**	**12.3**	**23.4**	**< 21.9**	**700**
ANNUAL MAXIMUM	**< 17.5**	**< 7.0**	**34.9**	**441**	**< 17.5**	**1.5**	**13.8**	**31.1**	**< 34.9**	**790**
	As	**Cd**	**Cr**	**Cu**	**Pb**	**Hg**	**Mo**	**Ni**	**Se**	**Zn**

TABLE 7 - DIGESTER OPERATING PARAMETERS, 2018

OPERATING PARAMETERS (c) OF DIGESTERS AT TRES RIOS WRF, 2018

	VOLATILE SOLIDS REDUCTION (%)			DETENTION TIME (Days)			TEMPERATURE (°C)		
Regulatory Requirements	**38%, (d)**			**15 Days, (e)**			**35 - 55 (°C), (e)**		
Measured Parameters	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min
Digester #1	55	46	40	27	24	22	37.0	36.4	35.4
Digester #2	51	48	44	56	37	27	36.6	36.6	36.4
Digester #3	53	47	41	27	23	18	37.1	36.6	36.1
Digester #4	53	47	43	27	24	21	37.1	36.7	36.3
Digester #5	53	47	43	37	32	28	37.2	36.6	36.3
Digester #6	53	46	40	30	27	25	36.9	36.6	36.3

(a) N/A means Not Applicable

(b) The data compilation code represents: Number of samples / number of samples above R18-9-1005, Table 1 / number of samples above R18-9-1005, Table 2

The data compilation code represents: Number of samples / number of samples above 40 CFR, 503.13 Table 1 / number of samples above 40 CFR, 503.13 Table 3

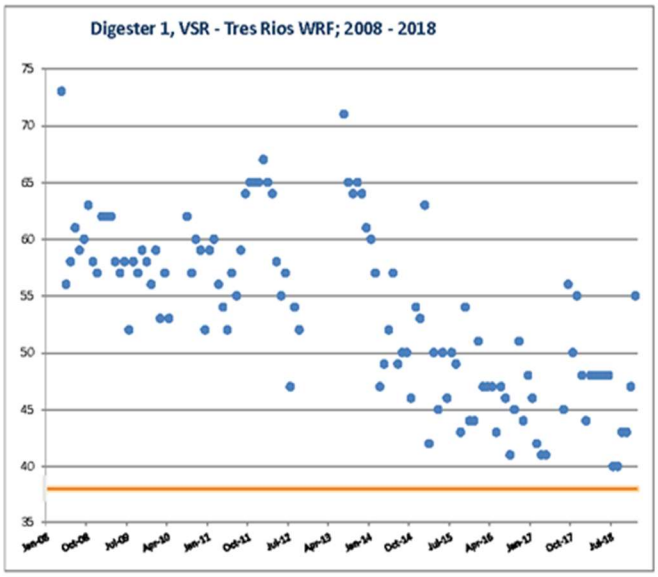
(c) Summary statistics derived from the monthly average results presented in this report

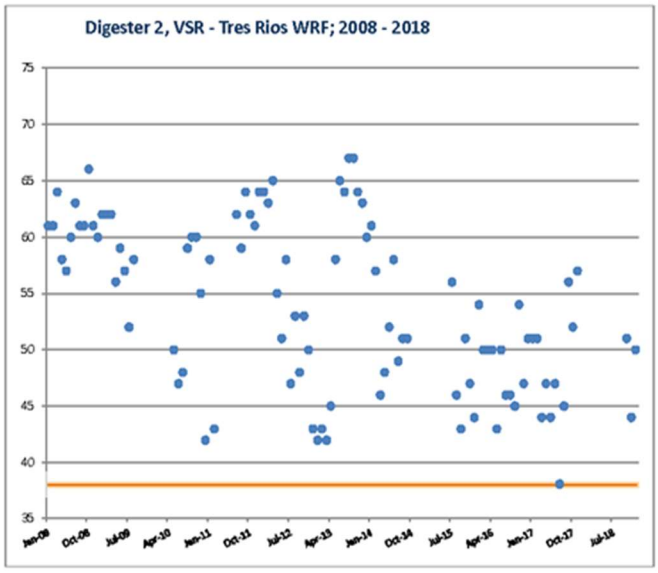
(d) R18-9-1010-A.1; 40 CFR 503.33(b)(1)

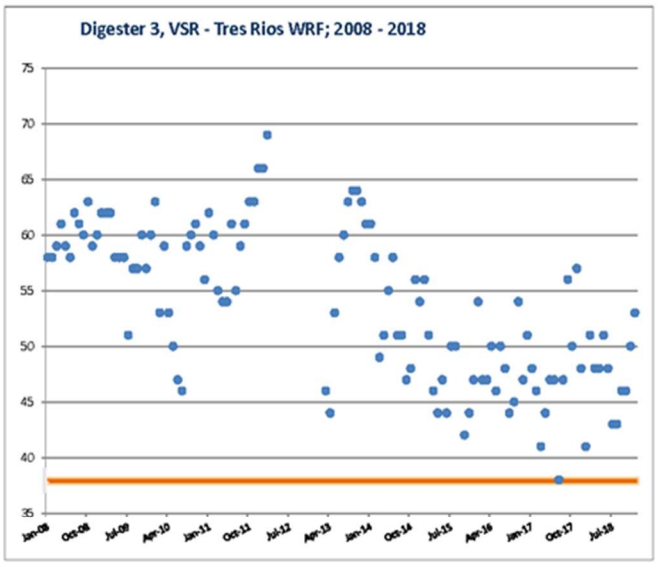
(e) R18-9-1006-E Alternative 5; 40 CFR 503.32(b)(3) Appendix B, No. 3

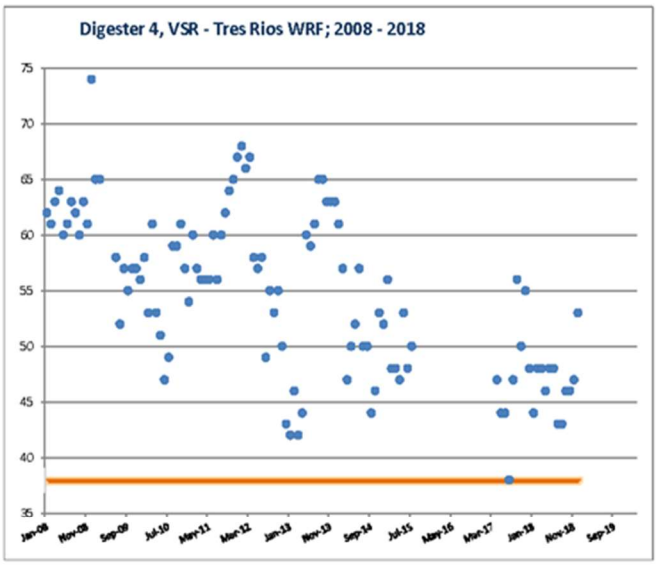
(f) O/S – Out of Service, Cleaning and Repair

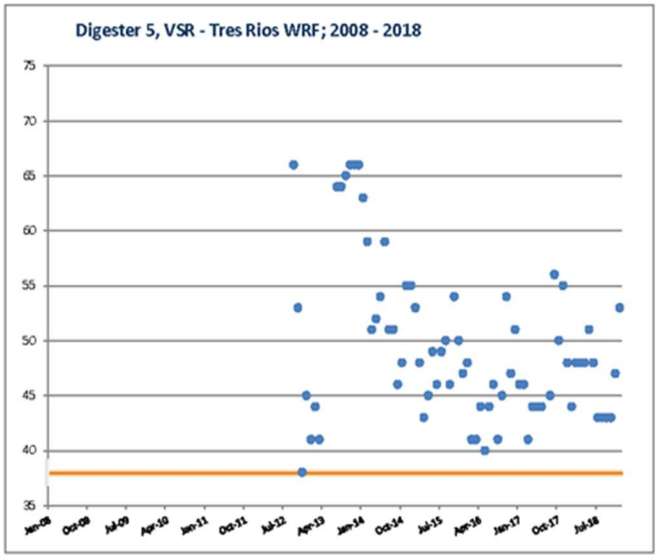
VOLATILE SOLIDS REDUCTION, DIGESTERS
TRES RIOS WRF; 2008 - 2018

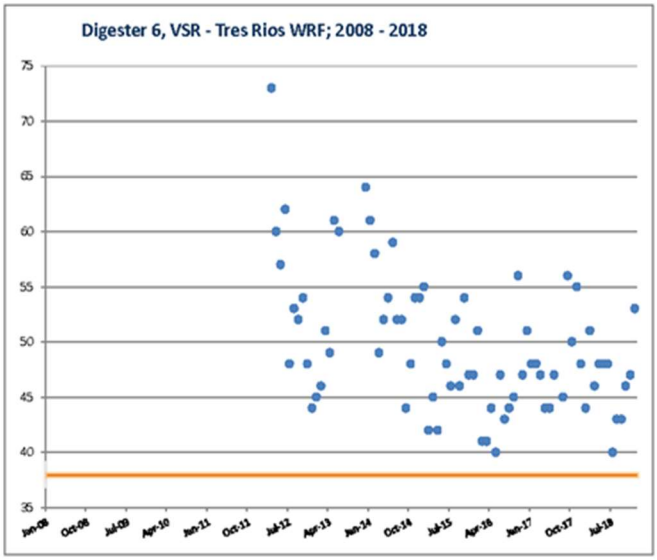




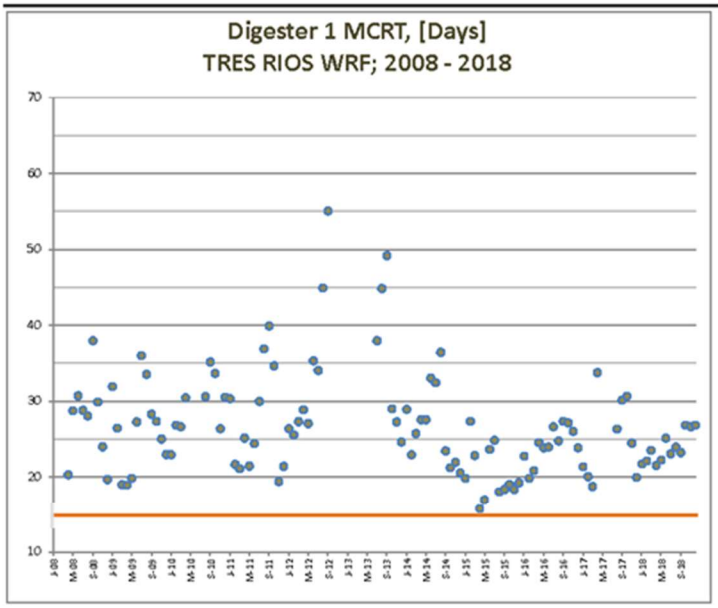


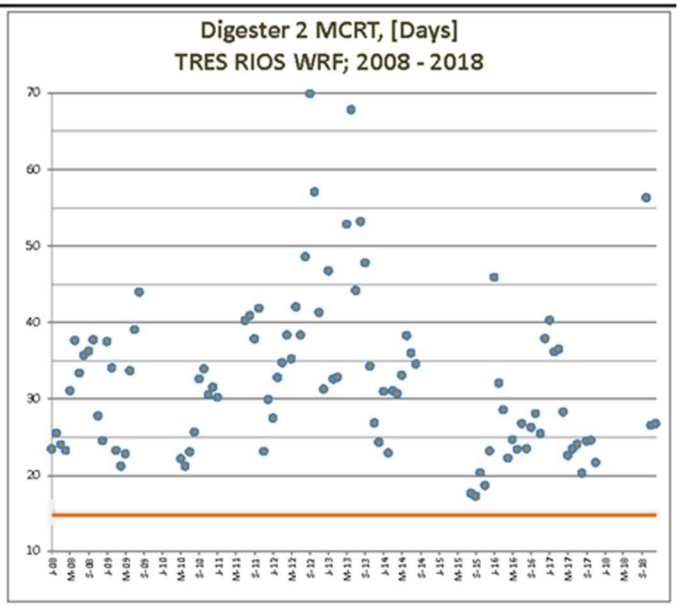


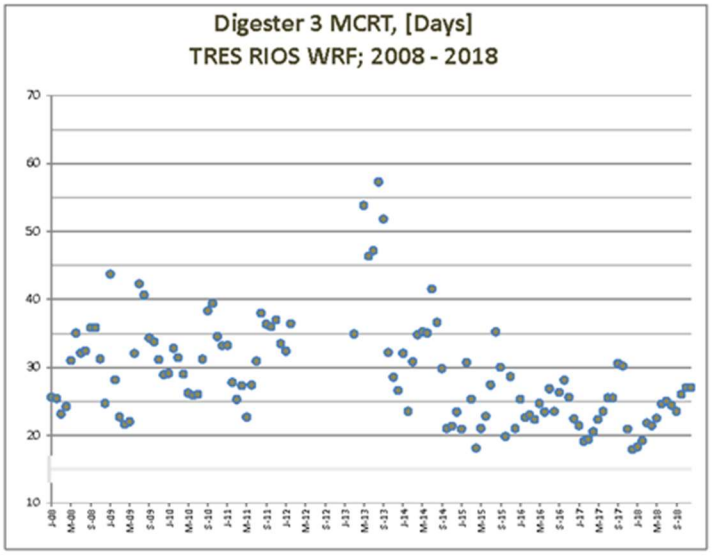


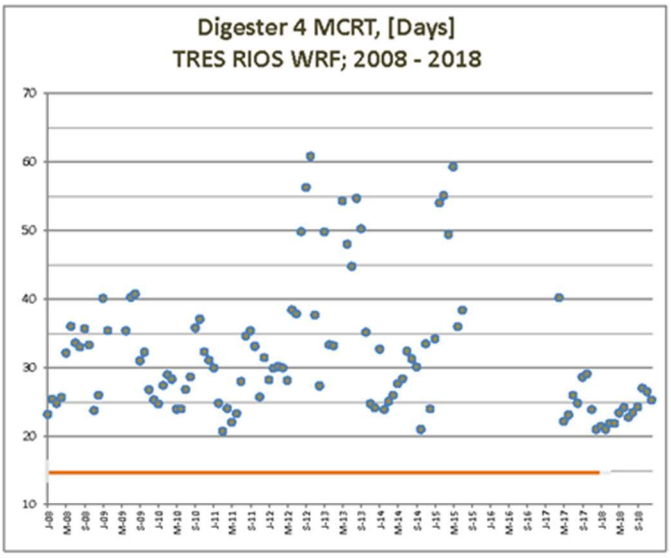


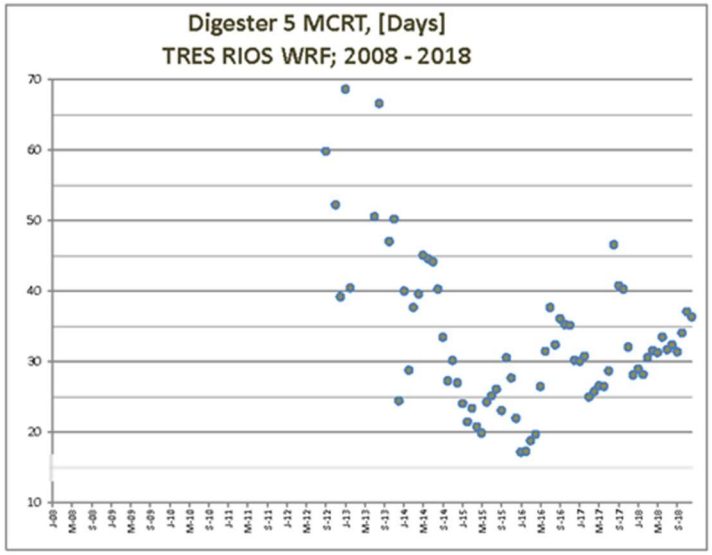
MCRT [DAYS], DIGESTERS
TRES RIOS WRF; 2008 - 2018

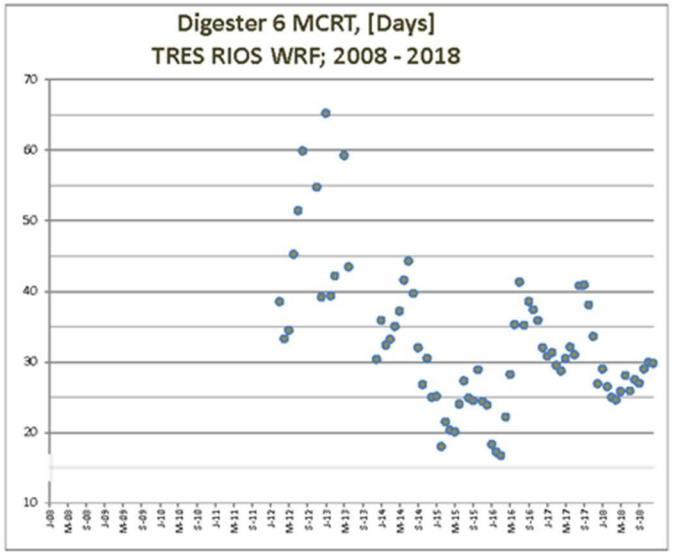




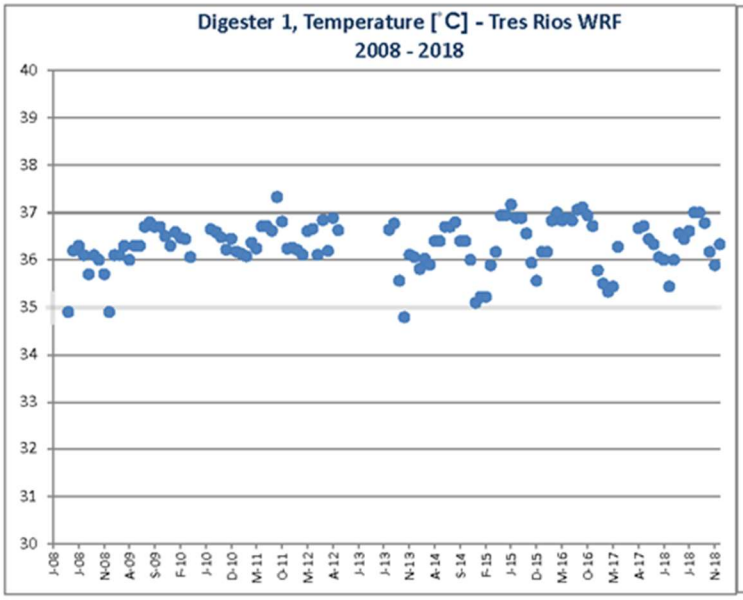


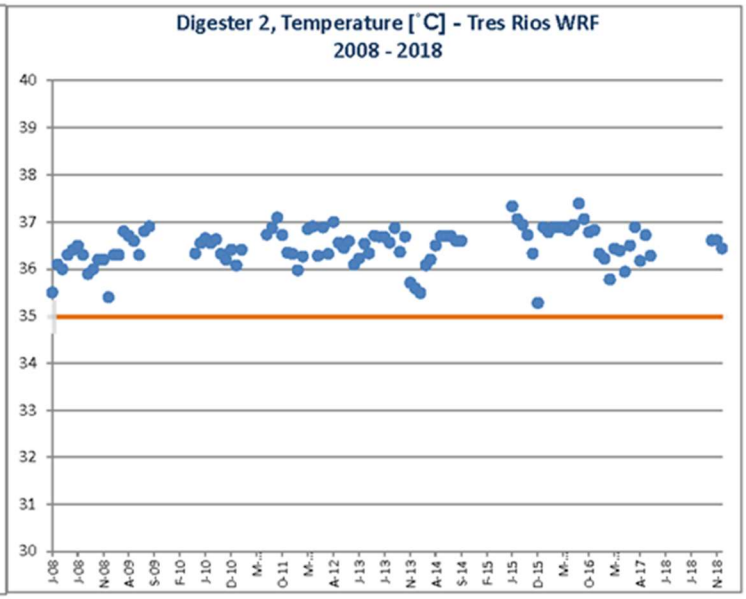


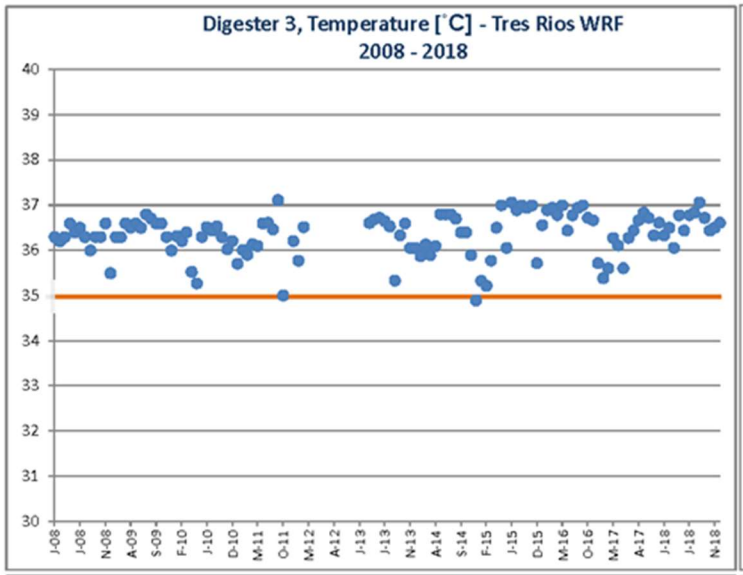


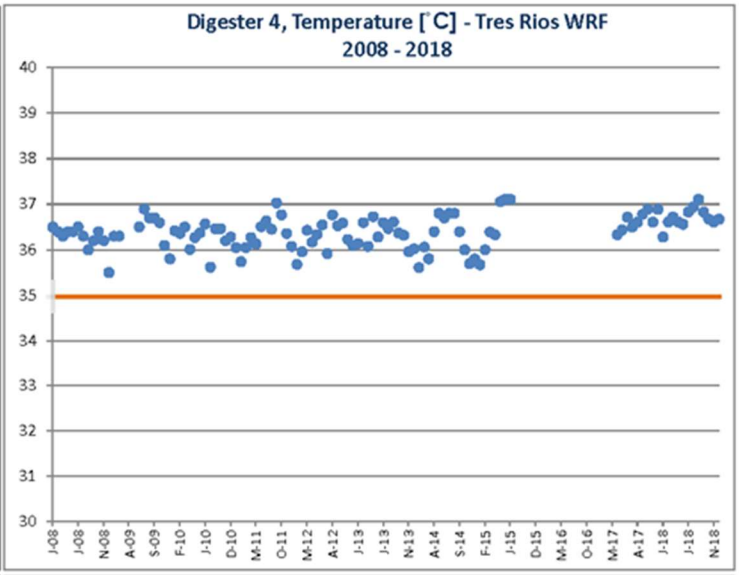


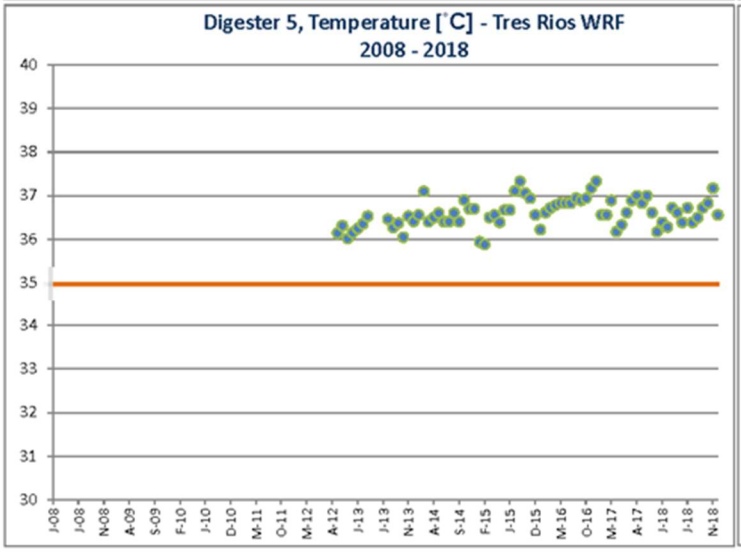
TEMPERATURE [°C], DIGESTERS; 2008 - 2018
TRES RIOS WRF; PIMA COUNTY RWRD - PIMA COUNTY, ARIZONA

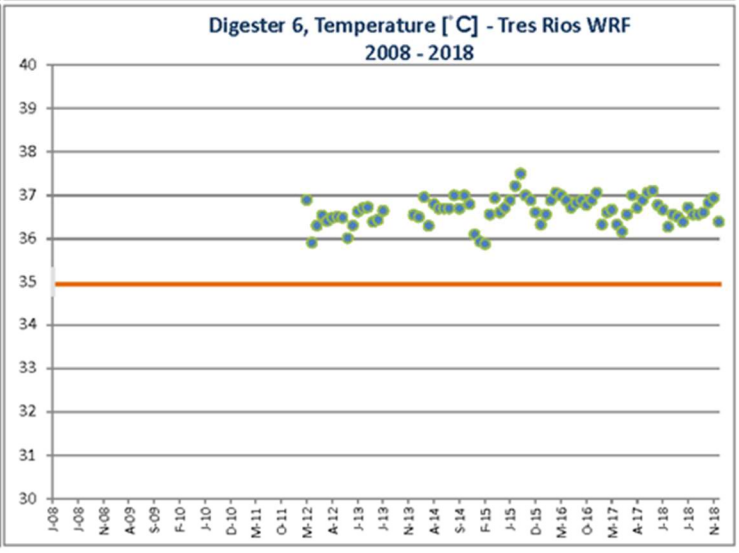


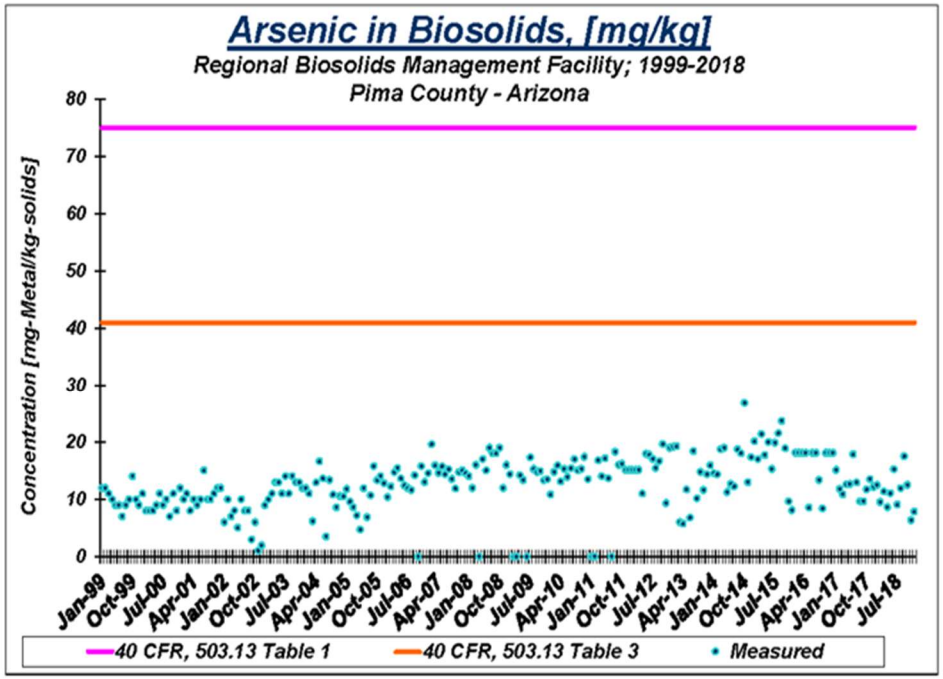


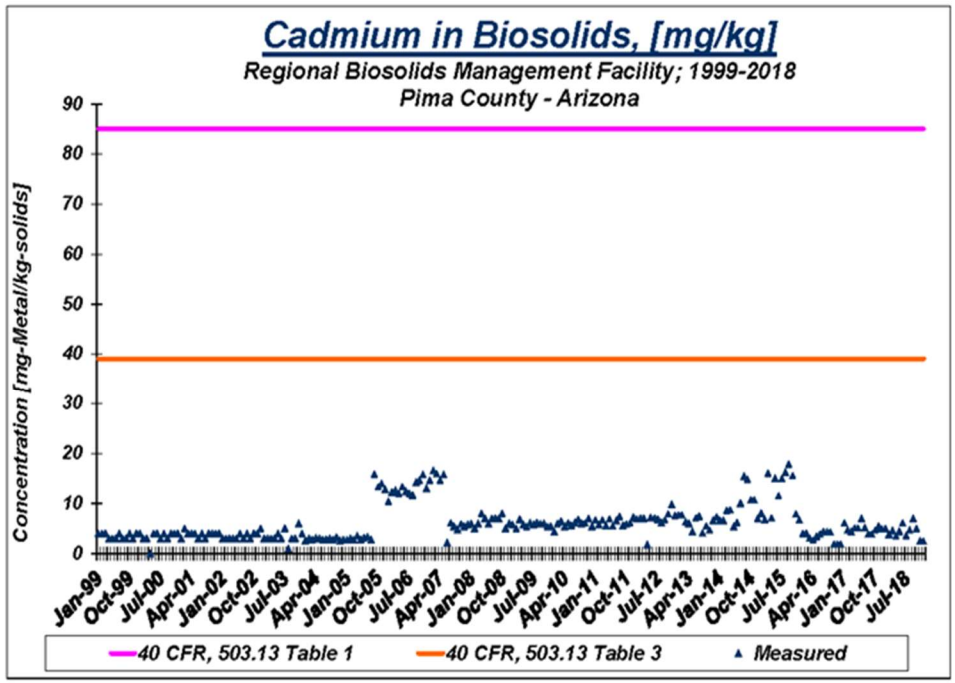


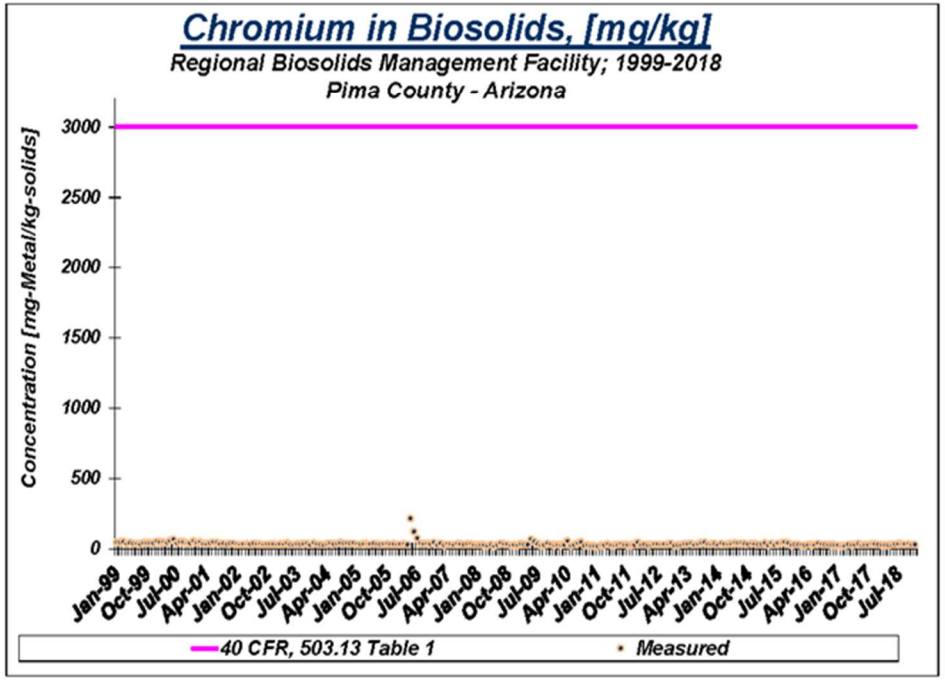


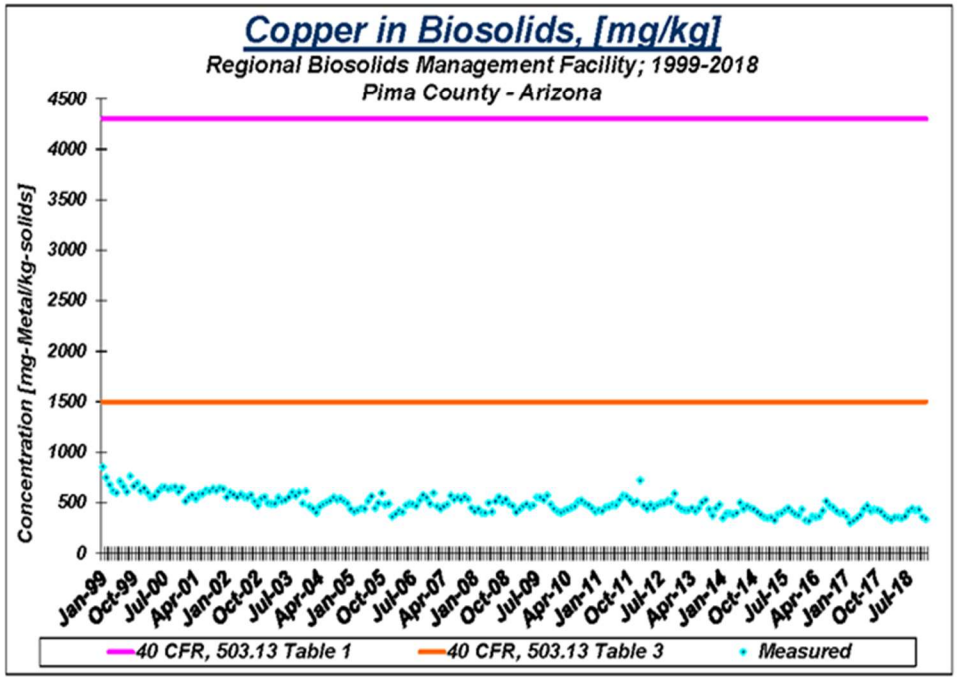


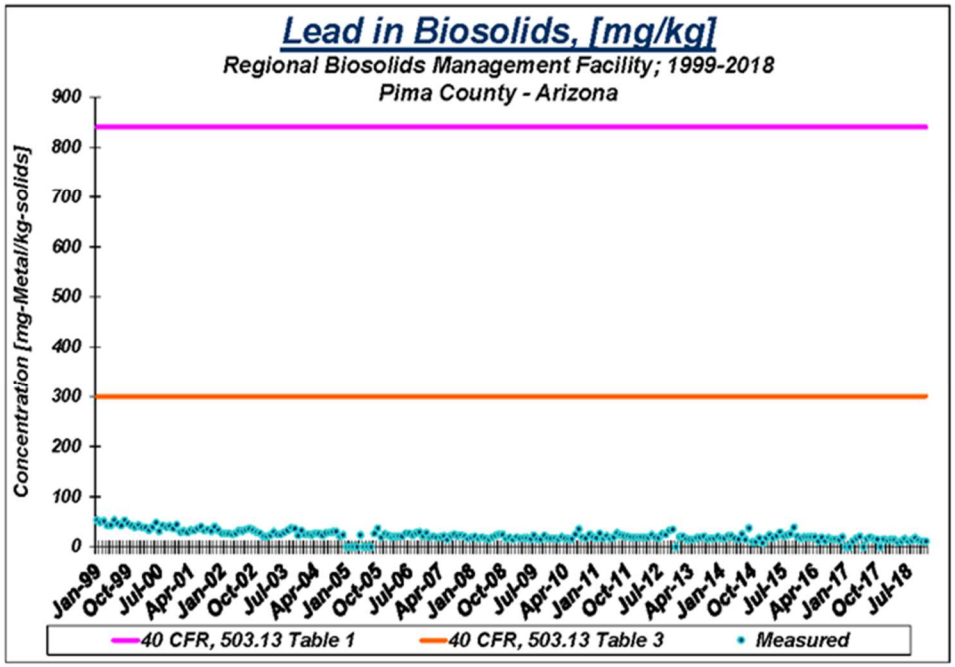


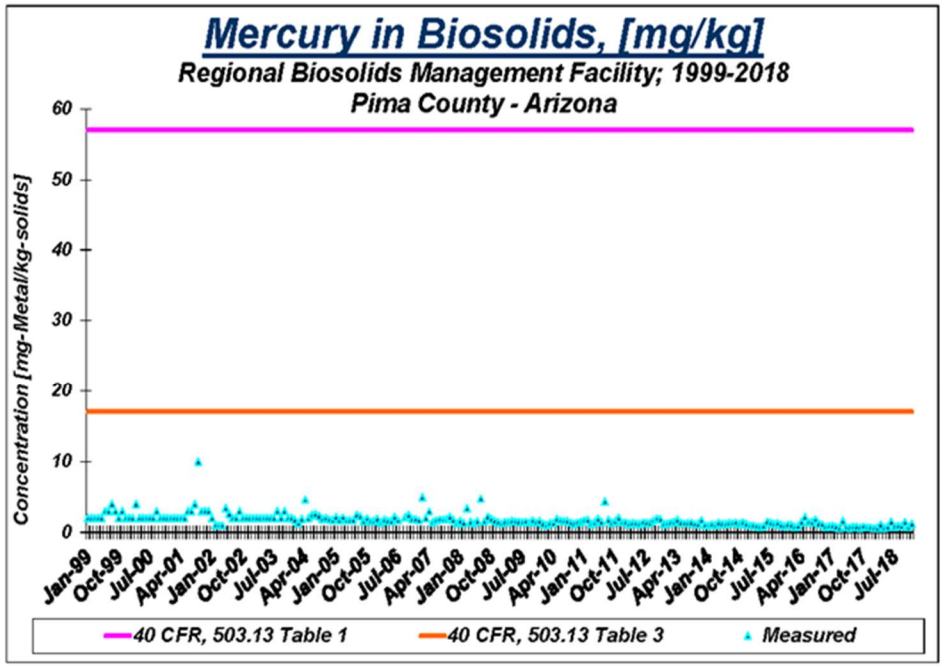

Arsenic in Biosolids, [mg/kg]
Regional Biosolids Management Facility; 1999-2018
Pima County - Arizona
Concentration [mg-Metal/kg-solids]
40 CFR, 503.13 Table 1
40 CFR, 503.13 Table 3
Measured

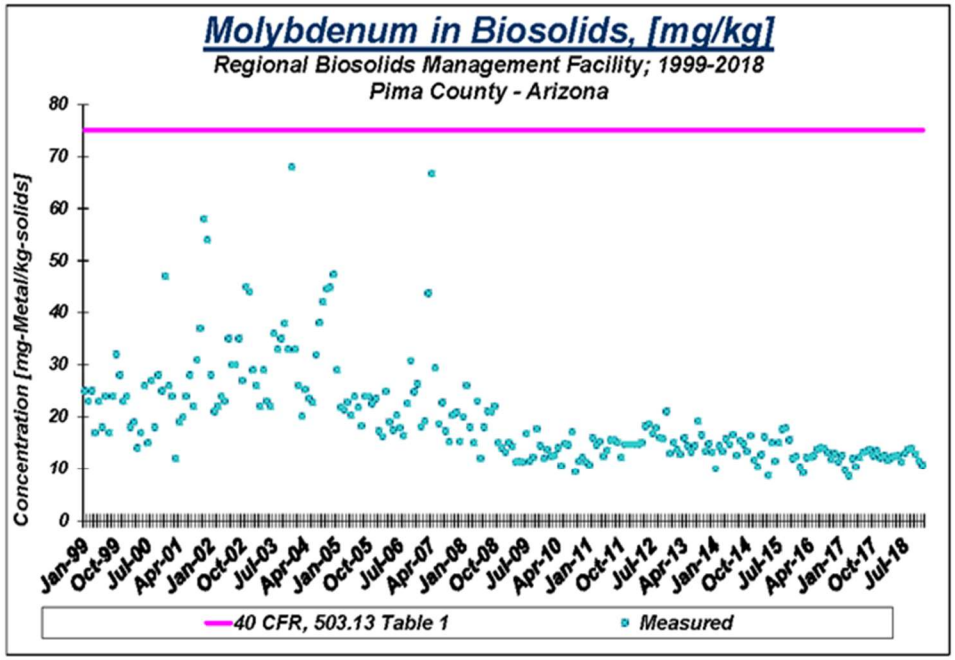

Cadmium in Biosolids, [mg/kg]
Regional Biosolids Management Facility; 1999-2018
Pima County - Arizona
Concentration [mg-Metal/kg-solids]
40 CFR, 503.13 Table 1
40 CFR, 503.13 Table 3
Measured

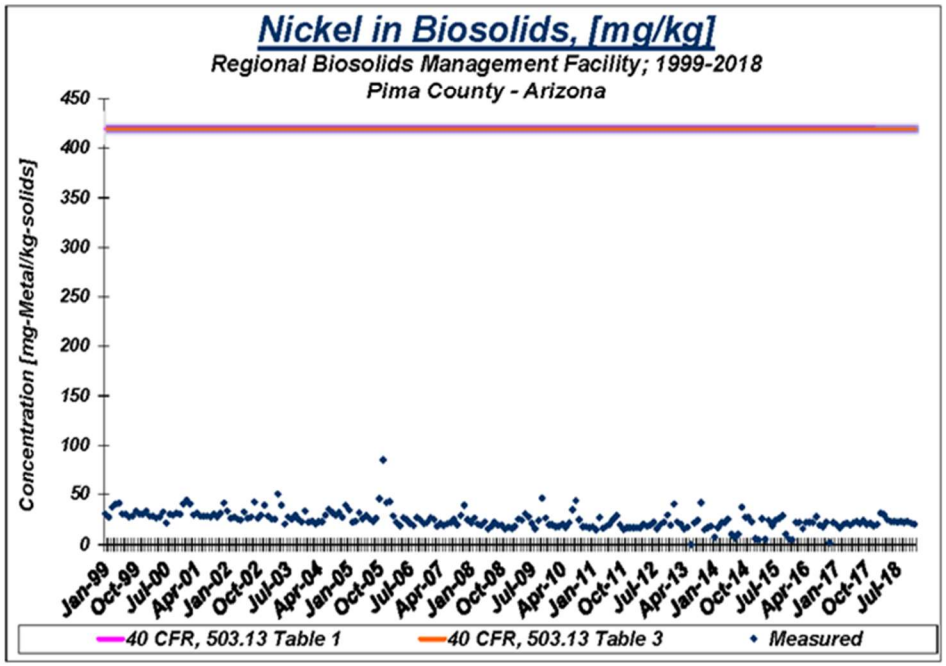

Chromium in Biosolids, [mg/kg]
Regional Biosolids Management Facility; 1999-2018
Pima County - Arizona
Concentration [mg-Metal/kg-solids]
40 CFR, 503.13 Table 1
Measured

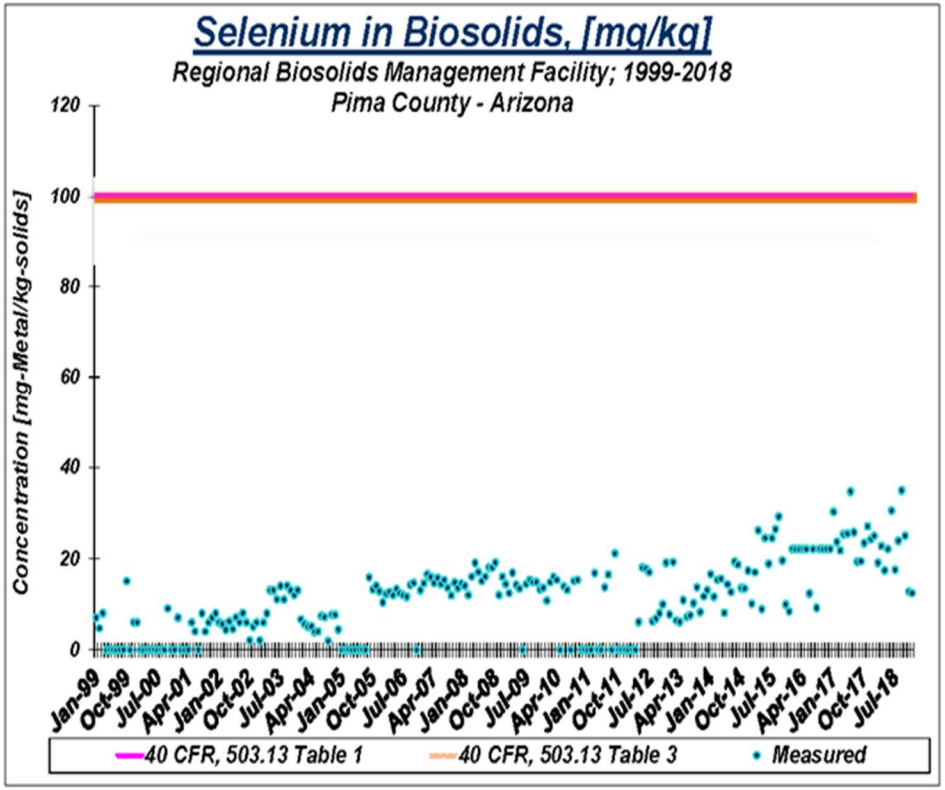

Copper in Biosolids, [mg/kg]
Regional Biosolids Management Facility; 1999-2018
Pima County - Arizona
Concentration [mg-Metal/kg-solids]
40 CFR, 503.13 Table 1
40 CFR, 503.13 Table 3
Measured

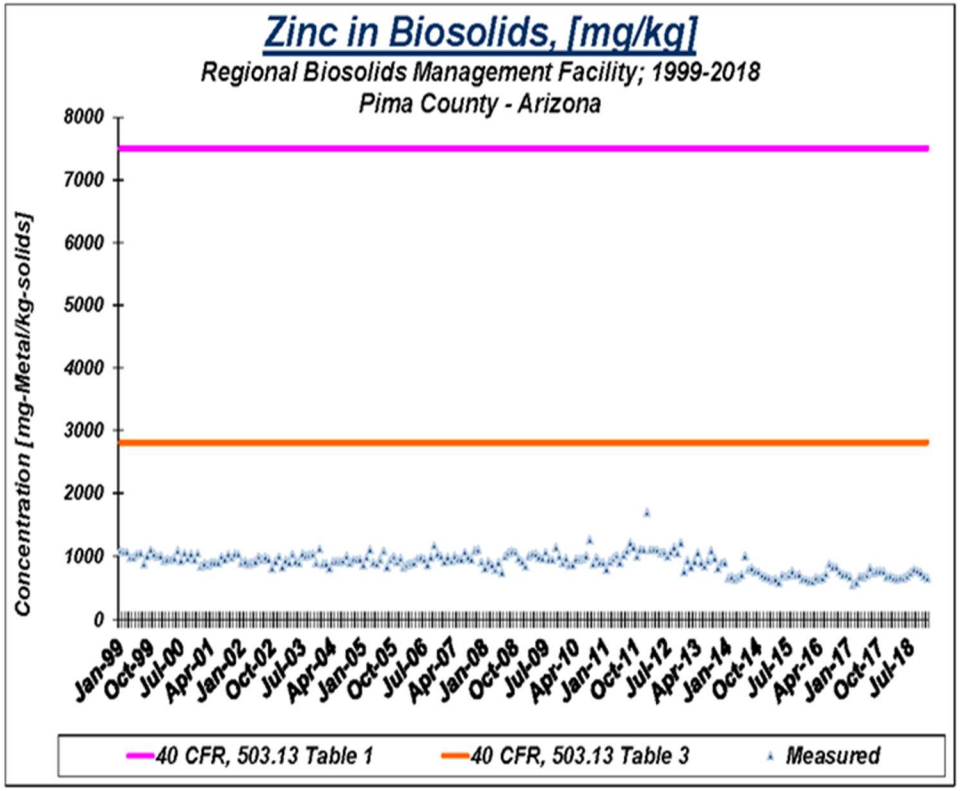

Lead in Biosolids, [mg/kg]
Regional Biosolids Management Facility; 1999-2018
Pima County - Arizona
Concentration [mg-Metal/kg-solids]
40 CFR, 503.13 Table 1
40 CFR, 503.13 Table 3
Measured


Mercury in Biosolids, [mg/kg]
Regional Biosolids Management Facility; 1999-2018
Pima County - Arizona
Concentration [mg-Metal/kg-solids]
40 CFR, 503.13 Table 1
40 CFR, 503.13 Table 3
Measured


Molybdenum in Biosolids, [mg/kg]
Regional Biosolids Management Facility; 1999-2018
Pima County - Arizona
Concentration [mg-Metal/kg-solids]
40 CFR, 503.13 Table 1
Measured


Nickel in Biosolids, [mg/kg]
Regional Biosolids Management Facility; 1999-2018
Pima County - Arizona
Concentration [mg-Metal/kg-solids]
40 CFR, 503.13 Table 1
40 CFR, 503.13 Table 3
Measured


Selenium in Biosolids, [mg/kg]
Regional Biosolids Management Facility; 1999-2018
Pima County - Arizona
Concentration [mg-Metal/kg-solids]
120
100
80
60
40
20
0
Jan-99
Oct-99
Jul-00
Apr-01
Jan-02
Oct-02
Jul-03
Apr-04
Jan-05
Oct-05
Jul-06
Apr-07
Jan-08
Oct-08
Jul-09
Apr-10
Jan-11
Oct-11
Jul-12
Apr-13
Jan-14
Oct-14
Jul-15
Apr-16
Jan-17
Oct-17
Jul-18
40 CFR, 503.13 Table 1
40 CFR, 503.13 Table 3
Measured


Zinc in Biosolids, [mg/kg]
Regional Biosolids Management Facility; 1999-2018
Pima County - Arizona
Concentration [mg-Metal/kg-solids]
8000
7000
6000
5000
4000
3000
2000
1000
0
Jan-99
Oct-99
Jul-00
Apr-01
Jan-02
Oct-02
Jul-03
Apr-04
Jan-05
Oct-05
Jul-06
Apr-07
Jan-08
Oct-08
Jul-09
Apr-10
Jan-11
Oct-11
Jul-12
Apr-13
Jan-14
Oct-14
Jul-15
Apr-16
Jan-17
Oct-17
Jul-18
40 CFR, 503.13 Table 1
40 CFR, 503.13 Table 3
Measured

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ANNUAL BIOSOLIDS REPORT 2018

REGIONAL WATER
RECLAMATION DEPARTMENT

TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

TABLE 8 - LAND APPLICATION POLLUTANT LIMITS

1. Name and Address of Facility:
Regional Biosolids Management Facility
7101 North Casa Grande Highway, Tucson, Arizona 85743-9577

2. Name and Address of Facility Owner:
Pima County Regional Wastewater Reclamation Department
201 North Stone, Tucson, Arizona 85701

3. Monitoring Period: January 1, 2018 through January 31, 2018
Facility Contact: F. Jeff Prevatt, Deputy Director
Phone: (520) 724-6060

4. AZPDES Permit Number: AZ0020001
5. Sludge Permit Number: N/A

Parameter	Regulatory Requirement		Pollutant Concentration (dry weight) Average		Units	Frequency of	Sample Type (Discrete or	Analytical Method
Arsenic	R18-9-1005	Sample Measurement	**<12.49**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	75	41	mg/kg	1/60 days		
Cadmium	R18-9-1005	Sample Measurement	**<5.00**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	85	39	mg/kg	1/60 days		
Chromium	R18-9-1005	Sample Measurement	**29.3**		mg/kg	1/31 days	Composite	EPA 6010D
		Table 1	3000		mg/kg	1/60 days		
Copper	R18-9-1005	Sample Measurement	**344**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	4300	1500	mg/kg	1/60 days		
Lead	R18-9-1005	Sample Measurement	**12.8**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	840	300	mg/kg	1/60 days		
Mercury	R18-9-1005	Sample Measurement	**0.55**		mg/kg	1/31 days	Composite	EPA 7471B
	40 CFR 503.13	Table 1 / Table 2	57	17	mg/kg	1/60 days		
Molybdenum	R18-9-1005	Sample Measurement	**12.5**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1	75		mg/kg	1/60 days		
Nickel	R18-9-1005	Sample Measurement	**19.6**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	420	420	mg/kg	1/61 days		
Selenium	R18-9-1005	Sample Measurement	**<24.99**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	100	100	mg/kg	1/60 days		
Zinc	R18-9-1005	Sample Measurement	**687**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	7500	3100	mg/kg	1/60 days		

R18-9-1005 Table 2 is equivalent to 40 CFR 503.13 Table 3

6. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information submitted, it is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Name and Official Title (type or print) F. Jeff Prevatt, Deputy Director	Area Code and Phone (520) 724-6100
Signature	Date Signed 02/19/2019

TABLE 9 - LAND APPLICATION POLLUTANT LIMITS

1. Name and Address of Facility:
Regional Biosolids Management Facility
7101 North Casa Grande Highway, Tucson, Arizona 85743-9577

2. Name and Address of Facility Owner:
Pima County Regional Wastewater Reclamation Department
201 North Stone, Tucson, Arizona 85701

3. Monitoring Period: February 1, 2018 through February 28, 2018
Facility Contact: F. Jeff Prevatt, Deputy Director
Phone: (520) 724-6060

4. AZPDES Permit Number: AZ0020001
5. Sludge Permit Number: N/A

Parameter	Regulatory Requirement		Pollutant Concentration (dry weight) Average		Units	Frequency of	Sample Type (Discrete or	Analytical Method
Arsenic	R18-9-1005	Sample Measurement	**<9.53**		mg/kg	1/28 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	75	41	mg/kg	1/60 days		
Cadmium	R18-9-1005	Sample Measurement	**<3.81**		mg/kg	1/28 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	85	39	mg/kg	1/60 days		
Chromium	R18-9-1005	Sample Measurement	**27.0**		mg/kg	1/28 days	Composite	EPA 6010D
		Table 1	3000		mg/kg	1/60 days		
Copper	R18-9-1005	Sample Measurement	**333**		mg/kg	1/28 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	4300	1500	mg/kg	1/60 days		
Lead	R18-9-1005	Sample Measurement	**13.9**		mg/kg	1/28 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	840	300	mg/kg	1/60 days		
Mercury	R18-9-1005	Sample Measurement	**0.65**		mg/kg	1/28 days	Composite	EPA 7471B
	40 CFR 503.13	Table 1 / Table 2	57	17	mg/kg	1/60 days		
Molybdenum	R18-9-1005	Sample Measurement	**11.6**		mg/kg	1/28 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1	75		mg/kg	1/60 days		
Nickel	R18-9-1005	Sample Measurement	**31.1**		mg/kg	1/28 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	420	420	mg/kg	1/61 days		
Selenium	R18-9-1005	Sample Measurement	**<19.06**		mg/kg	1/28 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	100	100	mg/kg	1/60 days		
Zinc	R18-9-1005	Sample Measurement	**654**		mg/kg	1/28 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	7500	3100	mg/kg	1/60 days		

R18-9-1005 Table 2 is equivalent to 40 CFR 503.13 Table 3

6. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information submitted, it is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Name and Official Title (type or print) F. Jeff Prevatt, Deputy Director	Area Code and Phone (520) 724-6100
Signature	Date Signed 02/19/2019

TABLE 10 - LAND APPLICATION POLLUTANT LIMITS

1. Name and Address of Facility:
Regional Biosolids Management Facility
7101 North Casa Grande Highway, Tucson, Arizona 85743-9577

2. Name and Address of Facility Owner:
Pima County Regional Wastewater Reclamation Department
201 North Stone, Tucson, Arizona 85701

3. Monitoring Period: March 1, 2018 through March 31, 2018
Facility Contact: F. Jeff Prevatt, Deputy Director
Phone: (520) 724-6060

4. AZPDES Permit Number: AZ0020001
5. Sludge Permit Number: N/A

Parameter	Regulatory Requirement			Pollutant Concentration (dry weight) Average		Units	Frequency of	Sample Type (Discrete or	Analytical Method
Arsenic	R18-9-1005 40 CFR 503.13	Sample Measurement		<11.35		mg/kg	1/31 days	Composite	EPA 6010D
		Table 1	Table 2	75	41	mg/kg	1/60 days		
Cadmium	R18-9-1005 40 CFR 503.13	Sample Measurement		<4.54		mg/kg	1/31 days	Composite	EPA 6010D
		Table 1	Table 2	85	39	mg/kg	1/60 days		
Chromium	R18-9-1005	Sample Measurement		26.7		mg/kg	1/31 days	Composite	EPA 6010D
		Table 1		3000		mg/kg	1/60 days		
Copper	R18-9-1005 40 CFR 503.13	Sample Measurement		354		mg/kg	1/31 days	Composite	EPA 6010D
		Table 1	Table 2	4300	1500	mg/kg	1/60 days		
Lead	R18-9-1005 40 CFR 503.13	Sample Measurement		13.7		mg/kg	1/31 days	Composite	EPA 6010D
		Table 1	Table 2	840	300	mg/kg	1/60 days		
Mercury	R18-9-1005 40 CFR 503.13	Sample Measurement		1.08		mg/kg	1/31 days	Composite	EPA 7471B
		Table 1	Table 2	57	17	mg/kg	1/60 days		
Molybdenum	R18-9-1005 40 CFR 503.13	Sample Measurement		12.1		mg/kg	1/31 days	Composite	EPA 6010D
		Table 1		75		mg/kg	1/60 days		
Nickel	R18-9-1005 40 CFR 503.13	Sample Measurement		29.4		mg/kg	1/31 days	Composite	EPA 6010D
		Table 1	Table 2	420	420	mg/kg	1/61 days		
Selenium	R18-9-1005 40 CFR 503.13	Sample Measurement		<22.69		mg/kg	1/31 days	Composite	EPA 6010D
		Table 1	Table 2	100	100	mg/kg	1/60 days		
Zinc	R18-9-1005 40 CFR 503.13	Sample Measurement		644		mg/kg	1/31 days	Composite	EPA 6010D
		Table 1	Table 2	7500	3100	mg/kg	1/60 days		

R18-9-1005 Table 2 is equivalent to 40 CFR 503.13 Table 3

6. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information submitted, it is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Name and Official Title (type or print) F. Jeff Prevatt, Deputy Director	Area Code and Phone (520) 724-6060
Signature	Date Signed 02/19/2019

TABLE 11 - LAND APPLICATION POLLUTANT LIMITS

1. Name and Address of Facility:
Regional Biosolids Management Facility
7101 North Casa Grande Highway, Tucson, Arizona 85743-9577

2. Name and Address of Facility Owner:
Pima County Regional Wastewater Reclamation Department
201 North Stone, Tucson, Arizona 85701

3. Monitoring Period: April 1, 2018 through April 30, 2018
Facility Contact: F. Jeff Prevatt, Deputy Director
Phone: (520) 724-6060

4. AZPDES Permit Number: AZ0020001
5. Sludge Permit Number: N/A

Parameter	Regulatory Requirement		Pollutant Concentration (dry weight) Average		Units	Frequency of	Sample Type (Discrete or	Analytical Method
Arsenic	R18-9-1005 40 CFR 503.13	Sample Measurement	<8.67		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1 / Table 2	75	41	mg/kg	1/60 days		
Cadmium	R18-9-1005 40 CFR 503.13	Sample Measurement	<3.47		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1 / Table 2	85	39	mg/kg	1/60 days		
Chromium	R18-9-1005	Sample Measurement	26.1		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1	3000		mg/kg	1/60 days		
Copper	R18-9-1005 40 CFR 503.13	Sample Measurement	355		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1 / Table 2	4300	1500	mg/kg	1/60 days		
Lead	R18-9-1005 40 CFR 503.13	Sample Measurement	9.04		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1 / Table 2	840	300	mg/kg	1/60 days		
Mercury	R18-9-1005 40 CFR 503.13	Sample Measurement	0.61		mg/kg	1/30 days	Composite	EPA 7471B
		Table 1 / Table 2	57	17	mg/kg	1/60 days		
Molybdenum	R18-9-1005 40 CFR 503.13	Sample Measurement	12.4		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1	75		mg/kg	1/60 days		
Nickel	R18-9-1005 40 CFR 503.13	Sample Measurement	24.5		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1 / Table 2	420	420	mg/kg	1/61 days		
Selenium	R18-9-1005 40 CFR 503.13	Sample Measurement	<17.33		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1 / Table 2	100	100	mg/kg	1/60 days		
Zinc	R18-9-1005 40 CFR 503.13	Sample Measurement	652		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1 / Table 2	7500	3100	mg/kg	1/60 days		

R18-9-1005 Table 2 is equivalent to 40 CFR 503.13 Table 3

6. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information submitted, it is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Name and Official Title (type or print) F. Jeff Prevatt, Deputy Director	Area Code and Phone (520) 724-6060
Signature	Date Signed 02/19/2019

TABLE 12 - LAND APPLICATION POLLUTANT LIMITS

1. Name and Address of Facility:
Regional Biosolids Management Facility
7101 North Casa Grande Highway, Tucson, Arizona 85743-9577

2. Name and Address of Facility Owner:
Pima County Regional Wastewater Reclamation Department
201 North Stone, Tucson, Arizona 85701

3. Monitoring Period: May 1, 2018 through May 31, 2018
Facility Contact: F. Jeff Prevatt, Deputy Director
Phone: (520) 724-6060

4. AZPDES Permit Number: AZ0020001
5. Sludge Permit Number: N/A

Parameter	Regulatory Requirement		Pollutant Concentration (dry weight) Average		Units	Frequency of	Sample Type (Discrete or	Analytical Method
Arsenic	R18-9-1005	Sample Measurement	**<11.03**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	75	41	mg/kg	1/60 days		
Cadmium	R18-9-1005	Sample Measurement	**<4.41**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	85	39	mg/kg	1/60 days		
Chromium	R18-9-1005	Sample Measurement	**29.2**		mg/kg	1/31 days	Composite	EPA 6010D
		Table 1	3000		mg/kg	1/60 days		
Copper	R18-9-1005	Sample Measurement	**346**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	4300	1500	mg/kg	1/60 days		
Lead	R18-9-1005	Sample Measurement	**11.1**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	840	300	mg/kg	1/60 days		
Mercury	R18-9-1005	Sample Measurement	**0.80**		mg/kg	1/31 days	Composite	EPA 7471B
	40 CFR 503.13	Table 1 / Table 2	57	17	mg/kg	1/60 days		
Molybdenum	R18-9-1005	Sample Measurement	**12.6**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1	75		mg/kg	1/60 days		
Nickel	R18-9-1005	Sample Measurement	**22.8**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	420	420	mg/kg	1/61 days		
Selenium	R18-9-1005	Sample Measurement	**<22.06**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	100	100	mg/kg	1/60 days		
Zinc	R18-9-1005	Sample Measurement	**663**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	7500	3100	mg/kg	1/60 days		

R18-9-1005 Table 2 is equivalent to 40 CFR 503.13 Table 3

6. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information submitted, it is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Name and Official Title (type or print) F. Jeff Prevatt, Deputy Director	Area Code and Phone (520) 724-6060
Signature	Date Signed 02/19/2019

TABLE 13 - LAND APPLICATION POLLUTANT LIMITS

1. Name and Address of Facility:
Regional Biosolids Management Facility
7101 North Casa Grande Highway, Tucson, Arizona 85743-9577

2. Name and Address of Facility Owner:
Pima County Regional Wastewater Reclamation Department
201 North Stone, Tucson, Arizona 85701

3. Monitoring Period: June 1, 2018 through June 30, 2018
Facility Contact: F. Jeff Prevatt, Deputy Director
Phone: (520) 724-6060

4. AZPDES Permit Number: AZ0020001
5. Sludge Permit Number: N/A

Parameter	Regulatory Requirement		Pollutant Concentration (dry weight) Average		Units	Frequency of	Sample Type (Discrete or	Analytical Method
Arsenic	R18-9-1005 40 CFR 503.13	Sample Measurement	<15.23		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1 / Table 2	75	41	mg/kg	1/60 days		
Cadmium	R18-9-1005 40 CFR 503.13	Sample Measurement	<6.09		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1 / Table 2	85	39	mg/kg	1/60 days		
Chromium	R18-9-1005	Sample Measurement	30.8		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1	3000		mg/kg	1/60 days		
Copper	R18-9-1005 40 CFR 503.13	Sample Measurement	365		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1 / Table 2	4300	1500	mg/kg	1/60 days		
Lead	R18-9-1005 40 CFR 503.13	Sample Measurement	<15.23		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1 / Table 2	840	300	mg/kg	1/60 days		
Mercury	R18-9-1005 40 CFR 503.13	Sample Measurement	1.50		mg/kg	1/30 days	Composite	EPA 7471B
		Table 1 / Table 2	57	17	mg/kg	1/60 days		
Molybdenum	R18-9-1005 40 CFR 503.13	Sample Measurement	11.3		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1	75		mg/kg	1/60 days		
Nickel	R18-9-1005 40 CFR 503.13	Sample Measurement	22.9		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1 / Table 2	420	420	mg/kg	1/60 days		
Selenium	R18-9-1005 40 CFR 503.13	Sample Measurement	<30.46		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1 / Table 2	100	100	mg/kg	1/60 days		
Zinc	R18-9-1005 40 CFR 503.13	Sample Measurement	694		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1 / Table 2	7500	3000	mg/kg	1/60 days		

R18-9-1005 Table 2 is equivalent to 40 CFR 503.13 Table 3

6. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information submitted, it is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Name and Official Title (type or print) F. Jeff Prevatt, Deputy Director	Area Code and Phone (520) 724-6060
Signature	Date Signed 02/19/2019

TABLE 14 - LAND APPLICATION POLLUTANT LIMITS

1. Name and Address of Facility:
Regional Biosolids Management Facility
7101 North Casa Grande Highway, Tucson, Arizona 85743-9577

2. Name and Address of Facility Owner:
Pima County Regional Wastewater Reclamation Department
201 North Stone, Tucson, Arizona 85701

3. Monitoring Period: July 1, 2018 through July 31, 2018
Facility Contact: F. Jeff Prevatt, Deputy Director
Phone: (520) 724-6060

4. AZPDES Permit Number: AZ0020001
5. Sludge Permit Number: N/A

Parameter	Regulatory Requirement		Pollutant Concentration (dry weight) Average		Units	Frequency of	Sample Type (Discrete or	Analytical Method
Arsenic	R18-9-1005	Sample Measurement	**9.08**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	75	41	mg/kg	1/60 days		
Cadmium	R18-9-1005	Sample Measurement	**<3.50**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	85	39	mg/kg	1/60 days		
Chromium	R18-9-1005	Sample Measurement	**34.9**		mg/kg	1/31 days	Composite	EPA 6010D
		Table 1	3000		mg/kg	1/60 days		
Copper	R18-9-1005	Sample Measurement	**418**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	4300	1500	mg/kg	1/60 days		
Lead	R18-9-1005	Sample Measurement	**10.9**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	840	300	mg/kg	1/60 days		
Mercury	R18-9-1005	Sample Measurement	**0.82**		mg/kg	1/31 days	Composite	EPA 7471B
	40 CFR 503.13	Table 1 / Table 2	57	17	mg/kg	1/60 days		
Molybdenum	R18-9-1005	Sample Measurement	**13.0**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1	75		mg/kg	1/60 days		
Nickel	R18-9-1005	Sample Measurement	**22.0**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	420	420	mg/kg	1/60 days		
Selenium	R18-9-1005	Sample Measurement	**<17.51**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	100	100	mg/kg	1/60 days		
Zinc	R18-9-1005	Sample Measurement	**749**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	7500	3000	mg/kg	1/60 days		

R18-9-1005 Table 2 is equivalent to 40 CFR 503.13 Table 3

6. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information submitted, it is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Name and Official Title (type or print) F. Jeff Prevatt, Deputy Director	Area Code and Phone (520) 724-6060
Signature	Date Signed 02/19/2019

TABLE 15 - LAND APPLICATION POLLUTANT LIMITS

1. Name and Address of Facility:
Regional Biosolids Management Facility
7101 North Casa Grande Highway, Tucson, Arizona 85743-9577

2. Name and Address of Facility Owner:
Pima County Regional Wastewater Reclamation Department
201 North Stone, Tucson, Arizona 85701

3. Monitoring Period: August 1, 2018 through August 31, 2018
Facility Contact: F. Jeff Prevatt, Deputy Director
Phone: (520) 724-6060

4. AZPDES Permit Number: AZ0020001
5. Sludge Permit Number: N/A

Parameter	Regulatory Requirement		Pollutant Concentration (dry weight) Average		Units	Frequency of	Sample Type (Discrete or	Analytical Method
Arsenic	R18-9-1005	Sample Measurement	**<11.91**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	75	41	mg/kg	1/60 days		
Cadmium	R18-9-1005	Sample Measurement	**<4.76**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	85	39	mg/kg	1/60 days		
Chromium	R18-9-1005	Sample Measurement	**33.3**		mg/kg	1/31 days	Composite	EPA 6010D
		Table 1	3000		mg/kg	1/60 days		
Copper	R18-9-1005	Sample Measurement	**441**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	4300	1500	mg/kg	1/60 days		
Lead	R18-9-1005	Sample Measurement	**12.7**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	840	300	mg/kg	1/60 days		
Mercury	R18-9-1005	Sample Measurement	**0.90**		mg/kg	1/31 days	Composite	EPA 7471B
	40 CFR 503.13	Table 1 / Table 2	57	17	mg/kg	1/60 days		
Molybdenum	R18-9-1005	Sample Measurement	**13.7**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1	75		mg/kg	1/60 days		
Nickel	R18-9-1005	Sample Measurement	**22.6**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	420	420	mg/kg	1/60 days		
Selenium	R18-9-1005	Sample Measurement	**<23.82**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	100	100	mg/kg	1/60 days		
Zinc	R18-9-1005	Sample Measurement	**790**		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	7500	3000	mg/kg	1/60 days		

R18-9-1005 Table 2 is equivalent to 40 CFR 503.13 Table 3

6. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information submitted, it is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Name and Official Title (type or print) F. Jeff Prevatt, Deputy Director	Area Code and Phone (520) 724-6060
Signature	Date Signed 02/19/2019

TABLE 16 - LAND APPLICATION POLLUTANT LIMITS

1. Name and Address of Facility:
Regional Biosolids Management Facility
7101 North Casa Grande Highway, Tucson, Arizona 85743-9577

2. Name and Address of Facility Owner:
Pima County Regional Wastewater Reclamation Department
201 North Stone, Tucson, Arizona 85701

3. Monitoring Period: September 1, 2018 through September 30, 2018
Facility Contact: F. Jeff Prevatt, Deputy Director
Phone: (520) 724-6060

4. AZPDES Permit Number: AZ0020001
5. Sludge Permit Number: N/A

Parameter	Regulatory Requirement		Pollutant Concentration (dry weight) Average		Units	Frequency of	Sample Type (Discrete or	Analytical Method
Arsenic	R18-9-1005	Sample Measurement	**<17.45**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	75	41	mg/kg	1/60 days		
Cadmium	R18-9-1005	Sample Measurement	**<6.98**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	85	39	mg/kg	1/60 days		
Chromium	R18-9-1005	Sample Measurement	**29.9**		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1	3000		mg/kg	1/60 days		
Copper	R18-9-1005	Sample Measurement	**427**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	4300	1500	mg/kg	1/60 days		
Lead	R18-9-1005	Sample Measurement	**<17.45**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	840	300	mg/kg	1/60 days		
Mercury	R18-9-1005	Sample Measurement	**0.90**		mg/kg	1/30 days	Composite	EPA 7471B
	40 CFR 503.13	Table 1 / Table 2	57	17	mg/kg	1/60 days		
Molybdenum	R18-9-1005	Sample Measurement	**13.8**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1	75		mg/kg	1/60 days		
Nickel	R18-9-1005	Sample Measurement	**21.9**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	420	420	mg/kg	1/60 days		
Selenium	R18-9-1005	Sample Measurement	**<34.89**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	100	100	mg/kg	1/60 days		
Zinc	R18-9-1005	Sample Measurement	**774**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	7500	3000	mg/kg	1/60 days		

R18-9-1005 Table 2 is equivalent to 40 CFR 503.13 Table 3

6. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information submitted, it is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Name and Official Title (type or print) F. Jeff Prevatt, Deputy Director	Area Code and Phone (520) 724-6060
Signature	Date Signed 02/19/2019

TABLE 17 - LAND APPLICATION POLLUTANT LIMITS

1. Name and Address of Facility:
Regional Biosolids Management Facility
7101 North Casa Grande Highway, Tucson, Arizona 85743-9577

2. Name and Address of Facility Owner:
Pima County Regional Wastewater Reclamation Department
201 North Stone, Tucson, Arizona 85701

3. Monitoring Period: October 1, 2018 through October 31, 2018
Facility Contact: F. Jeff Prevatt, Deputy Director
Phone: (520) 724-6060

4. AZPDES Permit Number: AZ0020001
5. Sludge Permit Number: N/A

Parameter	Regulatory Requirement		Pollutant Concentration (dry weight) Average		Units	Frequency of	Sample Type (Discrete or	Analytical Method
Arsenic	R18-9-1005	Sample Measurement	<12.49		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	75	41	mg/kg	1/60 days		
Cadmium	R18-9-1005	Sample Measurement	<5.00		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	85	39	mg/kg	1/60 days		
Chromium	R18-9-1005	Sample Measurement	32.2		mg/kg	1/31 days	Composite	EPA 6010D
		Table 1	3000		mg/kg	1/60 days		
Copper	R18-9-1005	Sample Measurement	433		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	4300	1500	mg/kg	1/60 days		
Lead	R18-9-1005	Sample Measurement	<12.49		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	840	300	mg/kg	1/60 days		
Mercury	R18-9-1005	Sample Measurement	1.47		mg/kg	1/31 days	Composite	EPA 7471B
	40 CFR 503.13	Table 1 / Table 2	57	17	mg/kg	1/60 days		
Molybdenum	R18-9-1005	Sample Measurement	12.8		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1	75		mg/kg	1/60 days		
Nickel	R18-9-1005	Sample Measurement	22.9		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	420	420	mg/kg	1/60 days		
Selenium	R18-9-1005	Sample Measurement	<24.98		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	100	100	mg/kg	1/60 days		
Zinc	R18-9-1005	Sample Measurement	749		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	7500	3000	mg/kg	1/60 days		

R18-9-1005 Table 2 is equivalent to 40 CFR 503.13 Table 3

6. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information submitted, it is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Name and Official Title (type or print) F. Jeff Prevatt, Deputy Director	Area Code and Phone (520) 724-6060
Signature	Date Signed 02/19/2019

TABLE 18 - LAND APPLICATION POLLUTANT LIMITS

1. Name and Address of Facility:
Regional Biosolids Management Facility
7101 North Casa Grande Highway, Tucson, Arizona 85743-9577

2. Name and Address of Facility Owner:
Pima County Regional Wastewater Reclamation Department
201 North Stone, Tucson, Arizona 85701

3. Monitoring Period: November 1, 2018 through November 30, 2018
Facility Contact: F. Jeff Prevatt, Deputy Director
Phone: (520) 724-6060

4. AZPDES Permit Number: AZ0020001
5. Sludge Permit Number: N/A

Parameter	Regulatory Requirement		Pollutant Concentration (dry weight) Average		Units	Frequency of	Sample Type (Discrete or	Analytical Method
Arsenic	R18-9-1005	Sample Measurement	**<6.34**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	75	41	mg/kg	1/60 days		
Cadmium	R18-9-1005	Sample Measurement	**<2.54**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	85	39	mg/kg	1/60 days		
Chromium	R18-9-1005	Sample Measurement	**29.0**		mg/kg	1/30 days	Composite	EPA 6010D
		Table 1	3000		mg/kg	1/60 days		
Copper	R18-9-1005	Sample Measurement	**359**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	4300	1500	mg/kg	1/60 days		
Lead	R18-9-1005	Sample Measurement	**10.3**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	840	300	mg/kg	1/60 days		
Mercury	R18-9-1005	Sample Measurement	**0.74**		mg/kg	1/30 days	Composite	EPA 7471B
	40 CFR 503.13	Table 1 / Table 2	57	17	mg/kg	1/60 days		
Molybdenum	R18-9-1005	Sample Measurement	**11.5**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1	75		mg/kg	1/60 days		
Nickel	R18-9-1005	Sample Measurement	**21.1**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	420	420	mg/kg	1/60 days		
Selenium	R18-9-1005	Sample Measurement	**<12.68**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	100	100	mg/kg	1/60 days		
Zinc	R18-9-1005	Sample Measurement	**688**		mg/kg	1/30 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	7500	3000	mg/kg	1/60 days		

R18-9-1005 Table 2 is equivalent to 40 CFR 503.13 Table 3

6. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information submitted, it is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Name and Official Title (type or print) F. Jeff Prevatt, Deputy Director	Area Code and Phone (520) 724-6060
Signature	Date Signed 02/19/2019

TABLE 19 - LAND APPLICATION POLLUTANT LIMITS

1. Name and Address of Facility:
Regional Biosolids Management Facility
7101 North Casa Grande Highway, Tucson, Arizona 85743-9577

2. Name and Address of Facility Owner:
Pima County Regional Wastewater Reclamation Department
201 North Stone, Tucson, Arizona 85701

3. Monitoring Period: December 1, 2018 through December 31, 2018
Facility Contact: F. Jeff Prevatt, Deputy Director
Phone: (520) 724-6060

4. AZPDES Permit Number: AZ0020001
5. Sludge Permit Number: N/A

Parameter	Regulatory Requirement		Pollutant Concentration (dry weight) Average		Units	Frequency of	Sample Type (Discrete or	Analytical Method
Arsenic	R18-9-1005	Sample Measurement	7.80		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	75	41	mg/kg	1/60 days		
Cadmium	R18-9-1005	Sample Measurement	<2.48		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	85	39	mg/kg	1/60 days		
Chromium	R18-9-1005	Sample Measurement	28.2		mg/kg	1/31 days	Composite	EPA 6010D
		Table 1	3000		mg/kg	1/60 days		
Copper	R18-9-1005	Sample Measurement	340		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	4300	1500	mg/kg	1/60 days		
Lead	R18-9-1005	Sample Measurement	11.0		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	840	300	mg/kg	1/60 days		
Mercury	R18-9-1005	Sample Measurement	1.21		mg/kg	1/31 days	Composite	EPA 7471B
	40 CFR 503.13	Table 1 / Table 2	57	17	mg/kg	1/60 days		
Molybdenum	R18-9-1005	Sample Measurement	10.6		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1	75		mg/kg	1/60 days		
Nickel	R18-9-1005	Sample Measurement	20.2		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	420	420	mg/kg	1/60 days		
Selenium	R18-9-1005	Sample Measurement	<12.42		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	100	100	mg/kg	1/60 days		
Zinc	R18-9-1005	Sample Measurement	655		mg/kg	1/31 days	Composite	EPA 6010D
	40 CFR 503.13	Table 1 / Table 2	7500	3000	mg/kg	1/60 days		

R18-9-1005 Table 2 is equivalent to 40 CFR 503.13 Table 3

6. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information submitted, it is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Name and Official Title (type or print) F. Jeff Prevatt, Deputy Director	Area Code and Phone (520) 724-6060
Signature	Date Signed 02/19/2019

SECTION 3

TRES RIOS WRF
AZPDES NO. AZ0020001

ANALYSES RESULTS

PRIORITY POLLUTANTS

TCLP AND HAZARDOUSNESS

BIOSOLIDS ANNUAL REPORT 2018

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ANNUAL BIOSOLIDS REPORT 2018

REGIONAL WATER
RECLAMATION DEPARTMENT

TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 06/04/2018
Laboratory License: AZO159

Sample Analysis Report
Tres Rios WRF
January 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:
See attached

Case Narratives:
See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Cinelle Graft 6.25.18

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

Date

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801091-01	C	Di-n-octyl phthalate	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	2.55	12.00	D1, D7	SJM
1801091-01	C	Fluoranthene	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	1.32	4.00	D1, D7	SJM
1801091-01	C	Fluorene	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	1.54	4.00	D1, D7	SJM
1801091-01	C	Hexachlorobenzene	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	0.62	4.00	D1, D7	SJM
1801091-01	C	Hexachlorobutadiene	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	1.01	4.00	D1, D7	SJM
1801091-01	C	Hexachlorocyclopentadiene	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	4.23	12.00	D1, D7	SJM
1801091-01	C	Hexachloroethane	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	1.26	4.00	D1, D7	SJM
1801091-01	C	Indeno(1,2,3-cd)pyrene	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	2.83	12.00	D1, D7	SJM
1801091-01	C	Isophorone	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	1.66	4.00	D1, D7	SJM
1801091-01	C	Naphthalene	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	1.77	4.00	D1, D7	SJM
1801091-01	C	n-Decane	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	1.95	4.00	D1, D7	SJM
1801091-01	C	Nitrobenzene	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	2.10	12.00	D1, D7	SJM
1801091-01	C	N-Nitrosodimethylamine	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	2.09	12.00	D1, D7, PC3	SJM
1801091-01	C	N-Nitrosodi-n-propylamine	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	2.43	12.00	D1, D7	SJM
1801091-01	C	N-Nitrosodiphenylamine	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	6.08	20.00	D1, D7	SJM
1801091-01	C	n-Octadecane	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	2.18	12.00	D1, D7	SJM
1801091-01	C	Pentachlorophenol	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	4.02	12.00	D1, D7	SJM
1801091-01	C	Phenanthrene	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	1.63	4.00	D1, D7	SJM
1801091-01	C	Phenol	01/12/18 6:00	EPA 625	1/30/18 17:49	**13.7**	ug/L	2.59	12.00	D1, D7	SJM
1801091-01	C	Pyrene	01/12/18 6:00	EPA 625	1/30/18 17:49	**ND**	ug/L	1.38	4.00	D1, D7	SJM
1801091-01	C	1,2-Diphenylhydrazine	01/12/18 6:00	EPA 8270C	1/30/18 17:49	**ND**	ug/L	1.16	4.00	D1, D7	SJM
1801091-01RE1	C	Copper	01/12/18 6:00	EPA 200.8	2/7/18 16:35	**50.9**	ug/L	0.36	2.00	D1	JB
1801091-01RE1	C	Lead	01/12/18 6:00	EPA 200.8	2/7/18 16:35	**2.46**	ug/L	0.01	2.00	D1	JB
1801091-01RE1	C	Thallium	01/12/18 6:00	EPA 200.8	2/7/18 16:35	**ND**	ug/L	0.01	2.00	D1	JB
1801091-01RE1	C	Zinc	01/12/18 6:00	EPA 200.8	2/7/18 16:35	**193**	ug/L	0.23	2.00	D2	JB

Dewatered Cake Biosolids (20001-5703)

1801088-01	C	Cyanide, Total	01/12/18 6:00	9012B	1/17/18 12:31	**1.8**	mg/Kg dry	0.73	3.6	E4	JML *
* Analysis Performed by:TestAmerica Denver - See attached contract lab report for official results.											
1801088-01	C	Sulfide	01/12/18 6:00	9034	1/16/18 15:58	**1400**	mg/Kg dry	290	290		KMY*
* Analysis Performed by:TestAmerica Irvine - See attached contract lab report for official results.											
1801088-01	C	2,4-D	01/12/18 6:00	8151A	1/25/18 15:01	**ND**	ug/L	50	100	E8	JML *
1801088-01	C	Silvex (2,4,5-TP)	01/12/18 6:00	8151A	1/25/18 15:01	**ND**	ug/L	50	100	E8	JML *
* Analysis Performed by:TestAmerica Nashville - See attached contract lab report for official results.											
1801088-01	C	Ignitability	01/12/18 6:00	1030	1/19/18 15:03	**Non-Ignitable**	NONE				TLN *
* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.											
1801088-01	C	pH	01/12/18 6:00	9045D	1/15/18 18:30	**7.3**	SU	1.7	1.7	H5	NEL *
* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.											
1801088-01	C	Percent Solids	01/12/18 6:00	2540G	1/15/18 13:58	**13.9**	%	0.1	0.1		YET *
* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.											
1801088-01	C	Percent Moisture	01/12/18 6:00	2540G	1/15/18 13:58	**86.1**	%	0.1	0.1		YET *
* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.											
1801090-01	C	Antimony	01/12/18 6:00	EPA 6010D	1/24/18 09:40	**ND**	mg/kg dry		12.91		MLB
1801090-01	C	Arsenic	01/12/18 6:00	EPA 6010D	1/24/18 09:40	**ND**	mg/kg dry		12.91		MLB
1801090-01	C	Beryllium	01/12/18 6:00	EPA 6010D	1/24/18 09:40	**ND**	mg/kg dry		2.58		MLB
1801090-01	C	Cadmium	01/12/18 6:00	EPA 6010D	1/24/18 09:40	**ND**	mg/kg dry		5.16		MLB
1801090-01	C	Chromium	01/12/18 6:00	EPA 6010D	1/24/18 09:40	**30.5**	mg/kg dry		12.91		MLB
1801090-01	C	Copper	01/12/18 6:00	EPA 6010D	1/24/18 09:40	**335**	mg/kg dry		12.91		MLB
1801090-01	C	Lead	01/12/18 6:00	EPA 6010D	1/24/18 11:20	**ND**	mg/kg dry		12.91		MLB
1801090-01	C	Mercury	01/12/18 6:00	EPA 7471B	1/29/18 15:50	**0.13**	mg/kg dry		0.00072		DML
1801090-01	C	Molybdenum	01/12/18 6:00	EPA 6010D	1/24/18 09:40	**10.9**	mg/kg dry		5.16		MLB
1801090-01	C	Nickel	01/12/18 6:00	EPA 6010D	1/24/18 09:40	**22.7**	mg/kg dry		12.91		MLB
1801090-01	C	Selenium	01/12/18 6:00	EPA 6010D	1/24/18 09:40	**ND**	mg/kg dry		25.82		MLB
1801090-01	C	Silver	01/12/18 6:00	EPA 6010D	1/24/18 12:32	**2.64**	mg/kg dry		1.29		MLB
1801090-01	C	Arsenic	01/12/18 6:00	TCLP/EPA 6010D	2/8/18 16:46	**ND**	mg/L		0.03		MLB
1801090-01	C	Barium	01/12/18 6:00	TCLP/EPA 6010D	2/6/18 16:56	**ND**	mg/L		0.03		MLB
1801090-01	C	Cadmium	01/12/18 6:00	TCLP/EPA 6010D	2/6/18 16:56	**ND**	mg/L		0.01		MLB
1801090-01	C	Chromium	01/12/18 6:00	TCLP/EPA 6010D	2/6/18 16:56	**ND**	mg/L		0.03		MLB

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801090-01	C	Lead	01/12/18 6:00	TCLP/EPA 6010D	2/6/18 16:56	**ND**	mg/L		0.03		MLB
1801090-01	C	Mercury	01/12/18 6:00	TCLP/EPA 7470A	2/26/18 12:27	**ND**	mg/L		0.00		DML
1801090-01	C	Selenium	01/12/18 6:00	TCLP/EPA 6010D	2/6/18 16:56	**ND**	mg/L		0.05		MLB
1801090-01	C	Silver	01/12/18 6:00	TCLP/EPA 6010D	2/6/18 16:56	**ND**	mg/L		0.0026		MLB
1801090-01	C	Thallium	01/12/18 6:00	EPA 6010D	1/24/18 09:40	**ND**	mg/kg dry		12.91		MLB
1801090-01	C	Zinc	01/12/18 6:00	EPA 6010D	1/24/18 09:40	**670**	mg/kg dry		12.91		MLB
1801090-01	C	% Solids	01/12/18 6:00	SM 2540G	1/14/18 07:23	**13.84**	%		0.01		JEL
1801090-01	C	Acrolein	01/12/18 6:00	EPA 624	1/16/18 20:57	**ND**	mg/kg dry	0.00360	0.00072	V1	SRM
1801090-01	C	Acrylonitrile	01/12/18 6:00	EPA 624	1/16/18 20:57	**ND**	mg/kg dry	0.00280	0.00072		SRM
1801090-01	C	4,4-DDD	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00006	0.00024	D1, D7	KLH
1801090-01	C	4,4-DDE	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00003	0.00024	D1, D7	KLH
1801090-01	C	4,4-DDT	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00006	0.00024	D1, D7	KLH
1801090-01	C	Aldrin	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00006	0.00024	D1, D7	KLH
1801090-01	C	alpha-BHC	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00004	0.00024	D1, D7	KLH
1801090-01	C	beta-BHC	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00009	0.00024	D1, D7	KLH
1801090-01	C	Chlordane	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00025	0.00194	D1, D7	KLH
1801090-01	C	delta-BHC	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00007	0.00024	D1, D7	KLH
1801090-01	C	Dieldrin	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00015	0.00049	D1, D7	KLH
1801090-01	C	Endosulfan I	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00004	0.00024	D1, D7	KLH
1801090-01	C	Endosulfan II	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00003	0.00024	D1, D7	KLH
1801090-01	C	Endosulfan sulfate	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00004	0.00024	D1, D7	KLH
1801090-01	C	Endrin	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00010	0.00024	D1, D7	KLH
1801090-01	C	Endrin aldehyde	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00011	0.00024	D1, D7	KLH
1801090-01	C	gamma-BHC (Lindane)	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00007	0.00024	D1, D7	KLH
1801090-01	C	Heptachlor	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00005	0.00024	D1, D7	KLH
1801090-01	C	Heptachlor Epoxide	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00004	0.00024	D1, D7	KLH
1801090-01	C	PCB 1016	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00006	0.00049	D1, D7	KLH
1801090-01	C	PCB 1221	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00017	0.00146	D1, D7	KLH
1801090-01	C	PCB 1232	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00007	0.00146	D1, D7	KLH
1801090-01	C	PCB 1242	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00013	0.00146	D1, D7	KLH
1801090-01	C	PCB 1248	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00010	0.00146	D1, D7	KLH
1801090-01	C	PCB 1254	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00019	0.00146	D1, D7	KLH
1801090-01	C	PCB 1260	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00007	0.00049	D1, D7	KLH
1801090-01	C	Total PCBs	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00016	0.00146	D1, D7	KLH
1801090-01	C	Toxaphene	01/12/18 6:00	EPA 625	1/24/18 15:19	**ND**	mg/kg dry	0.00094	0.00388	D1, D7	KLH
1801090-01	C	Methoxychlor	01/12/18 6:00	EPA 8270C	1/24/18 15:19	**ND**	mg/kg dry		0.00024	D1, D7	KLH
1801090-01	C	1,1,1-Trichloroethane	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0002	0.00007		SRM
1801090-01	C	1,1,2,2-Tetrachloroethane	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.00006	0.00007		SRM
1801090-01	C	1,1,2-Trichloroethane	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.00009	0.00007		SRM
1801090-01	C	1,1-Dichloroethane	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0002	0.00007		SRM
1801090-01	C	1,1-Dichloroethene	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0001	0.00007		SRM
1801090-01	C	1,2-Dichlorobenzene	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.00008	0.00007		SRM
1801090-01	C	1,2-Dichloroethane	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.00009	0.00007		SRM
1801090-01	C	1,2-Dichloropropane	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0001	0.00007		SRM
1801090-01	C	1,3-Dichlorobenzene	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.00008	0.00007		SRM
1801090-01	C	1,4-Dichlorobenzene	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0002	0.00007		SRM
1801090-01	C	2-Chloroethyl vinyl ether	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0003	0.00014		SRM
1801090-01	C	Benzene	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0001	0.00007		SRM
1801090-01	C	Bromodichloromethane	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0002	0.00007		SRM
1801090-01	C	Bromoform	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0003	0.00007		SRM
1801090-01	C	Bromomethane	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0001	0.00007		SRM
1801090-01	C	Carbon Tetrachloride	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0004	0.00007		SRM
1801090-01	C	Chlorobenzene	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.00006	0.00007		SRM
1801090-01	C	Chloroethane	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0002	0.00007		SRM
1801090-01	C	Chloroform	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0001	0.00007		SRM
1801090-01	C	Chloromethane	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0002	0.00007		SRM
1801090-01	C	cis-1,3-Dichloropropene	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.00009	0.00007		SRM
1801090-01	C	Dibromochloromethane	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.00006	0.00007		SRM
1801090-01	C	Ethyl Benzene	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.00009	0.00007		SRM
1801090-01	C	Methylene Chloride	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0002	0.00007		SRM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801090-01	C	Tetrachloroethene	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0002	0.00007		SRM
1801090-01	C	Toluene	01/12/18 6:00	EPA 624	1/16/18 16:53	**0.08**	mg/kg dry	0.0001	0.00007		SRM
1801090-01	C	Total Trihalomethanes	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0003	0.00007		SRM
1801090-01	C	trans-1,2-Dichloroethene	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0001	0.00007		SRM
1801090-01	C	trans-1,3-Dichloropropene	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0001	0.00007		SRM
1801090-01	C	Trichloroethene	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0001	0.00007		SRM
1801090-01	C	Trichlorofluoromethane	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0003	0.00007		SRM
1801090-01	C	Vinyl chloride	01/12/18 6:00	EPA 624	1/16/18 16:53	**ND**	mg/kg dry	0.0002	0.00007		SRM
1801090-01	C	1,2,4-Trichlorobenzene	01/12/18 6:00	EPA 8260	1/16/18 16:53	**ND**	mg/kg dry		0.00007		SRM
1801090-01	C	1,2-Dibromo-3-chloropropane	01/12/18 6:00	EPA 8260	1/16/18 16:53	**ND**	mg/kg dry		0.00014		SRM
1801090-01	C	1,2-Dibromoethane	01/12/18 6:00	EPA 8260	1/16/18 16:53	**ND**	mg/kg dry		0.00007		SRM
1801090-01	C	cis-1,2-Dichloroethene	01/12/18 6:00	EPA 8260	1/16/18 16:53	**ND**	mg/kg dry		0.00007		SRM
1801090-01	C	m,p-Xylenes	01/12/18 6:00	EPA 8260	1/16/18 16:53	**ND**	mg/kg dry		0.00014		SRM
1801090-01	C	Methyl Ethyl Ketone	01/12/18 6:00	EPA 8260	1/16/18 16:53	**6.54**	mg/kg dry		0.00007		SRM
1801090-01	C	o-Xylene	01/12/18 6:00	EPA 8260	1/16/18 16:53	**ND**	mg/kg dry		0.00007		SRM
1801090-01	C	Styrene	01/12/18 6:00	EPA 8260	1/16/18 16:53	**ND**	mg/kg dry		0.00007		SRM
1801090-01	C	Xylenes, total	01/12/18 6:00	EPA 8260	1/16/18 16:53	**ND**	mg/kg dry		0.00014		SRM
1801090-01	C	2,3,7,8-TCDD - Dioxin Scan	01/12/18 6:00	EPA 625	2/5/18 13:52	**ND**	ug/kg dry		0.18		SJM
1801090-01	C	1,2,4-Trichlorobenzene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	2,3-Dichloroaniline	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.01	N1	SJM
1801090-01	C	2,4,6-Trichlorophenol	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.001	0.00200	N1	SJM
1801090-01	C	2,4-Dichlorophenol	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	2,4-Dimethylphenol	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.004	0.01	N1	SJM
1801090-01	C	2,4-Dinitrophenol	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.009	0.01	N1	SJM
1801090-01	C	2,4-Dinitrotoluene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.01	N1	SJM
1801090-01	C	2,6-Dinitrotoluene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.001	0.00200	N1	SJM
1801090-01	C	2-Chloronaphthalene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.001	0.00200	N1	SJM
1801090-01	C	2-Chlorophenol	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.001	0.00200	N1	SJM
1801090-01	C	2-Methyl-4,6-dinitrophenol	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.005	0.01	N1	SJM
1801090-01	C	2-Methylphenol	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.001	0.00200	N1	SJM
1801090-01	C	2-Nitrophenol	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.003	0.01	N1	SJM
1801090-01	C	3,3-Dichlorobenzidine	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.01	N1	SJM
1801090-01	C	4-Bromophenyl phenyl ether	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.001	0.00200	N1	SJM
1801090-01	C	4-Chloro-3-methylphenol	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.01	N1	SJM
1801090-01	C	4-Chlorophenyl phenyl ether	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.001	0.00200	N1	SJM
1801090-01	C	4-Methylphenol	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	4-Nitrophenol	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.005	0.01	N1	SJM
1801090-01	C	Acenaphthene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	Acenaphthylene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	Anthracene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	Benzidine	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.007	0.01	N1	SJM
1801090-01	C	Benzo[a]anthracene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.001	0.00200	N1	SJM
1801090-01	C	Benzo[a]pyrene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	Benzo[b]fluoranthene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	Benzo[ghi]perylene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.003	0.01	N1	SJM
1801090-01	C	Benzo[k]fluoranthene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.01	N1	SJM
1801090-01	C	bis(2-chloroethoxy)methane	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	bis(2-chloroethyl)ether	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.01	N1	SJM
1801090-01	C	bis(2-chloroisopropyl)ether	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	bis(2-ethylhexyl)phthalate	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.003	0.01	N1	SJM
1801090-01	C	Butylbenzylphthalate	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	Carbazole	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.003	0.01	N1	SJM
1801090-01	C	Chrysene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.001	0.00200	N1	SJM
1801090-01	C	Dibenzo(a,h)anthracene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.003	0.01	N1	SJM
1801090-01	C	Diethyl phthalate	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.01	N1	SJM
1801090-01	C	Dimethyl phthalate	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.0006	0.00200	N1	SJM
1801090-01	C	Di-n-butyl phthalate	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.01	N1	SJM
1801090-01	C	Di-n-octyl phthalate	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.003	0.01	N1	SJM
1801090-01	C	Fluoranthene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.001	0.00200	N1	SJM
1801090-01	C	Fluorene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801090-01	C	Hexachlorobenzene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.0006	0.00200	N1	SJM
1801090-01	C	Hexachlorobutadiene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.001	0.00200	N1	SJM
1801090-01	C	Hexachlorocyclopentadiene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.004	0.01	N1	SJM
1801090-01	C	Hexachloroethane	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.001	0.00200	N1	SJM
1801090-01	C	Indeno(1,2,3-cd)pyrene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.003	0.01	N1	SJM
1801090-01	C	Isophorone	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	Naphthalene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	n-Decane	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	Nitrobenzene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.01	N1	SJM
1801090-01	C	N-Nitrosodimethylamine	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.01	N1	SJM
1801090-01	C	N-Nitrosodi-n-propylamine	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.01	N1	SJM
1801090-01	C	N-Nitrosodiphenylamine	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.006	0.01	N1	SJM
1801090-01	C	n-Octadecane	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.01	N1	SJM
1801090-01	C	Pentachlorophenol	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.004	0.01	N1	SJM
1801090-01	C	Phenanthrene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	Phenol	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.003	0.01	N1	SJM
1801090-01	C	Pyrene	01/12/18 6:00	EPA 625	1/30/18 17:11	**NR**	mg/kg dry	0.001	0.00200	N1	SJM
1801090-01	C	1,2-Diphenylhydrazine	01/12/18 6:00	EPA 8270C	1/30/18 17:11	**NR**	mg/kg dry	0.001	0.00200	N1	SJM
1801090-01	C	1,4-Dichlorobenzene	01/12/18 6:00	EPA 8270C	1/30/18 17:11	**NR**	mg/kg dry	0.005	0.01	N1	SJM
1801090-01	C	2,4,5-Trichlorophenol	01/12/18 6:00	EPA 8270C	1/30/18 17:11	**NR**	mg/kg dry	0.003	0.01	N1	SJM
1801090-01	C	3 & 4-Methylphenol	01/12/18 6:00	EPA 8270C	1/30/18 17:11	**NR**	mg/kg dry	0.001	0.01	N1	SJM
1801090-01	C	Pyridine	01/12/18 6:00	EPA 8270C	1/30/18 17:11	**NR**	mg/kg dry	0.002	0.00200	N1	SJM
1801090-01	C	Chlordane	01/12/18 6:00	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	1.38	3.00	N7	KLH
1801090-01	C	Endrin	01/12/18 6:00	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	0.200	0.50	N7	KLH
1801090-01	C	gamma-BHC (Lindane)	01/12/18 6:00	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	0.270	0.50	N7	KLH
1801090-01	C	Heptachlor	01/12/18 6:00	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	0.270	0.50	N7	KLH
1801090-01	C	Heptachlor Epoxide	01/12/18 6:00	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	0.290	0.50	N7	KLH
1801090-01	C	Methoxychlor	01/12/18 6:00	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	0.270	0.50	N7	KLH
1801090-01	C	Toxaphene	01/12/18 6:00	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	3.79	6.00	N7	KLH
1801090-01	C	1,1-Dichloroethene	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 16:53	**NA**	ug/L		0.50	N7	SRM
1801090-01	C	1,2-Dichloroethane	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 16:53	**NA**	ug/L		0.50	N7	SRM
1801090-01	C	1,4-Dichlorobenzene	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 16:53	**NA**	ug/L		0.50	N7	SRM
1801090-01	C	Benzene	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 16:53	**NA**	ug/L		0.50	N7	SRM
1801090-01	C	Carbon Tetrachloride	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 16:53	**NA**	ug/L		0.50	N7	SRM
1801090-01	C	Chlorobenzene	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 16:53	**NA**	ug/L		0.50	N7	SRM
1801090-01	C	Chloroform	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 16:53	**NA**	ug/L		0.50	N7	SRM
1801090-01	C	Hexachlorobutadiene	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 16:53	**NA**	ug/L		0.50	N7	SRM
1801090-01	C	Methyl Ethyl Ketone	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 16:53	**NA**	ug/L		0.50	N7	SRM
1801090-01	C	Tetrachloroethene	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 16:53	**NA**	ug/L		0.50	N7	SRM
1801090-01	C	Trichloroethene	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 16:53	**NA**	ug/L		0.50	N7	SRM
1801090-01	C	Vinyl chloride	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 16:53	**NA**	ug/L		0.50	N7	SRM
Final Effluent #3 (20001-7030)											
1801073-01	D	Temperature	01/10/18 11:50	SM2550B	1/10/18 11:50	**25.6**	°C		0.10		SMPLR
1801073-01	D	pH	01/10/18 11:50	SM4500 H B	1/10/18 11:50	**7.2**	pH Units				SMPLR
1801073-01	D	Temp at time of pH, °C	01/10/18 11:50	SM4500 H B	1/10/18 11:50	**25.2**	°C				SMPLR
1801073-01	D	Ammonia	01/10/18 11:50	SM4500-NH3-D	1/17/18 12:37	**0.60**	mg/L	0.07	0.50		KMT
1801073-01	D	Nitrate	01/10/18 11:50	Calculated	1/11/18 15:12	**5.80**	mg/L	0.02	0.20		KMT
1801073-01	D	Nitrate/Nitrite	01/10/18 11:50	EPA 353.2	1/11/18 15:12	**5.80**	mg/L	0.02	0.20		JGB
1801073-01	D	Nitrite	01/10/18 11:50	SM4500-NO2 B	1/11/18 10:40	**ND**	mg/L	0.02	0.20		KMT
1801073-01	D	Total Kjeldahl Nitrogen	01/10/18 11:50	EPA 351.2	1/18/18 11:12	**1.85**	mg/L	0.36	0.80		HAV
1801073-01	D	Nitrogen Total Water	01/10/18 11:50	Calculated	1/18/18 11:12	**7.65**	mg/L	0.36	0.80		HAV
1801073-01	D	Sulfide	01/10/18 11:50	Hach 8131	1/14/18 13:59	**0.004**	mg/L	0.003	0.100	J	MGA
1801073-01	D	Oil & Grease	01/10/18 11:50	EPA 1664B	1/29/18 14:07	**4.67**	mg/L	1.25	4.44		KLH
1801085-01	C	Azinphos-Methyl	01/12/18 6:00	EPA 8141B	1/21/18 21:22	**ND**	ug/l	0.348	1.00		HMH*
1801085-01	C	Bolstar (Sulprofos)	01/12/18 6:00	EPA 8141B	1/21/18 21:22	**ND**	ug/l	0.205	1.00		HMH*
1801085-01	C	Chlorpyrifos (8141)	01/12/18 6:00	EPA 8141B	1/21/18 21:53	**ND**	ug/l	0.245	1.00		HMH*
1801085-01	C	Coumaphos	01/12/18 6:00	EPA 8141B	1/21/18 21:22	**ND**	ug/l	0.277	1.00		HMH*
1801085-01	C	Demeton,-O and -S	01/12/18 6:00	EPA 8141B	1/21/18 21:22	**ND**	ug/l	0.341	2.00		HMH*

Qualifier Definitions

A	Absence
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D4	Minimum Reporting Limit (MRL) adjusted to reflect sample amount received and analyzed.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
L2	The associated blank spike recovery was below laboratory acceptance limits.
L3	The associated blank spike recovery was above method acceptance limits.
L4	The associated blank spike recovery was below method acceptance limits.
L5	The associated blank spike recovery was above laboratory/method acceptance limits. This analyte was not detected in the sample.
M1	Matrix spike recovery was high; the associated blank spike recovery was acceptable.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
N1	See case narrative.
N7	Additional analysis was not performed based on the "Total" result which was below the requested analyte's MCL/Action level/Trigger Level.
NA	Not Analyzed
Non-Ignita	Non-Ignitable
NR	Not Reported
PC3	Semi-quantitation is included in the case narrative.
Q6	Sample was received above recommended temperature.
R1	RPD/RSD exceeded the method acceptance limit. See case narrative.
R4	MS/MSD RPD exceeded the method control limit. Recovery met acceptance criteria.
R6	LFB/LFBD RPD exceeded method control limit. Recovery met acceptance criteria.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis

RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction

Case Narrative(s)

1801026-01, 02
EPA Method 624 and 8260 Volatiles. Target analytes flagged with N1 failed the Matrix Spike RPD from the same analytical batch but the spike was performed on a different sample. SRM 01/22/18

1801026-01
EPA Method 625 Semi-volatiles: Target analytes flagged with N1 failed the Matrix Spike from the same extraction batch but the spike was performed on a different sample. SJM 02/07/18

1801026-02
EPA Method 625 Semi-volatiles: Target analytes flagged with N1 failed the Matrix Spike from the same extraction batch but the spike was performed on a different sample. SJM 02/07/18

1801057-01
EPA Method 624 and 8260 Volatiles. Target analytes flagged with N1 failed the Matrix Spike RPD from the same analytical batch but the spike was performed on a different sample. SRM 01/22/18

1801057-01
EPA Method 625 Semi-volatiles: Target analytes flagged with N1 failed the Matrix Spike from the same extraction batch but the spike was performed on a different sample. SJM 02/07/18

1801085-01
EPA 531.1: See contract lab report for the R1 case narrative. JD 3/30/18

1801090-01
Surrogates were not added to sample before extraction. Will be resampled. SJM 02/15/18

1801091-01
EPA Method 624 and 8260 Volatiles. Target analytes flagged with N1 failed the Matrix Spike Percent Recovery from the same analytical batch but the spike was performed on a different sample.SRM 01/23/18

Semi-Quantitation
Method: 625
1801091-01

Compound Name	Concentration-ug/L
Benzoic Acid	126
Benzeneacetic Acid	131
N,N-Dimethyl-1-dodecanamine	791
Dodecanoic Acid	137
Tetradecanoic Acid	264
Palmitic Acid	42188
Oleic Acid	31104
Stearic Acid	17241

SJM 02/15/18

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1801088-01

PROJECT & LOCATION: Tres Rios WRF - Dewatered Cake Biosolids (Annual)

PROJECT-LOCATION NUMBER: 20001-5703 (XXXXX-XXXX)

SAMPLE START DATE: 01/11/2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE START TIME: 0600 (Military time) CLIENT: IWC

SAMPLE END DATE: 01/12/2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE END TIME: 0600 (Military time) SAMPLER(S): Silva, Echanove, Riccaboni, Martinez (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ☐ 503 ☐ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury			☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *			☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total (contract) 1-12-18	☐	■
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability (contract)	☐	■
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide (contract)	☐	■
Other	☐	☐
Other	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	■
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other	☐	☐
Other	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total (contract)	☐	■
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other	☐	☐

OTHER	D	C
Paint Filter	☐	☐
Corrosivity pH (contract)	☐	■
	☐	☐
	☐	☐
	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions: To be sent to an outside lab

Sent to Test America JOH B-019630 GOS 01-12-18

Septum Blank Prep Date & Initials:

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
		1-11-18	1500
Relinquished by:	Received by:	Date:	Time: (Military time)
Refrigerator		1-12-18	0130
Relinquished by:	Received by:	Date:	Time: (Military time)
Refrigerator		1-12-18	0630
Relinquished by:	Received by:	Date:	Time: (Military time)
		1-12-18	1052
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

# of Bottles Delivered: 6

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 6 °C

Initials: GOS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☑	☐	☐
Sample labels match Chain of Custody?	☑	☐	☐
Correct number of sample bottles were delivered?	☑	☐	☐
Custody seals intact?	☐	☐	☑
Within holding time?	☑	☐	☐
Sufficient sample volume for analysis?	☑	☐	☐
Samples are in properly preserved containers?	☑	☐	☐
Sample containers damaged/leaking/frozen?	☐	☑	☐
40 ml vials headspace, > pea-sized air bubble?	☑	☐	☑
Received from a refrigerator?	☐	☑	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
Phone 602.437.3340 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Joe Doranski	Site Contact:	Date:	COC No:
Pima County CRAO Lab	Tel/Fax: 520-724-6032	Lab Contact:	Carrier:	1 of 1 COCs
2955 W. Calle Agua Nueva	Analysis Turnaround Time			Sampler: Mike Silva
Tucson/AZ/85745	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(520) 724-6032 Phone	TAT if different from Below _____			Walk-in Client:
(520) 724-6071 FAX	☑ 2 weeks			Lab Sampling:
Project Name: Sludge	☐ 1 week			
Site: Tres Rios and Agua Nueva WRF	☐ 2 days			Job / SDG No.:
P O # 18-019630	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Total cyanide mg/kg dry	total % solids	Sulfide mg/kg dry	TCLP herbicides	pH/corrosivity	Ignitability	Sample Specific Notes:
Tres Rios WRF Dewatered Cake 20001-5703														BS - biosolids
1801088-01	1/12/18	0600	Comp	BS	6	N		1	1	1	1	1	1	mg/kg dry
COS 01/12/18 thickened sludge pump														
Agua Nueva WRF 26107-0600														SL - sludge
1801087-01	1/12/18	0600	Comp	BS	6	N		1	1	1	1	1	1	mg/kg dry

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

3.1°C

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PC CRAO Lab	1-12-18 1052	[signature]	PC CRAO	1-12-18 1052
Relinquished by: [signature]	Company: PC CRAO	Date/Time: 01-12-18	Received by: [signature]	Company: PC CRAO	Date/Time: 01-12-18 1156
Relinquished by: [signature]	Company: PC CRAO	Date/Time: 1-12-18	Received in Laboratory by: [signature]	Company: [signature]	Date/Time: 1-12-18 1420

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

LIMS CHECKLIST FOR SUBCONTRACT DATA

LIMS ID	**1801087-01, 1801088-01**	**DO**	**18-019630**
CONTRACT LAB	**TestAmerica PHX, DEN, NASH, IRV**	**SAMPLE GROUP**	**Sludge**
ANALYSES	**Cyanide sludge, % TS, TCLP Herbicides, pH, Ignitibility, Sulfide**	**REPORT ID**	**550-96234-1**

TRANSFER & CONVERT FILES:	
Was the contract lab spreadsheet file saved to \\Sphmsapp\elementshare\Transferin ?	Y
Was the above mentioned file converted from a .xls file to a .mdb file for each WO#, and further, for each subcontract location, or separate analysis (as applicable), on the contract lab report? (Element>Project Management>Reports)	Y
Was the converted file attached to the sample in LIMS?	Y
VALIDATING CONTRACT LAB REPORT , CHAIN OF CUSTODY(S), AND DO#:	
Contract Lab Report signed and dated?	Y
Copy of contract lab COC included with contract Lab Report?	Y
Contract lab COC verified with CRAO COC(s) for Sample ID, Sample Date, Analysis Requested?	Y
Sample dates and received dates on the CL report, match the CL COC?	Y
CL report includes all requested analysis?	Y
CL licensed in AZ for the reported methods?	Y
Check that DO matches COC in types and number of tests?	N/A
DO received in Pima Core?	Y
CONTRACT LAB REPORT, EXCEL SPREADSHEET, and QC:	
CL report and CL spreadsheet report the same sample results, sample date, and analysis date?	Y
Was a Case Narrative Included in Contract Lab report?	Y
Data packet includes QC Report from primary lab and any secondary subcontract labs?	Y
Did CL report list applicable AZ Data Qualifiers?	Y
Were there any dilutions made to samples that were reported as ND?	N
If so, were they qualified due to matrix interference?	N/A
Was QC included for every analysis method: typically Blk, LCS, MS, MSD?	Y
Did QC pass stated acceptance limits, or was it qualified?	Y
Were samples analyzed within required holding times?	Y
Check that MDLs are below water quality standards, If not notify Belinda Gamboa-Felix? (Cyanide, Hexachlorobenzene)	N/A
Semivolatiles & Volatiles: Check that all analytes were delivered?	N/A
COMPLIANCE LIMIT REVIEW	
Were results compared to the discharge permit?.	N/A
Was Belinda Gamboa-Felix notified of any exceedences?	N/A
WET TESTING SPECIFIC REQUIREMENTS	
Statement of Pass/Fail reflected in End Points?	N/A
Report states if zeolite treatment was utilized?	N/A
Survival and Reproduction or Growth Data included (P. promelas or Ceriodaphnia only)?	N/A
Chemistry data included?	N/A

Reference Toxicant Test Results and Control Chart within limits?			N/A
PMSD Determination included and within acceptable range? (minimum acceptable= 13)			N/A
End Points include TUc, NOEC, LOEC, and IC25?			N/A
Statistics verify endpoints			N/A
Control Charts Updated to include month of analysis			N/A
Reviewer Initials:	**JD**	**Review Date:**	**01-29-18**

PEER/FINAL REVIEW:	PR	FR
LIMS/Excel data matches printed CL report?	JD	
Analysis dates are correct?	JD	
Correct Data Qualifiers included if necessary.	JD	
CRAO report shows result is from Contract Lab?	JD	
CRAO report shows correct Contract Lab (e.g. Test America, Phoenix)?	JD	
DO received in Pima Core	JD	
Analysis set to Reported?		✓

Peer Reviewer Initials:	JD	**Review Date:**	1-30-18
Biomonitor Supervisor Initials:	N/A	**Review Date:**	
Final Reviewer Initials:	QC	**Review Date:**	1.30.18

CORRECTIVE ACTION REPORT:			
Preliminary Review:		Date:	
QA/QC Review:		Date:	
Data Entry:		Date:	
Peer Review:		Date:	
Lab Supervisor:		Date:	

LIMS #:	**DEVIATION:**	**CORRECTIVE ACTION:**

DEVIATIONS FROM ACCEPTABLE QA/QC:

Missing QC Report/Data
Holding Time for analysis exceeded.
Inappropriate dilution performed.
Missing COC.
Missing Data Qualifiers.
Incorrect Analysis Method.
Incorrect Sample IDs.
Other.

CORRECTIVE ACTION:

Request report correction from Subcontract Lab project manager.
Add missing Data Qualifiers.
Notify data end-user of deviation.
Arrange for resampling.
Other.

1

TestAmerica

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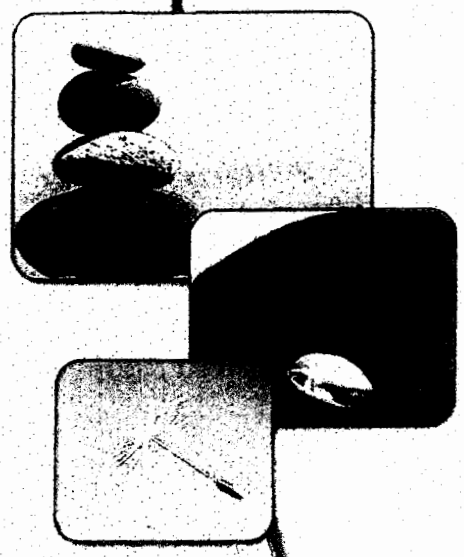

TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica SDG: Tres Rios and Agua Nueve WRF
Client Project/Site: Sludge

Pima County WWTP
PO BOX 791
Tucson, Arizona 85701

Attn: Joseph Doranski

Authorized for release by:
1/26/2018 8:45:37 AM

Linda Eshelman, Project Manager II
(602)659-7629

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

2

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Sample Summary 5
Detection Summary 6
Client Sample Results 7
Surrogate Summary 9
QC Sample Results 10
QC Association Summary 16
Lab Chronicle 19
Certification Summary 21
Method Summary 24
Chain of Custody 25
Receipt Checklists 32

Definitions/Glossary

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Qualifiers

Qualifier	Qualifier Description
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C8	Sample RPD between the primary and confirmatory analysis exceeded 40% Per EPA Method 8000C, the lower value was reported as there was no evidence of chromatographic problems.

Qualifier	Qualifier Description
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
N1	See case narrative.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Job ID: 550-96234-1

Narrative

Job Narrative
550-96234-1

Comments
No additional comments.

Receipt
The samples were received on 1/12/2018 2:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1° C.

GC Semi VOA
Method(s) 8151A: The closing continuing calibration verification (CCVC) associated with batch 490-490115 recovered above the upper control limit for Silvex (2,4,5-TP). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data has been reported.

Method(s) 8151A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 490-490119 and analytical batch 490-490115.

Method(s) 8151A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 490-491116 and analytical batch 490-491278.

Method(s) 8151A: The %RPD between the primary and confirmation column exceeded 40% for 2,4-D for the following sample: (LCS 490-491116/2-A). The lower value(s) has been reported and qualified in accordance with the laboratory's SOP.

Method(s) 8151A: The %RPD between the primary and confirmation column exceeded 40% for 2,4-D and Silvex (2,4,5-TP) for the following sample: (LCSD 490-491116/3-A). The lower value(s) has been reported and qualified in accordance with the laboratory's SOP.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method(s) 9040C: The pH results by method EPA 9040C for the following samples were outside the instrument calibration range of 1.68 to 12.45: (550-95808-B-1), (550-95808-B-1 DU), (550-96258-D-1) and (550-96258-D-1 DU). The results exceeded the high end of the calibration range, therefore, these data have been reported as greater than 12.45 and qualified with N1 flags.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-96234-1	1801088-01	Solid	01/12/18 06:00	01/12/18 14:30
550-96234-2	1801087-01	Waste	01/12/18 06:00	01/12/18 14:30

Detection Summary

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Client Sample ID: 1801088-01 — Lab Sample ID: 550-96234-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ignitability	Non-Ignitable				NONE	1		1030	Total/NA
Cyanide, Total	1.8	E4	3.6	0.73	mg/Kg	1	☼	9012B	Total/NA
Sulfide	1400		290	290	mg/Kg	1	☼	9034	Total/NA
pH	7.3	H5	1.7	1.7	SU	1		9045D	Soluble

Client Sample ID: 1801087-01 — Lab Sample ID: 550-96234-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Flashpoint	>201		72.0	72.0	Degrees F	1		1020B	Total/NA
pH	6.5	H5	1.7	1.7	SU	1		9040C	Total/NA
Corrosivity	6.5	H5	1.7	1.7	SU	1		9040C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Client Sample ID: 1801088-01

Lab Sample ID: 550-96234-1

Date Collected: 01/12/18 06:00
Matrix: Solid
Date Received: 01/12/18 14:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND	E8	100	50	ug/L		01/24/18 13:51	01/25/18 15:01	1
Silvex (2,4,5-TP)	ND	E8	100	50	ug/L		01/24/18 13:51	01/25/18 15:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*49*		*10 - 150*	*01/24/18 13:51*	*01/25/18 15:01*	*1*

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
					NONE			01/19/18 15:03	1
			0.1	0.1	%			01/15/18 13:58	1
			0.1	0.1	%			01/15/18 13:58	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
			1.7	1.7	SU			01/15/18 18:30	1

Client Sample ID: 1801088-01

Lab Sample ID: 550-96234-1

Date Collected: 01/12/18 06:00
Matrix: Solid
Date Received: 01/12/18 14:30
Percent Solids: 13.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
			3.6	0.73	mg/Kg		01/17/18 07:49	01/17/18 12:31	1
			290	290	mg/Kg		01/16/18 13:22	01/16/18 15:58	1

Client Sample ID: 1801087-01

Lab Sample ID: 550-96234-2

Date Collected: 01/12/18 06:00
Matrix: Waste
Date Received: 01/12/18 14:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND	E8	980	490	ug/L		01/19/18 10:36	01/19/18 16:32	1
2,4-D	ND	E8	980	490	ug/L		01/19/18 10:36	01/19/18 16:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*79*		*10 - 150*	*01/19/18 10:36*	*01/19/18 16:32*	*1*

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
			72.0	72.0	Degrees F			01/17/18 15:41	1
			0.1	0.1	%			01/15/18 13:58	1
			1.7	1.7	SU			01/15/18 18:45	1
			1.7	1.7	SU			01/15/18 18:45	1

Client Sample Results

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Client Sample ID: 1801087-01
Date Collected: 01/12/18 06:00
Date Received: 01/12/18 14:30

Lab Sample ID: 550-96234-2
Matrix: Waste
Percent Solids: 1.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	E8	41	17	mg/Kg	☼	01/17/18 13:46	01/17/18 16:21	1
Sulfide	ND	E8	4200	2100	mg/Kg	☼	01/17/18 17:57	01/18/18 14:55	1

Surrogate Summary

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: Total/NA**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCAA2 (10-150)
LCS 490-491116/2-A	Lab Control Sample	48
LCSD 490-491116/3-A	Lab Control Sample Dup	44

Surrogate Legend
DCAA = Dichloroacetic acid(Surr)

8

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: TCLP**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCAA2 (10-150)
550-96234-1	1801088-01	49
LB 490-490653/1-F	Method Blank	45

Surrogate Legend
DCAA = Dichloroacetic acid(Surr)

Method: 8151A - Herbicides (GC)

Matrix: Waste **Prep Type: Total/NA**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCAA1 (10-150)
LCS 490-490119/2-A	Lab Control Sample	24

Surrogate Legend
DCAA = Dichloroacetic acid(Surr)

Method: 8151A - Herbicides (GC)

Matrix: Waste **Prep Type: Total/NA**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCAA2 (10-150)
LCSD 490-490119/3-A	Lab Control Sample Dup	23
MB 490-490119/1-A	Method Blank	31

Surrogate Legend
DCAA = Dichloroacetic acid(Surr)

Method: 8151A - Herbicides (GC)

Matrix: Waste **Prep Type: TCLP**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCAA1 (10-150)
550-96234-2	1801087-01	79

Surrogate Legend
DCAA = Dichloroacetic acid(Surr)

QC Sample Results

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Method: 8151A - Herbicides (GC)

[illegible]

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND	E8	1000	500	ug/L		01/19/18 10:36	01/19/18 15:47	1
Silvex (2,4,5-TP)	ND	E8	1000	500	ug/L		01/19/18 10:36	01/19/18 15:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*31*		*10 - 150*	*01/19/18 10:36*	*01/19/18 15:47*	*1*

9

[illegible]

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-D	5000	1900		ug/L		38	10 - 150
Silvex (2,4,5-TP)	5000	1700		ug/L		34	10 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*24*		*10 - 150*

[illegible]

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-D	5000	1810		ug/L		36	10 - 150	5	40
Silvex (2,4,5-TP)	5000	1690		ug/L		34	10 - 150	0	40

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*23*		*10 - 150*

[illegible]

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-D	50.0	29.3	C8	ug/L		59	10 - 150
Silvex (2,4,5-TP)	50.0	26.5		ug/L		53	10 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*48*		*10 - 150*

[illegible]

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-D	50.0	25.8	C8	ug/L		52	10 - 150	13	35
Silvex (2,4,5-TP)	50.0	23.6	C8	ug/L		47	10 - 150	12	35

QC Sample Results

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Method: 8151A - Herbicides (GC) (Continued)

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Dichloroacetic acid(Surr)	44		10 - 150

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND	E8	20	10	ug/L		01/24/18 13:51	01/25/18 13:45	1
Silvex (2,4,5-TP)	ND	E8	20	10	ug/L		01/24/18 13:51	01/25/18 13:45	1

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dichloroacetic acid(Surr)	45		10 - 150	01/24/18 13:51	01/25/18 13:45	1

9

Method: 1020B - Ignitability, Small Scale Closed-Cup Method

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Flashpoint	84.0	82.00		Degrees F		98	95 - 105

Method: 2540G - SM 2540G

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	0.0006		0.1	0.1	%			01/15/18 13:58	1
Percent Solids	100		0.1	0.1	%			01/15/18 13:58	1

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	99.0		99.1		%		0	10
Percent Solids	1		0.9		%		4	10

Method: 9012B - Cyanide, Total andor Amenable

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	E8	0.50	0.10	mg/Kg		01/17/18 07:49	01/17/18 12:22	1

QC Sample Results

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	17.5	18.1		mg/Kg		103	90 - 110

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	5.00	5.23		mg/Kg		105	90 - 110

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	5.00	5.17		mg/Kg		103	51 - 150

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	ND	E8	4.88	5.04		mg/Kg	¤	103	90 - 110

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	ND	E8	4.93	5.07		mg/Kg	¤	103	90 - 110	1	10

Method: 9014 - Cyanide

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	E8	0.37	0.16	mg/Kg		01/17/18 13:46	01/17/18 16:21	1

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	2.27	2.50		mg/Kg		110	90 - 110

9

QC Sample Results

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Method: 9014 - Cyanide (Continued)

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total			2.43	2.56		mg/Kg		105	90 - 110	2	20

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total	ND	E8	243	277		mg/Kg	¤	114	80 - 120		

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	ND	E8	255	278		mg/Kg	¤	109	80 - 120	0	20

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND	E8	40	40	mg/Kg		01/16/18 13:22	01/16/18 15:58	1

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			104	95.8		mg/Kg		92	80 - 120		

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide			103	87.5		mg/Kg		85	80 - 120	9	20

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide	1400		743	2060		mg/Kg	¤	92	70 - 130		

9

QC Sample Results

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric) (Continued)

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	1400		744	2120		mg/Kg	¤	100	70 - 130	3	30

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND	E8	40	20	mg/Kg		01/17/18 17:57	01/18/18 14:55	1

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	96.0	88.0		mg/Kg		92	80 - 120

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	96.0	88.0		mg/Kg		92	80 - 120	0	20

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	ND	E8	10100	8410		mg/Kg	¤	83	70 - 130

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	ND	E8	10100	7570		mg/Kg	¤	75	70 - 130	11	30

Method: 9040C - pH

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		99.6	98.5 - 101.5

9

QC Sample Results

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Method: 9040C - pH (Continued)

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	6.9		SU		98.9	98.5 - 101.5		

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	>12.45	H5 N1		>12.45	H5 N1	SU				NaN	5.0
Corrosivity	>12.45	H5 N1		>12.45	H5 N1	SU				NaN	5.0

9

Method: 9045D - pH

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	7.0		SU		100.1	98.5 - 101.5		

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	7.0		SU		100.0	98.5 - 101.5		

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.6	H5		7.7	H5	SU				0.8	5

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

550-96234 Chain of Custody

COOLER RECEIPT FORM

Cooler Received/Opened On 1/18/2018 @1050

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 4973 (last 4 digits, FedEx) Courier: FedEx

   IR Gun ID 31470366 pH Strip Lot_____ Chlorine Strip Lot_____

2. Temperature of rep. sample or temp blank when opened: 2.3 Degrees Celsius
3. If item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA
4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA
6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) es

7. Were custody seals on containers: YES NO and intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None
9. Cooling process: Ice Ice-pack Ice (direct contact) Dry Ice Other None
10. Did all containers arrive in good condition (unbroken)? YES...NO...NA
11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA
12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

   b. Was there any observable headspace present in any VOA vial? YES...NO...NA

Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) es

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

   b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) es

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA
18. Did you sign the custody papers in the appropriate place? YES...NO...NA
19. Were correct containers used for the analysis requested? YES...NO...NA
20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) es

I certify that I attached a label with the unique LIMS number to each container (intial) es

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...# es

BIS = Broken in shipment

Cooler Receipt Form.doc LE-1 Revised 8/23/17

TestAmerica Phoenix
4625 East Cotton Ctr Blvd Suite 189
Phoenix, AZ 85040
Phone (602) 437-3340 Fax (602) 454-9303

Chain of Custody Record

550-96234

America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Eshelman, Linda	
Client Contact: Shipping/Receiving	Phone:	E-Mail: linda.eshelman@testamericainc.com	Arizona — Page 1 of 1
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note): State Program - Arizona	Job #: 550-96234-1
Address: 2960 Foster Creighton Drive, ,	Due Date Requested: 1/19/2018		
City: Nashville	TAT Requested (days):		
State, Zip: TN, 37204			
Phone: 615-726-0177(Tel) 615-726-3404(Fax)	PO #:		
Email:	WO #:		
Project Name: General CRAO Lab	Project #: 55001656		
Site:	SSOW#:		

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	8151A/1311_T(MOD) TCLP 8151	8151A/1311_T TCLP 8151	Special Instructions/Note:
1801088-01 (550-96234-1)	1/12/18	06:00 Arizona		Solid	X		
1801087-01 (550-96234-2)	1/12/18	06:00 Arizona		Waste		X	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does no currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[illegible] 01-18-18	15:40	TA-PHX	[illegible]	1-18-18 16:50	TA-NAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.3

Ver: 09/20/2016

Page 31 of 34

1/26/2018

Login Sample Receipt Checklist

Client: Pima County WWTP

Job Number: 550-96234-1
SDG Number: Tres Rios and Agua Nueve WRF

Login Number: 96234
List Number: 1
Creator: Vilaboy, Monica

List Source: TestAmerica Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: Pima County WWTP

Job Number: 550-96234-1
SDG Number: Tres Rios and Agua Nueve WRF

Login Number: 96234
List Number: 2
Creator: Pottruff, Reed W

List Source: TestAmerica Denver
List Creation: 01/16/18 10:46 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Refer to Job Narrative for details.
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Pima County WWTP

Job Number: 550-96234-1
SDG Number: Tres Rios and Agua Nueve WRF

Login Number: 96234
List Number: 3
Creator: Ornelas, Olga

List Source: TestAmerica Irvine
List Creation: 01/16/18 12:30 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1801090-01

PROJECT & LOCATION: Tres Rios WRF - Dewatered Cake Biosolids (Annual)

PROJECT-LOCATION NUMBER: 20001-5703 (XXXXX-XXXX)

SAMPLE START DATE: 01-11-2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 0600 (Military time)

CLIENT: IWC

SAMPLE END DATE: 01-12-2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0600 (Military time)

SAMPLER(S): Silva, Echanove, Riccaboni, Martinez (Print Last Name(s) Only)

Permit Type: ☐ APP ■ AZPDES ☐ IWC ☐ Investigative ☐ Reuse ☐ Air ☐ 503 ☐ Process Control ☐ Other

Matrix: ■ Biosolids ☐ Groundwater ☐ Industrial ☐ Soil ☐ Stormwater ☐ Surface Water ☐ Wastewater ☐ Air ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Hardness				
Iron				
Lead				
Magnesium				
Manganese				
Mercury	×			■
Mercury LL				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Thallium				
Tin				

METALS	Tot	Diss	D	C
Titanium				
Vanadium				
Zinc				
PPMs *	×			■
TCLP Metals				■
503 Metals **				■
Dissolved Cr+6				

WET METHODS	D	C
Ammonia as N		
Chloride 1-12-18		
~~Cyanide, Total~~		■
Cyanide, Amenable		
Fluoride		
Ignitability		
Nitrate as N		
Nitrite as N		
Nitrate/Nitrite as N		
Nitrogen, Total Kjeldahl		
Nitrogen, Total as N		
Orthophosphate as P		
Phosphorus, Total as P		
Sulfate		
Sulfide		
Other		
Other		

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	■	
Dioxin GC/SIM/MS Scan		■
Organochlorine Pesticides & PCBs		■
Purgeable Organics (GCMS)	■	
Semivolatile Organics (GCMS)		■
Bis(2-ethylhexyl) phthalate		
Digester Gas		
Oil and Grease		
Organic Carbon, Total		
Organic Carbon, Dissolved		
TCLP Herbicides (Contract Lab)		
TCLP Pesticides		■
TCLP Semivolatile Organics		■
TCLP Volatile Organics	■	
TTHM		
Total Petroleum Hydrocarbons		
Volatile Acids		
Other		
Other		

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*		
Chronic *C. dubia*		
Chronic *Selenastrum capricornutum*		
Other		

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity		
BOD		
COD		
Coliform, Fecal		
Coliform, Total		
Specific Conductance		
E. coli		
Oxygen, Dissolved		
pH		
Solids, Total		■
Solids, Total Dissolved		
Solids, Total Suspended		
Solids, Total Volatile		
Solids, Volatile Suspended		
Other		

OTHER	D	C
Paint Filter		

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions:
The Lab shall composite the Purgeable Organic, TCLP Volatile Organics and Acrolein/Acrylonitrile samples.
624+ 603 OH 1648

Septum Blank Prep Date & Initials: 11-28-17 lej

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	Riccaboni	1-11-18	1500
Relinquished by: Riccaboni	Received by: Refrigerator	1-12-18	0130
Relinquished by: Refrigerator	Received by: [signature]	1-12-18	0630
Relinquished by: [signature]	Received by: Michelle Spencer	1-12-18	1052
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

of Bottles Delivered: 11

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 6 °C

Initials: GOJ

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☑		
Sample labels match Chain of Custody?	☑		
Correct number of sample bottles were delivered?	☑		
Custody seals intact?			☑
Within holding time?	☑		
Sufficient sample volume for analysis?	☑		
Samples are in properly preserved containers?	☑		
Sample containers damaged/leaking/frozen?		☑	
40 ml vials headspace, > pea-sized air bubble? 1-12-18	☒		☑ 1-12-18
Received from a refrigerator?		☑	

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY

NOTIFICATION

LABORATORY ID:	1801090-01
SAMPLE DATE/TIME:	01-12-18/0600
SAMPLE PERMIT NAME:	Tres Rios WRF
SAMPLE LOCATION NAME:	Dewatered Cake Biosolids
PERMIT TYPE:	AZPDES
FACILITY/LOCATION ID:	20001-5703
PARAMETER:	Semi-Volatile Organics/ TCLP Semi-Volatiles
ANALYSIS DATE:	1/30/2018
ANALYSIS RESULT:	Not Reported
LIMIT:	

COMMENTS: Surrogates were not added to sample before extraction.

☐ **Not Analyzed** ☑ **Not Reported**

SUBMITTED BY: Steve Mitchell 2/21/2018
ANALYST DATE

REVIEWED BY: Julian Portillo 2/21/2018
UNIT SUPERVISOR DATE

☐ Laboratory Director Review

Audit Pending?
☐ Yes ☐ N

QA Audit Number:

xc: Permit_Testing_Notification@pima.gov

* This form must be submitted for any Not Analyzed or Not reported sample.

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT
WATER QUALITY
SAMPLE COLLECTION REPORT

SAMPLE LOCATION: Tres Rios WRF – Dewatered Cake Biosolids LIMS: 1801090-01
LOCATION ID: 20001 – 5703 SAMPLERS: Silva, Echanove, Riccaboni, Martinez SAMPLE DATE: 1-12-18
Last names only, primary sampler first

Sample D or C	Parameter	Frequency	AUTO MAN	Volume Submitted	Bottle/Preservation
C	Semivolatile Organics	Hand Composite 4 Aliquots for the duration of the discharge	Man	1000 ml	Amber Glass/None/Ice
C	Organochlorine Pest & PCB's		Man	1000 ml	Amber Glass/None/Ice
C	Dioxin		Man	1000 ml	Amber Glass/None/Ice
C	Priority Pollutant & 503 Metals		Man	1000 ml	Dissolved Metals/None/Ice
C	Total Solids		Man	1000 ml	General Purpose/None/Ice
C	TCLP Metals		Man	1000 ml	Dissolved Metals/None/Ice
C	TCLP Pesticides		Man	1000 ml	Amber Glass/None/Ice
C	TCLP Semivolatile organics		Man	1000 ml	Amber Glass/None/Ice
To be Composited by the Laboratory					
D	Purgeable Organics	Hand Composite 4 Aliquots for the duration of the discharge	Man	4 X 40	None/Ice
D	Acrolein/Acrylonitrile		Man	4 X 40	None/Ice
D	TCLP Volatile Organics		Man	4 X 40	None/Ice
To be Submitted to an outside Laboratory					
C	Corrosivity pH & Total Solids	Hand Composite 4 Aliquots for the duration of the discharge	Man	1000 ml	General Purpose/None/Ice
C	Sulfide (T)		Man	1000 ml	Dissolved Metals/None/Ice
C	Ignitability		Man	1000 ml	Amber Glass/None/Ice
C	Total Solids		Man	1000 ml	General Purpose/None/Ice
C	TCLP Herbicides		Man	1000 ml	Amber Glass/None/Ice
C	Cyanide (T)		Man	1000 ml	Dissolved Metals/None/Ice

	Time
Aliquot #1	1-11-18 0715
Aliquot #2	1-11-18 1300
Aliquot #3	1-11-18 1845
Aliquot #4	1-12-18 0025

Comments:	Dewatered Cake Biosolids samples are not preserved.
	All Composites including Cyanide can be poured off at the end of the sampling event

Jenette Lee

From: Joseph Doranski
Sent: Tuesday, February 6, 2018 15:30
To: Jenelle Chraft
Cc: Tom Tomchak; Belinda Gamboa-Felix; Jenette Lee; Manisha Patel; Melaine Halash
Subject: RE: 1801090-01

I caught up with Mr. Tomchak to discuss the situation. He will add the Semi-Volatiles and TCLP Semis to the next quarterly sampling event.

Thanks to all.

From: Jenelle Chraft
Sent: Tuesday, February 6, 2018 3:00 PM
To: Joseph Doranski <Joseph.Doranski@pima.gov>
Subject: Fwd: 1801090-01

See below.

Sent from my iPhone

Begin forwarded message:

> **From:** Belinda Gamboa-Felix <Belinda.Gamboa-Felix@pima.gov>
> **Date:** February 6, 2018 at 2:11:39 PM MST
> **To:** Jenelle Chraft <Jenelle.Chraft@pima.gov>
> **Cc:** Melaine Halash <Melaine.Halash@pima.gov>, Jenette Lee <Jenette.Lee@pima.gov>
> **Subject: RE: 1801090-01**
>
> Hi Jenelle,
> After consulting with Barbara, she agrees with you that it does have to be resampled for Semivolatile Organics and TCLP Semivolatile Organics.
>
> *Belinda Gamboa-Felix*
> *Compliance Data and Reporting Manager*
>
> ---
>
> *Pima County Regional Wastewater Reclamation Department*
> *Compliance & Regulatory Affairs Office*
> *2955 W. Calle Agua Nueva*
> *Tucson, AZ 85745*
> *520-724-6007 Office*
>
> ***Please consider the environment before printing this email***
>
> **From:** Jenelle Chraft
> **Sent:** Tuesday, February 6, 2018 9:15 AM
> **To:** Belinda Gamboa-Felix <Belinda.Gamboa-Felix@pima.gov>
> **Cc:** Melaine Halash <Melaine.Halash@pima.gov>; Jenette Lee <Jenette.Lee@pima.gov>
> **Subject:** 1801090-01

Hello and Good Morning,
We had a lab error on this sample involving the surrogates not getting added to the sample at the time of extraction.
This is TR Dewatered Cake Bio solids (Annual) sample.
I am hoping to fix this we can order a re-sample of the Semivolatile Organics and TCLP Semivolatile Organics.
Can we use dewatered cake from any day, such as what came in today, or do we need CRAO to collect the sample?
I wanted to alert you to the situation so we can resolve it together.
Let me know what can be done about the re-sample.

Jenelle Chraft
Pima County Wastewater Reclamation
CRAO Laboratory Manager
(520) 724-6045

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 05/31/2018
Laboratory License: AZO159

Sample Analysis Report
Tres Rios WRF
March 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:
See attached

Case Narratives:
See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

6-25-18
Date

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
Dewatered Cake Biosolids	1803122-01	Biosolids	3/16/2018 6:00:00	3/16/2018 8:27:00	Q6

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
Dewatered Cake Biosolids (20001-5703)											
1803122-01	C	% Solids	03/16/18 6:00	SM 2540G	3/18/18 08:39	**13.69**	%		0.01		DEB
1803122-01	C	1,2,4-Trichlorobenzene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1803122-01	C	2,3-Dichloroaniline	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.01	D1, D7, L4	SJM
1803122-01	C	2,4,6-Trichlorophenol	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.001	0.00200	D1, D7, N1	SJM
1803122-01	C	2,4-Dichlorophenol	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1803122-01	C	2,4-Dimethylphenol	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.004	0.01	D1, D7, N1	SJM
1803122-01	C	2,4-Dinitrophenol	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.009	0.01	D1, D7	SJM
1803122-01	C	2,4-Dinitrotoluene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1803122-01	C	2,6-Dinitrotoluene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1803122-01	C	2-Chloronaphthalene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.001	0.00200	D1, D7, N1	SJM
1803122-01	C	2-Chlorophenol	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.001	0.00200	D1, D7, S1	SJM
1803122-01	C	2-Methyl-4,6-dinitrophenol	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.005	0.01	D1, D7	SJM
1803122-01	C	2-Methylphenol	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.001	0.00200	D1, D7, N1, S1	SJM
1803122-01	C	2-Nitrophenol	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1803122-01	C	3,3-Dichlorobenzidine	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1803122-01	C	4-Bromophenyl phenyl ether	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1803122-01	C	4-Chloro-3-methylphenol	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1803122-01	C	4-Chlorophenyl phenyl ether	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1803122-01	C	4-Methylphenol	03/16/18 6:00	EPA 625	3/28/18 19:22	**1.03**	mg/kg dry	0.002	0.00200	D1, D7, L4, S1	SJM
1803122-01	C	4-Nitrophenol	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.005	0.01	D1, D7	SJM
1803122-01	C	Acenaphthene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1803122-01	C	Acenaphthylene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1803122-01	C	Anthracene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1803122-01	C	Benzidine	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.007	0.01	D1, D7, N1	SJM
1803122-01	C	Benzo[a]anthracene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1803122-01	C	Benzo[a]pyrene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1803122-01	C	Benzo[b]fluoranthene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1803122-01	C	Benzo[ghi]perylene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1803122-01	C	Benzo[k]fluoranthene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1803122-01	C	bis(2-chloroethoxy)methane	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1803122-01	C	bis(2-chloroethyl)ether	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.01	D1, D7, S1	SJM
1803122-01	C	bis(2-chloroisopropyl)ether	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7, N1, S1	SJM
1803122-01	C	bis(2-ethylhexyl)phthalate	03/16/18 6:00	EPA 625	3/28/18 19:22	**1.60**	mg/kg dry	0.003	0.01	D1, D7	SJM
1803122-01	C	Butylbenzylphthalate	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1803122-01	C	Carbazole	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.003	0.01	D1, D7, L4	SJM
1803122-01	C	Chrysene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1803122-01	C	Dibenzo(a,h)anthracene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1803122-01	C	Diethyl phthalate	03/16/18 6:00	EPA 625	3/28/18 19:22	**4.19**	mg/kg dry	0.002	0.01	D1, D7	SJM
1803122-01	C	Dimethyl phthalate	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1803122-01	C	Di-n-butyl phthalate	03/16/18 6:00	EPA 625	3/28/18 19:22	**0.79**	mg/kg dry	0.002	0.01	D1, D7	SJM
1803122-01	C	Di-n-octyl phthalate	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1803122-01	C	Fluoranthene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1803122-01	C	Fluorene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1803122-01	C	Hexachlorobenzene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1803122-01	C	Hexachlorobutadiene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1803122-01	C	Hexachlorocyclopentadiene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1803122-01	C	Hexachloroethane	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.001	0.00200	D1, D7, N1, S1	SJM
1803122-01	C	Indeno(1,2,3-cd)pyrene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1803122-01	C	Isophorone	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7, N1	SJM
1803122-01	C	Naphthalene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1803122-01	C	n-Decane	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7, S1	SJM
1803122-01	C	Nitrobenzene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.01	D1, D7, N1	SJM
1803122-01	C	N-Nitrosodimethylamine	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.01	D1, D7, N1, PC3	SJM
1803122-01	C	N-Nitrosodi-n-propylamine	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.01	D1, D7, N1, S1	SJM
1803122-01	C	N-Nitrosodiphenylamine	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.006	0.01	D1, D7, V1	SJM
1803122-01	C	n-Octadecane	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1803122-01	C	Pentachlorophenol	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1803122-01	C	Phenanthrene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1803122-01	C	Phenol	03/16/18 6:00	EPA 625	3/28/18 19:22	**1.76**	mg/kg dry	0.003	0.01	D1, D7	SJM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1803122-01	C	Pyrene	03/16/18 6:00	EPA 625	3/28/18 19:22	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1803122-01	C	1,2-Diphenylhydrazine	03/16/18 6:00	EPA 8270C	3/28/18 19:22	**ND**	mg/kg dry	0.001	0.00200	D1, D7, N1	SJM
1803122-01	C	1,4-Dichlorobenzene	03/16/18 6:00	EPA 8270C	3/28/18 19:22	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1803122-01	C	2,4,5-Trichlorophenol	03/16/18 6:00	EPA 8270C	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1803122-01	C	3 & 4-Methylphenol	03/16/18 6:00	EPA 8270C	3/28/18 19:22	**1.30**	mg/kg dry	0.002	0.01	D1, D7	SJM
1803122-01	C	Pyridine	03/16/18 6:00	EPA 8270C	3/28/18 19:22	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1803122-01	C	1,4-Dichlorobenzene	03/16/18 6:00	TCLP/EPA 8270C	4/2/18 11:56	**NA**	ug/L dry	1.37	2.00	N7	SJM
1803122-01	C	2,4,5-Trichlorophenol	03/16/18 6:00	TCLP/EPA 8270C	4/2/18 11:56	**NA**	ug/L dry	2.46	10.00	N7	SJM
1803122-01	C	2,4,6-Trichlorophenol	03/16/18 6:00	TCLP/EPA 8270C	4/2/18 11:56	**NA**	ug/L dry	1.14	5.00	N7	SJM
1803122-01	C	2,4-Dinitrotoluene	03/16/18 6:00	TCLP/EPA 8270C	4/2/18 11:56	**NA**	ug/L dry	1.44	5.00	N7	SJM
1803122-01	C	2-Methylphenol	03/16/18 6:00	TCLP/EPA 8270C	4/2/18 11:56	**NA**	ug/L dry	1.09	2.00	N7	SJM
1803122-01	C	3 & 4-Methylphenol	03/16/18 6:00	TCLP/EPA 8270C	4/2/18 11:56	**NA**	ug/L dry	1.07	4.00	N7	SJM
1803122-01	C	Hexachlorobenzene	03/16/18 6:00	TCLP/EPA 8270C	4/2/18 11:56	**NA**	ug/L dry	0.610	2.00	N7	SJM
1803122-01	C	Hexachlorobutadiene	03/16/18 6:00	TCLP/EPA 8270C	4/2/18 11:56	**NA**	ug/L dry	0.880	2.00	N7	SJM
1803122-01	C	Hexachloroethane	03/16/18 6:00	TCLP/EPA 8270C	4/2/18 11:56	**NA**	ug/L dry	1.09	2.00	N7	SJM
1803122-01	C	Nitrobenzene	03/16/18 6:00	TCLP/EPA 8270C	4/2/18 11:56	**NA**	ug/L dry	1.84	5.00	N7	SJM
1803122-01	C	Pentachlorophenol	03/16/18 6:00	TCLP/EPA 8270C	4/2/18 11:56	**NA**	ug/L dry	6.10	10.00	N7	SJM
1803122-01	C	Pyridine	03/16/18 6:00	TCLP/EPA 8270C	4/2/18 11:56	**NA**	ug/L dry	1.55	2.00	N7	SJM
Final Effluent #3 (20001-7030)											
1803040-01	D	Temperature	03/06/18 10:15	SM2550B	3/6/18 10:15	**24.2**	°C		0.10		SMPLR
1803040-01	D	pH	03/06/18 10:15	SM4500 H B	3/6/18 10:15	**7.3**	pH Units				SMPLR
1803040-01	D	Temp at time of pH, °C	03/06/18 10:15	SM4500 H B	3/6/18 10:15	**23.8**	°C				SMPLR
1803040-01	D	Antimony	03/06/18 10:15	EPA 200.8	3/22/18 14:43	**0.45**	ug/L	0.21	1.00	J	JB
1803040-01	D	Arsenic	03/06/18 10:15	EPA 200.8	3/22/18 14:43	**2.61**	ug/L	0.07	1.00		JB
1803040-01	D	Barium	03/06/18 10:15	EPA 200.8	3/22/18 14:43	**49.1**	ug/L	0.19	1.00		JB
1803040-01	D	Beryllium	03/06/18 10:15	EPA 200.8	3/22/18 14:43	**ND**	ug/L	0.33	1.00		JB
1803040-01	D	Cadmium	03/06/18 10:15	EPA 200.8	3/22/18 14:43	**ND**	ug/L	0.07	1.00		JB
1803040-01	D	Chromium, Hexavalent	03/06/18 10:15	EPA 200.8	3/6/18 10:15	**NA**	ug/L		1.00	N7	
1803040-01	D	Chromium	03/06/18 10:15	EPA 200.8	3/22/18 14:43	**0.56**	ug/L	0.03	1.00	J	JB
1803040-01	D	Copper	03/06/18 10:15	EPA 200.8	3/22/18 14:43	**1.85**	ug/L	0.36	1.00		JB
1803040-01	D	Cyanide	03/06/18 10:15	SM4500-CN-E	3/11/18 14:35	**ND**	ug/L	1.61	5.00	M5	MGA
1803040-01	D	Cyanide Amenable	03/06/18 10:15	SM 4500-CN-G	3/11/18 14:35	**NA**	ug/L	1.61	5.00	N7	MGA
1803040-01	D	Fluoride	03/06/18 10:15	SM4500-F-C	3/7/18 10:07	**0.45**	mg/L	0.004	0.10		KMT
1803040-01	D	Lead	03/06/18 10:15	EPA 200.8	3/22/18 14:43	**0.23**	ug/L	0.01	1.00	J	JB
1803040-01	D	Mercury	03/06/18 10:15	EPA 245.1	3/17/18 15:09	**ND**	ug/L	0.19	0.20		DML
1803040-01	D	Mercury	03/06/18 10:15	EPA 245.7	3/12/18 12:17	**0.806**	ng/L	0.741	5.00	J	KMT
1803040-01	D	Nickel	03/06/18 10:15	EPA 200.8	3/22/18 14:43	**9.70**	ug/L	0.24	1.00		JB
1803040-01	D	Nitrate	03/06/18 10:15	Calculated	3/11/18 08:22	**3.88**	mg/L	0.02	0.20		JGB
1803040-01	D	Nitrate/Nitrite	03/06/18 10:15	EPA 353.2	3/11/18 08:22	**3.92**	mg/L	0.02	0.20		MGA
1803040-01	D	Nitrite	03/06/18 10:15	SM4500-NO2 B	3/6/18 13:53	**0.04**	mg/L	0.02	0.20	J	JGB
1803040-01	D	Total Kjeldahl Nitrogen	03/06/18 10:15	EPA 351.2	3/9/18 13:40	**1.85**	mg/L	0.29	0.80		HAV
1803040-01	D	Nitrogen Total Water	03/06/18 10:15	Calculated	3/11/18 08:22	**5.77**	mg/L	0.29	0.80		HAV
1803040-01	D	Selenium	03/06/18 10:15	EPA 200.8	3/22/18 14:43	**0.55**	ug/L	0.48	1.00	J	JB
1803040-01	D	Silver	03/06/18 10:15	EPA 200.8	3/22/18 14:43	**ND**	ug/L	0.03	1.00		JB
1803040-01	D	Sulfide	03/06/18 10:15	Hach 8131	3/8/18 11:31	**0.005**	mg/L	0.005	0.100	J	KMT
1803040-01	D	Thallium	03/06/18 10:15	EPA 200.8	3/22/18 14:43	**ND**	ug/L	0.01	1.00		JB
1803040-01	D	Oil & Grease	03/06/18 10:15	EPA 1664B	3/13/18 14:06	**1.59**	mg/L	1.25	4.55	J	KLH
1803040-01RE1	D	Ammonia	03/06/18 10:15	SM4500-NH3-D	3/16/18 12:47	**0.55**	mg/L	0.07	0.50	N1	KMT
1803040-01RE1	D	Zinc	03/06/18 10:15	EPA 200.8	3/22/18 17:53	**45.6**	ug/L	0.23	5.00	D1	JB
1803040-02	D	Chromium (Dissolved)	03/06/18 10:15	EPA 200.8	3/22/18 15:32	**0.69**	ug/L	0.03	1.00	H6, J	JB
1803040-03	FB	Mercury	03/06/18 10:15	EPA 245.7	3/12/18 12:14	**ND**	ng/L	0.741	5.00		KMT
1803052-01	C	Calcium	03/07/18 10:00	EPA 200.7	3/15/18 15:55	**64.8**	mg/L	0.02	4.00		MLB
1803052-01	C	Cyanide	03/07/18 10:00	SM4500-CN-E	3/11/18 14:37	**3.27**	ug/L	1.61	5.00	J	MGA
1803052-01	C	Hardness	03/07/18 10:00	SM 2340B	3/15/18 15:55	**219**	mg/L	0.05	9.99		MLB
1803052-01	C	Magnesium	03/07/18 10:00	EPA 200.7	3/15/18 15:55	**13.7**	mg/L	0.004	2.00		MLB

Qualifier Definitions

A	Absence
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
H6	The filtration was not done within the required 15 minutes of sampling, the sample was filtered in the laboratory.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
L4	The associated blank spike recovery was below method acceptance limits.
M5	Analyte concentration was determined by the method of standard addition (MSA).
N1	See case narrative.
N7	Additional analysis was not performed based on the "Total" result which was below the requested analyte's MCL/Action level/Trigger Level.
NA	Not Analyzed
P	Presence
PC3	Semi-quantitation is included in the case narrative.
Q6	Sample was received above recommended temperature.
S1	Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction

Case Narrative(s)

1803011-02 RE1
SM4500-NH3-D: Sample was rerun due to a calibration error causing original result to be invalid. JEC 3/20/18 - KMT 3/20/18

1803040-01 RE1
SM4500-NH3-D: Sample was rerun due to a calibration error causing original result to be invalid. JEC 3/20/18 - KMT 3/20/18.

1803068-01 RE1
SM4500-NH3-D: Sample was rerun due to a calibration error causing original result to be invalid. JEC 3/20/18 - KMT 3/20/18.

1803122-01
EPA Method 625 Semi-volatiles: Target analytes flagged with N1 failed the Matrix Spike from the same extraction batch but the spike was performed on a different sample. SJM 04/02/18

Semi-Quantitation
Method: 625
1803122-01

Compound Name	Concentration-mg/Kg
Benzeneacetic Acid	31
Palmitic Acid	3050
Oleic Acid	2421
Stearic Acid	716

SJM 04/03/18

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1803122 - 01

PROJECT & LOCATION: Tres Rios WRF - Dewatered Cake Biosolids (Annual)

PROJECT-LOCATION NUMBER: 20001-5703 (XXXXX-XXXX)

SAMPLE START DATE: 03-15-2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 0600 (Military time)

CLIENT: IWC

SAMPLE END DATE: 03-16-2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0600 (Military time)

SAMPLER(S): Silva, Tomchak, Riccaboni, Martinez (Print Last Name(s) Only) Morales

Permit Type: ☐ APP ☐ Investigative ☐ 503 ☐ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury			☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *			☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total	☐	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other	☐	☐
Other	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	■
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	■
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other	☐	☐
Other	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total	☐	■
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other	☐	☐

OTHER	D	C
Paint Filter	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions:

Septum Blank Prep Date & Initials:

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	3.15.18	1500
Relinquished by:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	3.16.18	0100
Relinquished by:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	3.16.18	0530
Relinquished by:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	3-16-2018	0827
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

of Bottles Delivered: 3

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 8.2 °C

Initials: MW

Q6 qualifier? ☒ YES ☐ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☑	☐	☐
Sample labels match Chain of Custody?	☑	☐	☐
Correct number of sample bottles were delivered?	☑	☐	☐
Custody seals intact?	☐	☐	☑
Within holding time?	☑	☐	☐
Sufficient sample volume for analysis?	☑	☐	☐
Samples are in properly preserved containers?	☑	☐	☐
Sample containers damaged/leaking/frozen?	☐	☑	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☑
Received from a refrigerator?	☐	☑	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT
WATER QUALITY
SAMPLE COLLECTION REPORT

SAMPLE LOCATION: Tres Rios WRF – Dewatered Cake Biosolids LIMS: 1803122-01
LOCATION ID: 20001 – 5703 SAMPLERS: Silva, Tomchak, Morales SAMPLE DATE: 3-16-18
Last names only, primary sampler first
Riccaboni, Martinez

Sample D or C	Parameter	Frequency	AUTO MAN	Volume Submitted	Bottle/Preservation
C	Semivolatile Organics	Hand Composite 4 Aliquots for the duration of the discharge	Man	1000 ml	Amber Glass/None/Ice
C	TCLP Semivolatile organics		Man	1000 ml	Amber Glass/None/Ice
			Man	1000 ml	Amber Glass/None/Ice
			Man	1000 ml	Dissolved Metals/None/Ice
C	Total Solids		Man	1000 ml	General Purpose/None/Ice
			Man	1000 ml	Dissolved Metals/None/Ice
			Man	1000 ml	Amber Glass/None/Ice
			Man	1000 ml	Amber Glass/None/Ice
To be Composited by the Laboratory					
		Hand Composite 4 Aliquots for the duration of the discharge	Man	4 X 40	None/Ice
			Man	4 X 40	None/Ice
			Man	4 X 40	None/Ice
To be Submitted to an outside Laboratory					
		Hand Composite 4 Aliquots for the duration of the discharge	Man	1000 ml	General Purpose/None/Ice
			Man	1000 ml	Dissolved Metals/None/Ice
			Man	1000 ml	Amber Glass/None/Ice
			Man	1000 ml	General Purpose/None/Ice
			Man	1000 ml	Amber Glass/None/Ice
			Man	1000 ml	Dissolved Metals/None/Ice

	Time
Aliquot #1	1250 3/15/18
Aliquot #2	1800 3·15·18
Aliquot #3	0005 3·16·18
Aliquot #4	0555 3-16-18

Comments:	Dewatered Cake Biosolids samples are not preserved.
	All Composites including Cyanide can be poured off at the end of the sampling event

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 07/26/2018
Laboratory License: AZO159

Sample Analysis Report

Tres Rios WRF

April 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Chraft

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

8·27·18
Date

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled		Date Received		Sample Qualifiers
Final Effluent #3	1804022-01	Water	4/3/2018	11:25:00	4/3/2018	12:28:00	Q6
Raw Influent	1804046-01	Water	4/6/2018	6:00:00	4/6/2018	8:26:00	Q6
Dewatered Cake Biosolids	1804050-01	Biosolids	4/6/2018	6:00:00	4/6/2018	9:41:00	Q6
Final Effluent #3	1804078-01	Water	4/10/2018	10:25:00	4/10/2018	12:00:00	Q6
Dewatered Cake Biosolids	1804049-01	Biosolids	4/6/2018	6:00:00	4/6/2018	9:41:00	Q6

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1804046-01	C	Di-n-octyl phthalate	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	2.55	12.00	D1, D7	SJM
1804046-01	C	Fluoranthene	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	1.32	4.00	D1, D7	SJM
1804046-01	C	Fluorene	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	1.54	4.00	D1, D7	SJM
1804046-01	C	Hexachlorobenzene	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	0.62	4.00	D1, D7	SJM
1804046-01	C	Hexachlorobutadiene	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	1.01	4.00	D1, D7	SJM
1804046-01	C	Hexachlorocyclopentadiene	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	4.23	12.00	D1, D7	SJM
1804046-01	C	Hexachloroethane	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	1.26	4.00	D1, D7	SJM
1804046-01	C	Indeno(1,2,3-cd)pyrene	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	2.83	12.00	D1, D7	SJM
1804046-01	C	Isophorone	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	1.66	4.00	D1, D7	SJM
1804046-01	C	Naphthalene	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	1.77	4.00	D1, D7	SJM
1804046-01	C	n-Decane	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	1.95	4.00	D1, D7	SJM
1804046-01	C	Nitrobenzene	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	2.10	12.00	D1, D7	SJM
1804046-01	C	N-Nitrosodimethylamine	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	2.09	12.00	D1, D7, PC3	SJM
1804046-01	C	N-Nitrosodi-n-propylamine	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	2.43	12.00	D1, D7	SJM
1804046-01	C	N-Nitrosodiphenylamine	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	6.08	20.00	D1, D7	SJM
1804046-01	C	n-Octadecane	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	2.18	12.00	D1, D7	SJM
1804046-01	C	Pentachlorophenol	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	4.02	12.00	D1, D7	SJM
1804046-01	C	Phenanthrene	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	1.63	4.00	D1, D7	SJM
1804046-01	C	Phenol	04/06/18 6:00	EPA 625	5/18/18 23:39	**17.4**	ug/L	2.59	12.00	D1, D7	SJM
1804046-01	C	Pyrene	04/06/18 6:00	EPA 625	5/18/18 23:39	**ND**	ug/L	1.38	4.00	D1, D7	SJM
1804046-01	C	1,2-Diphenylhydrazine	04/06/18 6:00	EPA 8270C	5/18/18 23:39	**ND**	ug/L	0.98	4.00	D1, D7	SJM
1804046-01RE1	C	Lead	04/06/18 6:00	EPA 200.8	4/10/18 19:21	**1.28**	ug/L	0.01	2.00	D1, J	JB
1804046-01RE1	C	Thallium	04/06/18 6:00	EPA 200.8	4/10/18 19:21	**0.02**	ug/L	0.01	2.00	D1, J	JB
1804046-01RE1	C	Zinc	04/06/18 6:00	EPA 200.8	4/10/18 19:21	**174**	ug/L	0.23	2.00	D2	JB
1804046-01RE2	C	Copper	04/06/18 6:00	EPA 200.8	4/10/18 19:27	**63.1**	ug/L	0.36	10.00	D1	JB
Dewatered Cake Biosolids (20001-5703)											
1804049-01	C	Cyanide, Total	04/06/18 6:00	9014	4/11/18 15:35	**2.9**	mg/Kg dry	1.1	2.6		NEL *
* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.											
1804049-01	C	Percent Solids	04/06/18 6:00	2540G	4/9/18 10:20	**14.9**	%	0.1	0.1		YET *
* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.											
1804049-01	C	Percent Moisture	04/06/18 6:00	2540G	4/9/18 10:20	**85.1**	%	0.1	0.1		YET *
* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.											
1804050-01	C	Antimony	04/06/18 6:00	EPA 6010D	4/20/18 13:41	**ND**	mg/kg dry		8.77		MLB
1804050-01	C	Arsenic	04/06/18 6:00	EPA 6010D	4/20/18 13:41	**ND**	mg/kg dry		8.77		MLB
1804050-01	C	Beryllium	04/06/18 6:00	EPA 6010D	4/20/18 13:41	**ND**	mg/kg dry		1.75		MLB
1804050-01	C	Cadmium	04/06/18 6:00	EPA 6010D	4/20/18 13:41	**ND**	mg/kg dry		3.51		MLB
1804050-01	C	Chromium	04/06/18 6:00	EPA 6010D	4/20/18 13:41	**24.6**	mg/kg dry		8.77		MLB
1804050-01	C	Copper	04/06/18 6:00	EPA 6010D	4/20/18 13:41	**337**	mg/kg dry		8.77		MLB
1804050-01	C	Lead	04/06/18 6:00	EPA 6010D	4/20/18 13:41	**ND**	mg/kg dry		8.77		MLB
1804050-01	C	Mercury	04/06/18 6:00	EPA 7471B	4/23/18 14:30	**0.78**	mg/kg dry		0.00333		DML
1804050-01	C	Molybdenum	04/06/18 6:00	EPA 6010D	4/20/18 13:41	**12.3**	mg/kg dry		3.51		MLB
1804050-01	C	Nickel	04/06/18 6:00	EPA 6010D	4/20/18 13:41	**25.8**	mg/kg dry		8.77		MLB
1804050-01	C	Selenium	04/06/18 6:00	EPA 6010D	4/20/18 13:41	**ND**	mg/kg dry		17.54		MLB
1804050-01	C	Silver	04/06/18 6:00	EPA 6010D	4/20/18 13:41	**2.45**	mg/kg dry		0.88		MLB
1804050-01	C	Thallium	04/06/18 6:00	EPA 6010D	4/20/18 15:06	**ND**	mg/kg dry		8.77		MLB
1804050-01	C	Zinc	04/06/18 6:00	EPA 6010D	4/20/18 13:41	**630**	mg/kg dry		8.77		MLB
1804050-01	C	% Solids	04/06/18 6:00	SM 2540G	4/8/18 08:48	**15.00**	%		0.01		JAH
1804050-01	C	Acrolein	04/06/18 6:00	EPA 624	4/12/18 20:31	**ND**	mg/kg dry	0.00360	0.00067		SRM
1804050-01	C	Acrylonitrile	04/06/18 6:00	EPA 624	4/12/18 20:31	**ND**	mg/kg dry	0.00280	0.00067		SRM
1804050-01	C	4,4-DDD	04/06/18 6:00	EPA 625	4/17/18 16:15	**ND**	mg/kg dry	0.00006	0.00017	D1, D7	MSM
1804050-01	C	4,4-DDE	04/06/18 6:00	EPA 625	4/17/18 16:15	**ND**	mg/kg dry	0.00003	0.00017	D1, D7	MSM
1804050-01	C	4,4-DDT	04/06/18 6:00	EPA 625	4/17/18 16:15	**ND**	mg/kg dry	0.00006	0.00017	D1, D7	MSM
1804050-01	C	Aldrin	04/06/18 6:00	EPA 625	4/17/18 16:15	**ND**	mg/kg dry	0.00006	0.00017	D1, D7	MSM
1804050-01	C	alpha-BHC	04/06/18 6:00	EPA 625	4/17/18 16:15	**ND**	mg/kg dry	0.00004	0.00017	D1, D7	MSM
1804050-01	C	beta-BHC	04/06/18 6:00	EPA 625	4/17/18 16:15	**ND**	mg/kg dry	0.00009	0.00067	D1, D7	MSM
1804050-01	C	Chlordane	04/06/18 6:00	EPA 625	4/17/18 16:15	**ND**	mg/kg dry	0.00025	0.00134	D1, D7	MSM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1804050-01	C	delta-BHC	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00007	0.00017	D1, D7	MSM
1804050-01	C	Dieldrin	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00015	0.00034	D1, D7	MSM
1804050-01	C	Endosulfan I	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00004	0.00017	D1, D7	MSM
1804050-01	C	Endosulfan II	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00003	0.00017	D1, D7	MSM
1804050-01	C	Endosulfan sulfate	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00004	0.00017	D1, D7, N1	MSM
1804050-01	C	Endrin	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00010	0.00017	D1, D7	MSM
1804050-01	C	Endrin aldehyde	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00011	0.00017	D1, D7	MSM
1804050-01	C	gamma-BHC (Lindane)	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00007	0.00017	D1, D7	MSM
1804050-01	C	Heptachlor	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00005	0.00017	D1, D7	MSM
1804050-01	C	Heptachlor Epoxide	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00004	0.00017	D1, D7	MSM
1804050-01	C	PCB 1016	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00006	0.00040	D1, D7	MSM
1804050-01	C	PCB 1221	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00017	0.00101	D1, D7	MSM
1804050-01	C	PCB 1232	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00007	0.00101	D1, D7	MSM
1804050-01	C	PCB 1242	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00013	0.00101	D1, D7	MSM
1804050-01	C	PCB 1248	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00010	0.00101	D1, D7	MSM
1804050-01	C	PCB 1254	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00019	0.00101	D1, D7	MSM
1804050-01	C	PCB 1260	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00007	0.00034	D1, D7	MSM
1804050-01	C	Total PCBs	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00016	0.00101	D1, D7	MSM
1804050-01	C	Toxaphene	04/06/18 6:00	EPA 625	4/17/18 16:15	ND	mg/kg dry	0.00094	0.00268	D1, D7	MSM
1804050-01	C	Methoxychlor	04/06/18 6:00	EPA 8270C	4/17/18 16:15	ND	mg/kg dry		0.00017	D1, D7	MSM
1804050-01	C	1,1,1-Trichloroethane	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0002	0.00007		SRM
1804050-01	C	1,1,2,2-Tetrachloroethane	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.00006	0.00007		SRM
1804050-01	C	1,1,2-Trichloroethane	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.00009	0.00007		SRM
1804050-01	C	1,1-Dichloroethane	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0002	0.00007		SRM
1804050-01	C	1,1-Dichloroethene	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0001	0.00007		SRM
1804050-01	C	1,2-Dichlorobenzene	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.00008	0.00007		SRM
1804050-01	C	1,2-Dichloroethane	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.00009	0.00007		SRM
1804050-01	C	1,2-Dichloropropane	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0001	0.00007		SRM
1804050-01	C	1,3-Dichlorobenzene	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.00008	0.00007		SRM
1804050-01	C	1,4-Dichlorobenzene	04/06/18 6:00	EPA 624	4/11/18 15:42	0.004	mg/kg dry	0.0002	0.00007		SRM
1804050-01	C	2-Chloroethyl vinyl ether	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0003	0.00013		SRM
1804050-01	C	Benzene	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0001	0.00007		SRM
1804050-01	C	Bromodichloromethane	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0002	0.00007		SRM
1804050-01	C	Bromoform	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0003	0.00007		SRM
1804050-01	C	Bromomethane	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0001	0.00007		SRM
1804050-01	C	Carbon Tetrachloride	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0004	0.00007		SRM
1804050-01	C	Chlorobenzene	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.00006	0.00007		SRM
1804050-01	C	Chloroethane	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0002	0.00007		SRM
1804050-01	C	Chloroform	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0001	0.00007		SRM
1804050-01	C	Chloromethane	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0002	0.00007		SRM
1804050-01	C	cis-1,3-Dichloropropene	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.00009	0.00007		SRM
1804050-01	C	Dibromochloromethane	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.00006	0.00007		SRM
1804050-01	C	Ethyl Benzene	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.00009	0.00007		SRM
1804050-01	C	Methylene Chloride	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0002	0.00007		SRM
1804050-01	C	Tetrachloroethene	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0002	0.00007		SRM
1804050-01	C	Toluene	04/06/18 6:00	EPA 624	4/11/18 15:42	0.005	mg/kg dry	0.0001	0.00007		SRM
1804050-01	C	Total Trihalomethanes	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0003	0.00007		SRM
1804050-01	C	trans-1,2-Dichloroethene	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0001	0.00007		SRM
1804050-01	C	trans-1,3-Dichloropropene	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0001	0.00007		SRM
1804050-01	C	Trichloroethene	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0001	0.00007		SRM
1804050-01	C	Trichlorofluoromethane	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0003	0.00007		SRM
1804050-01	C	Vinyl chloride	04/06/18 6:00	EPA 624	4/11/18 15:42	ND	mg/kg dry	0.0002	0.00007		SRM
1804050-01	C	1,2,4-Trichlorobenzene	04/06/18 6:00	EPA 8260	4/11/18 15:42	ND	mg/kg dry		0.00007		SRM
1804050-01	C	1,2-Dibromo-3-chloropropane	04/06/18 6:00	EPA 8260	4/11/18 15:42	ND	mg/kg dry		0.00013		SRM
1804050-01	C	1,2-Dibromoethane	04/06/18 6:00	EPA 8260	4/11/18 15:42	ND	mg/kg dry		0.00007		SRM
1804050-01	C	cis-1,2-Dichloroethene	04/06/18 6:00	EPA 8260	4/11/18 15:42	ND	mg/kg dry		0.00007		SRM
1804050-01	C	m,p-Xylenes	04/06/18 6:00	EPA 8260	4/11/18 15:42	ND	mg/kg dry		0.00013		SRM
1804050-01	C	o-Xylene	04/06/18 6:00	EPA 8260	4/11/18 15:42	ND	mg/kg dry		0.00007		SRM
1804050-01	C	Styrene	04/06/18 6:00	EPA 8260	4/11/18 15:42	ND	mg/kg dry		0.00007		SRM
1804050-01	C	Xylenes, total	04/06/18 6:00	EPA 8260	4/11/18 15:42	ND	mg/kg dry		0.00013		SRM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1804050-01	C	2,3,7,8-TCDD - Dioxin Scan	04/06/18 6:00	EPA 625	5/18/18 13:31	**ND**	ug/kg dry		0.17		SJM
1804050-01	C	1,2,4-Trichlorobenzene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.00200	D1, D7, S1	SJM
1804050-01	C	2,3-Dichloroaniline	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.01	D1, D7, S1	SJM
1804050-01	C	2,4,6-Trichlorophenol	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.001	0.00200	D1, D7, S1	SJM
1804050-01	C	2,4-Dichlorophenol	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.00200	D1, D7, S1	SJM
1804050-01	C	2,4-Dimethylphenol	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.004	0.01	D1, D7, S1	SJM
1804050-01	C	2,4-Dinitrophenol	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.009	0.01	D1, D7	SJM
1804050-01	C	2,4-Dinitrotoluene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804050-01	C	2,6-Dinitrotoluene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804050-01	C	2-Chloronaphthalene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804050-01	C	2-Chlorophenol	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.001	0.00200	D1, D7, S1	SJM
1804050-01	C	2-Methyl-4,6-dinitrophenol	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.005	0.01	D1, D7	SJM
1804050-01	C	2-Methylphenol	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.001	0.00200	D1, D7, S1	SJM
1804050-01	C	2-Nitrophenol	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.003	0.01	D1, D7, S1	SJM
1804050-01	C	3,3-Dichlorobenzidine	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804050-01	C	4-Bromophenyl phenyl ether	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804050-01	C	4-Chloro-3-methylphenol	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.01	D1, D7, S1	SJM
1804050-01	C	4-Chlorophenyl phenyl ether	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804050-01	C	4-Methylphenol	04/06/18 6:00	EPA 625	5/19/18 01:29	**3.55**	mg/kg dry	0.002	0.00200	D1, D7, S1	SJM
1804050-01	C	4-Nitrophenol	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.005	0.01	D1, D7	SJM
1804050-01	C	Acenaphthene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804050-01	C	Acenaphthylene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804050-01	C	Anthracene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804050-01	C	Benzidine	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.007	0.01	D1, D7	SJM
1804050-01	C	Benzo[a]anthracene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804050-01	C	Benzo[a]pyrene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804050-01	C	Benzo[b]fluoranthene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804050-01	C	Benzo[ghi]perylene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804050-01	C	Benzo[k]fluoranthene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804050-01	C	bis(2-chloroethoxy)methane	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.00200	D1, D7, S1	SJM
1804050-01	C	bis(2-chloroethyl)ether	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.01	D1, D7, S1	SJM
1804050-01	C	bis(2-chloroisopropyl)ether	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.00200	D1, D7, S1, V1	SJM
1804050-01	C	bis(2-ethylhexyl)phthalate	04/06/18 6:00	EPA 625	5/19/18 01:29	**1.14**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804050-01	C	Butylbenzylphthalate	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804050-01	C	Carbazole	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804050-01	C	Chrysene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804050-01	C	Dibenzo(a,h)anthracene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804050-01	C	Diethyl phthalate	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804050-01	C	Dimethyl phthalate	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1804050-01	C	Di-n-butyl phthalate	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804050-01	C	Di-n-octyl phthalate	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804050-01	C	Fluoranthene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804050-01	C	Fluorene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804050-01	C	Hexachlorobenzene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1804050-01	C	Hexachlorobutadiene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.001	0.00200	D1, D7, S1	SJM
1804050-01	C	Hexachlorocyclopentadiene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.004	0.01	D1, D7, S1	SJM
1804050-01	C	Hexachloroethane	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.001	0.00200	D1, D7, S1	SJM
1804050-01	C	Indeno(1,2,3-cd)pyrene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804050-01	C	Isophorone	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.00200	D1, D7, S1	SJM
1804050-01	C	Naphthalene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.00200	D1, D7, S1	SJM
1804050-01	C	n-Decane	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.00200	D1, D7, S1	SJM
1804050-01	C	Nitrobenzene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.01	D1, D7, S1	SJM
1804050-01	C	N-Nitrosodimethylamine	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.01	D1, D7, PC3, S1	SJM
1804050-01	C	N-Nitrosodi-n-propylamine	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.01	D1, D7, S1	SJM
1804050-01	C	N-Nitrosodiphenylamine	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.006	0.01	D1, D7	SJM
1804050-01	C	n-Octadecane	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804050-01	C	Pentachlorophenol	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1804050-01	C	Phenanthrene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804050-01	C	Phenol	04/06/18 6:00	EPA 625	5/19/18 01:29	**3.83**	mg/kg dry	0.003	0.01	D1, D7, S1	SJM
1804050-01	C	Pyrene	04/06/18 6:00	EPA 625	5/19/18 01:29	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1804050-01	C	1,2-Diphenylhydrazine	04/06/18 6:00	EPA 8270C	5/19/18 01:29	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
Final Effluent #3 (20001-7030)											
1804022-01	D	Temperature	04/03/18 11:25	SM2550B	4/3/18 11:25	**26.5**	°C		0.10		SMPLR
1804022-01	D	pH	04/03/18 11:25	SM4500 H B	4/3/18 11:25	**7.3**	pH Units				SMPLR
1804022-01	D	Temp at time of pH, °C	04/03/18 11:25	SM4500 H B	4/3/18 11:25	**24.9**	°C				SMPLR
1804022-01	D	Ammonia	04/03/18 11:25	SM4500-NH3-D	4/5/18 11:46	**0.13**	mg/L	0.07	0.50	J	KMT
1804022-01	D	Nitrate	04/03/18 11:25	Calculated	4/13/18 14:19	**3.15**	mg/L	0.02	0.20		KMT
1804022-01	D	Nitrate/Nitrite	04/03/18 11:25	EPA 353.2	4/13/18 14:19	**3.19**	mg/L	0.02	0.20		JGB
1804022-01	D	Nitrite	04/03/18 11:25	SM4500-NO2 B	4/4/18 08:09	**0.04**	mg/L	0.02	0.20	J	KMT
1804022-01	D	Total Kjeldahl Nitrogen	04/03/18 11:25	EPA 351.2	4/12/18 10:40	**1.66**	mg/L	0.29	0.80		HAV
1804022-01	D	Nitrogen Total Water	04/03/18 11:25	Calculated	4/13/18 14:19	**4.85**	mg/L	0.29	0.80		HAV
1804022-01	D	Sulfide	04/03/18 11:25	Hach 8131	4/8/18 15:38	**ND**	mg/L	0.005	0.100		MGA
1804022-01	D	Oil & Grease	04/03/18 11:25	EPA 1664B	4/17/18 14:18	**4.02**	mg/L	1.25	4.00		DML
1804046-02	C	Antimony	04/06/18 6:00	EPA 200.8	4/10/18 14:28	**0.48**	ug/L	0.21	1.00	J	JB
1804046-02	C	Arsenic	04/06/18 6:00	EPA 200.8	4/10/18 14:28	**2.99**	ug/L	0.07	1.00		JB
1804046-02	C	Barium	04/06/18 6:00	EPA 200.8	4/10/18 14:28	**50.4**	ug/L	0.19	1.00		JB
1804046-02	C	Beryllium	04/06/18 6:00	EPA 200.8	4/10/18 14:28	**ND**	ug/L	0.33	1.00		JB
1804046-02	C	Cadmium	04/06/18 6:00	EPA 200.8	4/10/18 14:28	**ND**	ug/L	0.07	1.00		JB
1804046-02	C	Calcium	04/06/18 6:00	EPA 200.7	4/17/18 17:03	**67.9**	mg/L	0.02	4.00		MLB
1804046-02	C	Chromium	04/06/18 6:00	EPA 200.8	4/10/18 14:28	**0.57**	ug/L	0.03	1.00	J	JB
1804046-02	C	Copper	04/06/18 6:00	EPA 200.8	4/10/18 14:28	**2.00**	ug/L	0.36	1.00		JB
1804046-02	C	Cyanide	04/06/18 6:00	SM4500-CN-E	4/17/18 10:33	**3.23**	ug/L	1.61	5.00	J	DML
1804046-02	C	Hardness	04/06/18 6:00	SM 2340B	4/17/18 17:03	**222**	mg/L	0.05	9.99		MLB
1804046-02	C	Iron	04/06/18 6:00	EPA 200.7	4/10/18 16:49	**65.8**	ug/L	6.45	25.00		MLB
1804046-02	C	Lead	04/06/18 6:00	EPA 200.8	4/10/18 14:28	**0.22**	ug/L	0.01	1.00	J	JB
1804046-02	C	Magnesium	04/06/18 6:00	EPA 200.7	4/17/18 17:03	**12.7**	mg/L	0.004	2.00		MLB
1804046-02	C	Mercury	04/06/18 6:00	EPA 245.1	4/20/18 11:02	**ND**	ug/L	0.19	0.20		DML
1804046-02	C	Nickel	04/06/18 6:00	EPA 200.8	4/10/18 14:28	**1.22**	ug/L	0.24	1.00		JB
1804046-02	C	Selenium	04/06/18 6:00	EPA 200.8	4/10/18 14:28	**0.83**	ug/L	0.48	1.00	J	JB
1804046-02	C	Silver	04/06/18 6:00	EPA 200.8	4/10/18 14:28	**ND**	ug/L	0.03	1.00		JB
1804046-02	C	Thallium	04/06/18 6:00	EPA 200.8	4/10/18 14:28	**0.05**	ug/L	0.01	1.00	J	JB
1804046-02	C	Acrolein	04/06/18 6:00	EPA 624	4/12/18 14:54	**ND**	ug/L	3.60	5.00	L4, N1	SRM
1804046-02	C	Acrylonitrile	04/06/18 6:00	EPA 624	4/12/18 14:54	**ND**	ug/L	2.76	5.00		SRM
1804046-02	C	4,4-DDD	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.06	0.13		MSM
1804046-02	C	4,4-DDE	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.03	0.13		MSM
1804046-02	C	4,4-DDT	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.06	0.13		MSM
1804046-02	C	Aldrin	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.06	0.13		MSM
1804046-02	C	alpha-BHC	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.04	0.13		MSM
1804046-02	C	beta-BHC	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.09	0.50		MSM
1804046-02	C	Chlordane	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.25	1.00		MSM
1804046-02	C	delta-BHC	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.07	0.13		MSM
1804046-02	C	Dieldrin	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.12	0.13		MSM
1804046-02	C	Endosulfan I	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.04	0.13		MSM
1804046-02	C	Endosulfan II	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.03	0.13		MSM
1804046-02	C	Endosulfan sulfate	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.04	0.13	N1	MSM
1804046-02	C	Endrin	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.10	0.13		MSM
1804046-02	C	Endrin aldehyde	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.11	0.13		MSM
1804046-02	C	gamma-BHC (Lindane)	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.07	0.13		MSM
1804046-02	C	Heptachlor	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.05	0.13		MSM
1804046-02	C	Heptachlor Epoxide	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.04	0.13		MSM
1804046-02	C	PCB 1016	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.06	0.30		MSM
1804046-02	C	PCB 1221	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.17	0.30		MSM
1804046-02	C	PCB 1232	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.07	0.25		MSM
1804046-02	C	PCB 1242	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.13	0.30		MSM
1804046-02	C	PCB 1248	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.10	0.30		MSM
1804046-02	C	PCB 1254	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.19	0.30		MSM
1804046-02	C	PCB 1260	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.07	0.25		MSM
1804046-02	C	Total PCBs	04/06/18 6:00	EPA 625	4/17/18 13:54	**ND**	ug/L	0.25	0.75		MSM

Qualifier Definitions

A	Absence
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
L4	The associated blank spike recovery was below method acceptance limits.
N1	See case narrative.
N7	Additional analysis was not performed based on the "Total" result which was below the requested analyte's MCL/Action level/Trigger Level.
NA	Not Analyzed
PC3	Semi-quantitation is included in the case narrative.
Q6	Sample was received above recommended temperature.
S1	Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction

Case Narrative(s)

1804046-01, 02
EPA Method 624 Acrolein and Acrylonitrile. Target analytes flagged with N1 failed the Spike Percent Recovery for Acrolein. The analyte was not detected in the samples. The associated CVS passed. SRM 041918

1804046-01, 02
EPA Method 625/8270 Pesticides: Target analyte Endosulfan Sulfate is flagged with N1and failed the Matrix Spike from the same analytical batch but the spike was performed on a different sample. MSM 042018

Semi-Quantitation
Method: 625
1804046-01

Compound Name	Concentration-ug/L
Benzoic Acid	119
Benzeneacetic Acid	112
N,N-Dimethyl-1-dodecanamine	376
Palmitic Acid	15012
Oleic Acid	23079
Stearic Acid	8270

SJM 06/06/18

1804050-01
EPA Method 625/8270 Pesticides: Target analyte Endosulfan Sulfate is flagged with N1and failed the Matrix Spike from the same analytical batch but the spike was performed on a different sample. MSM 042018

Semi-Quantitation
Method: 625
1804050-01

Compound Name	Concentration-mg/Kg
Benzeneacetic Acid	44
Palmitic Acid	2810
Oleic Acid	2173
Stearic Acid	641

SJM 06/06/18

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1804049-01

PROJECT & LOCATION: Tres Rios WRF - Dewatered Cake Biosolids (Quarterly)

PROJECT-LOCATION NUMBER: 20001-5703 (XXXXX-XXXX)

SAMPLE START DATE: 04-05-2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE START TIME: 0600 (Military time) CLIENT: IWC

SAMPLE END DATE: 04-06-2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE END TIME: 0600 (Military time) SAMPLER(S): Silva, Kaufman, Riccaboni, Martinez (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ☐ 503 ☐ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ☒ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury			☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *			☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total (contract)	☐	☒
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other	☐	☐
Other	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other	☐	☐
Other	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH GCS 04-06-18	☐	☐
Solids, Total (contract)	☐	☒
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other	☐	☐

OTHER	D	C
Paint Filter	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions:
~~The Lab shall composite the Purgeable Organic and Acrolein/Acrylonitrile samples.~~ GCS 04-06-18
Sent to Test America. GCS 04-06-18
PO#18-027679

Septum Blank Prep Date & Initials: ~~03/06/18~~ ~~LES + MF~~ GCS 04-06-18

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	Riccaboni Jr.	04-05-18	1530
Riccaboni Jr.	Refrigerator	04-06-18	0130
Refrigerator	[signature]	04-06-18	0600
[signature]	[signature]	04-06-18	0941
[signature]	Mike Root	04-06-18	1157

Sample Integrity/Preservation:

of Bottles Delivered: 2 GCS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

GCS 04-06-18 Temperature: ~~GCS~~ 7 °C

Initials: GCS

Q6 qualifier? ☒ YES ☐ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Joe Doranski	Site Contact:	Date:	COC No:
Pima County CRAO Lab	Tel/Fax: 520-724-6032	Lab Contact:	Carrier:	1 of 1 COCs
2955 W. Calle Agua Nueva	Analysis Turnaround Time			Sampler: Mike Silva
Tucson/AZ/85745	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(520) 724-6032 Phone	TAT if different from Below _____			Walk-in Client:
(520) 724-6075 FAX	☑ 2 weeks			Lab Sampling:
Project Name: TR and AN	☐ 1 week			
Site: Tres Rios WRF & Agua Nueva WRF	☐ 2 days			Job / SDG No.:
P O # 18-027679	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Cyanide total mg/kg dry	Total % solids for mg/kg dry	Sample Specific Notes:
Agua Nueva WRF thickened sludge pump 26107-0600										BS - biosolids
1804 048-01	4/6/18	0600	Comp	BS	2	N		1	1	mg/kg dry
Tres Rios WRF dewatered cake biosolids 20001-5703										BS - biosolids
1804 049-01	4/6/18	0600	Comp	BS	2	N		1	1	mg/kg dry

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PC CRAO Lab	04-06-18/1002	[signature]	PC CRAO	04-04-18 / 1002
Relinquished by: [signature]	Company: PC CRAO	Date/Time:	Received by: [signature]	Company: TA	Date/Time: 4/6/18 1157
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

PIMA COUNTY
WASTEWATER RECLAMATION

COMPLIANCE AND REGULATORY AFFAIRS OFFICE LABORATORY
2955 W Calle Agua Nueva, Tucson, AZ 85745
Telephone: (520) 724-6200

LIMS CHECKLIST FOR SUBCONTRACT DATA

LIMS ID	**1804048-01, 1804049-01**	**DO**	**18-027679**
CONTRACT LAB	**TestAmerica PHX**	**SAMPLE GROUP**	**TR and AN**
ANALYSES	**Percent Solids, Cyanide (Biosolids)**	**REPORT ID**	**550-100795-1**

TRANSFER & CONVERT FILES:	
Was the contract lab spreadsheet file saved to \\Splimsapp\elementshare\TransferIn ?	Y
Was the above mentioned file converted from a .xls file to a .mdb file for each WO#, and further, for each subcontract location, or separate analysis (as applicable), on the contract lab report? (Element>Project Management>Reports)	Y
Was the converted file attached to the sample in LIMS?	Y
VALIDATING CONTRACT LAB REPORT , CHAIN OF CUSTODY(S), AND DO#:	
Contract Lab Report signed and dated?	Y
Copy of contract lab COC included with contract Lab Report?	Y
Contract lab COC verified with CRAO COC(s) for Sample ID, Sample Date, Analysis Requested?	Y
Sample dates and received dates on the CL report, match the CL COC?	Y
CL report includes all requested analysis?	Y
CL licensed in AZ for the reported methods?	Y
Check that DO matches COC in types and number of tests?	N/A
DO received in Pima Core?	N/A
CONTRACT LAB REPORT, EXCEL SPREADSHEET, and QC:	
CL report and CL spreadsheet report the same sample results, sample date, and analysis date?	Y
Was a Case Narrative Included in Contract Lab report?	Y
Data packet includes QC Report from primary lab and any secondary subcontract labs?	Y
Did CL report list applicable AZ Data Qualifiers?	Y
Were there any dilutions made to samples that were reported as ND?	N
If so, were they qualified due to matrix interference?	N/A
Was QC included for every analysis method: typically Blk, LCS, MS, MSD?	Y
Did QC pass stated acceptance limits, or was it qualified?	Y
Were samples analyzed within required holding times?	Y
Check that MDLs are below water quality standards, If not notify Belinda Gamboa-Felix? (Cyanide, Hexachlorobenzene)	Y
Semivolatiles & Volatiles: Check that all analytes were delivered?	N/A
COMPLIANCE LIMIT REVIEW	
Were results compared to the discharge permit?.	N/A
Was Belinda Gamboa-Felix notified of any exceedences?	N/A
WET TESTING SPECIFIC REQUIREMENTS	
Statement of Pass/Fail reflected in End Points?	N/A
Report states if zeolite treatment was utilized?	N/A
Survival and Reproduction or Growth Data included (P. promelas or Ceriodaphnia only)?	N/A
Chemistry data included?	N/A

Reference Toxicant Test Results and Control Chart within limits?			N/A
PMSD Determination included and within acceptable range? (minimum acceptable= 13)			N/A
End Points include TUc, NOEC, LOEC, and IC25?			N/A
Statistics verify endpoints			N/A
Control Charts Updated to include month of analysis			N/A
Reviewer Initials:	**ABR**	**Review Date:**	**6-28-18**

PEER/FINAL REVIEW:	PR	FR
LIMS/Excel data matches printed CL report?	✓	
Analysis dates are correct?	✓	
Correct Data Qualifiers included if necessary.	✓	
CRAO report shows result is from Contract Lab?	✓	
CRAO report shows correct Contract Lab (e.g. Test America, Phoenix)?	✓	
DO received in Pima Core	✓	
Analysis set to Reported?		✓

Peer Reviewer Initials:	JLO	**Review Date:**	6-28-18
Biomonitor Supervisor Initials:	N/A	**Review Date:**	
Final Reviewer Initials:	JEC	**Review Date:**	7.3.18

CORRECTIVE ACTION REPORT:			
Preliminary Review:		Date:	
QA/QC Review:		Date:	
Data Entry:		Date:	
Peer Review:		Date:	
Lab Supervisor:		Date:	

LIMS #:	**DEVIATION:**	**CORRECTIVE ACTION:**

DEVIATIONS FROM ACCEPTABLE QA/QC:

Missing QC Report/Data
Holding Time for analysis exceeded.
Inappropriate dilution performed.
Missing COC.
Missing Data Qualifiers.
Incorrect Analysis Method.
Incorrect Sample IDs.
Other.

CORRECTIVE ACTION:

Request report correction from Subcontract Lab project manager.
Add missing Data Qualifiers.
Notify data end-user of deviation.
Arrange for resampling.
Other.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-100795-1
TestAmerica SDG: Tres rios WRF & Agua Nueva WRF
Client Project/Site: TR and AN

For:
Pima County WWTP
PO BOX 791
Tucson, Arizona 85701

Attn: Joseph Doranski

Authorized for release by:
4/12/2018 10:38:13 AM

Linda Eshelman, Project Manager II
(602)659-7629
linda.eshelman@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Sample Summary 5
Detection Summary 6
Client Sample Results 7
QC Sample Results 8
QC Association Summary 9
Lab Chronicle 10
Certification Summary 11
Method Summary 12
Chain of Custody 13
Receipt Checklists 14

Definitions/Glossary

Client: Pima County WWTP
Project/Site: TR and AN

TestAmerica Job ID: 550-100795-1
SDG: Tres rios WRF & Agua Nueva WRF

Qualifiers

General Chemistry

Qualifier	Qualifier Description
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pima County WWTP
Project/Site: TR and AN

TestAmerica Job ID: 550-100795-1
SDG: Tres rios WRF & Agua Nueva WRF

Job ID: 550-100795-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-100795-1

Comments
No additional comments.

Receipt
The samples were received on 4/6/2018 2:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Pima County WWTP
Project/Site: TR and AN

TestAmerica Job ID: 550-100795-1
SDG: Tres rios WRF & Agua Nueva WRF

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-100795-1	1804048-01	Waste	04/06/18 06:00	04/06/18 14:15
550-100795-2	1804049-01	Solid	04/06/18 06:00	04/06/18 14:15

Detection Summary

Client: Pima County WWTP
Project/Site: TR and AN

TestAmerica Job ID: 550-100795-1
SDG: Tres rios WRF & Agua Nueva WRF

Client Sample ID: 1804048-01 — Lab Sample ID: 550-100795-1

No Detections.

Client Sample ID: 1804049-01 — Lab Sample ID: 550-100795-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	2.9		2.6	1.1	mg/Kg	1	☼	9014	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Pima County WWTP
Project/Site: TR and AN

TestAmerica Job ID: 550-100795-1
SDG: Tres rios WRF & Agua Nueva WRF

Client Sample ID: 1804048-01 **Lab Sample ID: 550-100795-1**
Date Collected: 04/06/18 06:00 **Matrix: Waste**
Date Received: 04/06/18 14:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	0.6		0.1	0.1	%			04/09/18 10:20	1

Client Sample ID: 1804048-01 **Lab Sample ID: 550-100795-1**
Date Collected: 04/06/18 06:00 **Matrix: Waste**
Date Received: 04/06/18 14:15 **Percent Solids: 0.6**

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	E8	61	26	mg/Kg	☼	04/09/18 16:30	04/11/18 15:35	1

Client Sample ID: 1804049-01 **Lab Sample ID: 550-100795-2**
Date Collected: 04/06/18 06:00 **Matrix: Solid**
Date Received: 04/06/18 14:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	85.1		0.1	0.1	%			04/09/18 10:20	1
Percent Solids	14.9		0.1	0.1	%			04/09/18 10:20	1

Client Sample ID: 1804049-01 **Lab Sample ID: 550-100795-2**
Date Collected: 04/06/18 06:00 **Matrix: Solid**
Date Received: 04/06/18 14:15 **Percent Solids: 14.9**

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	2.9		2.6	1.1	mg/Kg	☼	04/09/18 16:30	04/11/18 15:35	1

QC Sample Results

Client: Pima County WWTP
Project/Site: TR and AN

TestAmerica Job ID: 550-100795-1
SDG: Tres rios WRF & Agua Nueva WRF

Method: 2540G - SM 2540G

Lab Sample ID: MB 550-143976/1
Matrix: Solid
Analysis Batch: 143976

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	0.0		0.1	0.1	%			04/09/18 10:20	1
Percent Solids	100.0		0.1	0.1	%			04/09/18 10:20	1

Lab Sample ID: 550-100795-1 DU
Matrix: Waste
Analysis Batch: 143976

Client Sample ID: 1804048-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	99.4		99.4		%		0	10
Percent Solids	0.6		0.6		%		3	10

Method: 9014 - Cyanide

Lab Sample ID: MB 550-144032/1-B
Matrix: Solid
Analysis Batch: 144277

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 144032

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	E8	0.39	0.17	mg/Kg		04/09/18 16:30	04/11/18 15:35	1

Lab Sample ID: LCS 550-144032/2-B
Matrix: Solid
Analysis Batch: 144277

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 144032

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	2.31	2.30		mg/Kg		100	90 - 110

Lab Sample ID: LCSD 550-144032/3-B
Matrix: Solid
Analysis Batch: 144277

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 144032

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	2.36	2.25		mg/Kg		95	90 - 110	2	20

Lab Sample ID: 550-100193-C-1-D MS
Matrix: Solid
Analysis Batch: 144277

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 144032

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	3.3		2.74	5.83		mg/Kg	☼	91	80 - 120

Lab Sample ID: 550-100193-C-1-E MSD
Matrix: Solid
Analysis Batch: 144277

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 144032

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	3.3		2.74	5.83		mg/Kg	☼	91	80 - 120	0	20

Accreditation/Certification Summary

Client: Pima County WWTP
Project/Site: TR and AN

TestAmerica Job ID: 550-100795-1
SDG: Tres rios WRF & Agua Nueva WRF

Laboratory: TestAmerica Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0728	06-09-18

Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: Pima County WWTP
Project/Site: TR and AN

TestAmerica Job ID: 550-100795-1
SDG: Tres rios WRF & Agua Nueva WRF

Method	Method Description	Protocol	Laboratory
2540G	SM 2540G	SM22	TAL PHX
9014	Cyanide	SW846	TAL PHX

Protocol References:

SM22 = SM22

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax

Chain of Custody Record

100795

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

4/12/2018

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

Client Contact	Project Manager: Joe Doranski	Site Contact:	Date:	COC No:
Pima County CRAO Lab	Tel/Fax: 520-724-6032	Lab Contact:	Carrier:	1 of 1 COCs
2955 W. Calle Agua Nueva	Analysis Turnaround Time			Sampler: Mike Silva
Tucson/AZ/85745	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(520) 724-6032 Phone	TAT if different from Below _____			Walk-in Client:
(520) 724-6075 FAX	☑ 2 weeks			Lab Sampling:
Project Name: TR and AN	☐ 1 week			
Site: Tres Rios WRF & Agua Nueva WRF	☐ 2 days			Job / SDG No.:
P O # 18-027679	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Cyanide total mg/kg dry	Total % solids for mg/kg dry	Sample Specific Notes:
Agua Nueva WRF thickened sludge pump 26107-0600										BS - biosolids
-01 1804048-01	4/6/18	0600	Comp	BS	2	N		1	1	mg/kg dry
Tres Rios WRF dewatered cake biosolids 20001-5703										BS - biosolids
-02 1804049-01	4/6/18	0600	Comp	BS	2	N		1	1	mg/kg dry

550-100795 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☑Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐Return to Client ☑Disposal by Lab ☐Archive for _____ Months

Special Instructions/QC Requirements & Comments:

0.8°C R

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PC CRAO Lab	04-06-18/1002	[signature]	PC CRAO	04-04-18 / 1002
[signature]	PC CRAO		[signature]	TA	4/6/18 1157
[signature] 1415	4/6/18		Received in Laboratory by: [signature]		4-6-18 1415

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Login Sample Receipt Checklist

Client: Pima County WWTP

Job Number: 550-100795-1
SDG Number: Tres rios WRF & Agua Nueva WRF

Login Number: 100795
List Number: 1
Creator: Gravlin, Andrea

List Source: TestAmerica Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1804050-01

PROJECT & LOCATION: Tres Rios WRF - Dewatered Cake Biosolids (Quarterly)

PROJECT-LOCATION NUMBER: 20001-5703 (XXXXX-XXXX)

SAMPLE START DATE: 04-05-2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 0600 (Military time)

CLIENT: IWC

SAMPLE END DATE: 04-06-2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0600 (Military time)

SAMPLER(S): Silva, Kaufman, Riccaboni, Martinez (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Hardness				
Iron				
Lead				
Magnesium				
Manganese				
Mercury	×			■
Mercury LL				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Thallium				
Tin				

METALS	Tot	Diss	D	C
Titanium				
Vanadium				
Zinc				
PPMs *	×			■
TCLP Metals				
503 Metals **				■
Dissolved Cr+6				

WET METHODS	D	C
Ammonia as N		
Chloride		
Cyanide, Total		
Cyanide, Amenable		
Fluoride		
Ignitability		
Nitrate as N		
Nitrite as N		
Nitrate/Nitrite as N		
Nitrogen, Total Kjeldahl		
Nitrogen, Total as N		
Orthophosphate as P		
Phosphorus, Total as P		
Sulfate		
Sulfide		
Other		
Other		

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	■	
Dioxin GC/SIM/MS Scan		■
Organochlorine Pesticides & PCBs		■
Purgeable Organics (GCMS)	■	
Semivolatile Organics (GCMS)		■
Bis(2-ethylhexyl) phthalate		
Digester Gas		
Oil and Grease		
Organic Carbon, Total		
Organic Carbon, Dissolved		
TCLP Herbicides (Contract Lab)		
TCLP Pesticides		
TCLP Semivolatile Organics		
TCLP Volatile Organics		
TTHM		
Total Petroleum Hydrocarbons		
Volatile Acids		
Other		
Other		

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*		
Chronic *C. dubia*		
Chronic *Selenastrum capricornutum*		
Other		

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity		
BOD		
COD		
Coliform, Fecal		
Coliform, Total		
Specific Conductance		
E. coli		
Oxygen, Dissolved		
pH		
Solids, Total		■
Solids, Total Dissolved		
Solids, Total Suspended		
Solids, Total Volatile		
Solids, Volatile Suspended		
Other		

OTHER	D	C
Paint Filter		

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions: The Lab shall composite the Purgeable Organic and Acrolein/Acrylonitrile samples.

624+ GOS 04-06-18

Septum Blank Prep Date & Initials: 03/06/18 LEJ + MF

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	04-05-18	1530
Relinquished by:	Received by:	Date:	Time: (Military time)
[signature]	Refrigerator	04-06-18	0130
Relinquished by:	Received by:	Date:	Time: (Military time)
Refrigerator	[signature]	04-06-18	0600
Relinquished by:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	04-06-18	0941
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

of Bottles Delivered: 7 GOS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 7 °C

Initials: GOS

Q6 qualifier? ☒ YES ☐ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒		
Sample labels match Chain of Custody?	☒		
Correct number of sample bottles were delivered?	☒		
Custody seals intact?			☒
Within holding time?	☒		
Sufficient sample volume for analysis?	☒		
Samples are in properly preserved containers?	☒		
Sample containers damaged/leaking/frozen?		☒	
40 ml vials headspace, > pea-sized air bubble?	☒		
Received from a refrigerator?		☒	

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT
WATER QUALITY
SAMPLE COLLECTION REPORT

SAMPLE LOCATION: Tres Rios WRF – Dewatered Cake Biosolids LIMS: 1804050-01
LOCATION ID: 20001 – 5703 SAMPLERS: Silva, Kaufman, Riccaboni SAMPLE DATE: 04-06-18
Last names only, primary sampler first Martinez

Sample D or C	Parameter	Frequency	AUTO MAN	Volume Submitted	Bottle/Preservation
C	Semivolatile Organics	Hand Composite	Man	1000 ml	Amber Glass/None/Ice
C	Organochlorine Pest & PCB's		Man	1000 ml	Amber Glass/None/Ice
C	Dioxin		Man	1000 ml	Amber Glass/None/Ice
C	Priority Pollutant & 503 Metals	4 Aliquots for the duration of the discharge	Man	1000 ml	Dissolved Metals/None/Ice
C	Total Solids		Man	1000 ml	General Purpose/None/Ice
C	Total Solids		Man	1000 ml	General Purpose/None/Ice
C	Cyanide		Man	1000 ml	Dissolved Metals/None/Ice
			Total	8L	
To be Composited by the Laboratory					
D	Purgeable Organics	Hand Composite	Man	4 X 40	None/Ice
D	Acrolein/Acrylonitrile		Man	4 X 40	None/Ice
		4 Aliquots for the duration of the discharge			
To be Submitted to an outside Laboratory					

Grab 2L for each aliquot

	Time
Aliquot #1	4/5/18 0730
Aliquot #2	4-5-18 1385
Aliquot #3	4.5.18 1820
Aliquot #4	4.6.18 0020

Comments:	Dewatered Cake Biosolids samples are not preserved.
	All Composites including Cyanide can be poured off at the end of the sampling event

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson, Arizona 85745-9750, Phone (520) 724-6200

Report Date: 02/12/2019
Laboratory License: AZO159

Sample Analysis Report

Client: Industrial Wastewater Control
Project: Tres Rios WRF
Permit Type: AZPDES

Work Order ID: 1807096
Lab Received Date: 7/13/18 8:34
Project Number: 20001

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory Licensure Rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Pratt

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

2·12·19
Date

Laboratory License: AZO159

Analytical Report for Samples

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
Dewatered Cake Biosolids	1807096-03	Biosolids	7/13/2018 6:00:00	7/13/2018 8:34:00	Q6

Sample ID: 1807096-03

Site Location: Dewatered Cake Biosolids

Site Number: 20001-5703

Sample Start Date/Time 7/12/2018 6:00:00

Sample End Date/Time 7/13/2018 6:00:00

Sampled By: Michael Silva

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
Antimony	C	EPA 6010D	7/25/18 10:38	**ND**	mg/kg dry		6.69		MLB	
Arsenic	C	EPA 6010D	7/25/18 10:38	**9.20**	mg/kg dry		6.69		MLB	
Beryllium	C	EPA 6010D	7/25/18 10:38	**ND**	mg/kg dry		1.34		MLB	
Cadmium	C	EPA 6010D	7/25/18 10:38	**ND**	mg/kg dry		2.68		MLB	
Chromium	C	EPA 6010D	7/25/18 10:38	**30.0**	mg/kg dry		6.69		MLB	
Copper	C	EPA 6010D	7/25/18 10:38	**417**	mg/kg dry		6.69		MLB	
Lead	C	EPA 6010D	7/25/18 12:51	**12.4**	mg/kg dry		6.69		MLB	
Molybdenum	C	EPA 6010D	7/25/18 10:38	**13.1**	mg/kg dry		2.68		MLB	
Nickel	C	EPA 6010D	7/25/18 10:38	**22.6**	mg/kg dry		6.69		MLB	
Selenium	C	EPA 6010D	7/25/18 10:38	**ND**	mg/kg dry		13.38		MLB	
Silver	C	EPA 6010D	7/25/18 12:51	**3.43**	mg/kg dry		0.67		MLB	
Thallium	C	EPA 6010D	7/25/18 12:51	**ND**	mg/kg dry		6.69		MLB	
Mercury	C	EPA 7471B	7/26/18 09:35	**0.78**	mg/kg dry		0.00303		DML	
Acrylonitrile	C	EPA 8260	7/23/18 19:09	**ND**	mg/kg dry	3.66	12.7	E8, D1, H4	LSD	*
Acrolein	C	EPA 8260	7/23/18 19:09	**ND**	mg/kg dry	6.02	25.3	M2, V1, E8, D1, H4	LSD	*
2-Chloroethylvinyl ether	C	EPA 8260	7/23/18 19:09	**ND**	mg/kg dry	0.255	2.53	E8, D1, H4	LSD	*

* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.

Chlorobenzene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.385	2.53	E8, D1, H4	LSD	*
Hexachlorobutadiene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.541	2.53	E8, D1, H4	LSD	*
Ethylbenzene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.508	2.53	E8, D1, H4	LSD	*
Dichloromethane	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.603	2.53	E8, D1, H4	LSD	*
Dichlorodifluoromethane	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	1.43	2.53	E8, D1, H4	LSD	*
Dibromomethane	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.433	2.53	E8, D1, H4	LSD	*
Dibromochloromethane	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.284	2.53	E8, D1, H4	LSD	*
cis-1,3-Dichloropropene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.552	2.53	E8, D1, H4	LSD	*
cis-1,2-Dichloroethylene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.678	2.53	E8, D1, H4	LSD	*
Chloromethane	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.625	2.53	E8, D1, H4	LSD	*
4-Methyl-2-pentanone	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	4.18	12.7	E8, D1, H4	LSD	*
Chloroethane	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.782	6.33	E8, D1, H4	LSD	*
m,p-Xylene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.445	5.06	E8, D1, H4	LSD	*
Carbon Tetrachloride	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.673	2.53	E8, D1, H4, M2	LSD	*
Carbon disulfide	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	1.01	12.7	E8, D1, H4	LSD	*
Bromomethane	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.862	2.53	E8, D1, H4, M2	LSD	*
Bromoform	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.414	2.53	E8, D1, H4	LSD	*
Bromodichloromethane	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.539	2.53	E8, D1, H4	LSD	*
Bromochloromethane	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.704	2.53	E8, D1, H4	LSD	*
Bromobenzene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.486	2.53	E8, D1, H4	LSD	*
Benzene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.488	2.53	E8, D1, H4	LSD	*
Chloroform	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.534	2.53	E8, D1, H4	LSD	*
tert-Butylbenzene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.52	2.53	E8, D1, H4	LSD	*
Xylenes (total)	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry		7.6	E8, D1, H4	LSD	*
Vinyl chloride	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.266	0.633	E8, D1, H4	LSD	*
Trichlorofluoromethane	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.833	2.53	E8, D1, H4	LSD	*
Trichloroethene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.528	2.53	E8, D1, H4	LSD	*
trans-1,4-Dichloro-2-butene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	7.56	12.7	E8, D1, H4, M2	LSD	*
trans-1,3-Dichloropropene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.369	2.53	E8, D1, H4	LSD	*
trans-1,2-Dichloroethene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.54	2.53	E8, D1, H4	LSD	*
Total THMs	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry		2.53	E8, D1, H4	LSD	*
Iodomethane	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	6.99	12.7	E8, D1, H4, M2	LSD	*
Tetrachloroethene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.6	2.53	E8, D1, H4	LSD	*
Isopropylbenzene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.484	2.53	E8, D1, H4	LSD	*
Styrene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.384	2.53	E8, D1, H4	LSD	*
sec-Butylbenzene	C	EPA 8260B	7/23/18 19:09	**ND**	mg/kg dry	0.578	2.53	E8, D1, H4	LSD	*

Sample ID: 1807096-03 **Sample Start Date/Time** 7/12/2018 6:00:00

Site Location: Dewatered Cake Biosolids **Sample End Date/Time** 7/13/2018 6:00:00

Site Number: 20001-5703 **Sampled By:** Michael Silva

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
p-Isopropyltoluene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.528	2.53	E8, D1, H4	LSD	*
o-Xylene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.351	2.53	E8, D1, H4	LSD	*
Naphthalene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.279	2.53	E8, D1, H4	LSD	*
n-Propylbenzene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.646	2.53	E8, D1, H4	LSD	*
n-Butylbenzene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.478	2.53	E8, D1, H4	LSD	*
Methyl-tert-butyl ether	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	1.95	2.53	E8, D1, H4	LSD	*
Methyl methacrylate	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	5.43	12.7	E8, D1, H4	LSD	*
4-Chlorotoluene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.477	2.53	E8, D1, H4	LSD	*
Toluene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.535	2.53	E8, D1, H4	LSD	*
Acetone	C	EPA 8260B	7/23/18 19:09	11.2	mg/kg dry	7.71	25.3	E4, D1, H4	LSD	*
1,1,1-Trichloroethane	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.539	2.53	E8, D1, H4	LSD	*
1,1,2,2-Tetrachloroethane	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.403	2.53	E8, D1, H4	LSD	*
1,2-Dibromoethane (EDB)	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.451	2.53	E8, D1, H4	LSD	*
2-Hexanone	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	3.34	12.7	E8, D1, H4	LSD	*
2-Chlorotoluene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.503	2.53	E8, D1, H4	LSD	*
2-Butanone	C	EPA 8260B	7/23/18 19:09	6.73	mg/kg dry	4.44	12.7	E4, D1, H4	LSD	*
2,2-Dichloropropane	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.673	2.53	E8, D1, H4	LSD	*
1,4-Dichlorobenzene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.447	2.53	E8, D1, H4	LSD	*
1,3-Dichloropropane	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.295	2.53	E8, D1, H4	LSD	*
1,3-Dichlorobenzene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.499	2.53	E8, D1, H4	LSD	*
1,3,5-Trimethylbenzene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.503	2.53	E8, D1, H4	LSD	*
1,2-Dichloropropane	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.517	2.53	E8, D1, H4	LSD	*
1,1,1,2-Tetrachloroethane	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.305	2.53	E8, D1, H4	LSD	*
1,2-Dichlorobenzene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.324	2.53	E8, D1, H4	LSD	*
1,2-Dibromo-3-chloropropane	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.618	6.33	E8, D1, H4	LSD	*
1,2,4-Trimethylbenzene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.464	2.53	E8, D1, H4	LSD	*
1,2,4-Trichlorobenzene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.376	2.53	E8, D1, H4	LSD	*
1,2,3-Trichloropropane	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.472	2.53	E8, D1, H4	LSD	*
1,2,3-Trichlorobenzene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.326	2.53	E8, D1, H4	LSD	*
1,1-Dichloropropene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.606	2.53	E8, D1, H4	LSD	*
1,1-Dichloroethene	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.68	2.53	E8, D1, H4	LSD	*
1,1-Dichloroethane	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.547	2.53	E8, D1, H4	LSD	*
1,1,2-Trichloroethane	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.147	2.53	E8, D1, H4	LSD	*
1,2-Dichloroethane	C	EPA 8260B	7/23/18 19:09	ND	mg/kg dry	0.672	2.53	E8, D1, H4	LSD	*

* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.

Cyanide, Total	C	EPA 9014	7/20/18 10:58	0.316	mg/kg dry	0.162	0.633	E4, M2	AM	*

* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.

% Solids	C	SM 2540 G	7/18/18 16:20	16	%		1		SLL	*

* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.

% Solids	C	SM 2540G	7/15/18 09:40	16.51	%		0.01		TDA	
Chlordane	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00025	0.02	D1, D7, N1	MSM	
Heptachlor Epoxide	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00004	0.00203	D1, D7, N1	MSM	
Heptachlor	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00005	0.00203	D1, D7, N1	MSM	
gamma-BHC (Lindane)	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00007	0.00203	D1, D7, N1	MSM	
Endrin aldehyde	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00011	0.00203	D1, D7, N1	MSM	
Endrin	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00010	0.00203	D1, D7, N1	MSM	
Endosulfan sulfate	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00004	0.00203	D1, D7, N1	MSM	
Endosulfan II	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00003	0.00203	D1, D7, N1	MSM	
Endosulfan I	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00004	0.00203	D1, D7, N1	MSM	
Dieldrin	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00015	0.00406	D1, D7, N1	MSM	
delta-BHC	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00007	0.00203	D1, D7, N1	MSM	

Sample ID: 1807096-03

Site Location: Dewatered Cake Biosolids

Site Number: 20001-5703

Sample Start Date/Time 7/12/2018 6:00:00

Sample End Date/Time 7/13/2018 6:00:00

Sampled By: Michael Silva

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
PCB 1232	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00007	0.01	D1, D7, N1	MSM	
beta-BHC	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00009	0.01	D1, D7, N1	MSM	
alpha-BHC	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00004	0.00203	D1, D7, N1	MSM	
Aldrin	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00006	0.00203	D1, D7, N1	MSM	
4,4-DDT	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00006	0.00203	D1, D7, N1	MSM	
4,4-DDE	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00003	0.00203	D1, D7, N1	MSM	
4,4-DDD	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00006	0.00203	D1, D7, N1	MSM	
PCB 1016	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00006	0.00487	D1, D7, N1	MSM	
PCB 1221	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00017	0.01	D1, D7, N1	MSM	
Toxaphene	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00094	0.03	D1, D7, N1	MSM	
Total PCBs	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00016	0.01	D1, D7, N1	MSM	
PCB 1260	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00007	0.00406	D1, D7, N1	MSM	
PCB 1254	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00019	0.01	D1, D7, N1	MSM	
PCB 1248	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00010	0.01	D1, D7, N1	MSM	
PCB 1242	C	EPA 625	8/22/18 13:14	ND	mg/kg dry	0.00013	0.01	D1, D7, N1	MSM	
2,3,7,8-TCDD - Dioxin Scan	C	EPA 625	8/7/18 12:25	ND	ug/kg dry		0.15		SJM	
2-Methylphenol	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM	
Benzidine	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.007	0.01	D1, D7	SJM	
Anthracene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM	
Acenaphthylene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM	
Acenaphthene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM	
4-Nitrophenol	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.005	0.01	D1, D7	SJM	
4-Methylphenol	C	EPA 625	7/25/18 20:04	0.86	mg/kg dry	0.002	0.00200	D1, D7	SJM	
4-Chlorophenyl phenyl ether	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM	
4-Chloro-3-methylphenol	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.01	D1, D7	SJM	
4-Bromophenyl phenyl ether	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM	
2,4-Dichlorophenol	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM	
2-Nitrophenol	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.003	0.01	D1, D7	SJM	
Benzo[b]fluoranthene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM	
2-Methyl-4,6-dinitrophenol	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.005	0.01	D1, D7	SJM	
2-Chlorophenol	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM	
2-Chloronaphthalene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM	
2,6-Dinitrotoluene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM	
2,4-Dinitrotoluene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.01	D1, D7	SJM	
2,4-Dinitrophenol	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.009	0.02	D1, D7	SJM	
Isophorone	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM	
3,3-Dichlorobenzidine	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.01	D1, D7	SJM	
Di-n-butyl phthalate	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.01	D1, D7	SJM	
Hexachloroethane	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM	
Hexachlorocyclopentadiene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.004	0.01	D1, D7	SJM	
Hexachlorobutadiene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM	
Hexachlorobenzene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.0006	0.00200	D1, D7	SJM	
Fluorene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM	
Fluoranthene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM	
Dimethyl phthalate	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.0006	0.00200	D1, D7	SJM	
Diethyl phthalate	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.01	D1, D7	SJM	
Benzo[a]anthracene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM	
Di-n-octyl phthalate	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.003	0.01	D1, D7	SJM	
Benzo[a]pyrene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM	
Chrysene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM	
Carbazole	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.003	0.01	D1, D7	SJM	
Butylbenzylphthalate	C	EPA 625	7/25/18 20:04	0.64	mg/kg dry	0.002	0.00200	D1, D7	SJM	
bis(2-ethylhexyl)phthalate	C	EPA 625	7/25/18 20:04	0.78	mg/kg dry	0.003	0.01	D1, D7	SJM	
bis(2-chloroisopropyl)ether	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM	
bis(2-chloroethyl)ether	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.01	D1, D7	SJM	
bis(2-chloroethoxy)methane	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM	
Benzo[k]fluoranthene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.01	D1, D7	SJM	

Sample ID: 1807096-03
Site Location: Dewatered Cake Biosolids
Site Number: 20001-5703

Sample Start Date/Time 7/12/2018 6:00:00
Sample End Date/Time 7/13/2018 6:00:00
Sampled By: Michael Silva

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
Benzo[ghi]perylene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.003	0.01	D1, D7	SJM	
2,4,6-Trichlorophenol	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM	
Dibenzo(a,h)anthracene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.003	0.01	D1, D7	SJM	
2,4-Dimethylphenol	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.004	0.01	D1, D7	SJM	
2,3-Dichloroaniline	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.01	D1, D7	SJM	
1,2,4-Trichlorobenzene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM	
n-Decane	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM	
Indeno(1,2,3-cd)pyrene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.003	0.01	D1, D7	SJM	
Phenanthrene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM	
Pyrene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM	
Phenol	C	EPA 625	7/25/18 20:04	1.07	mg/kg dry	0.003	0.01	D1, D7	SJM	
Pentachlorophenol	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.004	0.01	D1, D7	SJM	
Nitrobenzene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.01	D1, D7	SJM	
Naphthalene	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM	
n-Octadecane	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.01	D1, D7	SJM	
N-Nitrosodiphenylamine	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.006	0.01	D1, D7	SJM	
N-Nitrosodimethylamine	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.01	D1, D7, PC3	SJM	
N-Nitrosodi-n-propylamine	C	EPA 625	7/25/18 20:04	ND	mg/kg dry	0.002	0.01	D1, D7	SJM	
Methoxychlor	C	EPA 8270C	8/22/18 13:14	ND	mg/kg dry	0.00004	0.00203	D1, D7, N1	MSM	
1,2-Diphenylhydrazine	C	EPA 8270C	7/25/18 20:04	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM	

Sample ID: 1807096-03RE1
Site Location: Dewatered Cake Biosolids
Site Number: 20001-5703

Sample Start Date/Time 7/12/2018 6:00:00
Sample End Date/Time 7/13/2018 6:00:00
Sampled By: Michael Silva

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
Zinc	C	EPA 6010D	7/25/18 11:00	768	mg/kg dry		33.45	D2	MLB	

Qualifier Definitions

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL), but above the MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time.
M2	Matrix spike recovery was low; the associated blank spike recovery was acceptable.
N1	See case narrative.
PC3	Semi-quantitation is included in the case narrative.
Q6	Sample was received above recommended temperature.
S8	The analysis of the sample required a dilution such that the surrogate recovery calculation does not provide useful information. The associated blank spike recovery was acceptable.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis.
RPD	Relative Percent Difference.
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction
EB	Equipment Blank

Case Narrative(s)

Semi-Quantitation
Method: 625
1807096-03

Compound Name	Concentration-mg/Kg
Palmitic Acid	3480
Oleic Acid	4553
Stearic Acid	609

SJM 08/02/18

1807096-03.
EPA Method 625/8270 Pesticides: Target analytes flagged with N1 for this method failed the Matrix Spike RPD from the same extraction batch but the spike was performed on a different sample.
MSM 081618

1807096-03
EPA Method 625/8270 Pesticides: Target analytes flagged with N1 for this method required a dilution such that associated surrogate recovery does not provide useful information.
MCD 100818

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1807096-03

PROJECT & LOCATION: Tres Rios WRF - Dewatered Cake Biosolids (Quarterly)

PROJECT-LOCATION NUMBER: 20001-5703 (XXXXX-XXXX)

SAMPLE START DATE: 07/12/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 0600 (Military time)

SAMPLE END DATE: 07/13/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0600 (Military time)

CLIENT: IWC

SAMPLER(S): Silva, Valencia, Riccaboni, Martine (First Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Hardness				
Iron				
Lead				
Magnesium				
Manganese				
Mercury	X			■
Mercury LL				■
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Thallium				
Tin				

METALS	Tot	Diss	D	C
Titanium				
Vanadium				
Zinc				
PPMs *	X			■
TCLP Metals				
503 Metals **				■
Dissolved Cr+6				

WET METHODS	D	C
Ammonia as N		
Chloride		
Cyanide, Total (contract)		■
Cyanide, Amenable		
Fluoride		
Ignitability		
Nitrate as N		
Nitrite as N		
Nitrate/Nitrite as N		
Nitrogen, Total Kjeldahl		
Nitrogen, Total as N		
Orthophosphate as P		
Phosphorus, Total as P		
Sulfate		
Sulfide		
Other		
Other		

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile (contract)	■	■
Dioxin GC/SIM/MS Scan		■
Organochlorine Pesticides & PCBs		■
Purgeable Organics (GCMS) (contract)	■	■
Semivolatile Organics (GCMS)		■
Bis(2-ethylhexyl) phthalate		
Digester Gas		
Oil and Grease		
Organic Carbon, Total		
Organic Carbon, Dissolved		
TCLP Herbicides (Contract Lab)		
TCLP Pesticides		
TCLP Semivolatile Organics		
TCLP Volatile Organics		
TTHM		
Total Petroleum Hydrocarbons		
Volatile Acids		
Other		
Other		

EFFLUENT TOXICITY TESTING

	D	C
Chronic *P. promelas*		
Chronic *C. dubia*		
Chronic *Selenastrum capricornutum*		
Other		

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity		
BOD		
COD		
Coliform, Fecal		
Coliform, Total		
Specific Conductance		
E. coli		
Oxygen, Dissolved		
pH		
Solids, Total (1 of 2 contract)		■
Solids, Total Dissolved		
Solids, Total Suspended		
Solids, Total Volatile		
Solids, Volatile Suspended		
Other		

OTHER

	D	C
Paint Filter		

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions: ~~The Lab shall composite the Purgeable Organic and Acrolein/Acrylonitrile samples.~~ Volatiles in soil jar and sent to Legend TS. COJ 07-13-18 DO# 19-001154 Cyanide sent to Legend TS. COJ 07-13-18

Septum Blank Prep Date & Initials:

Chain of Custody Record (Signatures Only)

Relinquished by:	Received by:	Date:	Time: (Military time)
Riccaboni		7-12-18	1500
Riccaboni	Refrigerator	7.13.18	0130
Refrigerator		7-13-18	0800
		07-13-18	0839
	Michelle Johnson		

Sample Integrity/Preservation:

of Bottles Delivered: 7-13-18 OK (8) COJ

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 7 °C

Initials: COJ

Q6 qualifier? ☒ YES ☐ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☒	☐	☐
Received from a refrigerator?	☐	☒	☐

As, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT
WATER QUALITY
SAMPLE COLLECTION REPORT

SAMPLE LOCATION: Tres Rios WRF – Dewatered Cake Biosolids LIMS: 1807096-03
LOCATION ID: 20001 – 5703 SAMPLERS: Silva, Valencia, Riccaboni SAMPLE DATE: 07-13-2018
Last names only, primary sampler first Martinez; Tomczak

Sample D or C	Parameter	Frequency	AUTO MAN	Volume Submitted	Bottle/Preservation
C	Semivolatile Organics	Hand Composite 4 Aliquots for the duration of the discharge	Man	1000 ml	Amber Glass/None/Ice
C	Organochlorine Pest & PCB's		Man	1000 ml	Amber Glass/None/Ice
C	Dioxin		Man	1000 ml	Amber Glass/None/Ice
C	Priority Pollutant & 503 Metals		Man	1000 ml	Dissolved Metals/None/Ice
C	Total Solids		Man	1000 ml	General Purpose/None/Ice
C	Total Solids		Man	1000 ml	General Purpose/None/Ice
C	Cyanide		Man	1000 ml	Dissolved Metals/None/Ice
			Man	1000 ml	Amber Glass/None/Ice
			Man	1000 ml	Amber Glass/None/Ice
To be Composited by the Laboratory					
D	Purgeable Organics	Hand Composite 4 Aliquots for the duration of the discharge	Man	4 X 40	None/Ice
D	Acrolein/Acrylonitrile		Man	4 X 40	None/Ice
To be Submitted to an outside Laboratory					

One 1603 Soil Jar per Lab @ 7-17-18

		Time
Aliquot #1	7-12-18	0655
Aliquot #2	7-12-18	1240
Aliquot #3	7-12-18	1845
Aliquot #4	7-13-18	0035

Comments:	Dewatered Cake Biosolids samples are not preserved.
	All Composites including Cyanide can be poured off at the end of the sampling event

CHAIN OF CUSTODY RECORD

LEGEND Technical Services, Inc.
www.legend-group.com

☐ 17631 N. 25th Avenue • Phoenix, AZ 85023 • (602) 324-6100 • Fax (602) 324-6101
☐ 4585 S. Palo Verde Rd, Ste 423 • Tucson, AZ 85714 • (520) 327-1234 • Fax (520) 327-0518

Page 2 of 4

Please Print Clearly

CLIENT INFORMATION

Client Name	Address	City	State	Zip	Phone	Fax Number or Email Address
Pima County CRAO Lab	2955 W Calle Agua Nueva	Tucson	AZ	85745	520-724-6016	joseph.doranski@pima.c

Project Name	Project Number	Contact	P.O. No.	
Volatiles #13		Joe Doranski	19-001154	Fax Results ☐ Email Results ☑ QC Report ☐ EDD ☒ Special Detection Limits ☐

SAMPLE TYPE CODES: DW=Drinking Water; WW=Wastewater; SW=Surface Water; G=Groundwater; O=Other; S=Soil/Solid; T=Travel Blank; F=Food; G=Sludge/Biosolids

TURN AROUND TIME: Laboratory Authorization Required for Rush
☒ Standard 10 - 15 Day
☐ Other

REQUESTED ANALYSES

Client's	Date	Time	Sample Location	Composite	Grab	Sample Type	Compliance	No. of Containers	EPA 8260	Ac/Ac & 2-CEVE	Total cyanide (mg	Total % solids
1807096-03	07/13/18	600	Tres Rios WRF - dewatered cake BS	X		G	X	3	X	X	X	X
20001-5703												
1807097-03	07/13/18	600	Agua Nueva WRF - thickened sludge	X		G	X	3	X	X	X	X
26107-0600												

WEEKEND/HOLIDAY SAMPLES

TO ENSURE COMPLETION OF ANALYSIS, SAMPLES MUST BE RECEIVED AT LEAST 24 HOURS PRIOR TO THE HOLD TIME EXPIRATION

Comments / Special Instructions:

SAMPLE CONDITION UPON RECEIPT (LAB USE)

[illegible]	0	
[illegible]	3.9°C	
[illegible]	Y	N
[illegible]	Y	N
[illegible]	Y	N

RELINQUISHED BY

①	Sampler Signature: [signature]	Date: 7/14/18	
	Sampler Printed Name: Greg Spence	Time: 1002	
②	Signature	Date	
	Printed Name	Time	
③	Signature	Date	
	Printed Name	Time	

SAMPLES RECEIVED BY

Signature: [signature]	Date: 7/14/18
Printed Name: Michelle Yatiel	Time: 1002
Signature	Date
Printed Name	Time
Signature	Date
Printed Name	Time

WHITE-LAB YELLOW-CLIENT

FORM GEN-170 (05/06)

PIMA COUNTY

WASTEWATER RECLAMATION

COMPLIANCE AND REGULATORY AFFAIRS OFFICE LABORATORY
2955 W Calle Agua Nueva, Tucson, AZ 85745
Telephone: (520) 724-6200

LIMS CHECKLIST FOR SUBCONTRACT DATA

LIMS ID	**1807096-01,02,03; 1807097-01,02,03; 1807095-02**	**DO**	**19-001154**
CONTRACT LAB	**Legend Technical Services of Arizona, Inc., Phoenix**	**SAMPLE GROUP**	**Volatiles #13**
ANALYSES	**Acrolein & Acrylonitrile; Purgeable 8260, Cyanide (biosolids), % TS**	**REPORT ID**	**18G1593**

TRANSFER & CONVERT FILES:	
Was the contract lab spreadsheet file saved to \\Splimsapp\elementshare\TransferIn ?	Y
Was the above mentioned file converted from a .xls file to a .mdb file for each WO#, and further, for each subcontract location, or separate analysis (as applicable), on the contract lab report? (Element>Project Management>Reports)	Y
Was the converted file attached to the sample in LIMS?	Y
VALIDATING CONTRACT LAB REPORT , CHAIN OF CUSTODY(S), AND DO#:	
Contract Lab Report signed and dated?	Y
Copy of contract lab COC included with contract Lab Report?	Y
Contract lab COC verified with CRAO COC(s) for Sample ID, Sample Date, Analysis Requested?	Y
Sample dates and received dates on the CL report match the CL COC?	Y
CL report includes all requested analysis?	Y
CL licensed in AZ for the reported methods?	Y
Check that DO matches COC in types and number of tests?	N/A
DO received in Pima Core?	N/A
CONTRACT LAB REPORT, EXCEL SPREADSHEET, and QC:	
CL report and CL spreadsheet report the same sample results, sample date, and analysis date?	Y
Was a Case Narrative Included in Contract Lab report?	Y
Data packet includes QC Report from primary lab and any secondary subcontract labs?	Y
Did CL report list applicable AZ Data Qualifiers?	Y
Were there any dilutions made to samples that were reported as ND?	Y
If so, were they qualified due to matrix interference?	Y
Was QC included for every analysis method: typically Blk, LCS, MS, MSD?	Y
Did QC pass stated acceptance limits, or was it qualified?	Y
Were samples analyzed within required holding times?	N
Check that MDLs are below water quality standards, If not notify Belinda Gamboa-Felix? (Cyanide, Hexachlorobenzene)	Y
Semivolatiles & Volatiles: Check that all analytes were delivered?	Y
COMPLIANCE LIMIT REVIEW	
Were results compared to the discharge permit?	N/A
Was Belinda Gamboa-Felix notified of any exceedences?	N/A
WET TESTING SPECIFIC REQUIREMENTS	
Statement of Pass/Fail reflected in End Points?	N/A
Report states if zeolite treatment was utilized?	N/A

Survival and Reproduction or Growth Data included (P. promelas or Ceriodaphnia only)?				N/A
Chemistry data included?				N/A
Reference Toxicant Test Results and Control Chart within limits?				N/A
PMSD Determination included and within acceptable range? (minimum acceptable= 13)				N/A
End Points include TUc, NOEC, LOEC, and IC25?				N/A
Statistics verify endpoints				N/A
Control Charts Updated to include month of analysis				N/A
Reviewer Initials:	**ABR**	**Review Date:**	**11-14-18**	

PEER/FINAL REVIEW:				PR	FR
LIMS/Excel data matches printed CL report?				✓	
Analysis dates are correct?				✓	
Correct Data Qualifiers included if necessary.				✓	
CRAO report shows result is from Contract Lab?				✓	
CRAO report shows correct Contract Lab (e.g. Legend Technical Services of Arizona, Phoenix)?				✓	
DO received in Pima Core				✓	
Analysis set to Reported?					✓
Peer Reviewer Initials:	JH	**Review Date:**	11-16-18		
Biomonitor Supervisor Initials:	N/A	**Review Date:**			
Final Reviewer Initials:	JEC	**Review Date:**	11.16.18		

CORRECTIVE ACTION REPORT:			
Preliminary Review:		Date:	
QA/QC Review:		Date:	
Data Entry:		Date:	
Peer Review:		Date:	
Lab Supervisor:		Date:	

LIMS #:	**DEVIATION:**	**CORRECTIVE ACTION:**
1807096-03	Extraction hold time exceeded. H4 applied.	Results cannot be used for compliance purposes.
1807097-03	Extraction hold time exceeded. H4 applied.	Results cannot be used for compliance purposes.

DEVIATIONS FROM ACCEPTABLE QA/QC:

Missing QC Report/Data
Holding Time for analysis exceeded.
Inappropriate dilution performed.
Missing COC.
Missing Data Qualifiers.
Incorrect Analysis Method.
Incorrect Sample IDs.
Other.

CORRECTIVE ACTION:

Request report correction from Subcontract Lab project manager.
Add missing Data Qualifiers.
Notify data end-user of deviation.
Arrange for resampling.
Other.

Pima County RWRD CRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745

Project: Volatiles
Project Number: Volatiles #13
Project Manager: Joe Doranski

Reported:
11/13/18 09:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
1807096-01 (Tres Rios WRF Raw Influent)	18G1593-01	Wastewater	Grab	07/13/18 06:00	07/14/18 10:02
1807096-01 (Travel Blank)	18G1593-02	DI Water	Grab	07/13/18 00:00	07/14/18 10:02
1807096-02 (Tres Rios WRF-final effluent #3)	18G1593-03	Wastewater	Grab	07/13/18 06:00	07/14/18 10:02
1807096-02	18G1593-04	DI Water	Grab	07/13/18 00:00	07/14/18 10:02
1807096-03 (Tres Rios WRF Dewatered Cake BS)	18G1593-05	Solid (Dry Weight)	Composite	07/13/18 06:00	07/14/18 10:02
1807097-03 (Agua Nueva WRF Thickened Sludge)	18G1593-06	Solid (Dry Weight)	Composite	07/13/18 06:00	07/14/18 10:02
1807097-01 (Agua Nueva WRF Plant Influent)	18G1593-07	Wastewater	Grab	07/13/18 06:00	07/14/18 10:02
1807097-01 (Travel Blank)	18G1593-08	DI Water	Grab	07/13/18 00:00	07/14/18 10:02
1807097-02 (Agua Nueva WRF Plant Effluent)	18G1593-09	Wastewater	Grab	07/13/18 06:00	07/14/18 10:02
1807097-02 (Travel Blank)	18G1593-10	DI Water	Grab	07/13/18 00:00	07/14/18 10:02
1807095-02 (PDEQ Stormwater Site #5)	18G1593-11	Storm Water	Grab	07/12/18 17:31	07/14/18 10:02
1807095-02 (Travel Blank)	18G1593-12	DI Water	Grab	07/12/18 00:00	07/14/18 10:02

Sample Condition Upon Receipt:

Temperature: 3.90 C

All samples were received in acceptable condition unless noted otherwise in the case narrative.

Case Narrative:

Holding Times: All holding times were met unless otherwise qualified.

QA/QC Criteria: All analyses met method requirements unless otherwise qualified.

Certifications: AZ(PHX)0004, AZ(TUC)OOO4, AIHA#102982, CDC ELITE Member.

Accreditation is applicable only to the test methods specified on the scope of accreditation held by LEGEND.

Comments: All reporting limits utilized in this report are from the approved method with the lowest possible levels of detection. All samples were analyzed on a "wet" basis unless designated as "dry weight".

N1- The client requested that this sample be reported to the MDL. The method blank associated with the sample had a detect for Dichloromethane slightly above the MDL at 0.11 ug/L.
The sample had a detect for Dichloromethane at 0.21 ug/L, with a dilution factor of 5x, final result of 1.05ug/L. The detect in the travel blank was 0.24ug/L.
Dichloromethane was found to be laboratory contamination at 0. 11ug/L. When the sample was diluted by 5x, the contamination was introduced into the sample and the multiplier influenced the final result.
The laboratory took corrective action by replacing the brita filter used to prepare the reagent water.

Pima County RWRD ORAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745

Project: Volatiles
Project Number: Volatiles #13
Project Manager: Joe Doranski

Reported:
11/13/18 09:28

1807096-01 (Tres Rios WRF Raw Influent) (18G1593-01) Wastewater (Grab) Sampled: 07/13/18 06:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds										
2-Chloroethylvinyl ether	<	2.05	10.0	ug/L	5	B8G1471	07/16/18 13:00	07/16/18 15:46	EPA 8260	D1 E8
Acrolein	<	29.8	250	ug/L	5	B8G1471	07/16/18 13:00	07/16/18 15:46	EPA 8260	E8
Acrylonitrile	<	15.9	50.0	ug/L	5	B8G1471	07/16/18 13:00	07/16/18 15:46	EPA 8260	E8
Surrogate: 1,2-Dichlorobenzene-d4			*99 %*		*80-120*	*B8G1471*	*07/16/18*	*07/16/18*	*EPA 8260*	
Surrogate: 1,2-Dichloroethane-d4			*102 %*		*75-120*	*B8G1471*	*07/16/18*	*07/16/18*	*EPA 8260*	
Surrogate: 4-Bromofluorobenzene			*86 %*		*75-120*	*B8G1471*	*07/16/18*	*07/16/18*	*EPA 8260*	
Surrogate: Pentafluorobenzene			*96 %*		*80-120*	*B8G1471*	*07/16/18*	*07/16/18*	*EPA 8260*	
tert-Butylbenzene	<	0.552	10.0	ug/L	5	B8G1548	07/18/18 10:00	07/18/18 16:10	EPA 8260B	E8
trans-1,4-Dichloro-2-butene	<	5.55	50.0	ug/L	5	B8G1548	07/18/18 10:00	07/18/18 16:10	EPA 8260B	E8
Surrogate: 1,2-Dichlorobenzene-d4			*112 %*		*80-120*	*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*	
Surrogate: 1,2-Dichloroethane-d4			*114 %*		*80-125*	*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*	
Surrogate: 4-Bromofluorobenzene			*89 %*		*74-120*	*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*	
Surrogate: Pentafluorobenzene			*100 %*		*80-120*	*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*	

1807096-01 (Tres Rios WRF Raw Influent) (18G1593-01RE1) Wastewater (Grab) Sampled: 07/13/18 06:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds										
1,1,1,2-Tetrachloroethane	<	0.544	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,1,1-Trichloroethane	<	0.519	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,1,2,2-Tetrachloroethane	<	0.730	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,1,2-Trichloroethane	<	0.594	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,1-Dichloroethane	<	0.544	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,1-Dichloroethene	<	0.470	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,1-Dichloropropene	<	0.625	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,2,3-Trichlorobenzene	<	0.654	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,2,3-Trichloropropane	<	1.38	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,2,4-Trichlorobenzene	<	0.444	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,2,4-Trimethylbenzene	<	0.605	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,2-Dibromo-3-chloropropane	<	0.998	25.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,2-Dibromoethane (EDB)	<	0.677	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,2-Dichlorobenzene	<	0.442	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,2-Dichloroethane	<	0.736	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,2-Dichloropropane	<	0.730	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,3,5-Trimethylbenzene	<	0.647	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,3-Dichlorobenzene	<	0.527	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,3-Dichloropropane	<	0.564	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
1,4-Dichlorobenzene	0.900	0.400	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E4
2,2-Dichloropropane	<	1.69	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
2-Butanone	<	8.15	50.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8

Legend Technical Services of Arizona, Inc.

Laboratory Work Order No.: 18G1593

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Pima County RWRD CRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745

Project: Volatiles
Project Number: Volatiles #13
Project Manager: Joe Doranski

Reported:
11/13/18 09:28

1807096-01 (Tres Rios WRF Raw Influent) (18G1593-01RE1) Wastewater (Grab) Sampled: 07/13/18 06:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Volatile Organic Compounds

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2-Chlorotoluene	<	0.635	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
2-Hexanone	<	6.72	50.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
4-Chlorotoluene	<	0.745	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
4-Methyl-2-pentanone	<	6.03	50.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Acetone	300	9.16	100	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	
Benzene	<	0.432	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Bromobenzene	<	0.466	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Bromochloromethane	<	0.595	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Bromodichloromethane	<	0.701	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Bromoform	<	0.938	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Bromomethane	<	0.915	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Carbon disulfide	<	4.40	50.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Carbon tetrachloride	<	0.678	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Chlorobenzene	<	0.332	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Chloroethane	<	0.508	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Chloroform	0.950	0.606	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E4
Chloromethane	<	0.794	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
cis-1,2-Dichloroethylene	<	0.658	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
cis-1,3-Dichloropropene	<	0.634	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Dibromochloromethane	<	0.654	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Dibromomethane	<	0.608	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Dichlorodifluoromethane	<	0.680	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Dichloromethane	1.20	0.511	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E4, N1
Ethylbenzene	<	0.466	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Hexachlorobutadiene	<	0.665	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Iodomethane	<	5.29	50.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Isopropylbenzene	<	0.470	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
m,p-Xylene	<	0.443	20.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Methyl methacrylate	<	7.48	50.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Methyl-tert-butyl ether	<	1.14	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Naphthalene	<	0.774	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
n-Butylbenzene	<	0.816	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
n-Propylbenzene	<	0.701	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
o-Xylene	<	0.495	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
p-Isopropyltoluene	<	0.605	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
sec-Butylbenzene	<	0.646	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Styrene	<	0.512	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Tetrachloroethene	<	0.500	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Toluene	1.00	0.496	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E4

Pima County RWRD CRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745

Project: Volatiles
Project Number: Volatiles #13
Project Manager: Joe Doranski

Reported:
11/13/18 09:28

1807096-01 (Tres Rios WRF Raw Influent) (18G1593-01RE1) Wastewater (Grab) Sampled: 07/13/18 06:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds										
Total THMs	0.950		10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E4
trans-1,2-Dichloroethene	<	0.672	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
trans-1,3-Dichloropropene	<	0.614	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Trichloroethene	<	0.462	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Trichlorofluoromethane	<	0.820	10.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Vinyl chloride	<	0.565	2.50	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Xylenes (total)	<		30.0	ug/L	5	B8G1579	07/19/18 12:00	07/19/18 16:09	EPA 8260B	E8
Surrogate: 1,2-Dichlorobenzene-d4			*110 %*		*80-120*	*B8G1579*	*07/19/18*	*07/19/18*	*EPA 8260B*	
Surrogate: 1,2-Dichloroethane-d4			*115 %*		*80-125*	*B8G1579*	*07/19/18*	*07/19/18*	*EPA 8260B*	
Surrogate: 4-Bromofluorobenzene			*89 %*		*74-120*	*B8G1579*	*07/19/18*	*07/19/18*	*EPA 8260B*	
Surrogate: Pentafluorobenzene			*103 %*		*80-120*	*B8G1579*	*07/19/18*	*07/19/18*	*EPA 8260B*	

1807096-01 (Travel Blank) (18G1593-02) DI Water (Grab) Sampled: 07/13/18 00:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds										Q2
1,1,1,2-Tetrachloroethane	<	0.109	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,1,1-Trichloroethane	<	0.104	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,1,2,2-Tetrachloroethane	<	0.146	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,1,2-Trichloroethane	<	0.119	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,1-Dichloroethane	<	0.109	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,1-Dichloroethene	<	0.0940	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,1-Dichloropropene	<	0.125	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,2,3-Trichlorobenzene	<	0.131	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,2,3-Trichloropropane	<	0.275	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,2,4-Trichlorobenzene	<	0.0889	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,2,4-Trimethylbenzene	<	0.121	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,2-Dibromo-3-chloropropane	<	0.200	5.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,2-Dibromoethane (EDB)	<	0.135	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,2-Dichlorobenzene	<	0.0884	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,2-Dichloroethane	<	0.147	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,2-Dichloropropane	<	0.146	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,3,5-Trimethylbenzene	<	0.129	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,3-Dichlorobenzene	<	0.105	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,3-Dichloropropane	<	0.113	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
1,4-Dichlorobenzene	<	0.0800	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
2,2-Dichloropropane	<	0.338	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
2-Butanone	<	1.63	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8, V1
2-Chlorotoluene	<	0.127	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
2-Hexanone	<	1.34	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8

Legend Technical Services of Arizona, Inc.

Laboratory Work Order No.: 18G1593

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Pima County RWRD CRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745

Project: Volatiles
Project Number: Volatiles #13
Project Manager: Joe Doranski

Reported:
11/13/18 09:28

1807096-01 (Travel Blank) (18G1593-02) DI Water (Grab) Sampled: 07/13/18 00:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds										Q2
4-Chlorotoluene	<	0.149	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
4-Methyl-2-pentanone	<	1.21	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Acetone	4.10	1.83	20.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E4
Benzene	<	0.0865	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Bromobenzene	<	0.0933	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Bromochloromethane	<	0.119	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Bromodichloromethane	<	0.140	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Bromoform	<	0.188	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Bromomethane	<	0.183	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Carbon disulfide	<	0.880	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Carbon tetrachloride	<	0.136	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Chlorobenzene	<	0.0685	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Chloroethane	<	0.102	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Chloroform	<	0.121	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Chloromethane	<	0.159	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8, V1
cis-1,2-Dichloroethylene	<	0.132	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
cis-1,3-Dichloropropene	<	0.127	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Dibromochloromethane	<	0.131	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Dibromomethane	<	0.122	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Dichlorodifluoromethane	<	0.136	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Dichloromethane	0.240	0.102	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E4, N1
Ethylbenzene	<	0.0933	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Hexachlorobutadiene	<	0.133	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Iodomethane	<	1.08	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Isopropylbenzene	<	0.0940	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
m,p-Xylene	<	0.0886	4.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Methyl methacrylate	<	1.50	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Methyl-tert-butyl ether	<	0.229	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Naphthalene	<	0.155	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
n-Butylbenzene	<	0.163	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
n-Propylbenzene	<	0.140	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
o-Xylene	<	0.0990	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
p-Isopropyltoluene	<	0.121	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
sec-Butylbenzene	<	0.129	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Styrene	<	0.102	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
tert-Butylbenzene	<	0.110	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Tetrachloroethene	<	0.100	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Toluene	<	0.0992	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8
Total THMs	<		2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8

Pima County SOURCE RAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745

Project: Volatiles
Project Number: Volatiles #13
Project Manager: Joe Doranski

Reported:
11/13/18 09:28

1807096-01 (Travel Blank) (18G1593-02) DI Water (Grab) Sampled: 07/13/18 00:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Volatile Organic Compounds

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes	Q2
trans-1,2-Dichloroethene	<	0.134	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8	
trans-1,3-Dichloropropene	<	0.123	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8	
trans-1,4-Dichloro-2-butene	<	1.11	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8	
Trichloroethene	<	0.0923	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8	
Trichlorofluoromethane	<	0.164	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8	
Vinyl chloride	<	0.113	0.500	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8	
Xylenes (total)	<		6.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 19:48	EPA 8260B	E8	
Surrogate: 1,2-Dichlorobenzene-d4			*112 %*		*80-120*	*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*		
Surrogate: 1,2-Dichloroethane-d4			*109 %*		*80-125*	*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*		
Surrogate: 4-Bromofluorobenzene			*88 %*		*74-120*	*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*		
Surrogate: Pentafluorobenzene			*105 %*		*80-120*	*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*		

1807096-02 (Tres Rios WRF-final effluent #3) (18G1593-03) Wastewater (Grab) Sampled: 07/13/18 06:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Volatile Organic Compounds

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
2-Chloroethylvinyl ether	<	0.410	2.00	ug/L	1	B8G1471	07/16/18 13:00	07/16/18 16:16	EPA 8260	E8
Acrolein	<	5.92	50.0	ug/L	1	B8G1471	07/16/18 13:00	07/16/18 16:16	EPA 8260	E8
Acrylonitrile	<	3.18	10.0	ug/L	1	B8G1471	07/16/18 13:00	07/16/18 16:16	EPA 8260	E8
Surrogate: 1,2-Dichlorobenzene-d4			*104 %*		*80-120*	*B8G1471*	*07/16/18*	*07/16/18*	*EPA 8260*	
Surrogate: 1,2-Dichloroethane-d4			*101 %*		*75-120*	*B8G1471*	*07/16/18*	*07/16/18*	*EPA 8260*	
Surrogate: 4-Bromofluorobenzene			*86 %*		*75-120*	*B8G1471*	*07/16/18*	*07/16/18*	*EPA 8260*	
Surrogate: Pentafluorobenzene			*97 %*		*80-120*	*B8G1471*	*07/16/18*	*07/16/18*	*EPA 8260*	
1,1,1,2-Tetrachloroethane	<	0.109	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,1,1-Trichloroethane	<	0.104	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,1,2,2-Tetrachloroethane	<	0.146	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,1,2-Trichloroethane	<	0.119	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,1-Dichloroethane	<	0.109	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,1-Dichloroethene	<	0.0940	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,1-Dichloropropene	<	0.125	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,2,3-Trichlorobenzene	<	0.131	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,2,3-Trichloropropane	<	0.275	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,2,4-Trichlorobenzene	<	0.0889	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,2,4-Trimethylbenzene	<	0.121	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,2-Dibromo-3-chloropropane	<	0.200	5.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,2-Dibromoethane (EDB)	<	0.135	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,2-Dichlorobenzene	<	0.0884	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,2-Dichloroethane	<	0.147	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,2-Dichloropropane	<	0.146	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,3,5-Trimethylbenzene	<	0.129	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8

Pima County RWRD DRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745

Project: Volatiles
Project Number: Volatiles #13
Project Manager: Joe Doranski

Reported:
11/13/18 09:28

1807096-02 (Tres Rios WRF-final effluent #3) (18G1593-03) Wastewater (Grab) Sampled: 07/13/18 06:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Volatile Organic Compounds

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,3-Dichlorobenzene	<	0.105	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,3-Dichloropropane	<	0.113	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
1,4-Dichlorobenzene	**0.220**	**0.0800**	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E4
2,2-Dichloropropane	<	0.338	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
2-Butanone	<	1.63	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	V1, E8
2-Chlorotoluene	<	0.127	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
2-Hexanone	<	1.34	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
4-Chlorotoluene	<	0.149	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
4-Methyl-2-pentanone	<	1.21	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Acetone	**6.24**	**1.83**	20.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E4
Benzene	<	0.0865	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Bromobenzene	<	0.0933	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Bromochloromethane	<	0.119	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Bromodichloromethane	**6.65**	**0.140**	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	
Bromoform	**0.250**	**0.188**	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E4
Bromomethane	<	0.183	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Carbon disulfide	<	0.880	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Carbon tetrachloride	<	0.136	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Chlorobenzene	<	0.0665	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Chloroethane	<	0.102	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Chloroform	**8.86**	**0.121**	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	
Chloromethane	<	0.159	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	V1, E8
cis-1,2-Dichloroethylene	<	0.132	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
cis-1,3-Dichloropropene	<	0.127	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Dibromochloromethane	**2.35**	**0.131**	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	
Dibromomethane	<	0.122	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Dichlorodifluoromethane	<	0.136	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Dichloromethane	<	0.102	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Ethylbenzene	<	0.0933	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Hexachlorobutadiene	<	0.133	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Iodomethane	<	1.06	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Isopropylbenzene	<	0.0940	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
m,p-Xylene	<	0.0886	4.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Methyl methacrylate	<	1.50	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Methyl-tert-butyl ether	<	0.229	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Naphthalene	<	0.155	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
n-Butylbenzene	<	0.163	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
n-Propylbenzene	<	0.140	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
o-Xylene	<	0.0990	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8

Pima County RWRD GRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745

Project: Volatiles
Project Number: Volatiles #13
Project Manager: Joe Doranski

Reported:
11/13/18 09:28

1807096-02 (Tres Rios WRF-final effluent #3) (18G1593-03) Wastewater (Grab) Sampled: 07/13/18 06:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Volatile Organic Compounds

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
p-Isopropyltoluene	<	0.121	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
sec-Butylbenzene	<	0.129	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Styrene	<	0.102	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
tert-Butylbenzene	<	0.110	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Tetrachloroethene	<	0.100	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Toluene	**0.130**	**0.0992**	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E4
Total THMs	**18.1**		2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	
trans-1,2-Dichloroethene	<	0.134	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
trans-1,3-Dichloropropene	<	0.123	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
trans-1,4-Dichloro-2-butene	<	1.11	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Trichloroethene	<	0.0923	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Trichlorofluoromethane	<	0.164	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Vinyl chloride	<	0.113	0.500	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Xylenes (total)	<		6.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 16:41	EPA 8260B	E8
Surrogate: 1,2-Dichlorobenzene-d4			*112 %*		*80-120*	*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*	
Surrogate: 1,2-Dichloroethane-d4			*107 %*		*80-125*	*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*	
Surrogate: 4-Bromofluorobenzene			*88 %*		*74-120*	*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*	
Surrogate: Pentafluorobenzene			*105 %*		*80-120*	*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*	

1807096-02 (18G1593-04) DI Water (Grab) Sampled: 07/13/18 00:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Volatile Organic Compounds

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1,1,2-Tetrachloroethane	<	0.109	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,1,1-Trichloroethane	<	0.104	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,1,2,2-Tetrachloroethane	<	0.146	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,1,2-Trichloroethane	<	0.119	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,1-Dichloroethane	<	0.109	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,1-Dichloroethene	<	0.0940	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,1-Dichloropropene	<	0.125	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,2,3-Trichlorobenzene	<	0.131	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,2,3-Trichloropropane	<	0.275	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,2,4-Trichlorobenzene	<	0.0889	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,2,4-Trimethylbenzene	<	0.121	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,2-Dibromo-3-chloropropane	<	0.200	5.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,2-Dibromoethane (EDB)	<	0.135	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,2-Dichlorobenzene	<	0.0884	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,2-Dichloroethane	<	0.147	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,2-Dichloropropane	<	0.146	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,3,5-Trimethylbenzene	<	0.129	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8

Pima County Wastewater Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745

Project: Volatiles
Project Number: Volatiles #13
Project Manager: Joe Doranski

Reported:
11/13/18 09:28

1807096-02 (18G1593-04) DI Water (Grab) Sampled: 07/13/18 00:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds										
1,3-Dichlorobenzene	<	0.105	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,3-Dichloropropane	<	0.113	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
1,4-Dichlorobenzene	<	0.0800	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
2,2-Dichloropropane	<	0.338	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
2-Butanone	<	1.63	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8, V1
2-Chlorotoluene	<	0.127	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
2-Hexanone	<	1.34	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
4-Chlorotoluene	<	0.149	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
4-Methyl-2-pentanone	<	1.21	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Acetone	<	1.83	20.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Benzene	<	0.0865	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Bromobenzene	<	0.0933	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Bromochloromethane	<	0.119	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Bromodichloromethane	<	0.140	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Bromoform	<	0.188	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Bromomethane	<	0.183	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Carbon disulfide	<	0.880	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Carbon tetrachloride	<	0.136	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Chlorobenzene	<	0.0665	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Chloroethane	<	0.102	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Chloroform	<	0.121	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Chloromethane	<	0.159	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8, V1
cis-1,2-Dichloroethylene	<	0.132	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
cis-1,3-Dichloropropene	<	0.127	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Dibromochloromethane	<	0.131	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Dibromomethane	<	0.122	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Dichlorodifluoromethane	<	0.136	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Dichloromethane	<	0.102	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Ethylbenzene	<	0.0933	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Hexachlorobutadiene	<	0.133	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Iodomethane	<	1.06	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Isopropylbenzene	<	0.0940	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
m,p-Xylene	<	0.0886	4.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Methyl methacrylate	<	1.50	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Methyl-tert-butyl ether	<	0.229	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Naphthalene	<	0.155	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
n-Butylbenzene	<	0.163	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
n-Propylbenzene	<	0.140	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
o-Xylene	<	0.0990	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8

Pima County RWRD CRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745

Project: Volatiles
Project Number: Volatiles #13
Project Manager: Joe Doranski

Reported:
11/13/18 09:28

1807096-02 (18G1593-04) DI Water (Grab) Sampled: 07/13/18 00:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds										
p-Isopropyltoluene	<	0.121	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
sec-Butylbenzene	<	0.129	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Styrene	<	0.102	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
tert-Butylbenzene	<	0.110	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Tetrachloroethene	<	0.100	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Toluene	<	0.0992	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Total THMs	<		2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
trans-1,2-Dichloroethene	<	0.134	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
trans-1,3-Dichloropropene	<	0.123	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
trans-1,4-Dichloro-2-butene	<	1.11	10.0	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Trichloroethene	<	0.0923	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Trichlorofluoromethane	<	0.164	2.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Vinyl chloride	<	0.113	0.500	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Xylenes (total)	<		6.00	ug/L	1	B8G1548	07/18/18 10:00	07/18/18 20:19	EPA 8260B	E8
Surrogate: 1,2-Dichlorobenzene-d4			*112 %*	*80-120*		*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*	
Surrogate: 1,2-Dichloroethane-d4			*108 %*	*80-125*		*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*	
Surrogate: 4-Bromofluorobenzene			*86 %*	*74-120*		*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*	
Surrogate: Pentafluorobenzene			*105 %*	*80-120*		*B8G1548*	*07/18/18*	*07/18/18*	*EPA 8260B*	

1807096-03 (Tres Rios WRF Dewatered Cake BS) (18G1593-05) Solid (Dry Weight) (Composite) Sampled: 07/13/18 06:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Inorganic Chemistry										
Cyanide, Total	0.316	0.162	0.633	mg/kg dry	1	B8G1635	07/20/18 08:46	07/20/18 10:58	EPA 9014	E4, M2
% Solids	16		1	%	1	B8G1585	07/18/18 16:20	07/18/18 16:20	SM 2540 G	
Volatile Organic Compounds										
2-Chloroethylvinyl ether *	<	0.255	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	H4, D1
Acrolein *	<	6.02	25.3	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Acrylonitrile *	<	3.66	12.7	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	M2, V1, E8
Surrogate: 1,2-Dichlorobenzene-d4			*72 %*	*44-130*		*B8G1460*	*07/16/18*	*07/23/18*	*EPA 8260B*	E8
Surrogate: 1,2-Dichloroethane-d4			*68 %*	*48-123*		*B8G1460*	*07/16/18*	*07/23/18*	*EPA 8260B*	
Surrogate: 4-Bromofluorobenzene			*69 %*	*32-122*		*B8G1460*	*07/16/18*	*07/23/18*	*EPA 8260B*	
Surrogate: Pentafluorobenzene			*72 %*	*39-128*		*B8G1460*	*07/16/18*	*07/23/18*	*EPA 8260B*	
1,1,1,2-Tetrachloroethane	<	0.305	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,1,1-Trichloroethane	<	0.539	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,1,2,2-Tetrachloroethane	<	0.403	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,1,2-Trichloroethane	<	0.147	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,1-Dichloroethane	<	0.547	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,1-Dichloroethene	<	0.680	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,1-Dichloropropene	<	0.606	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8

Legend Technical Services of Arizona, Inc.

Laboratory Work Order No.: 18G1593

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Pima County RWRD CRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745

Project: Volatiles
Project Number: Volatiles #13
Project Manager: Joe Doranski

Reported:
11/13/18 09:28

1807096-03 (Tres Rios WRF Dewatered Cake BS) (18G1593-05) Solid (Dry Weight) (Composite) Sampled: 07/13/18 06:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds										D1, H4
1,2,3-Trichlorobenzene	<	0.326	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,2,3-Trichloropropane	<	0.472	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,2,4-Trichlorobenzene	<	0.376	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,2,4-Trimethylbenzene	<	0.464	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,2-Dibromo-3-chloropropane	<	0.618	6.33	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,2-Dibromoethane (EDB)	<	0.451	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,2-Dichlorobenzene	<	0.324	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,2-Dichloroethane	<	0.672	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,2-Dichloropropane	<	0.517	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,3,5-Trimethylbenzene	<	0.503	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,3-Dichlorobenzene	<	0.499	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,3-Dichloropropane	<	0.285	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
1,4-Dichlorobenzene	<	0.447	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
2,2-Dichloropropane	<	0.673	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
2-Butanone	**6.73**	4.44	12.7	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E4
2-Chlorotoluene	<	0.503	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
2-Hexanone	<	3.34	12.7	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
4-Chlorotoluene	<	0.477	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
4-Methyl-2-pentanone	<	4.18	12.7	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Acetone	**11.2**	7.71	25.3	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E4
Benzene	<	0.488	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Bromobenzene	<	0.486	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Bromochloromethane	<	0.704	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Bromodichloromethane	<	0.539	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Bromoform	<	0.414	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Bromomethane	<	0.882	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8, M2
Carbon disulfide	<	1.01	12.7	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Carbon Tetrachloride	<	0.673	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8, M2
Chlorobenzene	<	0.385	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Chloroethane	<	0.782	6.33	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Chloroform	<	0.534	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Chloromethane	<	0.625	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
cis-1,2-Dichloroethylene	<	0.676	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
cis-1,3-Dichloropropene	<	0.552	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Dibromochloromethane	<	0.284	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Dibromomethane	<	0.433	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Dichlorodifluoromethane	<	1.43	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Dichloromethane	<	0.603	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Ethylbenzene	<	0.508	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8

Pima County RWRD CRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745

Project: Volatiles
Project Number: Volatiles #13
Project Manager: Joe Doranski

Reported:
11/13/18 09:28

1807096-03 (Tres Rios WRF Dewatered Cake BS) (18G1593-05) Solid (Dry Weight) (Composite) Sampled: 07/13/18 06:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds										D1, H4
Hexachlorobutadiene	<	0.541	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Iodomethane	<	8.99	12.7	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8, M2
Isopropylbenzene	<	0.484	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
m,p-Xylene	<	0.445	5.06	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Methyl methacrylate	<	5.43	12.7	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Methyl-tert-butyl ether	<	1.95	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Naphthalene	<	0.279	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
n-Butylbenzene	<	0.478	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
n-Propylbenzene	<	0.846	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
o-Xylene	<	0.351	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
p-Isopropyltoluene	<	0.528	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
sec-Butylbenzene	<	0.578	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Styrene	<	0.384	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
tert-Butylbenzene	<	0.520	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Tetrachloroethene	<	0.600	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Toluene	<	0.535	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Total THMs	<		2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
trans-1,2-Dichloroethene	<	0.540	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
trans-1,3-Dichloropropene	<	0.369	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
trans-1,4-Dichloro-2-butene	<	7.56	12.7	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8, M2
Trichloroethene	<	0.528	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Trichlorofluoromethane	<	0.833	2.53	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Vinyl chloride	<	0.266	0.633	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Xylenes (total)	<		7.60	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 19:09	EPA 8260B	E8
Surrogate: 1,2-Dichlorobenzene-d4			*77 %*	*44-130*		*B8G1460*	*07/16/18*	*07/23/18*	*EPA 8260B*	
Surrogate: 1,2-Dichloroethane-d4			*74 %*	*48-123*		*B8G1460*	*07/16/18*	*07/23/18*	*EPA 8260B*	
Surrogate: 4-Bromofluorobenzene			*74 %*	*32-122*		*B8G1460*	*07/16/18*	*07/23/18*	*EPA 8260B*	
Surrogate: Pentafluorobenzene			*77 %*	*39-128*		*B8G1460*	*07/16/18*	*07/23/18*	*EPA 8260B*	

1807097-03 (Agua Nueva WRF Thickened Sludge) (18G1593-06) Solid (Dry Weight) (Composite) Sampled: 07/13/18 06:00 Received: 07/14/18 10:02

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Inorganic Chemistry										
Cyanide, Total	<	2.38	9.26	mg/kg dry	1	B8G1635	07/20/18 08:48	07/20/18 10:58	EPA 9014	E8
% Solids	1		1	%	1	B8G1585	07/18/18 16:20	07/18/18 16:20	SM 2540 G	
Volatile Organic Compounds										D1, H4
2-Chloroethylvinyl ether	<	3.74	37.0	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 20:39	EPA 8260B	E8
Acrolein	<	88.0	370	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 20:39	EPA 8260B	E8, V1
Acrylonitrile	<	53.5	185	mg/kg dry	2	B8G1460	07/16/18 20:15	07/23/18 20:39	EPA 8260B	E8
Surrogate: 1,2-Dichlorobenzene-d4			*66 %*	*44-130*		*B8G1460*	*07/16/18*	*07/23/18*	*EPA 8260B*	

Legend Technical Services of Arizona, Inc.

Laboratory Work Order No.: 18G1593

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Bea Ronan

From: Bea Ronan
Sent: Monday, September 24, 2018 16:21
To: Kaitlyn Martel
Cc: Joseph Doranski
Subject: 18G1593 - Volatiles #13
Attachments: 18G1593 FINAL EXCEL 03 Aug 18 1002.xls

Kaitlyn,

I am writing to request a revised EDD for 18G1593. The one that was originally included in the report (attached to this email) has proven difficult to successfully import into our system (in part). When we import Legend's EDDs into our system, we break them up by Pima County Work Order ID. Sample 18G1593-11 (PC LIMS# 1807095) imported successfully into our system, but two of three samples from PC LIMS ID# 1807096 (samples 1807096-01 and -03) will not import. However, 1807096-02 will successfully import. After studying the EDD for each of these three samples in search of a difference to explain the inconsistent import success, we have only noticed that there seems to be something different about two analytes in sample 1807096-01: trans-1,4-Dichloro-2-butene and tert-Butylbenzene. When we remove those two analytes from the EDD, then the sample data is able to import into our system, but when one or both of these analytes are included, the EDD will not import. We aren't sure what it is specifically about the data from these two analytes that is causing the difficulty, but at least for sample 1807096-01 (18G1593-01) they seem to be the culprits. While have been able to successfully import 18G1593-03 (PC LIMS# 1807096-02), we are having difficulty with 18G1593-05 (PC LIMS# 1807096-03), though we don't have any clue yet as to what might be causing it. After taking a look at the previous EDD you sent to us for any potential errors that might be causing this incompatibility, would you be able to send us a revised EDD for this work order that might fix these issues? Thank you for looking into this for us, we really appreciate it.

Best,
Bea Ronan
Chemist, Quality Assurance Unit
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory
(520) 724-6183

Bea Ronan

From: Kaitlyn Martel <kmartel@legend-group.com>
Sent: Friday, October 12, 2018 10:35
To: Bea Ronan
Subject: RE: Volatiles #13, 18G1593
Attachments: 18G1593 Sample2MDL_lowestCOC Rev TUCSON FINAL 10 12 18 1029.pdf; 18G1593 FINAL EXCEL 12 Oct 18 1029.xls

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

Requested report is attached

Thank you,

Kaitlyn Martel
Tucson Lab Manager
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.
4585 S. Palo Verde Road, Ste. 423
Tucson, AZ 85714
(520) 327-1234
Fax: (520) 327-0518
kmartel@legend-group.com

Ask me about how to connect to our on-line data access portal, ClientConnect. https://az.legend-group.com/

Help the environment & save time with paperless reporting, monthly summary invoicing and

From: Bea Ronan [mailto:Bea.Ronan@pima.gov]
Sent: Thursday, October 11, 2018 10:29 AM
To: Kaitlyn Martel <kmartel@legend-group.com>
Subject: Volatiles #13, 18G1593

Good morning, Kaitlyn,

I am reviewing the report and EDD for 18G1593 and noticed that the MDL is not included in the report for certain analytes requested on the two biosolids samples: 18G1593-05 and 18G1593-06. For both these samples, the MDL is not included for 2-Chloroethylvinyl ether, Acrolein, Acrylonitrile, Total Cyanide, and % Solids. Also, the EDD says "FALSE" in the Report to MDL column on these samples for these specific analytes. Could you please provide us with a revised report and EDD which includes the MDLs for the above analytes? Thank you, this would be greatly appreciated.

Thanks,
Bea Ronan
Chemist, Quality Assurance Unit

1

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory
(520) 724-6183

Bea Ronan

From: Belinda Gamboa-Felix
Sent: Wednesday, October 17, 2018 6:36
To: Bea Ronan; Melaine Halash
Cc: Jenette Lee; Manisha Patel; Debra LaCas; Joseph Doranski; Jenelle Chraft
Subject: RE: Volatiles #13 Biosolids Samples

Thanks Bea,
I have informed IWC as this is for their pretreatment AZPDES permit.

Belinda Gamboa-Felix
Compliance Data and Reporting Manager
520-724-6007

From: Bea Ronan
Sent: Tuesday, October 16, 2018 4:34 PM
To: Belinda Gamboa-Felix <Belinda.Gamboa-Felix@pima.gov>; Melaine Halash <Melaine.Halash@pima.gov>
Cc: Jenette Lee <Jenette.Lee@pima.gov>; Manisha Patel <Manisha.Patel@pima.gov>; Debra LaCas <Debra.LaCas@pima.gov>; Joseph Doranski <Joseph.Doranski@pima.gov>; Jenelle Chraft <Jenelle.Chraft@pima.gov>
Subject: Volatiles #13 Biosolids Samples

Good afternoon,

While reviewing a lab report from Legend, I noticed that they used an H4 qualifier on two of our samples (1807096-03 and 1807097-03; both biosolids samples). Their definition of H4 states: "Sample was extracted past required extraction holding time, but analyzed within analysis holding time." The holding times for 8260 are 7 days if unpreserved, 14 days if preserved. According to Legend's report, these samples were run 10 days after the sample date. Since extraction is not part of an 8260 analysis, I am going to contact Brian Merritt at Legend to find out why the analyst used an H4 qualifier. According to Legend's CoC, one or both of these samples was preserved, which extends the hold time to 14 days. I will also ask Brian to clarify whether or not both of these samples were preserved, and I will share what I learn from him with you.

Thanks,
Bea Ronan
Chemist, Quality Assurance Unit
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory
(520) 724-6183

Bea Ronan

From: Brian Merritt <bmerritt@legend-group.com>
Sent: Thursday, October 18, 2018 12:12
To: Bea Ronan
Cc: Kaitlyn Martel; Jenelle Chraft
Subject: Re: 18G1593, Volatiles #13

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

Hi Bea,

I apologize for the delay in responding. Our organic chemistry manager was out yesterday. I am in Phoenix today and will begin an investigation into your questions.

Thanks,

Brian Merritt

Sent from my T-Mobile 4G LTE Device

-------- Original message --------
From: Bea Ronan <Bea.Ronan@pima.gov>
Date: 10/18/18 10:56 AM (GMT-07:00)
To: Brian Merritt <bmerritt@legend-group.com>
Cc: Kaitlyn Martel <kmartel@legend-group.com>, Jenelle Chraft <Jenelle.Chraft@pima.gov>
Subject: FW: 18G1593, Volatiles #13

Brian,

I'm following up on an email I sent you yesterday morning enquiring about two biosolids (18G1593-05 and 18G1593-06) samples of ours with an H4 qualifier applied to them. These were compliance samples, so the sooner we can get some clarity on what happened, the better. I've quoted the original message below for your reference:

"Good morning, Brian,

While reviewing the report for work order # 18G1593, I noticed that there are H4 qualifiers applied to two biosolids samples of ours (18G1593-05 and 18G1593-06). Since extraction is not part of an 8260 analysis, I am wondering if you can tell me why this qualifier was used for these samples? I have learned that this qualifier indicates that the results for these samples cannot be used for compliance purposes, so I am trying to find out as much information as I can. The Legend chain of custody included in the report shows that "Y" was selected in the "Sample Condition Upon Receipt" table in the "Preserved" section. Were these samples preserved, either upon receipt or by an analyst after receipt?

Preservation would make the hold time 14 days for 8260 samples, which adds some additional confusion in light of the use of H4. Can you explain what happened with these samples? "

Thanks,
Bea Ronan

From: Bea Ronan
Sent: Wednesday, October 17, 2018 8:30 AM
To: 'Brian Merritt' <bmerritt@legend-group.com>
Cc: Joseph Doranski <Joseph.Doranski@pima.gov>
Subject: 18G1593, Volatiles #13

Good morning, Brian,

While reviewing the report for work order # 18G1593, I noticed that there are H4 qualifiers applied to two biosolids samples of ours (18G1593-05 and 18G1593-06). Since extraction is not part of an 8260 analysis, I am wondering if you can tell me why this qualifier was used for these samples? I have learned that this qualifier indicates that the results for these samples cannot be used for compliance purposes, so I am trying to find out as much information as I can. The Legend chain of custody included in the report shows that "Y" was selected in the "Sample Condition Upon Receipt" table in the "Preserved" section. Were these samples preserved, either upon receipt or by an analyst after receipt? Preservation would make the hold time 14 days for 8260 samples, which adds some additional confusion in light of the use of H4. Can you explain what happened with these samples?

Thanks,
Bea Ronan
Chemist, Quality Assurance Unit
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory
(520) 724-6183

Bea Ronan

From: Joseph Doranski
Sent: Monday, October 22, 2018 15:14
To: Jason Grodman
Cc: Bea Ronan; Jenelle Chraft; Belinda Gamboa-Felix; Jenette Lee; Manisha Patel; Melaine Halash
Subject: Volatiles H4 Qualifier

Jason,

I spoke directly with the Lab Director at Legend today, and he confirmed with his organic unit supervisor that the H4 qualifier is valid. This means that the 8260 results reported for 1807096-03 and 1807097-03 cannot be used for compliance purposes. Once again, I apologize for the problems this has caused. We will make every effort moving forward to prioritize the reports that are for permit compliance. Hopefully, the worst of the confusion from switching contract labs will start to subside.

Regards,

Joseph Doranski
Quality Assurance Unit Chemist Specialist
Pima County RWRD CRAO – Laboratory
Water Campus - 2955 W Calle Agua Nueva
Tucson AZ 85745
520-724-6032
Joseph.doranski@pima.gov
Plesese consider the environment; print only if necessary

Bea Ronan

From: Brian Merritt <bmerritt@legend-group.com>
Sent: Monday, October 22, 2018 17:04
To: Bea Ronan
Cc: Joseph Doranski
Subject: RE: 18G1593, Volatiles #13

****
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****

Hi Bea,

These samples were extracted past the 48 hr hold time (EPA 5035) since they were received on a Saturday. The "Y" was applied to the water samples that were received with this group of samples.

Thank you,

Brian Merritt

4585 S. Palo Verde Rd, Ste 423
Tucson, AZ 85714
Phone: 520-327-1234
Cell: 520-991-8347
Fax: 520-327-0518
bmerritt@legend-group.com
http://www.legend-group.com

From: Bea Ronan [mailto:Bea.Ronan@pima.gov]
Sent: Wednesday, October 17, 2018 8:30 AM
To: Brian Merritt <bmerritt@legend-group.com>
Cc: Joseph Doranski <Joseph.Doranski@pima.gov>
Subject: 18G1593, Volatiles #13

Good morning, Brian,

While reviewing the report for work order # 18G1593, I noticed that there are H4 qualifiers applied to two biosolids samples of ours (18G1593-05 and 18G1593-06). Since extraction is not part of an 8260 analysis, I am wondering if you can tell me why this qualifier was used for these samples? I have learned that this qualifier indicates that the results for these samples cannot be used for compliance purposes, so I am trying to find out as much information as I can. The Legend chain of custody included in the report shows that "Y" was selected in the "Sample Condition Upon Receipt" table in the "Preserved" section. Were these samples preserved, either upon receipt or by an analyst after receipt? Preservation would make the hold time 14 days for 8260 samples, which adds some additional confusion in light of the use of H4. Can you explain what happened with these samples?

Thanks,
Bea Ronan

Chemist, Quality Assurance Unit
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory
(520) 724-6183

Bea Ronan

From: Kaitlyn Martel <kmartel@legend-group.com>
Sent: Tuesday, November 13, 2018 9:38
To: Bea Ronan
Subject: RE: 18G1593 and 18G2155
Attachments: 18G1593 Sample2MDL_lowestCOC Rev TUCSON FINAL 11 13 18 0928.pdf; 18G2155 FINAL EXCEL 13 Nov 18 0934.xls; 18G1593 FINAL EXCEL 13 Nov 18 0928.xls; 18G2155 Sample2MDL_lowestCOC Rev TUCSON FINAL 11 13 18 0934.pdf

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

Requested reports attached

Thank you,

Kaitlyn Martel
Tucson Lab Manager
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.
4585 S. Palo Verde Road, Ste. 423
Tucson, AZ 85714
(520) 327-1234
Fax: (520) 327-0518
kmartel@legend-group.com

Ask me about how to connect to our on-line data access portal, ClientConnect. https://az.legend-group.com/

Help the environment & save time with paperless reporting, monthly summary invoicing and

From: Bea Ronan [mailto:Bea.Ronan@pima.gov]
Sent: Tuesday, November 13, 2018 8:17 AM
To: Kaitlyn Martel <kmartel@legend-group.com>
Subject: FW: 18G1593 and 18G2155

Kaitlyn,

Have you been able to look into the issue we identified with 18G1593 regarding the error with the sample name in the report, and both 18G1593 and 18G2155 regarding the issue with biosolids results not being reported in mg/kg? I've forwarded my previous message for your reference.

Thanks,
Bea Ronan

From: Bea Ronan
Sent: Monday, November 5, 2018 1:48 PM
To: 'Kaitlyn Martel' <kmartel@legend-group.com>
Cc: Joseph Doranski <Joseph.Doranski@pima.gov>
Subject: 18G1593 and 18G2155

Kaitlyn,

For project 18G1593 (Volatiles #13), the report lists a partially incorrect Sample ID for one of the samples. The Legend COC lists the sample location for 18G1593-03 as "Tres Rios WRF – final effluent #3" and the Client's ID as "1807096-02," but the Analytical Report for Samples section of the report (page 2 of 76) lists the Sample ID as "1807096-02 (Tres Rios WRF Raw Influent #3)," and the same error is repeated in the sample results section on page 7 of 76 - the header preceding the list of results for 18G1593-03 refers to it as "Raw Influent #3" where it should say "Final Effluent #3."

Additionally, our AZPDES permits require results for biosolids samples to be reported in milligrams per kilogram. The biosolids sample results in both 18G1593 (-05 and -06) and 18G2155 (-03) are reported in micrograms per kilogram.

Would you please send us revised reports and EDDs for both 18G1593 and 18G2155 with biosolids results delivered in micrograms per kilogram, and with the naming error in 18G1593 corrected so that sample 18G1593-03 is correctly identified as Tres Rios WRF Final Effluent #3? We would also request that all future biosolids results be delivered in milligrams per kilogram.

Thank you,

Bea Ronan
Chemist, Quality Assurance Unit
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory
(520) 724-6183

LEGEND Technical Services, Inc.
4585 S. Palo Verde Rd., Ste. 423 • Tucson, AZ 85714
P (520) 327-1234 • F (520) 327-0518
www.legend-group.com

13 November 2018

Joe Doranski
Pima County RWRD CRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745
Fax: (520) 579-6002

RE: Volatiles

Laboratory Work Order No.: 18G1593

Legend Technical Services of Arizona, Inc. is pleased to provide the enclosed analytical results for the aforementioned project. These results relate only to the items tested. This cover letter and the accompanying pages represent the full report for these analyses and should only be reproduced in full. Samples for this project were received by the laboratory on 07/14/18 10:02.

The samples were processed in accordance with the Chain of Custody document and the results presented relate only to the samples tested. The Chain of Custody is considered part of this report.

All samples will be retained by LEGEND for 30 days from the date of this report and then discarded unless other arrangements are made. Due to hold-time and method sample volume requirements, microbiological samples are not retained unless other arrangements are made.

This entire report was reviewed and approved for release by the undersigned. If you have any questions concerning this report, please feel free to contact me.

Sincerely,
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.

Kaitlyn Martel

Kaitlyn M. Martel For P. Brian Merritt
Client Services Representative
(602) 324-6100

This laboratory report is confidential and is intended for the sole use of LEGEND and it's client.

PIMA COUNTY
WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson, Arizona 85745-9750, Phone (520) 724-6200

Report Date: 02/12/2019
Laboratory License: AZO159

Sample Analysis Report

Client:	Industrial Wastewater Control	Work Order ID:	1810092
Project:	Tres Rios WRF	Lab Received Date:	10/12/18 8:24
Permit Type:	AZPDES	Project Number:	20001

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Bio-solids sample 1810092-03 analyzed by CRAO Lab for EPA Methods 624, 625, 8260, 8270C: MRLs corrected and recalculated in this printed Report version. Sample results not changed. JEC 2/8/19 -edited JEC 2/12/19

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory Licensure Rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Grant 2·12·19

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

Date

Laboratory License: AZO159

Analytical Report for Samples

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
Dewatered Cake Biosolids	1810092-03	Biosolids	10/12/2018 6:00:00	10/12/2018 8:24:00	Q6

Sample ID: **1810092-03** **Sample Start Date/Time** 10/11/2018 6:00:00

Site Location: Dewatered Cake Biosolids **Sample End Date/Time** 10/12/2018 6:00:00

Site Number: 20001-5703 **Sampled By:** Michael Silva

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
Antimony	C	EPA 6010D	10/18/18 11:34	**ND**	mg/kg dry		11.93		MLB	
Arsenic	C	EPA 6010D	10/18/18 13:34	**16.9**	mg/kg dry		11.93		MLB	
Beryllium	C	EPA 6010D	10/18/18 11:34	**ND**	mg/kg dry		2.39		MLB	
Cadmium	C	EPA 6010D	10/18/18 11:34	**ND**	mg/kg dry		4.77		MLB	
Chromium	C	EPA 6010D	10/18/18 11:34	**31.8**	mg/kg dry		11.93		MLB	
Copper	C	EPA 6010D	10/18/18 11:34	**425**	mg/kg dry		11.93		MLB	
Lead	C	EPA 6010D	10/18/18 13:34	**14.3**	mg/kg dry		11.93		MLB	
Molybdenum	C	EPA 6010D	10/18/18 11:34	**12.1**	mg/kg dry		4.77		MLB	
Nickel	C	EPA 6010D	10/18/18 11:34	**22.0**	mg/kg dry		11.93		MLB	
Selenium	C	EPA 6010D	10/18/18 13:34	**ND**	mg/kg dry		23.87		MLB	
Silver	C	EPA 6010D	10/18/18 17:14	**2.01**	mg/kg dry		1.19		MLB	
Thallium	C	EPA 6010D	10/18/18 11:34	**ND**	mg/kg dry		11.93		MLB	
Zinc	C	EPA 6010D	10/18/18 11:34	**730**	mg/kg dry		11.93		MLB	
Mercury	C	EPA 7471B	10/30/18 14:10	**0.71**	mg/kg dry		0.01		MJC	
% Solids	C	% calculation	10/30/18 18:03	**15**	%				BDP	*

* Analysis Performed by:Legend Technical Services, Inc., St. Paul - See attached contract lab report for official results.

alpha-Chlordane	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.082	0.44	E8	MRH	*
alpha-BHC	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.075	0.44	E8	MRH	*
Aldrin	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.078	0.44	E8	MRH	*
4,4'-DDT	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.083	0.44	E8	MRH	*
4,4'-DDE	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.083	0.44	E8	MRH	*
4,4'-DDD	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.083	0.44	E8	MRH	*
Dieldrin	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.082	0.44	E8	MRH	*
gamma-Chlordane	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.081	0.44	E8	MRH	*
Toxaphene	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.17	0.89	E8	MRH	*
Methoxychlor	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.081	0.44	E8	MRH	*
beta-BHC	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.079	0.44	E8	MRH	*
Heptachlor	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.078	0.44	E8	MRH	*
delta-BHC	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.081	0.44	E8	MRH	*
gamma-BHC (Lindane)	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.078	0.44	E8	MRH	*
Endrin ketone	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.079	0.44	E8	MRH	*
Endrin aldehyde	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.074	0.44	E8	MRH	*
Endrin	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.079	0.44	E8	MRH	*
Endosulfan sulfate	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.084	0.44	E8	MRH	*
Endosulfan II	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.082	0.44	E8	MRH	*
Endosulfan I	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.080	0.44	E8	MRH	*
Heptachlor epoxide	C	EPA 8081B	10/22/18 22:44	**ND**	mg/kg dry	0.081	0.44	E8	MRH	*

* Analysis Performed by:Legend Technical Services, Inc., St. Paul - See attached contract lab report for official results.

Aroclor 1254	C	EPA 8082A	10/22/18 22:44	**ND**	mg/kg dry	0.28	2.2	E8	MRH	*
Aroclor 1248	C	EPA 8082A	10/22/18 22:44	**ND**	mg/kg dry	0.23	2.2	E8	MRH	*
Aroclor 1242	C	EPA 8082A	10/23/18 18:03	**ND**	mg/kg dry	0.57	6.7	D1, E8	MRH	*
Aroclor 1232	C	EPA 8082A	10/23/18 18:03	**ND**	mg/kg dry	1.8	6.7	D1, E8	MRH	*
Aroclor 1221	C	EPA 8082A	10/23/18 18:03	**ND**	mg/kg dry	1.8	6.7	D1, E8	MRH	*
Aroclor 1016	C	EPA 8082A	10/23/18 18:03	**ND**	mg/kg dry	0.97	6.7	D1, E8	MRH	*
Aroclor 1260	C	EPA 8082A	10/22/18 22:44	**ND**	mg/kg dry	0.26	2.2	E8	MRH	*

* Analysis Performed by:Legend Technical Services, Inc., St. Paul - See attached contract lab report for official results.

Cyanide, Total	C	EPA 9014	10/19/18 16:15	**0.333**	mg/kg dry	0.171	0.667	E4, M2	AM	*

* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.

Sample ID: **1810092-03** **Sample Start Date/Time** 10/11/2018 6:00:00

Site Location: Dewatered Cake Biosolids **Sample End Date/Time** 10/12/2018 6:00:00

Site Number: 20001-5703 **Sampled By:** Michael Silva

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
% Solids	C	SM 2540 G	10/18/18 16:50	**15**	%		1	R9	SLL	*
* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.										
% Solids	C	SM 2540G	10/14/18 12:55	**16.8**	%		0.01		AV	
Acrolein	C	EPA 624	10/18/18 18:48	**ND**	mg/kg dry	0.0202	0.10	S7, V1	JEL	
Acrylonitrile	C	EPA 624	10/18/18 18:48	**ND**	mg/kg dry	0.0350	0.10	S7, V1	JEL	
Trichlorofluoromethane	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.005	0.01		ADP	
Vinyl chloride	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.004	0.01		ADP	
Trichloroethene	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.003	0.01		ADP	
trans-1,3-Dichloropropene	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.002	0.01		ADP	
trans-1,2-Dichloroethene	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.003	0.01		ADP	
Total Trihalomethanes	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.006	0.01		ADP	
Toluene	C	EPA 624	10/16/18 18:07	**0.16**	mg/kg dry	0.003	0.01	N1	ADP	
Tetrachloroethene	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.004	0.01		ADP	
Methylene Chloride	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.004	0.01		ADP	
Dibromochloromethane	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.001	0.01		ADP	
Ethyl Benzene	C	EPA 624	10/16/18 18:07	**0.22**	mg/kg dry	0.002	0.01	N1	ADP	
1,1,1-Trichloroethane	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.004	0.01		ADP	
1,1,2-Trichloroethane	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.002	0.01		ADP	
1,1-Dichloroethane	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.003	0.01		ADP	
Benzene	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.002	0.01		ADP	
cis-1,3-Dichloropropene	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.002	0.01		ADP	
Chloromethane	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.004	0.01		ADP	
Chloroform	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.003	0.01		ADP	
Chloroethane	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.004	0.01		ADP	
Chlorobenzene	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.001	0.01		ADP	
Carbon Tetrachloride	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.007	0.01		ADP	
Bromomethane	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.003	0.01		ADP	
1,1,2,2-Tetrachloroethane	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.001	0.01		ADP	
Bromodichloromethane	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.005	0.01		ADP	
2-Chloroethyl vinyl ether	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.005	0.01		ADP	
1,4-Dichlorobenzene	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.003	0.01		ADP	
1,3-Dichlorobenzene	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.002	0.01		ADP	
1,2-Dichloropropane	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.002	0.01		ADP	
1,2-Dichloroethane	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.002	0.01		ADP	
1,2-Dichlorobenzene	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.002	0.01		ADP	
1,1-Dichloroethene	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.002	0.01		ADP	
Bromoform	C	EPA 624	10/16/18 18:07	**ND**	mg/kg dry	0.006	0.01		ADP	
2,3,7,8-TCDD - Dioxin Scan	C	EPA 625	11/7/18 15:33	**ND**	ug/kg dry		0.15		SJM	
4-Chloro-3-methylphenol	C	EPA 625	11/1/18 21:09	**ND**	mg/kg dry	0.09	0.24	D1, D7	SJM	
2,4-Dinitrotoluene	C	EPA 625	11/1/18 21:09	**ND**	mg/kg dry	0.09	0.24	D1, D7	SJM	
3,3-Dichlorobenzidine	C	EPA 625	11/1/18 21:09	**ND**	mg/kg dry	0.09	0.20	D1, D7	SJM	
2-Nitrophenol	C	EPA 625	11/1/18 21:09	**ND**	mg/kg dry	0.11	0.24	D1, D7	SJM	
2-Methylphenol	C	EPA 625	11/1/18 21:09	**ND**	mg/kg dry	0.05	0.08	D1, D7	SJM	
2-Methyl-4,6-dinitrophenol	C	EPA 625	11/1/18 21:09	**ND**	mg/kg dry	0.21	0.24	D1, D7	SJM	
2-Chlorophenol	C	EPA 625	11/1/18 21:09	**ND**	mg/kg dry	0.05	0.08	D1, D7	SJM	
2,6-Dinitrotoluene	C	EPA 625	11/1/18 21:09	**ND**	mg/kg dry	0.06	0.08	D1, D7	SJM	
2,4-Dinitrophenol	C	EPA 625	11/1/18 21:09	**ND**	mg/kg dry	0.34	0.40	D1, D7	SJM	
2,4-Dimethylphenol	C	EPA 625	11/1/18 21:09	**ND**	mg/kg dry	0.14	0.24	D1, D7	SJM	
2,4-Dichlorophenol	C	EPA 625	11/1/18 21:09	**ND**	mg/kg dry	0.07	0.08	D1, D7	SJM	
2,4,6-Trichlorophenol	C	EPA 625	11/1/18 21:09	**ND**	mg/kg dry	0.05	0.08	D1, D7	SJM	
2,3-Dichloroaniline	C	EPA 625	11/1/18 21:09	**ND**	mg/kg dry	0.09	0.24	D1, D7	SJM	
1,2,4-Trichlorobenzene	C	EPA 625	11/1/18 21:09	**ND**	mg/kg dry	0.06	0.08	D1, D7	SJM	
2-Chloronaphthalene	C	EPA 625	11/1/18 21:09	**ND**	mg/kg dry	0.06	0.08	D1, D7	SJM	

Sample ID: **1810092-03** **Sample Start Date/Time** 10/11/2018 6:00:00

Site Location: Dewatered Cake Biosolids **Sample End Date/Time** 10/12/2018 6:00:00

Site Number: 20001-5703 **Sampled By:** Michael Silva

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
4-Chlorophenyl phenyl ether	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
4-Bromophenyl phenyl ether	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
Pyrene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
Phenol	C	EPA 625	11/1/18 21:09	**2.45**	mg/kg dry	0.10	0.24	D1, D7	SJM	
Benzo[b]fluoranthene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
Phenanthrene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.07	0.08	D1, D7	SJM	
Chrysene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
Carbazole	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.11	0.24	D1, D7	SJM	
Butylbenzylphthalate	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.08	0.08	D1, D7	SJM	
bis(2-ethylhexyl)phthalate	C	EPA 625	11/1/18 21:09	**3.05**	mg/kg dry	0.11	0.24	D1, D7	SJM	
bis(2-chloroisopropyl)ether	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.07	0.08	D1, D7	SJM	
bis(2-chloroethyl)ether	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.08	0.24	D1, D7	SJM	
bis(2-chloroethoxy)methane	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.08	0.08	D1, D7	SJM	
Di-n-octyl phthalate	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.10	0.24	D1, D7	SJM	
Benzo[ghi]perylene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.12	0.24	D1, D7	SJM	
Dibenzo(a,h)anthracene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.12	0.24	D1, D7	SJM	
Benzo[a]pyrene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.08	0.08	D1, D7	SJM	
Benzo[a]anthracene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
Benzidine	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.26	0.40	D1, D7	SJM	
Anthracene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.08	0.08	D1, D7	SJM	
Acenaphthylene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
Acenaphthene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
4-Nitrophenol	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.19	0.24	D1, D7	SJM	
4-Methylphenol	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.07	0.08	D1, D7	SJM	
Benzo[k]fluoranthene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.09	0.24	D1, D7	SJM	
Indeno(1,2,3-cd)pyrene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.11	0.24	D1, D7	SJM	
Nitrobenzene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.08	0.24	D1, D7	SJM	
Naphthalene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.07	0.08	D1, D7	SJM	
n-Octadecane	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.09	0.24	D1, D7	SJM	
N-Nitrosodiphenylamine	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.24	0.40	D1, D7	SJM	
N-Nitrosodimethylamine	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.08	0.24	D1, D7, PC3	SJM	
N-Nitrosodi-n-propylamine	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.10	0.24	D1, D7	SJM	
Di-n-butyl phthalate	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.10	0.24	D1, D7	SJM	
Isophorone	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.07	0.08	D1, D7	SJM	
Pentachlorophenol	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.16	0.24	D1, D7	SJM	
Hexachloroethane	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
Hexachlorocyclopentadiene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.17	0.24	D1, D7	SJM	
Hexachlorobutadiene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.04	0.08	D1, D7	SJM	
Hexachlorobenzene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.02	0.08	D1, D7	SJM	
Fluorene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
Fluoranthene	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
Dimethyl phthalate	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.02	0.08	D1, D7	SJM	
Diethyl phthalate	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.09	0.24	D1, D7	SJM	
n-Decane	C	EPA 625	11/1/18 21:09	ND	mg/kg dry	0.08	0.08	D1, D7	SJM	
o-Xylene	C	EPA 8260	10/16/18 18:07	ND	mg/kg dry	0.002	0.01		ADP	
m,p-Xylenes	C	EPA 8260	10/16/18 18:07	**0.335**	mg/kg dry	0.003	0.02	N1	ADP	
cis-1,2-Dichloroethene	C	EPA 8260	10/16/18 18:07	ND	mg/kg dry	0.004	0.01		ADP	
1,2-Dibromoethane	C	EPA 8260	10/16/18 18:07	ND	mg/kg dry	0.002	0.01		ADP	
1,2-Dibromo-3-chloropropane	C	EPA 8260	10/16/18 18:07	ND	mg/kg dry	0.002	0.02		ADP	
Xylenes, total	C	EPA 8260	10/16/18 18:07	**0.335**	mg/kg dry	0.003	0.02	N1	ADP	
1,2,4-Trichlorobenzene	C	EPA 8260	10/16/18 18:07	ND	mg/kg dry	0.002	0.01		ADP	
Styrene	C	EPA 8260	10/16/18 18:07	ND	mg/kg dry	0.002	0.01		ADP	
Pyridine	C	EPA 8270C	11/1/18 21:09	ND	mg/kg dry	0.06	0.08		SJM	
2,4,5-Trichlorophenol	C	EPA 8270C	11/1/18 21:09	ND	mg/kg dry	0.10	0.24		SJM	
1,4-Dichlorobenzene	C	EPA 8270C	11/1/18 21:09	ND	mg/kg dry	0.05	0.08		SJM	

Sample ID: **1810092-03**
Site Location: Dewatered Cake Biosolids
Site Number: 20001-5703

Sample Start Date/Time 10/11/2018 6:00:00
Sample End Date/Time 10/12/2018 6:00:00
Sampled By: Michael Silva

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
1,2-Diphenylhydrazine	C	EPA 8270C	11/1/18 21:09	ND	mg/kg dry	0.04	0.08	D1, D7	SJM	

Qualifier Definitions

D1	Sample required dilution due to matrix.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL), but above the MDL.
E8	Analyte reported to the MDL per project specification. Target analyte was not detected in the sample.
M2	Matrix spike recovery was low; the associated blank spike recovery was acceptable.
N1	See case narrative.
PC3	Semi-quantitation is included in the case narrative.
Q6	Sample was received above recommended temperature.
R9	Sample RPD exceeded the laboratory acceptance limit.
S7	Surrogate recovery was below laboratory and method acceptance limits. Unable to confirm matrix effect.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis.
RPD	Relative Percent Difference.
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction
EB	Equipment Blank

Case Narrative(s)

1810092- 03
EPA Method 624/8260 Purgeables: Due to linear calibration model, trace hits near the reporting limit for analytes flagged with N1 are biased high. MCD 12/12/2018. Edited by MCD 1/2/19

Semi-Quantitation
Method: 625
1810092-03

Compound Name	Concentration-mg/Kg
Benzeneacetic Acid	20
N,N-Dimethyl-1-dodecanamine	25
Palmitic Acid	4092
Oleic Acid	2640
Stearic Acid	608

SJM 12/18/18

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1810092-03

PROJECT & LOCATION: Tres Rios WRF - Dewatered Cake Biosolids (Quarterly)

PROJECT-LOCATION NUMBER: 20001-5703 (XXXXX-XXXX)

SAMPLE START DATE: 10-11-2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE START TIME: 0600 (Military time) CLIENT: IWC

SAMPLE END DATE: 10-12-2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE END TIME: 0600 (Military time) SAMPLER(S): Silva, Orduna, Riccaboni, Martinez (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Hardness				
Iron				
Lead				
Magnesium				
Manganese				
Mercury	×			■
Mercury LL				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Thallium				
Tin				

METALS	Tot	Diss	D	C
Titanium				
Vanadium				
Zinc				
PPMs *	×			■
TCLP Metals				
503 Metals **				■
Dissolved Cr+6				

WET METHODS	D	C
Ammonia as N		
Chloride		
Cyanide, Total contract		■
Cyanide, Amenable		
Fluoride		
Ignitability		
Nitrate as N		
Nitrite as N		
Nitrate/Nitrite as N		
Nitrogen, Total Kjeldahl		
Nitrogen, Total as N		
Orthophosphate as P		
Phosphorus, Total as P		
Sulfate		
Sulfide		
Other		
Other		

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	■	
Dioxin GC/SIM/MS Scan contract		■
Organochlorine Pesticides & PCBs		■
Purgeable Organics (GCMS)	■	
Semivolatile Organics (GCMS)		■
Bis(2-ethylhexyl) phthalate		
Digester Gas		
Oil and Grease		
Organic Carbon, Total		
Organic Carbon, Dissolved		
TCLP Herbicides (Contract Lab)		
TCLP Pesticides		
TCLP Semivolatile Organics		
TCLP Volatile Organics		
TTHM		
Total Petroleum Hydrocarbons		
Volatile Acids		
Other		
Other		

EFFLUENT TOXICITY TESTING

	D	C
Chronic *P. promelas*		
Chronic *C. dubia*		
Chronic *Selenastrum capricornutum*		
Other		

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity		
BOD		
COD		
Coliform, Fecal		
Coliform, Total		
Specific Conductance		
E. coli		
Oxygen, Dissolved		
pH		
Solids, Total		■
Solids, Total Dissolved		
Solids, Total Suspended		
Solids, Total Volatile		
Solids, Volatile Suspended		
Other		

OTHER	D	C
Paint Filter		

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions:
The Lab shall composite the Purgeable Organic and Acrolein/Acrylonitrile samples. GZ4 + GC3 10-12-18
Pesticides, cyanide and 1 of 2 TKS' sent to Legend TS, GC3 10-12-18 DOA19-010982

Septum Blank Prep Date & Initials: 09-18-2018 le; + mf

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	10-11-18	1500
[signature]	Refrigerator	10-12-18	0130
Refrigerator	[signature]	10-12-18	0600
[signature]	[signature]	10-12-18	0824

Sample Integrity/Preservation:

of Bottles Delivered: 9 GC3

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 8 °C

Initials: GC3

Q6 qualifier? ☒ YES ☐ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☐	☒	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☒	☐	☐
Received from a refrigerator?	☐	☒	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 10/22/18 Revised: 03/12/2015

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT
WATER QUALITY
SAMPLE COLLECTION REPORT

SAMPLE LOCATION: Tres Rios WRF – Dewatered Cake Biosolids LIMS: 1810092-03
LOCATION ID: 20001 – 5703 SAMPLERS: Silva, Orduna, Riccabon, Martinez SAMPLE DATE: 10-12-18
Last names only, primary sampler first

Sample D or C	Parameter	Frequency	AUTO MAN	Volume Submitted	Bottle/Preservation
C	Semivolatile Organics	Hand Composite	Man	1000 ml	Amber Glass/None/Ice
C	Organochlorine Pest & PCB's		Man	1000 ml	Amber Glass/None/Ice
C	Dioxin		Man	1000 ml	Amber Glass/None/Ice
C	Priority Pollutant & 503 Metals		Man	1000 ml	Dissolved Metals/None/Ice
C	Total Solids	4 Aliquots for the duration of the discharge	Man	1000 ml	General Purpose/None/Ice
C	Total Solids (for outside lab)		Man	1000 ml	General Purpose/None/Ice
C	Cyanide		Man	1000 ml	Dissolved Metals/None/Ice
			Man	1000 ml	Amber Glass/None/Ice
			Man	1000 ml	Amber Glass/None/Ice
To be Composited by the Laboratory					
D	Purgeable Organics	Hand Composite	Man	4 X 40	None/Ice
D	Acrolein/Acrylonitrile		Man	4 X 40	None/Ice
		4 Aliquots for the duration of the discharge			
To be Submitted to an outside Laboratory					

	Time
Aliquot #1 10/11/18	0720
Aliquot #2 10/11/18	1255
Aliquot #3 10/11/18	1855
Aliquot #4 10/12/18	0035

@

Comments:	Dewatered Cake Biosolids samples are not preserved.
	All Composites including Cyanide can be poured off at the end of the sampling event

CHAIN OF CUSTODY RECORD

LEGEND Technical Services, Inc.
☐ 17631 N. 25th Avenue • Phoenix, AZ 85023 • (602) 324-6100 • Fax (602) 324-6101
☐ 4585 S. Palo Verde Rd, Ste 423 • Tucson, AZ 85714 • (520) 327-1234 • Fax (520) 327-0518

Page 1 of 1

Please Print Clearly

Client Name	Address	City	State	Zip	Phone	Fax Number or Email Address
Pima County CRAO Lab	2955 W Calle Agua Nueva	Tucson	AZ	85745	520-724-6016	joseph.doranski@pima.gov

Project Name	Project Number	Contact	P.O. No.	Fax Results ☐	QC Report ☐ EDD ☒
Pesticides #13		Joe Doranski	19-010982	Email Results ☒	Special Detection Limits ☐

DW=Drinking Water, WW=Wastewater, SW=Surface Water, GW=Groundwater, O=Other, S=Soil/Solid, T=Travel Blank, F=Food, G=Sludge/Biosolids

Laboratory Authorization Required for Rush
☒ Standard 10 - 15 Day
☐ Other _____

Client's Sample Identification	Date	Time	Sample Location	Composite	Grab	Sample Type	Compliance	No. of Containers	EPA 608 extended	EPA 8081/8082 mg/kg	Total cyanide mg/kg	Total % solids dry weight
1810093-03	10/12/18	600	Agua Nueva WRF thickened sludge	X		G	X	3		X	X	X
1810092-03	10/12/18	600	Tres Rios WRF dewatered cake	X		G	X	3		X	X	X
1810093-01	10/12/18	600	Agua Nueva WRF plant influent	X		WW	X	1	X			
1810093-02	10/12/18	600	Agua Nueva WRF plant effluent	X		WW	X	1	X			
1810092-01	10/12/18	600	Tres Rios WRF raw influent	X		WW	X	1	X			
1810092-02	10/12/18	600	Tres Rios WRF final effluent #3	X		WW	X	1	X			

Comments / Special Instructions: Analyte list emailed. Samples are unpreserved. EPA 608, total PCBs and Methoxychlor. Please report results from the sludge samples in mg/kg dry weight.

		°C
	Y	N
	Y	N
	Y	N

①	Sampler Signature		Date 10/15/18	Signature Alyssa Mazza	Date 10/15/18
	Sampler Printed Name	Greg Spence	Time 1108	Printed Name Alyssa Mazza	Time 1108
②	Signature		Date	Signature	Date
	Printed Name		Time	Printed Name	Time
③	Signature		Date	Signature	Date
	Printed Name		Time	Printed Name	Time

WHITE-LAB YELLOW-CLIENT

FORM CS-610-2 (07/18)

PIMA COUNTY

WASTEWATER RECLAMATION

COMPLIANCE AND REGULATORY AFFAIRS OFFICE LABORATORY
2955 W Calle Agua Nueva, Tucson, AZ 85745
Telephone: (520) 724-6200

LIMS CHECKLIST FOR SUBCONTRACT DATA

LIMS ID	**1810092-01,-02,-03; 1810093-01,-02,-03**	**DO**	**19-010982**
CONTRACT LAB	**Legend Technical Services, St. Paul**	**SAMPLE GROUP**	**Pesticides #13**
ANALYSES	**Pesticides, CN and %TS (Biosolids)**	**REPORT ID**	**18J1650**

TRANSFER & CONVERT FILES:	
Was the contract lab spreadsheet file saved to \\Splimsapp\elementshare\TransferIn ?	Y
Was the above mentioned file converted from a .xls file to a .mdb file for each WO#, and further, for each subcontract location, or separate analysis (as applicable), on the contract lab report? (Element>Project Management>Reports)	Y
Was the converted file attached to the sample in LIMS?	Y
VALIDATING CONTRACT LAB REPORT , CHAIN OF CUSTODY(S), AND DO#:	
Contract Lab Report signed and dated?	Y
Copy of contract lab COC included with contract Lab Report?	Y
Contract lab COC verified with CRAO COC(s) for Sample ID, Sample Date, Analysis Requested?	Y
Sample dates and received dates on the CL report match the CL COC?	Y
CL report includes all requested analysis?	Y
CL licensed in AZ for the reported methods?	Y
Check that DO matches COC in types and number of tests?	N/A
DO received in Pima Core?	N/A
CONTRACT LAB REPORT, EXCEL SPREADSHEET, and QC:	
CL report and CL spreadsheet report the same sample results, sample date, and analysis date?	Y
Was a Case Narrative Included in Contract Lab report?	Y
Data packet includes QC Report from primary lab and any secondary subcontract labs?	Y
Did CL report list applicable AZ Data Qualifiers?	Y
Were there any dilutions made to samples that were reported as ND?	Y
If so, were they qualified due to matrix interference?	Y
Was QC included for every analysis method: typically Blk, LCS, MS, MSD?	Y
Did QC pass stated acceptance limits, or was it qualified?	Y
Were samples analyzed within required holding times?	Y
Check that MDLs are below water quality standards, If not notify Belinda Gamboa-Felix? (Cyanide, Hexachlorobenzene)	Y
Semivolatiles & Volatiles: Check that all analytes were delivered?	N/A
COMPLIANCE LIMIT REVIEW	
Were results compared to the discharge permit?.	N/A
Was Belinda Gamboa-Felix notified of any exceedences?	N/A
WET TESTING SPECIFIC REQUIREMENTS	
Statement of Pass/Fail reflected in End Points?	N/A
Report states if zeolite treatment was utilized?	N/A
Survival and Reproduction or Growth Data included (P. promelas or Ceriodaphnia only)?	N/A
Chemistry data included?	N/A

Reference Toxicant Test Results and Control Chart within limits?	N/A
PMSD Determination included and within acceptable range? (minimum acceptable= 13)	N/A
End Points include TUc, NOEC, LOEC, and IC25?	N/A
Statistics verify endpoints	N/A
Control Charts Updated to include month of analysis	N/A

Reviewer Initials:	**ABR**	**Review Date:**	**12-06-18**

PEER/FINAL REVIEW:	PR	FR
LIMS/Excel data matches printed CL report?	✓	
Analysis dates are correct?	✓	
Correct Data Qualifiers included if necessary.	✓	
CRAO report shows result is from Contract Lab?	✓	
CRAO report shows correct Contract Lab (e.g. Legend Technical Services of Arizona, Phoenix)?	✓	
DO received in Pima Core	✓	
Analysis set to Reported?		✓

Peer Reviewer Initials:	JLP	**Review Date:**	12-07-18
Biomonitor Supervisor Initials:	N/A	**Review Date:**	
Final Reviewer Initials:	JEC	**Review Date:**	12-12-18

CORRECTIVE ACTION REPORT:			
Preliminary Review:		Date:	
QA/QC Review:		Date:	
Data Entry:		Date:	
Peer Review:		Date:	
Lab Supervisor:		Date:	

LIMS #:	**DEVIATION:**	**CORRECTIVE ACTION:**

DEVIATIONS FROM ACCEPTABLE QA/QC:

Missing QC Report/Data
Holding Time for analysis exceeded.
Inappropriate dilution performed.
Missing COC.
Missing Data Qualifiers.
Incorrect Analysis Method.
Incorrect Sample IDs.
Other.

CORRECTIVE ACTION:

Request report correction from Subcontract Lab project manager.
Add missing Data Qualifiers.
Notify data end-user of deviation.
Arrange for resampling.
Other.

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #13 10/12/18 Project Manager: Joe Doranski	**Reported:** 01/18/19 10:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
1810093-03	18J1650-01	Solid (Dry Weight)	Composite	10/12/18 06:00	10/15/18 14:15
1810092-03	18J1650-02	Solid (Dry Weight)	Composite	10/12/18 06:00	10/15/18 14:15
1810093-01	18J1650-03	Wastewater	Composite	10/12/18 06:00	10/15/18 14:15
1810093-02	18J1650-04	Wastewater	Composite	10/12/18 06:00	10/15/18 14:15
1810092-01	18J1650-05	Wastewater	Composite	10/12/18 06:00	10/15/18 14:15
1810092-02	18J1650-06	Wastewater	Composite	10/12/18 06:00	10/15/18 14:15

Sample Condition Upon Receipt:

Temperature: 2.00 C

All samples were received in acceptable condition unless noted otherwise in the case narrative.

Case Narrative:

Holding Times: All holding times were met unless otherwise qualified.

QA/QC Criteria: All analyses met method requirements unless otherwise qualified.

Certifications: AZ(PHX)0004, AZ(TUC)OOO4, AIHA#102982, CDC ELITE Member.

Accreditation is applicable only to the test methods specified on the scope of accreditation held by LEGEND.

Comments: All reporting limits utilized in this report are from the approved method with the lowest possible levels of detection. All samples were analyzed on a "wet" basis unless designated as "dry weight".

N1- The sample's matrix is solid (dry weight), however, the sample is in a liquid state. The sample was not treated as a solid per the method's SOP. The sample was filtered through a 0.45um filter and was run unpreserved.

This report contains data that were produced by a subcontracted laboratory certified for the fields of testing performed.

Legend Technical Services, St. Paul AZ0557

Bach Pham

651.221.4062

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #13 10/12/18 Project Manager: Joe Doranski	Reported: 01/18/19 10:14

1810093-03 (18J1650-01) Solid (Dry Weight) (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Legend Technical Services, Inc. #AZ0557

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PCB 8082A										
Aroclor 1016	<	11	75	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8082A	E8
Aroclor 1221	<	20	75	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8082A	E8
Aroclor 1232	<	20	75	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8082A	E8
Aroclor 1242	<	6.4	75	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8082A	E8
Aroclor 1248	<	7.9	75	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8082A	E8
Aroclor 1254	<	9.4	75	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8082A	E8
Aroclor 1260	<	8.7	75	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8082A	E8
Surrogate: Decachlorobiphenyl			*68.0 %*	*57.5-120*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8082A*	
Surrogate: Tetrachloro-meta-xylene			*56.5 %*	*57.1-114*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8082A*	*S12*
PERCENT SOLIDS										
% Solids	0.70			%	1	B7J1118	06/22/18 00:00	10/30/18 18:03	% calculation	
PESTICIDES 8081B										
4,4'-DDD	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
4,4'-DDE	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
4,4'-DDT	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Aldrin	<	2.6	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
alpha-BHC	<	2.6	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
alpha-Chlordane	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
beta-BHC	<	2.7	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
delta-BHC	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Dieldrin	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Endosulfan I	<	2.7	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Endosulfan II	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Endosulfan sulfate	<	2.9	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Endrin	<	2.7	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Endrin aldehyde	<	2.5	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Endrin ketone	<	2.7	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
gamma-BHC (Lindane)	<	2.6	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
gamma-Chlordane	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Heptachlor	<	2.6	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Heptachlor epoxide	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Methoxychlor	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Toxaphene	<	5.7	30	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Surrogate: Decachlorobiphenyl			*68.5 %*	*52.5-134*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8081B*	
Surrogate: Tetrachloro-meta-xylene			*58.0 %*	*59.6-120*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8081B*	*S12*

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #13 10/12/18 Project Manager: Joe Doranski	Reported: 01/18/19 10:14

1810093-03 (18J1650-01) Solid (Dry Weight) (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Legend Technical Services of Arizona, Inc.							
Inorganic Chemistry										
Cyanide, Total	4.29	3.67	14.3	mg/kg dry	1	B8J1641	10/19/18 09:13	10/19/18 16:15	EPA 9014	E4, N1
% Solids	0.7		1	%	1	B8J1622	10/18/18 16:50	10/18/18 16:50	SM 2540 G	

1810092-03 (18J1650-02) Solid (Dry Weight) (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Legend Technical Services, Inc. #AZ0557							
PCB 8082A										
Aroclor 1016	<	0.97	6.7	mg/kg dry	3	B8J2201	10/22/18 08:26	10/23/18 18:03	EPA 8082A	D1, E8
Aroclor 1221	<	1.8	6.7	mg/kg dry	3	B8J2201	10/22/18 08:26	10/23/18 18:03	EPA 8082A	D1, E8
Aroclor 1232	<	1.8	6.7	mg/kg dry	3	B8J2201	10/22/18 08:26	10/23/18 18:03	EPA 8082A	D1, E8
Aroclor 1242	<	0.57	6.7	mg/kg dry	3	B8J2201	10/22/18 08:26	10/23/18 18:03	EPA 8082A	D1, E8
Aroclor 1248	<	0.23	2.2	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8082A	E8
Aroclor 1254	<	0.28	2.2	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8082A	E8
Aroclor 1260	<	0.26	2.2	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8082A	E8
Surrogate: Decachlorobiphenyl			*66.0 %*	*57.5-120*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8082A*	
Surrogate: Tetrachloro-meta-xylene			*64.0 %*	*57.1-114*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8082A*	
PERCENT SOLIDS										
% Solids	15			%	1	B7J1118	06/22/18 00:00	10/30/18 18:03	% calculation	
PESTICIDES 8081B										
4,4'-DDD	<	0.083	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
4,4'-DDE	<	0.083	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
4,4'-DDT	<	0.083	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Aldrin	<	0.078	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
alpha-BHC	<	0.075	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
alpha-Chlordane	<	0.082	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
beta-BHC	<	0.079	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
delta-BHC	<	0.081	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Dieldrin	<	0.082	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Endosulfan I	<	0.080	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Endosulfan II	<	0.082	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Endosulfan sulfate	<	0.084	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Endrin	<	0.079	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Endrin aldehyde	<	0.074	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Endrin ketone	<	0.079	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
gamma-BHC (Lindane)	<	0.078	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
gamma-Chlordane	<	0.081	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Heptachlor	<	0.078	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Heptachlor epoxide	<	0.081	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Methoxychlor	<	0.081	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #13 10/12/18 Project Manager: Joe Doranski	Reported: 01/18/19 10:14

1810092-03 (18J1650-02) Solid (Dry Weight) (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Legend Technical Services, Inc. #AZ0557							
PESTICIDES 8081B										
Toxaphene -	<	0.17	0.89	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Surrogate: Decachlorobiphenyl			*67.0 %*	*52.5-134*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8081B*	
Surrogate: Tetrachloro-meta-xylene			*61.5 %*	*59.6-120*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8081B*	
			Legend Technical Services of Arizona, Inc.							
Inorganic Chemistry										
Cyanide, Total -	**0.333**	**0.171**	0.667	mg/kg dry	1	B8J1641	10/19/18 09:13	10/19/18 16:15	EPA 9014	E4
% Solids -	**15**		1	%	1	B8J1622	10/18/18 16:50	10/18/18 16:50	SM 2540 G	R9

1810093-01 (18J1650-03) Wastewater (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Legend Technical Services, Inc. #AZ0557							
PESTICIDES/PCBS 608										
Aroclor Total (PCBs)	<		2.2	ug/L	1	[CALC]	10/19/18 13:41	10/23/18 05:06	[CALC]	
4,4'-DDD	<	0.047	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
4,4'-DDE	<	0.037	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
4,4'-DDT	<	0.043	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Aldrin	<	0.041	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
alpha-BHC	<	0.037	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Aroclor 1016	<	0.13	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:06	EPA 608	E8
Aroclor 1221	<	0.45	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:06	EPA 608	E8
Aroclor 1232	<	0.23	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:06	EPA 608	E8
Aroclor 1242	<	0.14	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:06	EPA 608	E8
Aroclor 1248	<	0.26	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:06	EPA 608	E8
Aroclor 1254	<	0.14	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:06	EPA 608	E8
Aroclor 1260	<	0.11	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:06	EPA 608	E8
beta-BHC	<	0.043	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Chlordane (tech)	<	0.14	0.87	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
delta-BHC	<	0.046	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Dieldrin	<	0.041	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Endosulfan I	<	0.041	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Endosulfan II	<	0.043	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Endosulfan sulfate	<	0.042	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Endrin	<	0.047	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Endrin aldehyde	<	0.042	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
gamma-BHC (Lindane)	<	0.038	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Heptachlor	<	0.039	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Heptachlor epoxide	<	0.045	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Methoxychlor	<	0.046	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8, T2
Toxaphene	<	0.091	1.1	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Surrogate: Decachlorobiphenyl			*94.0 %*	*68.5-111*		*B8J1909*	*10/19/18*	*10/19/18*	*EPA 608*	

Legend Technical Services of Arizona, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Laboratory Work Order No.: 18J1650

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #13 10/12/18 Project Manager: Joe Doranski	Reported: 01/18/19 10:14

1810093-01 (18J1650-03) Wastewater (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services, Inc. #AZ0557										
PESTICIDES/PCBS 608										
Surrogate: Tetrachloro-meta-xylene			*70.5 %*		*61.1-119*	*B8J1909*	*10/19/18*	*10/19/18*	*EPA 608*	

1810093-02 (18J1650-04) Wastewater (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services, Inc. #AZ0557										
PESTICIDES/PCBS 608										
Aroclor Total (PCBs)	<		2.2	ug/L	1	[CALC]	10/19/18 13:41	10/23/18 03:25	[CALC]	
4,4'-DDD	<	0.046	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
4,4'-DDE	<	0.037	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
4,4'-DDT	<	0.043	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
Aldrin	<	0.041	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
alpha-BHC	<	0.037	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
Aroclor 1016	<	0.13	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 03:25	EPA 608	E8
Aroclor 1221	<	0.44	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 03:25	EPA 608	E8
Aroclor 1232	<	0.23	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 03:25	EPA 608	E8
Aroclor 1242	<	0.14	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 03:25	EPA 608	E8
Aroclor 1248	<	0.26	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 03:25	EPA 608	E8
Aroclor 1254	<	0.14	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 03:25	EPA 608	E8
Aroclor 1260	<	0.11	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 03:25	EPA 608	E8
beta-BHC	<	0.043	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
Chlordane (tech)	<	0.14	0.86	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
delta-BHC	<	0.045	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
Dieldrin	<	0.041	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
Endosulfan I	<	0.041	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
Endosulfan II	<	0.043	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
Endosulfan sulfate	<	0.042	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
Endrin	<	0.046	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
Endrin aldehyde	<	0.042	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
gamma-BHC (Lindane)	<	0.038	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
Heptachlor	<	0.039	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
Heptachlor epoxide	<	0.044	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
Methoxychlor	<	0.045	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8, T2
Toxaphene	<	0.090	1.1	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 20:46	EPA 608	E8
Surrogate: Decachlorobiphenyl			*100 %*		*68.5-111*	*B8J1909*	*10/19/18*	*10/19/18*	*EPA 608*	
Surrogate: Tetrachloro-meta-xylene			*84.0 %*		*61.1-119*	*B8J1909*	*10/19/18*	*10/19/18*	*EPA 608*	

1810092-01 (18J1650-05) Wastewater (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services, Inc. #AZ0557										
PESTICIDES/PCBS 608										

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #13 10/12/18 Project Manager: Joe Doranski	Reported: 01/18/19 10:14

1810092-01 (18J1650-05) Wastewater (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Legend Technical Services, Inc. #AZ0557

PESTICIDES/PCBS 608

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor Total (PCBs)	<		2.4	ug/L	1	[CALC]	10/19/18 13:41	10/23/18 05:57	[CALC]	
4,4'-DDD	<	0.051	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
4,4'-DDE	<	0.040	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
4,4'-DDT	<	0.047	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
Aldrin	<	0.045	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
alpha-BHC	<	0.040	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
Aroclor 1016	<	0.14	2.4	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:57	EPA 608	E8
Aroclor 1221	<	0.46	2.4	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:57	EPA 608	E8
Aroclor 1232	<	0.25	2.4	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:57	EPA 608	E8
Aroclor 1242	<	0.15	2.4	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:57	EPA 608	E8
Aroclor 1248	<	0.28	2.4	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:57	EPA 608	E8
Aroclor 1254	<	0.15	2.4	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:57	EPA 608	E8
Aroclor 1260	<	0.12	2.4	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:57	EPA 608	E8
beta-BHC	<	0.047	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
Chlordane (tech)	<	0.15	0.94	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
delta-BHC	<	0.049	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
Dieldrin	<	0.045	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
Endosulfan I	<	0.045	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
Endosulfan II	<	0.047	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
Endosulfan sulfate	<	0.046	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
Endrin	<	0.051	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
Endrin aldehyde	<	0.046	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
gamma-BHC (Lindane)	<	0.041	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
Heptachlor	<	0.042	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
Heptachlor epoxide	<	0.048	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
Methoxychlor	<	0.049	0.47	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8, T2
Toxaphene	<	0.099	1.2	ug/L	1	B8J1909	10/19/18 13:41	10/20/18 00:34	EPA 608	E8
Surrogate: Decachlorobiphenyl			*104 %*		*68.5-111*	*B8J1909*	*10/19/18*	*10/20/18*	*EPA 608*	
Surrogate: Tetrachloro-meta-xylene			*72.0 %*		*61.1-119*	*B8J1909*	*10/19/18*	*10/20/18*	*EPA 608*	

1810092-02 (18J1650-06) Wastewater (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Legend Technical Services, Inc. #AZ0557

PESTICIDES/PCBS 608

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor Total (PCBs)	<		2.2	ug/L	1	[CALC]	10/19/18 13:41	10/23/18 04:16	[CALC]	
4,4'-DDD	<	0.048	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
4,4'-DDE	<	0.038	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
4,4'-DDT	<	0.044	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
Aldrin	<	0.042	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #13 10/12/18 Project Manager: Joe Doranski	Reported: 01/18/19 10:14

1810092-02 (18J1650-06) Wastewater (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Legend Technical Services, Inc. #AZ0557

PESTICIDES/PCBS 608

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	<	0.038	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
Aroclor 1016	<	0.13	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 04:16	EPA 608	E8
Aroclor 1221	<	0.46	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 04:16	EPA 608	E8
Aroclor 1232	<	0.23	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 04:16	EPA 608	E8
Aroclor 1242	<	0.14	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 04:16	EPA 608	E8
Aroclor 1248	<	0.27	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 04:16	EPA 608	E8
Aroclor 1254	<	0.14	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 04:16	EPA 608	E8
Aroclor 1260	<	0.11	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 04:16	EPA 608	E8
beta-BHC	<	0.044	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
Chlordane (tech)	<	0.14	0.89	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
delta-BHC	<	0.047	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
Dieldrin	<	0.042	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
Endosulfan I	<	0.042	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
Endosulfan II	<	0.044	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
Endosulfan sulfate	<	0.043	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
Endrin	<	0.048	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
Endrin aldehyde	<	0.043	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
gamma-BHC (Lindane)	<	0.039	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
Heptachlor	<	0.040	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
Heptachlor epoxide	<	0.046	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
Methoxychlor	<	0.047	0.44	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8, T2
Toxaphene	<	0.093	1.1	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 21:37	EPA 608	E8
Surrogate: Decachlorobiphenyl			*100 %*		*68.5-111*	*B8J1909*	*10/19/18*	*10/19/18*	*EPA 608*	
Surrogate: Tetrachloro-meta-xylene			*82.5 %*		*61.1-119*	*B8J1909*	*10/19/18*	*10/19/18*	*EPA 608*	

Pima County RWRD CRAO Lab	Project: Pesticides	
2955 W Calle Agua Nueva	Project Number: Pesticides #13 10/12/18	Reported:
Tucson, AZ 85745	Project Manager: Joe Doranski	01/18/19 10:14

Notes and Definitions

T2	Cited ADHS licensed method does not contain this analyte as part of method compound list.
S12	Surrogate recovery was low. Data reported per ADEQ policy 0154.000.
R9	Sample RPD exceeded the laboratory acceptance limit.
N1	See case narrative.
M2a	Matrix spike recovery was low; the associated blank spike recovery was acceptable.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
E8	Analyte reported to the MDL per project specification. Target analyte was not detected in the sample.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL), but above the MDL.
D1	Sample required dilution due to matrix.
BLK	Method Blank
LCS/Dup	Laboratory Control Sample/Laboratory Fortified Blank/Duplicate
MS/Dup	Matrix Spike/Duplicate
Dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #13 10/12/18 Project Manager: Joe Doranski	Reported: 01/18/19 10:14

18J1650

CHAIN OF CUSTODY RECORD

LEGEND Technical Services, Inc.

☐ 1763 N. 25th Avenue • Phoenix, AZ 85023 • (602) 324-6100 • Fax (602) 324-6101
☐ 4555 S. Palo Verde Rd, Ste 423 • Tucson, AZ 85714 • (520) 327-1234 • Fax (520) 327-0519

Page 1 of 1

Please Print Clearly

Client Name	Address	City	State	Zip	Phone	Fax Number or Email Address
Pima County CRAO Lab	2955 W Calle Agua Nueva	Tucson	AZ	85745	520-724-6015	joseph.doranski@pima.gov

Project Name	Project Number	Contact	P.O. No	
Pesticides #13		Joe Doranski	19-010982	Fax Results ☐ QC Report ☐ EDD ☒ Email Results ☒ Special Detection Limits ☐

DW=Drinking Water, WW=Wastewater, SW=Surface Water, GW=Groundwater, O=Other, S=Solid/Soil, T=Travel Blank, F=Food, G=Sludge/Biosolids

Laboratory Authorization Required for Rush
☒ Standard 10 - 15 Day
☐ Other _____

Client's Sample Identification	Date	Time	Sample Location	Composite	Grab	Sample Type	Compliance	No. of Containers	EPA 608 extended	EPA 8081/8082 mg/kg	Total cyanide mg/kg	Total % solids dry weight	
1810093-03	10/12/18	800	Agua Nueva WRF thickened sludge	X		G	X	3		X	X	X	-01
1810092-03	10/12/18	800	Tres Rios WRF dewatered cake	X		G	X	3		X	X	X	-02
1810093-01	10/12/18	800	Agua Nueva WRF plant influent	X		WW	X	1	X				-03
1810093-02	10/12/18	800	Agua Nueva WRF plant effluent	X		WW	X	1	X				-04
1810092-01	10/12/18	800	Tres Rios WRF raw influent	X		WW	X	1	X				-05
1810092-02	10/12/18	800	Tres Rios WRF final effluent #3	X		WW	X	1	X				-06

TO ENSURE COMPLETION OF ANALYSIS, SAMPLES MUST BE RECEIVED AT LEAST 48 HOURS PRIOR TO THE HOLD TIME EXPIRATION

Comments / Special Instructions: Analyte list emailed. Samples are unpreserved. EPA 608, total PCBs and Methoxychlor. Please report results from the sludge samples in mg/kg dry weight

SAMPLE CONDITION UPON RECEIPT (CIRCLE)	
Intact	10
Temp	2.0 °C
Chilled	Y (N)
Preserved	Y N
Sealed	(Y) N

	Relinquished By	Date/Time	Received By	Date/Time
①	Sampler Signature / Sampler Printed Name: Greg Spence	10/15/18 1108	Signature / Printed Name: Alyssa Mazza	10/15/18 1108
②	Signature / Printed Name	Date / Time	Signature / Printed Name: C.J. Lab	10/15/18 1115
③	Signature / Printed Name: Amanda Karzo	10/15/18 1600	Signature / Printed Name: Courier	10/15/18 1600

Courier 10/16/18 730 M Shaley 10/16/18 730

WHITE-LAB YELLOW-CLIENT

FORM CS-316 2 (07/18)

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #13 10/12/18 Project Manager: Joe Doranski	Reported: 01/18/19 10:14

Legend Technical Services of Arizona, Inc.

LEGEND Technical Services, Inc.

PO Number:

SUBCONTRACT ORDER

18J1650

SENDING LABORATORY:

Legend Technical Services of Arizona, Inc.
17631 North 25th Avenue
Phoenix, AZ 85023
Phone: 602-324-6100
Fax: 602-324-6101
Project Manager: P. Brian Merritt

RECEIVING LABORATORY:

Legend Technical Services, St. Paul AZ0557
88 Empire Drive
Saint Paul, MN 55103
Phone :(800) 828-8553
Fax: (651) 642-1239

Project: Pesticides

Client: Pima County RWRD CRAO Lab%Tucson

Analysis	Due	Expires	Leach Date & Time	Sample Comments
Sample ID: 18J1650-01 Solid (Dry We		Sampled:10/12/18 06:00		
8081- Subcontract	10/24/18 15:00	10/19/18 06:00		
8082-Subcontract	10/24/18 15:00	10/26/18 06:00		

Containers Supplied:
02_1000mL Amber Glass Cool to 4° C (A)

For method 608: _____pH check _____Cl2 check
Special Instructions/Comments:

Analysis	Due	Expires	Leach Date & Time	Sample Comments
Sample ID: 18J1650-02 Solid (Dry We		Sampled:10/12/18 06:00		
8081- Subcontract	10/24/18 15:00	10/19/18 06:00		
8082-Subcontract	10/24/18 15:00	10/26/18 06:00		

Containers Supplied:
02_1000mL Amber Glass Cool to 4° C (A)

For method 608: _____pH check _____Cl2 check
Special Instructions/Comments:

* The sample matrix for leachates supplied to the MN laboratory reflects the matrix of the original sample received by LEGEND AZ.
**For matrices other than Drinking Water requiring drinking water methods (such as EPA 505, etc.), a 10x dilution is acceptable. Appropriate data qualifiers are to be used.

Released By (Print & Sign)	Date	Time	Received By (Print & Sign)	Date	Time
	10/16/18	1630	FedEx	10/16/18	1630
Released By (Print & Sign)	Date	Time	Received By (Print & Sign)	Date	Time

Page 1 of 3

Bea Ronan

From: Kaitlyn Martel <kmartel@legend-group.com>
Sent: Thursday, December 6, 2018 9:51
To: Bea Ronan; Joseph Doranski
Cc: Jenelle Chraft; Brian Merritt
Subject: RE: Report Pesticides #13 10-15-18
Attachments: 18J1650 Sample2MDL_lowestCOC Rev TUCSON FINAL 12 06 18 0948.PDF; 18J1650 FINAL EXCEL 06 Dec 18 0943.xls

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

Requested report attached

Thank you,

Kaitlyn Martel
Tucson Lab Manager
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.
4585 S. Palo Verde Road, Ste. 423
Tucson, AZ 85714
(520) 327-1234
Fax: (520) 327-0518
kmartel@legend-group.com

Ask me about how to connect to our on-line data access portal, ClientConnect. https://az.legend-group.com/

Help the environment & save time with paperless reporting, monthly summary invoicing and

From: Bea Ronan <Bea.Ronan@pima.gov>
Sent: Wednesday, December 5, 2018 4:18 PM
To: Kaitlyn Martel <kmartel@legend-group.com>; Joseph Doranski <Joseph.Doranski@pima.gov>
Cc: Jenelle Chraft <Jenelle.Chraft@pima.gov>; Brian Merritt <bmerritt@legend-group.com>
Subject: RE: Report Pesticides #13 10-15-18

Kaitlyn,

The report and EDD for 18J1650 do not apply an E4 qualifier to the cyanide results for the two biosolids samples. Would you please provide us with an EDD that has the E4 qualifier on those results?

Thanks,
Bea Ronan

From: Kaitlyn Martel [mailto:kmartel@legend-group.com]
Sent: Tuesday, November 6, 2018 3:17 PM
To: Joseph Doranski <Joseph.Doranski@pima.gov>; Bea Ronan <Bea.Ronan@pima.gov>
Subject: Report Pesticides #13 10-15-18

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

Report attached

Kaitlyn Martel
Tucson Lab Manager
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.
4585 S. Palo Verde Road, Ste. 423
Tucson, AZ 85714
(520) 327-1234
Fax: (520) 327-0518
kmartel@legend-group.com

Ask me about how to connect to our on-line data access portal, ClientConnect. https://az.legend-group.com/

Help the environment & save time with paperless reporting, monthly summary invoicing and on line access to data, reports & EDD.

Bea Ronan

From: Kaitlyn Martel <kmartel@legend-group.com>
Sent: Friday, January 18, 2019 10:19
To: Joseph Doranski
Cc: Bea Ronan
Subject: RE: Pesticides WO 18J1650
Attachments: 18J1650 Sample2MDL_lowestCOC Rev TUCSON FINAL 01 18 19 1014.PDF

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

Requested report is attached

Report attached

Kaitlyn Martel
Tucson Lab Manager
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Ask me about how to connect to our on-line data access portal, ClientConnect. https://az.legend-group.com/

Help the environment & save time with paperless reporting, monthly summary invoicing and on line access to data, reports & EDD.

From: Joseph Doranski <Joseph.Doranski@pima.gov>
Sent: Friday, January 18, 2019 10:02 AM
To: Kaitlyn Martel <kmartel@legend-group.com>
Cc: Bea Ronan <Bea.Ronan@pima.gov>
Subject: Pesticides WO 18J1650

Kaitlyn,

Our Data Management Unit uncovered an omission from the report for 18J1650. Somehow Bea and I did not notice there is no R9 qualifier for total solids on sample 18J1650-02 (page 5 of 19). The associated EDD was correct. Please, at your convenience, provide us yet another (I'm Sorry!) revision with the R9 qualifier, to match our in-house report. Please accept my apologies.

Thanks,

Joseph Doranski
Quality Assurance Unit Chemist Specialist
Pima County RWRD CRAO – Laboratory
Water Campus - 2955 W Calle Agua Nueva
Tucson AZ 85745
520-724-6032
Joseph.doranski@pima.gov
Plesese consider the environment, print only if necessary

LEGEND
Technical Services, Inc.

4585 S. Palo Verde Rd., Ste. 423 • Tucson, AZ 85714
P (520) 327-1234 • F (520) 327-0518
www.legend-group.com

18 January 2019

Joe Doranski
Pima County RWRD CRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745
Fax: (520) 579-6002

RE: Pesticides

Laboratory Work Order No.: 18J1650

Legend Technical Services of Arizona, Inc. is pleased to provide the enclosed analytical results for the aforementioned project. These results relate only to the items tested. This cover letter and the accompanying pages represent the full report for these analyses and should only be reproduced in full. Samples for this project were received by the laboratory on 10/15/18 14:15.

The samples were processed in accordance with the Chain of Custody document and the results presented relate only to the samples tested. The Chain of Custody is considered part of this report.

All samples will be retained by LEGEND for 30 days from the date of this report and then discarded unless other arrangements are made. Due to hold-time and method sample volume requirements, microbiological samples are not retained unless other arrangements are made.

This entire report was reviewed and approved for release by the undersigned. If you have any questions concerning this report, please feel free to contact me.

Sincerely,
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.

Kaitlyn Martel

Kaitlyn M. Martel For P. Brian Merritt
Client Services Representative
(602) 324-6100

This laboratory report is confidential and is intended for the sole use of LEGEND and it's client.

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 02/20/2018
Laboratory License: AZO159

Sample Analysis Report

Regional Biosolids Facility Management

January 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Graff

2·23·18
Date

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
Dewatered Cake Biosolids	1801013-01	Biosolids	1/1/2018 23:05:00	1/2/2018 9:45:00	Q6

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
Dewatered Cake Biosolids (20002-5703)											
Cross Reference 1801007-08											
1801013-01	C	Ammonia	01/01/18 23:05	EPA 350.1	1/7/18 15:15	**11000**	mg/kg dry	0.58	3.56		MGA
1801013-01	C	Arsenic	01/01/18 23:05	EPA 6010D	1/24/18 09:34	**ND**	mg/kg dry		12.49		MLB
1801013-01	C	Cadmium	01/01/18 23:05	EPA 6010D	1/24/18 09:34	**ND**	mg/kg dry		5.00		MLB
1801013-01	C	Chromium	01/01/18 23:05	EPA 6010D	1/24/18 09:34	**29.3**	mg/kg dry		12.49		MLB
1801013-01	C	Copper	01/01/18 23:05	EPA 6010D	1/24/18 09:34	**344**	mg/kg dry		12.49		MLB
1801013-01	C	Lead	01/01/18 23:05	EPA 6010D	1/24/18 11:14	**12.8**	mg/kg dry		12.49		MLB
1801013-01	C	Mercury	01/01/18 23:05	EPA 7471B	1/29/18 15:43	**0.55**	mg/kg dry		0.00356		DML
1801013-01	C	Molybdenum	01/01/18 23:05	EPA 6010D	1/24/18 09:34	**12.5**	mg/kg dry		5.00		MLB
1801013-01	C	Nickel	01/01/18 23:05	EPA 6010D	1/24/18 09:34	**19.6**	mg/kg dry		12.49		MLB
1801013-01	C	Nitrate/Nitrite	01/01/18 23:05	EPA 353.2	1/7/18 12:02	**0.99**	mg/kg dry	0.16	1.42	J	MGA
1801013-01	C	Nitrite	01/01/18 23:05	SM4500-NO2	1/2/18 13:52	**1.64**	mg/kg dry	0.14	1.42		KMT
1801013-01	C	Total Kjeldahl Nitrogen	01/01/18 23:05	EPA 351.2	1/10/18 08:46	**56616**	mg/kg dry	2.41	10.85	D2	HAV
1801013-01	C	Nitrogen Total Biosolids	01/01/18 23:05	Calculated	1/10/18 08:46	**56617**	mg/kg dry	0.34	1.52		HAV
1801013-01	C	Selenium	01/01/18 23:05	EPA 6010D	1/24/18 09:34	**ND**	mg/kg dry		24.99		MLB
1801013-01	C	Silver	01/01/18 23:05	EPA 6010D	1/24/18 12:26	**2.78**	mg/kg dry		1.25		MLB
1801013-01	C	Zinc	01/01/18 23:05	EPA 6010D	1/24/18 09:34	**687**	mg/kg dry		12.49		MLB
1801013-01	C	% Solids	01/01/18 23:05	SM 2540G	1/3/18 08:39	**14.05**	%		0.01		TDA

Qualifier Definitions

D2	Sample required dilution due to high concentration of target analyte.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
Q6	Sample was received above recommended temperature.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank

Case Narrative(s)

None

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1801013-01

PROJECT & LOCATION: Regional Biosolids Facility Management - Dewatered Cake Biosolids

PROJECT-LOCATION NUMBER: 20002-5703 (XXXXX-XXXX)

SAMPLE START DATE: 01/01/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 1005 (Military time)

CLIENT: Deputy Director-Treatment

SAMPLE END DATE: 01/01/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 2305 (Military time)

SAMPLER(S): Mondragon (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ AZPDES ☐ IWC ☐ Investigative ☐ Reuse ☐ Air ■ 503 ☐ Process Control ☐ Other

Matrix: ■ Biosolids ☐ Groundwater ☐ Industrial ☐ Soil ☐ Stormwater ☐ Surface Water ☐ Wastewater ☐ Air ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	×		☐	■
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	×		☐	■
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	☐	☐	☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	■
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	■
Chloride	☐	☐
Cyanide, Total	☐	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	■
Nitrite as N	☐	■
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	■
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other	☐	☐
Other	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other	☐	☐
Other	☐	☐

EFFLUENT TOXICITY TESTING

	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total	☐	■
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other	☐	☐

OTHER

	D	C
Paint Filter	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ ° C
☐ Temperature *SM 2550 B*		° C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions:
Poured off the daily sample 1801007-08

Septum Blank Prep Date & Initials:

Chain of Custody Record (Signatures Only)

See 1801007-08 for COC

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

# of Bottles Delivered: 2 GOS

Transported on Ice: ☐ YES ☒ NO

Lab Receipt

Temperature: 13 ° C

Initials: GOS

Q6 qualifier? ☒ YES ☐ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*
** *As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn*

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 03/14/2018
Laboratory License: AZO159

Sample Analysis Report

Regional Biosolids Facility Management

February 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Chratt 3·15·18

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

Date

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
Dewatered Cake Biosolids	1802038-01	Biosolids	2/5/2018 18:28:00	2/6/2018 9:55:00	Q6

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
Dewatered Cake Biosolids (20002-5703)											
1802038-01	C	Ammonia	02/05/18 18:28	EPA 350.1	2/9/18 11:52	**9740**	mg/kg dry	0.42	3.96		JGB
1802038-01	C	Arsenic	02/05/18 18:28	EPA 6010D	2/22/18 11:20	**ND**	mg/kg dry		9.53		MLB
1802038-01	C	Cadmium	02/05/18 18:28	EPA 6010D	2/22/18 11:20	**ND**	mg/kg dry		3.81		MLB
1802038-01	C	Chromium	02/05/18 18:28	EPA 6010D	2/22/18 11:20	**27.0**	mg/kg dry		9.53		MLB
1802038-01	C	Copper	02/05/18 18:28	EPA 6010D	2/22/18 11:20	**333**	mg/kg dry		9.53		MLB
1802038-01	C	Lead	02/05/18 18:28	EPA 6010D	2/22/18 11:20	**13.9**	mg/kg dry		9.53		MLB
1802038-01	C	Mercury	02/05/18 18:28	EPA 7471B	3/2/18 09:57	**0.65**	mg/kg dry		0.00396		DML
1802038-01	C	Molybdenum	02/05/18 18:28	EPA 6010D	2/22/18 11:20	**11.6**	mg/kg dry		3.81		MLB
1802038-01	C	Nickel	02/05/18 18:28	EPA 6010D	2/22/18 11:20	**31.1**	mg/kg dry		9.53		MLB
1802038-01	C	Nitrate/Nitrite	02/05/18 18:28	EPA 353.2	2/7/18 15:11	**1.41**	mg/kg dry	0.60	6.33	J	HAV
1802038-01	C	Nitrite	02/05/18 18:28	SM4500-NO2	2/6/18 15:12	**1.79**	mg/kg dry	0.63	6.33	J	KMT
1802038-01	C	Total Kjeldahl Nitrogen	02/05/18 18:28	EPA 351.2	2/12/18 10:48	**61280**	mg/kg dry	2.22	12.18	D2	HAV
1802038-01	C	Nitrogen Total Biosolids	02/05/18 18:28	Calculated	2/12/18 10:48	**61281**	mg/kg dry	0.28	1.60		HAV
1802038-01	C	Selenium	02/05/18 18:28	EPA 6010D	2/22/18 11:20	**ND**	mg/kg dry		19.06		MLB
1802038-01	C	Silver	02/05/18 18:28	EPA 6010D	2/22/18 13:48	**2.73**	mg/kg dry		0.95		MLB
1802038-01	C	Zinc	02/05/18 18:28	EPA 6010D	2/22/18 11:20	**654**	mg/kg dry		9.53		MLB
1802038-01	C	% Solids	02/05/18 18:28	SM 2540G	2/7/18 08:22	**12.63**	%		0.01		ADP

Qualifier Definitions

D2	Sample required dilution due to high concentration of target analyte.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
Q6	Sample was received above recommended temperature.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank

Case Narrative(s)

None

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1802038-01

PROJECT & LOCATION: Regional Biosolids Facility Management - Dewatered Cake Biosolids

PROJECT-LOCATION NUMBER: 20002-5703 (XXXXX-XXXX)

SAMPLE START DATE: 02/05/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 0737 (Military time)

CLIENT: Deputy Director-Treatment

SAMPLE END DATE: 02/05/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 1828 (Military time)

SAMPLER(S): Vasquez, Soto (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ AZPDES ☐ IWC ☐ Investigative ☐ Reuse ☐ Air ☐ 503 ☐ Process Control ☐ Other

Matrix: ☒ Biosolids ☐ Groundwater ☐ Industrial ☐ Soil ☐ Stormwater ☐ Surface Water ☐ Wastewater ☐ Air ☐ Other

Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Hardness				
Iron				
Lead				
Magnesium				
Manganese				
Mercury X				■
Mercury LL				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver X				■
Sodium				
Thallium				
Tin				

Titanium				
Vanadium				
Zinc				
PPMs *				
TCLP Metals				
503 Metals *				■
Dissolved Cr+6				
Ammonia as N				■
Chloride				
Cyanide, Total				
Cyanide, Amenable				
Fluoride				
Ignitability				
Nitrate as N				■
Nitrite as N				■
Nitrate/Nitrite as N				
Nitrogen, Total Kjeldahl				
Nitrogen, Total as N				■
Orthophosphate as P				
Phosphorus, Total as P				
Sulfate				
Sulfide				
Other				
Other				

Acrolein and Acrylonitrile		
Dioxin GC/SIM/MS Scan		
Organochlorine Pesticides & PCBs		
Purgeable Organics (GCMS)		
Semivolatile Organics (GCMS)		
Bis(2-ethylhexyl) phthalate		
Digester Gas		
Oil and Grease		
Organic Carbon, Total		
Organic Carbon, Dissolved		
TCLP Herbicides (Contract Lab)		
TCLP Pesticides		
TCLP Semivolatile Organics		
TCLP Volatile Organics		
TTHM		
Total Petroleum Hydrocarbons		
Volatile Acids		
Other		
Other		

Chronic *P. promelas*		
Chronic *C. dubia*		
Chronic *Selenastrum capricornutum*		
Other		

Alkalinity		
BOD		
COD		
Coliform, Fecal		
Coliform, Total		
Specific Conductance		
E. coli		
Oxygen, Dissolved		
pH		
Solids, Total		■
Solids, Total Dissolved		
Solids, Total Suspended		
Solids, Total Volatile		
Solids, Volatile Suspended		
Other		

Paint Filter		

☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ ° C
☐ Temperature *SM 2550 B*		° C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions:
Poured off the daily sample 1802034-08

Septum Blank Prep Date & Initials:

See 1802034-08 for COC

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

# of Bottles Delivered: 2

Transported on Ice: ☐ YES ☒ NO

Temperature: 12 ° C

Initials: GS

Q6 qualifier? ☒ YES ☐ NO

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*
Ba, Be, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 04/23/2018
Laboratory License: AZO159

Sample Analysis Report

Regional Biosolids Facility Management

March 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Chaffee

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

4.23.18
Date

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
Dewatered Cake Biosolids	1803193-01	Biosolids	3/26/2018 21:05:00	3/27/2018 9:40:00	Q6

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
Dewatered Cake Biosolids (20002-5703)											
Cross Reference WO 1803189-08											
1803193-01	C	Ammonia	03/26/18 21:05	EPA 350.1	3/31/18 14:52	**8810**	mg/kg dry	0.41	3.90		MGA
1803193-01	C	Arsenic	03/26/18 21:05	EPA 6010D	3/30/18 13:40	**ND**	mg/kg dry		11.35		MLB
1803193-01	C	Cadmium	03/26/18 21:05	EPA 6010D	3/30/18 13:40	**ND**	mg/kg dry		4.54		MLB
1803193-01	C	Chromium	03/26/18 21:05	EPA 6010D	3/30/18 13:40	**26.7**	mg/kg dry		11.35		MLB
1803193-01	C	Copper	03/26/18 21:05	EPA 6010D	3/30/18 13:40	**354**	mg/kg dry		11.35		MLB
1803193-01	C	Lead	03/26/18 21:05	EPA 6010D	3/30/18 13:40	**13.7**	mg/kg dry		11.35		MLB
1803193-01	C	Mercury	03/26/18 21:05	EPA 7471B	4/2/18 15:38	**1.08**	mg/kg dry		0.00390		DML
1803193-01	C	Molybdenum	03/26/18 21:05	EPA 6010D	3/30/18 13:40	**12.1**	mg/kg dry		4.54		MLB
1803193-01	C	Nickel	03/26/18 21:05	EPA 6010D	3/30/18 13:40	**29.4**	mg/kg dry		11.35		MLB
1803193-01	C	Nitrate/Nitrite	03/26/18 21:05	EPA 353.2	4/5/18 14:03	**0.60**	mg/kg dry	0.59	6.24	J	HAV
1803193-01	C	Nitrite	03/26/18 21:05	SM4500-NO2	3/28/18 08:22	**3.52**	mg/kg dry	0.16	1.56		KMT
1803193-01	C	Total Kjeldahl Nitrogen	03/26/18 21:05	EPA 351.2	3/30/18 12:27	**69707**	mg/kg dry	2.24	6.16		HAV
1803193-01	C	Nitrogen Total Biosolids	03/26/18 21:05	Calculated	4/5/18 14:03	**69708**	mg/kg dry	0.29	0.80		HAV
1803193-01	C	Selenium	03/26/18 21:05	EPA 6010D	4/3/18 15:23	**ND**	mg/kg dry		22.69		MLB
1803193-01	C	Silver	03/26/18 21:05	EPA 6010D	3/30/18 14:42	**2.86**	mg/kg dry		1.13		MLB
1803193-01	C	Zinc	03/26/18 21:05	EPA 6010D	3/30/18 13:40	**644**	mg/kg dry		11.35		MLB
1803193-01	C	% Solids	03/26/18 21:05	SM 2540G	3/28/18 08:35	**12.83**	%		0.01		ESW

Qualifier Definitions

J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
Q6	Sample was received above recommended temperature.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction

Case Narrative(s)

None

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1803193-01

PROJECT & LOCATION: Regional Biosolids Facility Management - Dewatered Cake Biosolids

PROJECT-LOCATION NUMBER: 20002-5703 (XXXXX-XXXX)

SAMPLE START DATE: 03/26/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 1005 (Military time)

CLIENT: Deputy Director-Treatment

SAMPLE END DATE: 03/26/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 2105 (Military time)

SAMPLER(S): Mondragon, Walker (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ AZPDES ☐ IWC ☐ Investigative ☐ Reuse ☐ Air ■ 503 ☐ Process Control ☐ Other

Matrix: ■ Biosolids ☐ Groundwater ☐ Industrial ☐ Soil ☐ Stormwater ☐ Surface Water ☐ Wastewater ☐ Air ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Hardness				
Iron				
Lead				
Magnesium				
Manganese				
Mercury	×			■
Mercury LL				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver	×			■
Sodium				
Thallium				
Tin				

METALS	Tot	Diss	D	C
Titanium				
Vanadium				
Zinc				
PPMs *				
TCLP Metals				
503 Metals **				■
Dissolved Cr+6				

WET METHODS	D	C
Ammonia as N		■
Chloride		
Cyanide, Total		
Cyanide, Amenable		
Fluoride		
Ignitability		
Nitrate as N		■
Nitrite as N		■
Nitrate/Nitrite as N		
Nitrogen, Total Kjeldahl		
Nitrogen, Total as N		■
Orthophosphate as P		
Phosphorus, Total as P		
Sulfate		
Sulfide		
Other		
Other		

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile		
Dioxin GC/SIM/MS Scan		
Organochlorine Pesticides & PCBs		
Purgeable Organics (GCMS)		
Semivolatile Organics (GCMS)		
Bis(2-ethylhexyl) phthalate		
Digester Gas		
Oil and Grease		
Organic Carbon, Total		
Organic Carbon, Dissolved		
TCLP Herbicides (Contract Lab)		
TCLP Pesticides		
TCLP Semivolatile Organics		
TCLP Volatile Organics		
TTHM		
Total Petroleum Hydrocarbons		
Volatile Acids		
Other		
Other		

EFFLUENT TOXICITY TESTING

	D	C
Chronic *P. promelas*		
Chronic *C. dubia*		
Chronic *Selenastrum capricornutum*		
Other		

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity		
BOD		
COD		
Coliform, Fecal		
Coliform, Total		
Specific Conductance		
E. coli		
Oxygen, Dissolved		
pH		
Solids, Total		■
Solids, Total Dissolved		
Solids, Total Suspended		
Solids, Total Volatile		
Solids, Volatile Suspended		
Other		

OTHER

	D	C
Paint Filter		

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions:
Poured off the daily sample 1803189-08

Septum Blank Prep Date & Initials:

Chain of Custody Record (Signatures Only)

See 1803189-08 for COC

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

# of Bottles Delivered: 2 (GS)

Transported on Ice: ☐ YES ☒ NO

Lab Receipt

Temperature: 17 °C

Initials: GS

Q6 qualifier? ☒ YES ☐ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒		
Sample labels match Chain of Custody?	☒		
Correct number of sample bottles were delivered?	☒		
Custody seals intact?			☒
Within holding time?	☒		
Sufficient sample volume for analysis?	☒		
Samples are in properly preserved containers?	☒		
Sample containers damaged/leaking/frozen?		☒	
40 ml vials headspace, > pea-sized air bubble?			☒
Received from a refrigerator?		☒	

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*
** *As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn*

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 05/17/2018
Laboratory License: AZO159

Sample Analysis Report

Regional Biosolids Facility Management

April 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Shaft

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

5·21·18
Date

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
Dewatered Cake Biosolids	1804124-01	Biosolids	4/16/2018 22:05:00	4/17/2018 9:00:00	Q6

Laboratory License # AZO159

Dewatered Cake Biosolids (20002-5703)

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
Cross Reference 1804120-08											
1804124-01	C	Ammonia	04/16/18 22:05	EPA 350.1	4/19/18 13:36	**10200**	mg/kg dry	38.6	363.83		JGB
1804124-01	C	Arsenic	04/16/18 22:05	EPA 6010D	4/20/18 13:49	**ND**	mg/kg dry		8.67		MLB
1804124-01	C	Cadmium	04/16/18 22:05	EPA 6010D	4/20/18 13:49	**ND**	mg/kg dry		3.47		MLB
1804124-01	C	Chromium	04/16/18 22:05	EPA 6010D	4/20/18 13:49	**26.1**	mg/kg dry		8.67		MLB
1804124-01	C	Copper	04/16/18 22:05	EPA 6010D	4/20/18 13:49	**355**	mg/kg dry		8.67		MLB
1804124-01	C	Lead	04/16/18 22:05	EPA 6010D	4/20/18 13:49	**9.04**	mg/kg dry		8.67		MLB
1804124-01	C	Mercury	04/16/18 22:05	EPA 7471B	4/23/18 14:32	**0.61**	mg/kg dry		0.00364		DML
1804124-01	C	Molybdenum	04/16/18 22:05	EPA 6010D	4/20/18 13:49	**12.4**	mg/kg dry		3.47		MLB
1804124-01	C	Nickel	04/16/18 22:05	EPA 6010D	4/20/18 13:49	**24.5**	mg/kg dry		8.67		MLB
1804124-01	C	Nitrite	04/16/18 22:05	SM4500-NO2	4/17/18 12:36	**1.56**	mg/kg dry	0.15	1.46		KMT
1804124-01	C	Total Kjeldahl Nitrogen	04/16/18 22:05	EPA 351.2	4/18/18 15:01	**69219**	mg/kg dry	2.02	5.57		HAV
1804124-01	C	Nitrogen Total Biosolids	04/16/18 22:05	Calculated	4/24/18 13:55	**69233**	mg/kg dry	0.28	0.76		HAV
1804124-01	C	Selenium	04/16/18 22:05	EPA 6010D	4/20/18 13:49	**ND**	mg/kg dry		17.33		MLB
1804124-01	C	Silver	04/16/18 22:05	EPA 6010D	4/20/18 13:49	**2.23**	mg/kg dry		0.87		MLB
1804124-01	C	Zinc	04/16/18 22:05	EPA 6010D	4/20/18 13:49	**652**	mg/kg dry		8.67		MLB
1804124-01	C	% Solids	04/16/18 22:05	SM 2540G	4/18/18 07:57	**13.74**	%		0.01		SDR
Cross Reference 1804120-08											
1804124-01RE1	C	Nitrate/Nitrite	04/16/18 22:05	EPA 353.2	4/24/18 13:55	**1.03**	mg/kg dry	0.14	1.46	N1, J	HAV

Qualifier Definitions

J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
N1	See case narrative.
Q6	Sample was received above recommended temperature.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction

Case Narrative(s)

1804124-01 RE1

Nitrate-Nitrite EPA 353.2 - Original sample results higher than historical data, sample re-analyzed to verify inital results. Results of the re-analysis yielded a concentration value within the range of previous historical data for the sample location. HAV 4/25/18

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1804124-01

PROJECT & LOCATION: Regional Biosolids Facility Management - Dewatered Cake Biosolids

PROJECT-LOCATION NUMBER: 20002-5703 (XXXXX-XXXX)

SAMPLE START DATE: 04/16/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 1000 (Military time)

CLIENT: Deputy Director-Treatment

SAMPLE END DATE: 04/16/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 2205 (Military time)

SAMPLER(S): Vasquez, Mondragon (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ☐ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Hardness				
Iron				
Lead				
Magnesium				
Manganese				
Mercury	X			■
Mercury LL				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver	X			■
Sodium				
Thallium				
Tin				

Titanium				
Vanadium				
Zinc				
PPMs *				
TCLP Metals				
503 Metals **				■
Dissolved Cr+6				
Ammonia as N				■
Chloride				
Cyanide, Total				
Cyanide, Amenable				
Fluoride				
Ignitability				
Nitrate as N				■
Nitrite as N				■
Nitrate/Nitrite as N				
Nitrogen, Total Kjeldahl				
Nitrogen, Total as N				■
Orthophosphate as P				
Phosphorus, Total as P				
Sulfate				
Sulfide				
Other				
Other				

Acrolein and Acrylonitrile		
Dioxin GC/SIM/MS Scan		
Organochlorine Pesticides & PCBs		
Purgeable Organics (GCMS)		
Semivolatile Organics (GCMS)		
Bis(2-ethylhexyl) phthalate		
Digester Gas		
Oil and Grease		
Organic Carbon, Total		
Organic Carbon, Dissolved		
TCLP Herbicides (Contract Lab)		
TCLP Pesticides		
TCLP Semivolatile Organics		
TCLP Volatile Organics		
TTHM		
Total Petroleum Hydrocarbons		
Volatile Acids		
Other		
Other		

Chronic *P. promelas*		
Chronic *C. dubia*		
Chronic *Selenastrum capricornutum*		
Other		

Alkalinity		
BOD		
COD		
Coliform, Fecal		
Coliform, Total		
Specific Conductance		
E. coli		
Oxygen, Dissolved		
pH		
Solids, Total		■
Solids, Total Dissolved		
Solids, Total Suspended		
Solids, Total Volatile		
Solids, Volatile Suspended		
Other		

Paint Filter		

☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ ° C
☐ Temperature *SM 2550 B*		° C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions:
Poured off the daily sample 1804120-08

Septum Blank Prep Date & Initials:

See 1804120-08 for COC

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

# of Bottles Delivered: 2 COS

Transported on Ice: ☐ YES ☒ NO

Temperature: 18 ° C

Initials: GS

Q6 qualifier? ☒ YES ☐ NO

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*
** *As, Ba, Be, Cd, Cr, Cu, Pb, Mo, Ni, Se, Ag, Tl, Zn*

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 06/22/2018
Laboratory License: AZO159

Sample Analysis Report

Regional Biosolids Facility Management

May 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Chaft

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

6·25·18
Date

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
Dewatered Cake Biosolids	1805153-01	Biosolids	5/21/2018 22:35:00	5/22/2018 9:03:00	Q6

Laboratory License # AZO159

Dewatered Cake Biosolids (20002-5703)

Cross Reference 1805149-08

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1805153-01	C	Ammonia	05/21/18 22:35	EPA 350.1	5/24/18 13:43	**9960**	mg/kg dry	0.39	3.63		HAV
1805153-01	C	Arsenic	05/21/18 22:35	EPA 6010D	5/31/18 13:03	**ND**	mg/kg dry		11.03		MLB
1805153-01	C	Cadmium	05/21/18 22:35	EPA 6010D	5/31/18 11:57	**ND**	mg/kg dry		4.41		MLB
1805153-01	C	Chromium	05/21/18 22:35	EPA 6010D	5/31/18 11:57	**29.2**	mg/kg dry		11.03		MLB
1805153-01	C	Copper	05/21/18 22:35	EPA 6010D	5/31/18 11:57	**346**	mg/kg dry		11.03		MLB
1805153-01	C	Lead	05/21/18 22:35	EPA 6010D	5/31/18 11:57	**11.1**	mg/kg dry		11.03		MLB
1805153-01	C	Mercury	05/21/18 22:35	EPA 7471B	6/12/18 13:53	**0.80**	mg/kg dry		0.00363		DML
1805153-01	C	Molybdenum	05/21/18 22:35	EPA 6010D	5/31/18 11:57	**12.6**	mg/kg dry		4.41		MLB
1805153-01	C	Nickel	05/21/18 22:35	EPA 6010D	5/31/18 11:57	**22.8**	mg/kg dry		11.03		MLB
1805153-01	C	Nitrate/Nitrite	05/21/18 22:35	EPA 353.2	5/23/18 12:51	**1.97**	mg/kg dry	0.93	5.81	J	JGB
1805153-01	C	Nitrite	05/21/18 22:35	SM4500-NO2	5/22/18 13:21	**1.93**	mg/kg dry	0.15	1.45		JGB
1805153-01	C	Total Kjeldahl Nitrogen	05/21/18 22:35	EPA 351.2	5/25/18 14:11	**70928**	mg/kg dry	2.11	5.79		HAV
1805153-01	C	Nitrogen Total Biosolids	05/21/18 22:35	Calculated	5/25/18 14:11	**70930**	mg/kg dry	0.29	0.80		HAV
1805153-01	C	Selenium	05/21/18 22:35	EPA 6010D	5/31/18 11:57	**ND**	mg/kg dry		22.06		MLB
1805153-01	C	Silver	05/21/18 22:35	EPA 6010D	5/31/18 11:57	**3.08**	mg/kg dry		1.10		MLB
1805153-01	C	Zinc	05/21/18 22:35	EPA 6010D	5/31/18 11:57	**663**	mg/kg dry		11.03		MLB
1805153-01	C	% Solids	05/21/18 22:35	SM 2540G	5/23/18 07:30	**13.76**	%		0.01		TDA

Qualifier Definitions

J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
Q6	Sample was received above recommended temperature.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction

Case Narrative(s)

None

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1805153-01

PROJECT & LOCATION: Regional Biosolids Facility Management - Dewatered Cake Biosolids

PROJECT-LOCATION NUMBER: 20002-5703 (XXXXX-XXXX)

SAMPLE START DATE: 05/21/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 0940 (Military time)

CLIENT: Deputy Director-Treatment

SAMPLE END DATE: 05/21/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 2235 (Military time)

SAMPLER(S): Vasquez, Mondragon (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ AZPDES ☐ IWC ☐ Investigative ☐ Reuse ☐ Air ■ 503 ☐ Process Control ☐ Other

Matrix: ■ Biosolids ☐ Groundwater ☐ Industrial ☐ Soil ☐ Stormwater ☐ Surface Water ☐ Wastewater ☐ Air ☐ Other

Aluminum				Titanium				Acrolein and Acrylonitrile		Alkalinity		Chlorine (Hach 10014) µg/L
Antimony				Vanadium				Dioxin GC/SIM/MS Scan		BOD		Specific Conductance (SM 2510 B) µmhos/cm
Arsenic				Zinc				Organochlorine Pesticides & PCBs		COD		Oxygen, Dissolved (SM 4500-O G) mg/L
Barium				PPMs *				Purgeable Organics (GCMS)		Coliform, Fecal		pH @ pH Temp (SM 4500-H B) @ pH Units @° C
Beryllium				TCLP Metals				Semivolatile Organics (GCMS)		Coliform, Total		Temperature (SM 2550 B) °C
Boron				Sol Metals **			■	Bis(2-ethylhexyl) phthalate		Specific Conductance		Total Depth of Well feet
Cadmium				Dissolved Cr+6				Digester Gas		*E. coli*		Depth to Water feet
Calcium								Oil and Grease		Oxygen, Dissolved		Other
Chromium				Ammonia as N			■	Organic Carbon, Total		pH		
Cobalt				Chloride				Organic Carbon, Dissolved		Solids, Total	■	
Copper				Cyanide, Total				TCLP Herbicides (Contract Lab)		Solids, Total Dissolved		
Hardness				Cyanide, Amenable				TCLP Pesticides		Solids, Total Suspended		
Iron				Fluoride				TCLP Semivolatile Organics		Solids, Total Volatile		
Lead				Ignitability				TCLP Volatile Organics		Solids, Volatile Suspended		
Magnesium				Nitrate as N			■	TTHM		Other		
Manganese				Nitrite as N			■	Total Petroleum Hydrocarbons				
Mercury *			■	Nitrate/Nitrite as N				Volatile Acids		Paint Filter		
Mercury LL				Nitrogen, Total Kjeldahl				Other				
Molybdenum				Nitrogen, Total as N			■	Other				
Nickel				Orthophosphate as P								
Potassium				Phosphorus, Total as P				Chronic *P. promelas*				
Selenium				Sulfate				Chronic *C. dubia*				
Silver *			■	Sulfide				Chronic *Selenastrum capricornutum*				
Sodium				Other				Other				
Thallium				Other								
Tin												

Comments/Instructions:
Poured off the daily sample 1805149-08

Septum Blank Prep Date & Initials:

See 1805149-08 for COC

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

# of Bottles Delivered: 2 GOS

Transported on Ice: ☐ YES ☒ NO

Temperature: 21 °C

Initials: GOS

Q6 qualifier? ☒ YES ☐ NO

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 07/24/2018
Laboratory License: AZO159

Sample Analysis Report

Regional Biosolids Facility Management

June 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Chaffee

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

7.25.18
Date

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
Dewatered Cake Biosolids	1806084-01	Biosolids	6/11/2018 22:35:00	6/12/2018 9:11:00	Q6

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
Dewatered Cake Biosolids (20002-5703)											
Cross Reference 1806080-08											
1806084-01	C	Ammonia	06/11/18 22:35	EPA 350.1	6/14/18 13:38	**9040**	mg/kg dry	0.39	3.65		MJC
1806084-01	C	Arsenic	06/11/18 22:35	EPA 6010D	6/21/18 10:18	**ND**	mg/kg dry		15.23		MLB
1806084-01	C	Cadmium	06/11/18 22:35	EPA 6010D	6/21/18 10:18	**ND**	mg/kg dry		6.09		MLB
1806084-01	C	Chromium	06/11/18 22:35	EPA 6010D	6/21/18 10:18	**30.8**	mg/kg dry		15.23		MLB
1806084-01	C	Copper	06/11/18 22:35	EPA 6010D	6/21/18 10:18	**365**	mg/kg dry		15.23		MLB
1806084-01	C	Lead	06/11/18 22:35	EPA 6010D	6/21/18 11:23	**ND**	mg/kg dry		15.23		MLB
1806084-01	C	Mercury	06/11/18 22:35	EPA 7471B	6/27/18 14:35	**1.50**	mg/kg dry		0.00365	M5	DML
1806084-01	C	Molybdenum	06/11/18 22:35	EPA 6010D	6/21/18 10:18	**11.3**	mg/kg dry		6.09		MLB
1806084-01	C	Nickel	06/11/18 22:35	EPA 6010D	6/21/18 10:18	**22.9**	mg/kg dry		15.23		MLB
1806084-01	C	Nitrate/Nitrite	06/11/18 22:35	EPA 353.2	6/18/18 12:59	**1.27**	mg/kg dry	0.23	1.46	J	JGB
1806084-01	C	Nitrite	06/11/18 22:35	SM4500-NO2	6/12/18 12:06	**1.27**	mg/kg dry	0.15	1.46	J	KMT
1806084-01	C	Total Kjeldahl Nitrogen	06/11/18 22:35	EPA 351.2	6/14/18 12:52	**56430**	mg/kg dry	1.78	9.76	D2	HAV
1806084-01	C	Nitrogen Total Biosolids	06/11/18 22:35	Calculated	6/18/18 12:59	**56431**	mg/kg dry	0.24	1.34		HAV
1806084-01	C	Selenium	06/11/18 22:35	EPA 6010D	6/21/18 10:18	**ND**	mg/kg dry		30.46		MLB
1806084-01	C	Silver	06/11/18 22:35	EPA 6010D	6/21/18 10:18	**3.62**	mg/kg dry		1.52		MLB
1806084-01	C	Zinc	06/11/18 22:35	EPA 6010D	6/21/18 10:18	**694**	mg/kg dry		15.23		MLB
1806084-01	C	% Solids	06/11/18 22:35	SM 2540G	6/13/18 07:45	**13.72**	%		0.01		NGF

Qualifier Definitions

D2	Sample required dilution due to high concentration of target analyte.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
M5	Analyte concentration was determined by the method of standard addition (MSA).
Q6	Sample was received above recommended temperature.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction

Case Narrative(s)

None

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1806084-01

PROJECT & LOCATION: Regional Biosolids Facility Management - Dewatered Cake Biosolids

PROJECT-LOCATION NUMBER: 20002-5703 (XXXXX-XXXX)

SAMPLE START DATE: 06/11/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 1010 (Military time)

CLIENT: Deputy Director-Treatment

SAMPLE END DATE: 06/11/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 2235 (Military time)

SAMPLER(S): Vasquez, Mondragon (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ☐ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

Metals					
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Hardness					
Iron					
Lead					
Magnesium					
Manganese					
Mercury	X				■
Mercury LL					
Molybdenum					
Nickel					
Potassium					
Selenium					
Silver	X				■
Sodium					
Thallium					
Tin					

Metals					
Titanium					
Vanadium					
Zinc					
PPMs *					
TCLP Metals					
503 Metals **					■
Dissolved Cr+6					
Ammonia as N					■
Chloride					
Cyanide, Total					
Cyanide, Amenable					
Fluoride					
Ignitability					
Nitrate as N					■
Nitrite as N					■
Nitrate/Nitrite as N					
Nitrogen, Total Kjeldahl					
Nitrogen, Total as N					■
Orthophosphate as P					
Phosphorus, Total as P					
Sulfate					
Sulfide					
Other					
Other					

Organic Pollutants		
Acrolein and Acrylonitrile		
Dioxin GC/SIM/MS Scan		
Organochlorine Pesticides & PCBs		
Purgeable Organics (GCMS)		
Semivolatile Organics (GCMS)		
Bis(2-ethylhexyl) phthalate		
Digester Gas		
Oil and Grease		
Organic Carbon, Total		
Organic Carbon, Dissolved		
TCLP Herbicides (Contract Lab)		
TCLP Pesticides		
TCLP Semivolatile Organics		
TCLP Volatile Organics		
TTHM		
Total Petroleum Hydrocarbons		
Volatile Acids		
Other		
Other		

Toxicity Bioassays		
Chronic *P. promelas*		
Chronic *C. dubia*		
Chronic *Selenastrum capricornutum*		
Other		

Biological Criteria		
Alkalinity		
BOD		
COD		
Coliform, Fecal		
Coliform, Total		
Specific Conductance		
E. coli		
Oxygen, Dissolved		
pH		
Solids, Total		■
Solids, Total Dissolved		
Solids, Total Suspended		
Solids, Total Volatile		
Solids, Volatile Suspended		
Other		

Other		
Paint Filter		

Field Measurements		
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ ° C
☐ Temperature *SM 2550 B*		° C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions:
Poured off the daily sample 1806080-08

Septum Blank Prep Date & Initials:

See 1806080-08 for COC

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

# of Bottles Delivered: 2 GCJ

Transported on Ice: ☐ YES ☒ NO

Temperature: 17 ° C

Initials: GCJ

Q6 qualifier? ☒ YES ☐ NO

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*
** *As, Cd, Cr, Cu, Pb, Mo, Ni, Se, Zn*

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 08/20/2018
Laboratory License: AZO159

Sample Analysis Report

Regional Biosolids Facility Management

July 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Pratt

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

8·21·18
Date

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
Dewatered Cake Biosolids	1807166-01	Biosolids	7/23/2018 23:05:00	7/24/2018 8:51:00	Q6

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
Dewatered Cake Biosolids (20002-5703)											
Cross Reference 1807162-08											
1807166-01	C	Ammonia	07/23/18 23:05	EPA 350.1	8/2/18 10:15	**9520**	mg/kg dry	0.08	0.31		JGB
1807166-01	C	Arsenic	07/23/18 23:05	EPA 6010D	7/25/18 10:56	**9.08**	mg/kg dry		8.75		MLB
1807166-01	C	Cadmium	07/23/18 23:05	EPA 6010D	7/25/18 10:56	**ND**	mg/kg dry		3.50		MLB
1807166-01	C	Chromium	07/23/18 23:05	EPA 6010D	7/25/18 10:56	**34.9**	mg/kg dry		8.75		MLB
1807166-01	C	Copper	07/23/18 23:05	EPA 6010D	7/25/18 10:56	**418**	mg/kg dry		8.75		MLB
1807166-01	C	Lead	07/23/18 23:05	EPA 6010D	7/25/18 13:07	**10.9**	mg/kg dry		8.75		MLB
1807166-01	C	Mercury	07/23/18 23:05	EPA 7471B	7/26/18 09:41	**0.82**	mg/kg dry		0.00313		DML
1807166-01	C	Molybdenum	07/23/18 23:05	EPA 6010D	7/25/18 10:56	**13.0**	mg/kg dry		3.50		MLB
1807166-01	C	Nickel	07/23/18 23:05	EPA 6010D	7/25/18 10:56	**22.0**	mg/kg dry		8.75		MLB
1807166-01	C	Nitrate/Nitrite	07/23/18 23:05	EPA 353.2	7/27/18 12:53	**1.58**	mg/kg dry	0.20	1.25		KMT
1807166-01	C	Nitrite	07/23/18 23:05	SM4500-NO2	7/24/18 15:47	**0.81**	mg/kg dry	0.13	1.25	J	JGB
1807166-01	C	Total Kjeldahl Nitrogen	07/23/18 23:05	EPA 351.2	7/26/18 09:54	**53131**	mg/kg dry	1.80	9.88	D2	HAV
1807166-01	C	Nitrogen Total Biosolids	07/23/18 23:05	Calculated	7/27/18 12:53	**53132**	mg/kg dry	0.29	1.58		HAV
1807166-01	C	Selenium	07/23/18 23:05	EPA 6010D	7/25/18 10:56	**ND**	mg/kg dry		17.51		MLB
1807166-01	C	Silver	07/23/18 23:05	EPA 6010D	7/25/18 13:07	**3.54**	mg/kg dry		0.88		MLB
1807166-01	C	Zinc	07/23/18 23:05	EPA 6010D	7/25/18 10:56	**749**	mg/kg dry		8.75		MLB
1807166-01	C	% Solids	07/23/18 23:05	SM 2540G	7/25/18 07:35	**15.96**	%		0.01		DEB

Qualifier Definitions

D2	Sample required dilution due to high concentration of target analyte.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
Q6	Sample was received above recommended temperature.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction

Case Narrative(s)

None

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1807166-01

PROJECT & LOCATION: Regional Biosolids Facility Management - Dewatered Cake Biosolids

PROJECT-LOCATION NUMBER: 20002-5703 (XXXXX-XXXX)

SAMPLE START DATE: 07/23/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 1035 (Military time)

CLIENT: Deputy Director-Treatment

SAMPLE END DATE: 07/23/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 2305 (Military time)

SAMPLER(S): Vasquez, Mondragon (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ AZPDES ☐ IWC ☐ Investigative ☐ Reuse ☐ Air ■ 503 ☐ Process Control ☐ Other

Matrix: ■ Biosolids ☐ Groundwater ☐ Industrial ☐ Soil ☐ Stormwater ☐ Surface Water ☐ Wastewater ☐ Air ☐ Other

Aluminum					Titanium					Acrolein and Acrylonitrile		
Antimony					Vanadium					Dioxin GC/SIM/MS Scan		
Arsenic					Zinc					Organochlorine Pesticides & PCBs		
Barium					PPMs *					Purgeable Organics (GCMS)		
Beryllium					TCLP Metals					Semivolatile Organics (GCMS)		
Boron					[illegible]				■	Bis(2-ethylhexyl) phthalate		
Cadmium					Dissolved Cr+6					Digester Gas		
Calcium								D	C	Oil and Grease		
Chromium					[illegible]				■	Organic Carbon, Total		
Cobalt					Chloride					Organic Carbon, Dissolved		
Copper					Cyanide, Total					TCLP Herbicides (Contract Lab)		
Hardness					Cyanide, Amenable					TCLP Pesticides		
Iron					Fluoride					TCLP Semivolatile Organics		
Lead					Ignitability					TCLP Volatile Organics		
Magnesium					[illegible]				■	TTHM		
Manganese					[illegible]				■	Total Petroleum Hydrocarbons		
[illegible]				■	Nitrate/Nitrite as N					Volatile Acids		
Mercury LL					Nitrogen, Total Kjeldahl					Other		
Molybdenum					[illegible]				■	Other		
Nickel					Orthophosphate as P							
Potassium					Phosphorus, Total as P					Chronic *P. promelas*		
Selenium					Sulfate					Chronic *C. dubia*		
[illegible]				■	Sulfide					Chronic *Selenastrum capricornutum*		
Sodium					Other					Other		
Thallium					Other							
Tin												

Alkalinity			
BOD			
COD			
Coliform, Fecal			
Coliform, Total			
Specific Conductance			
E. coli			
Oxygen, Dissolved			
pH			
[illegible]			■
Solids, Total Dissolved			
Solids, Total Suspended			
Solids, Total Volatile			
Solids, Volatile Suspended			
Other			
Paint Filter			

☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ ° C
☐ Temperature *SM 2550 B*		° C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions:
Poured off the daily sample 1807162-08

Septum Blank Prep Date & Initials:

See 1807162-08 for COC

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

# of Bottles Delivered: 2 COS

Transported on Ice: ☐ YES ☒ NO

Temperature: 20 ° C

Initials: GOS

Q6 qualifier? ☒ YES ☐ NO

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*
Al, Ba, Ca, Co, Fe, Mg, Mn, Mo, Na, Sn, Sr, Zn

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY
WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 10/03/2018
Laboratory License: AZO159

Sample Analysis Report

Regional Biosolids Facility Management

August 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

Notes and Definitions:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By: Jenelle Chratt

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

10·5·18
Date

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
Thickener Underflow #2	1808015-24	Water	8/2/2018 4:05:00	8/2/2018 7:25:00	Q6
Thickener Underflow #3	1808015-26	Water	8/2/2018 4:07:00	8/2/2018 7:25:00	Q6
Thickener Underflow #4	1808015-28	Water	8/2/2018 4:18:00	8/2/2018 7:25:00	Q6
GBT #2 Thickened Sludge #58	1808015-35	Water	8/1/2018 13:45:00	8/2/2018 7:25:00	Q6
GBT #3 Thickened Sludge #58	1808015-38	Water	8/1/2018 13:48:00	8/2/2018 7:25:00	Q6
Thickener Underflow #2	1808044-24	Water	8/7/2018 0:45:00	8/7/2018 7:59:00	Q6
Thickener Underflow #2	1808065-24	Water	8/9/2018 0:20:00	8/9/2018 7:02:00	Q6
Thickener Underflow #3	1808065-26	Water	8/9/2018 0:25:00	8/9/2018 7:02:00	Q6
Thickener Underflow #4	1808065-28	Water	8/9/2018 0:30:00	8/9/2018 7:02:00	Q6
Thickener Underflow #3	1808044-26	Water	8/7/2018 0:50:00	8/7/2018 7:59:00	Q6
Thickener Underflow #4	1808044-28	Water	8/7/2018 0:55:00	8/7/2018 7:59:00	Q6
GBT #2 Thickened Sludge #58	1808044-35	Water	8/6/2018 13:50:00	8/7/2018 7:59:00	Q6
GBT #3 Thickened Sludge #58	1808044-38	Water	8/6/2018 13:49:00	8/7/2018 7:59:00	Q6
Digester #1 to Centrifuge	1808055-19	Water	8/7/2018 7:10:00	8/8/2018 7:42:00	Q6
Digester #3 to Centrifuge	1808055-21	Water	8/7/2018 1:25:00	8/8/2018 7:42:00	Q6
Digester #4 to Centrifuge	1808055-22	Water	8/7/2018 11:00:00	8/8/2018 7:42:00	Q6
Digester #5 to Centrifuge	1808055-23	Water	8/7/2018 13:20:00	8/8/2018 7:42:00	Q6
Digester #6 to Centrifuge	1808055-24	Water	8/7/2018 4:00:00	8/8/2018 7:42:00	Q6
GBT #2 Thickened Sludge #58	1808065-35	Water	8/8/2018 10:59:00	8/9/2018 7:02:00	Q6
GBT #3 Thickened Sludge #58	1808065-38	Water	8/8/2018 10:55:00	8/9/2018 7:02:00	Q6
Digester #1 to Centrifuge	1808073-20	Water	8/9/2018 4:30:00	8/10/2018 8:34:00	Q6
Digester #3 to Centrifuge	1808073-22	Water	8/9/2018 13:45:00	8/10/2018 8:34:00	Q6
Digester #4 to Centrifuge	1808073-23	Water	8/9/2018 7:30:00	8/10/2018 8:34:00	Q6
Digester #5 to Centrifuge	1808073-24	Water	8/9/2018 10:30:00	8/10/2018 8:34:00	Q6
Digester #6 to Centrifuge	1808073-25	Water	8/9/2018 2:25:00	8/10/2018 8:34:00	Q6
Digester #1 to Centrifuge	1808085-20	Water	8/12/2018 8:50:00	8/13/2018 7:40:00	Q6
Digester #3 to Centrifuge	1808085-22	Water	8/12/2018 17:30:00	8/13/2018 7:40:00	Q6
Digester #4 to Centrifuge	1808085-23	Water	8/12/2018 11:57:00	8/13/2018 7:40:00	Q6
Digester #5 to Centrifuge	1808085-24	Water	8/12/2018 14:55:00	8/13/2018 7:40:00	Q6
Digester #6 to Centrifuge	1808085-25	Water	8/12/2018 20:30:00	8/13/2018 7:40:00	Q6
Thickener Underflow #3	1808094-26	Water	8/14/2018 1:40:00	8/14/2018 6:54:00	Q6
Thickener Underflow #4	1808094-28	Water	8/14/2018 1:50:00	8/14/2018 6:54:00	Q6
GBT #2 Thickened Sludge #58	1808094-35	Water	8/13/2018 13:51:00	8/14/2018 6:54:00	Q6
GBT #3 Thickened Sludge #58	1808094-38	Water	8/13/2018 13:47:00	8/14/2018 6:54:00	Q6
Dewatered Cake Biosolids	1808098-01	Biosolids	8/13/2018 23:05:00	8/14/2018 9:08:00	Q6
Thickener Underflow #4	1808115-28	Water	8/16/2018 1:20:00	8/16/2018 7:17:00	Q6
GBT #2 Thickened Sludge #58	1808115-35	Water	8/15/2018 15:19:00	8/16/2018 7:17:00	Q6
GBT #3 Thickened Sludge #58	1808115-38	Water	8/15/2018 15:22:00	8/16/2018 7:17:00	Q6
Dewatered Cake Biosolids	1808094-08	Biosolids	8/13/2018 23:05:00	8/14/2018 6:54:00	Q6
Thickener Underflow #2	1808094-24	Water	8/14/2018 1:30:00	8/14/2018 6:54:00	Q6
Thickener Underflow #2	1808115-24	Water	8/16/2018 1:00:00	8/16/2018 7:17:00	Q6
Thickener Underflow #3	1808115-26	Water	8/16/2018 1:05:00	8/16/2018 7:17:00	Q6
Digester #1 to Centrifuge	1808138-20	Water	8/19/2018 4:35:00	8/20/2018 7:00:00	Q6
Digester #3 to Centrifuge	1808138-22	Water	8/19/2018 14:35:00	8/20/2018 7:00:00	Q6
Digester #4 to Centrifuge	1808138-23	Water	8/19/2018 8:35:00	8/20/2018 7:00:00	Q6
Digester #5 to Centrifuge	1808138-24	Water	8/19/2018 11:15:00	8/20/2018 7:00:00	Q6
Digester #6 to Centrifuge	1808138-25	Water	8/19/2018 2:40:00	8/20/2018 7:00:00	Q6
Thickener Underflow #2	1808144-24	Water	8/21/2018 0:55:00	8/21/2018 6:35:00	Q6
Thickener Underflow #2	1808158-24	Water	8/23/2018 0:30:00	8/23/2018 6:30:00	Q6
Thickener Underflow #3	1808158-26	Water	8/23/2018 0:36:00	8/23/2018 6:30:00	Q6
Thickener Underflow #4	1808158-28	Water	8/23/2018 0:45:00	8/23/2018 6:30:00	Q6
GBT #2 Thickened Sludge #58	1808158-35	Water	8/22/2018 10:15:00	8/23/2018 6:30:00	Q6
Digester #1 to Centrifuge	1808167-20	Water	8/23/2018 14:00:00	8/24/2018 7:09:00	Q6
Digester #3 to Centrifuge	1808167-22	Water	8/23/2018 8:00:00	8/24/2018 7:09:00	Q6
Digester #4 to Centrifuge	1808167-23	Water	8/23/2018 2:40:00	8/24/2018 7:09:00	Q6
Digester #5 to Centrifuge	1808167-24	Water	8/23/2018 4:30:00	8/24/2018 7:09:00	Q6
Digester #6 to Centrifuge	1808167-25	Water	8/23/2018 10:30:00	8/24/2018 7:09:00	Q6
Thickener Underflow #3	1808144-26	Water	8/21/2018 0:48:00	8/21/2018 6:35:00	Q6

Thickener Underflow #4	1808144-33	Water	8/21/2018	0:51:00	8/21/2018	6:35:00	Q6
GBT #2 Thickened Sludge #58	1808144-35	Water	8/20/2018	12:10:00	8/21/2018	6:35:00	Q6
GBT #3 Thickened Sludge #58	1808144-38	Water	8/20/2018	12:10:00	8/21/2018	6:35:00	Q6
GBT #3 Thickened Sludge #58	1808158-38	Water	8/22/2018	10:05:00	8/23/2018	6:30:00	Q6
Digester #3 to Centrifuge	1808181-22	Water	8/26/2018	11:00:00	8/27/2018	7:18:00	Q6
Digester #4 to Centrifuge	1808181-23	Water	8/26/2018	4:20:00	8/27/2018	7:18:00	Q6
Digester #5 to Centrifuge	1808181-24	Water	8/26/2018	8:45:00	8/27/2018	7:18:00	Q6
Digester #6 to Centrifuge	1808181-25	Water	8/26/2018	14:50:00	8/27/2018	7:18:00	Q6
Digester #1 to Centrifuge	1808181-20	Water	8/26/2018	2:50:00	8/27/2018	7:18:00	Q6

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
Dewatered Cake Biosolids (20002-5703)											
Cross Reference 1808094-08											
1808098-01	C	Ammonia	08/13/18 23:05	EPA 350.1	8/15/18 13:30	**9410**	mg/kg dry	0.08	0.31		JGB
1808098-01	C	Arsenic	08/13/18 23:05	EPA 6010D	9/20/18 09:50	**ND**	mg/kg dry		11.91		MLB
1808098-01	C	Cadmium	08/13/18 23:05	EPA 6010D	9/20/18 09:50	**ND**	mg/kg dry		4.76		MLB
1808098-01	C	Chromium	08/13/18 23:05	EPA 6010D	9/20/18 09:50	**33.3**	mg/kg dry		11.91		MLB
1808098-01	C	Copper	08/13/18 23:05	EPA 6010D	9/20/18 09:50	**441**	mg/kg dry		11.91		MLB
1808098-01	C	Lead	08/13/18 23:05	EPA 6010D	9/20/18 09:50	**12.7**	mg/kg dry		11.91		MLB
1808098-01	C	Mercury	08/13/18 23:05	EPA 7471B	8/21/18 14:36	**0.90**	mg/kg dry		0.00306	M5	DML
1808098-01	C	Molybdenum	08/13/18 23:05	EPA 6010D	9/20/18 09:50	**13.7**	mg/kg dry		4.76		MLB
1808098-01	C	Nickel	08/13/18 23:05	EPA 6010D	9/20/18 09:50	**22.6**	mg/kg dry		11.91		MLB
1808098-01	C	Nitrite	08/13/18 23:05	SM4500-NO2	8/14/18 11:15	**1.42**	mg/kg dry	0.12	1.22		KMT
1808098-01	C	Total Kjeldahl Nitrogen	08/13/18 23:05	EPA 351.2	8/20/18 13:34	**53469**	mg/kg dry	1.74	9.56	D2	HAV
1808098-01	C	Nitrogen Total Biosolids	08/13/18 23:05	Calculated	8/20/18 13:34	**53470**	mg/kg dry	0.28	1.56		HAV
1808098-01	C	Selenium	08/13/18 23:05	EPA 6010D	9/20/18 09:50	**ND**	mg/kg dry		23.82		MLB
1808098-01	C	Silver	08/13/18 23:05	EPA 6010D	9/20/18 09:50	**3.21**	mg/kg dry		1.19		MLB
1808098-01	C	Zinc	08/13/18 23:05	EPA 6010D	9/20/18 11:44	**790**	mg/kg dry		11.91		MLB
1808098-01	C	% Solids	08/13/18 23:05	SM 2540G	8/15/18 07:45	**16.36**	%		0.01		JAH
Dewatered Cake Biosolids (20001-5703)											
Cross Reference 1808098-01											
1808094-08	C	% Solids	08/13/18 23:05	SM 2540G	8/15/18 07:45	**16.36**	%		0.01		JAH
1808094-08	C	Solids Total Grams	08/13/18 23:05	NA	8/14/18 10:04	**509.1**	g				JAH
Thickener Underflow #2 (20001-0900)											
1808015-24	D	% Solids, Total Volatile	08/02/18 4:05	SM 2540G	8/2/18 16:36	**85.3**	%		0.01		AV
1808044-24	D	% Solids, Total Volatile	08/07/18 0:45	SM 2540G	8/7/18 16:16	**89.2**	%		0.01		NGF
1808065-24	D	% Solids, Total Volatile	08/09/18 0:20	SM 2540G	8/9/18 15:56	**88.0**	%		0.01		JAH
1808094-24	D	% Solids, Total Volatile	08/14/18 1:30	SM 2540G	8/14/18 17:30	**88.4**	%		0.01		JAH
1808115-24	D	% Solids, Total Volatile	08/16/18 1:00	SM 2540G	8/16/18 16:22	**87.8**	%		0.01		IYC
1808144-24	D	% Solids, Total Volatile	08/21/18 0:55	SM 2540G	8/21/18 15:40	**87.8**	%		0.01		NGF
1808158-24	D	% Solids, Total Volatile	08/23/18 0:30	SM 2540G	8/23/18 16:33	**82.8**	%		0.01		IYC
1808188-24	D	% Solids, Total Volatile	08/28/18 0:45	SM 2540G	8/28/18 16:52	**86.7**	%		0.01		AV
1808206-24	D	% Solids, Total Volatile	08/30/18 0:10	SM 2540G	8/31/18 06:54	**89.8**	%		0.01		IYC
Thickener Underflow #3 (20001-1100)											
1808015-26	D	% Solids, Total Volatile	08/02/18 4:07	SM 2540G	8/2/18 16:36	**87.5**	%		0.01		AV
1808044-26	D	% Solids, Total Volatile	08/07/18 0:50	SM 2540G	8/7/18 16:16	**87.2**	%		0.01		NGF
1808065-26	D	% Solids, Total Volatile	08/09/18 0:25	SM 2540G	8/9/18 15:56	**88.8**	%		0.01		JAH
1808094-26	D	% Solids, Total Volatile	08/14/18 1:40	SM 2540G	8/14/18 16:30	**88.5**	%		0.01		JAH
1808115-26	D	% Solids, Total Volatile	08/16/18 1:05	SM 2540G	8/16/18 16:22	**87.6**	%		0.01		IYC
1808144-26	D	% Solids, Total Volatile	08/21/18 0:48	SM 2540G	8/21/18 15:40	**88.8**	%		0.01		NGF
1808158-26	D	% Solids, Total Volatile	08/23/18 0:36	SM 2540G	8/23/18 16:33	**83.5**	%		0.01		IYC
1808188-26	D	% Solids, Total Volatile	08/28/18 0:48	SM 2540G	8/28/18 16:52	**86.4**	%		0.01		AV
1808206-26	D	% Solids, Total Volatile	08/30/18 0:20	SM 2540G	8/31/18 06:54	**86.6**	%		0.01		IYC
Thickener Underflow #4 (20001-1300)											
1808015-28	D	% Solids, Total Volatile	08/02/18 4:18	SM 2540G	8/2/18 16:36	**83.2**	%		0.01		AV
1808044-28	D	% Solids, Total Volatile	08/07/18 0:55	SM 2540G	8/7/18 16:16	**88.4**	%		0.01		NGF
1808065-28	D	% Solids, Total Volatile	08/09/18 0:30	SM 2540G	8/9/18 15:56	**85.3**	%		0.01		JAH
1808094-28	D	% Solids, Total Volatile	08/14/18 1:50	SM 2540G	8/14/18 16:30	**87.1**	%		0.01		JAH
1808115-28	D	% Solids, Total Volatile	08/16/18 1:20	SM 2540G	8/16/18 16:22	**86.6**	%		0.01		IYC
1808144-28	D	% Solids, Total Volatile	08/21/18 0:51	SM 2540G	8/21/18 15:40	**87.4**	%		0.01		NGF
1808158-28	D	% Solids, Total Volatile	08/23/18 0:45	SM 2540G	8/23/18 16:33	**83.1**	%		0.01		IYC
1808188-28	D	% Solids, Total Volatile	08/28/18 0:51	SM 2540G	8/28/18 16:52	**87.0**	%		0.01		AV
1808206-28	D	% Solids, Total Volatile	08/30/18 0:30	SM 2540G	8/31/18 06:54	**87.6**	%		0.01		IYC
Digester #1 to Centrifuge (20001-2101)											
1808021-20	C	% Solids, Total Volatile	08/02/18 7:50	SM 2540G	8/3/18 15:40	**75.6**	%		0.01		IYC
1808037-20	C	% Solids, Total Volatile	08/05/18 11:30	SM 2540G	8/6/18 16:03	**77.1**	%		0.01		TDA
1808055-19	C	% Solids, Total Volatile	08/07/18 7:10	SM 2540G	8/8/18 16:07	**75.3**	%		0.01		NGF
1808073-20	C	% Solids, Total Volatile	08/09/18 4:30	SM 2540G	8/10/18 15:54	**76.1**	%		0.01		TDA
1808085-20	C	% Solids, Total Volatile	08/12/18 8:50	SM 2540G	8/13/18 15:19	**76.8**	%		0.01		NGF

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1808104-19	C	% Solids, Total Volatile	08/14/18 4:45	SM 2540G	8/15/18 14:56	**74.7**	%		0.01		IYC
1808123-20	C	% Solids, Total Volatile	08/16/18 2:40	SM 2540G	8/17/18 15:24	**74.3**	%		0.01		IYC
1808138-20	C	% Solids, Total Volatile	08/19/18 4:35	SM 2540G	8/20/18 15:09	**75.8**	%		0.01		NGF
1808151-19	C	% Solids, Total Volatile	08/21/18 2:15	SM 2540G	8/22/18 16:04	**76.5**	%		0.01		AV
1808167-20	C	% Solids, Total Volatile	08/23/18 14:00	SM 2540G	8/24/18 15:01	**76.7**	%		0.01		IYC
1808181-20	C	% Solids, Total Volatile	08/26/18 2:50	SM 2540G	8/27/18 15:17	**77.5**	%		0.01		NGF
1808194-19	C	% Solids, Total Volatile	08/28/18 14:20	SM 2540G	8/29/18 15:31	**73.2**	%		0.01		AV
1808211-20	C	% Solids, Total Volatile	08/30/18 20:20	SM 2540G	8/31/18 15:06	**74.7**	%		0.01		IYC
Digester #3 to Centrifuge (20001-2301)											
1808021-22	C	% Solids, Total Volatile	08/02/18 16:40	SM 2540G	8/3/18 15:40	**75.3**	%		0.01		IYC
1808037-22	C	% Solids, Total Volatile	08/05/18 4:20	SM 2540G	8/6/18 16:03	**74.6**	%		0.01		TDA
1808055-21	C	% Solids, Total Volatile	08/07/18 1:25	SM 2540G	8/8/18 16:07	**73.9**	%		0.01		NGF
1808073-22	C	% Solids, Total Volatile	08/09/18 13:45	SM 2540G	8/10/18 15:54	**76.6**	%		0.01		TDA
1808085-22	C	% Solids, Total Volatile	08/12/18 17:30	SM 2540G	8/13/18 15:19	**74.6**	%		0.01		NGF
1808104-21	C	% Solids, Total Volatile	08/14/18 11:50	SM 2540G	8/15/18 14:56	**74.4**	%		0.01		IYC
1808123-22	C	% Solids, Total Volatile	08/16/18 11:15	SM 2540G	8/17/18 15:24	**76.7**	%		0.01		IYC
1808138-22	C	% Solids, Total Volatile	08/19/18 14:35	SM 2540G	8/20/18 15:09	**75.0**	%		0.01		NGF
1808151-21	C	% Solids, Total Volatile	08/21/18 11:10	SM 2540G	8/22/18 16:04	**75.6**	%		0.01		AV
1808167-22	C	% Solids, Total Volatile	08/23/18 8:00	SM 2540G	8/24/18 15:01	**74.7**	%		0.01		IYC
1808181-22	C	% Solids, Total Volatile	08/26/18 11:00	SM 2540G	8/27/18 15:17	**75.6**	%		0.01		NGF
1808194-21	C	% Solids, Total Volatile	08/28/18 8:40	SM 2540G	8/29/18 15:31	**74.1**	%		0.01		AV
1808211-22	C	% Solids, Total Volatile	08/30/18 3:45	SM 2540G	8/31/18 15:06	**74.7**	%		0.01		IYC
Digester #4 to Centrifuge (20001-2401)											
1808021-23	C	% Solids, Total Volatile	08/02/18 10:40	SM 2540G	8/3/18 15:40	**75.3**	%		0.01		IYC
1808037-23	C	% Solids, Total Volatile	08/05/18 14:20	SM 2540G	8/6/18 16:03	**75.7**	%		0.01		TDA
1808055-22	C	% Solids, Total Volatile	08/07/18 11:00	SM 2540G	8/8/18 16:07	**73.9**	%		0.01		NGF
1808073-23	C	% Solids, Total Volatile	08/09/18 7:30	SM 2540G	8/10/18 15:54	**77.6**	%		0.01		TDA
1808085-23	C	% Solids, Total Volatile	08/12/18 11:57	SM 2540G	8/13/18 15:19	**74.3**	%		0.01		NGF
1808104-22	C	% Solids, Total Volatile	08/14/18 8:45	SM 2540G	8/15/18 14:56	**74.3**	%		0.01		IYC
1808123-23	C	% Solids, Total Volatile	08/16/18 4:45	SM 2540G	8/17/18 15:24	**77.8**	%		0.01		IYC
1808138-23	C	% Solids, Total Volatile	08/19/18 8:35	SM 2540G	8/20/18 15:09	**74.4**	%		0.01		NGF
1808151-22	C	% Solids, Total Volatile	08/21/18 3:35	SM 2540G	8/22/18 16:04	**74.7**	%		0.01		AV
1808167-23	C	% Solids, Total Volatile	08/23/18 2:40	SM 2540G	8/24/18 15:01	**76.7**	%		0.01		IYC
1808181-23	C	% Solids, Total Volatile	08/26/18 4:20	SM 2540G	8/27/18 15:17	**76.1**	%		0.01		NGF
1808194-22	C	% Solids, Total Volatile	08/28/18 18:47	SM 2540G	8/29/18 15:31	**73.9**	%		0.01		AV
1808211-23	C	% Solids, Total Volatile	08/30/18 19:35	SM 2540G	8/31/18 15:06	**74.4**	%		0.01		IYC
Digester #5 to Centrifuge (20001-2501)											
1808021-24	C	% Solids, Total Volatile	08/02/18 14:10	SM 2540G	8/3/18 15:40	**75.0**	%		0.01		IYC
1808037-24	C	% Solids, Total Volatile	08/05/18 2:15	SM 2540G	8/6/18 16:03	**76.4**	%		0.01		TDA
1808055-23	C	% Solids, Total Volatile	08/07/18 13:20	SM 2540G	8/8/18 16:07	**75.3**	%		0.01		NGF
1808073-24	C	% Solids, Total Volatile	08/09/18 10:30	SM 2540G	8/10/18 15:54	**75.0**	%		0.01		TDA
1808085-24	C	% Solids, Total Volatile	08/12/18 14:55	SM 2540G	8/13/18 15:19	**74.7**	%		0.01		NGF
1808104-23	C	% Solids, Total Volatile	08/14/18 14:55	SM 2540G	8/15/18 14:56	**74.8**	%		0.01		IYC
1808123-24	C	% Solids, Total Volatile	08/16/18 8:30	SM 2540G	8/17/18 15:24	**76.8**	%		0.01		IYC
1808138-24	C	% Solids, Total Volatile	08/19/18 11:15	SM 2540G	8/20/18 15:09	**75.0**	%		0.01		NGF
1808151-23	C	% Solids, Total Volatile	08/21/18 7:01	SM 2540G	8/22/18 16:04	**76.6**	%		0.01		AV
1808167-24	C	% Solids, Total Volatile	08/23/18 4:30	SM 2540G	8/24/18 15:01	**74.0**	%		0.01		IYC
1808181-24	C	% Solids, Total Volatile	08/26/18 8:45	SM 2540G	8/27/18 15:17	**74.0**	%		0.01		NGF
1808194-23	C	% Solids, Total Volatile	08/28/18 19:50	SM 2540G	8/29/18 15:31	**74.4**	%		0.01		AV
1808211-24	C	% Solids, Total Volatile	08/30/18 2:10	SM 2540G	8/31/18 15:06	**75.3**	%		0.01		IYC
Digester #6 to Centrifuge (20001-2601)											
1808021-25	C	% Solids, Total Volatile	08/02/18 20:15	SM 2540G	8/3/18 15:40	**74.3**	%		0.01		IYC
1808037-25	C	% Solids, Total Volatile	08/05/18 7:30	SM 2540G	8/6/18 16:03	**71.8**	%		0.01		TDA
1808055-24	C	% Solids, Total Volatile	08/07/18 4:00	SM 2540G	8/8/18 16:07	**75.3**	%		0.01		NGF
1808073-25	C	% Solids, Total Volatile	08/09/18 2:25	SM 2540G	8/10/18 15:54	**78.7**	%		0.01		TDA
1808085-25	C	% Solids, Total Volatile	08/12/18 20:30	SM 2540G	8/13/18 15:19	**75.0**	%		0.01		NGF
1808104-24	C	% Solids, Total Volatile	08/14/18 1:15	SM 2540G	8/15/18 14:56	**74.3**	%		0.01		IYC
1808123-25	C	% Solids, Total Volatile	08/16/18 14:00	SM 2540G	8/17/18 15:24	**78.0**	%		0.01		IYC
1808138-25	C	% Solids, Total Volatile	08/19/18 2:40	SM 2540G	8/20/18 15:09	**74.7**	%		0.01		NGF

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1808151-24	C	% Solids, Total Volatile	08/21/18 14:02	SM 2540G	8/22/18 16:04	**77.3**	%		0.01		AV
1808167-25	C	% Solids, Total Volatile	08/23/18 10:30	SM 2540G	8/24/18 15:01	**73.0**	%		0.01		IYC
1808181-25	C	% Solids, Total Volatile	08/26/18 14:50	SM 2540G	8/27/18 15:17	**80.0**	%		0.01		NGF
1808194-24	C	% Solids, Total Volatile	08/28/18 11:35	SM 2540G	8/29/18 15:31	**73.5**	%		0.01		AV
1808211-25	C	% Solids, Total Volatile	08/30/18 23:45	SM 2540G	8/31/18 15:06	**74.7**	%		0.01		IYC
GBT #1 Thickened Sludge #58 (20001-9309)											
1808206-32	C	% Solids, Total Volatile	08/29/18 13:35	SM 2540G	8/31/18 06:54	**80.7**	%		0.01		IYC
GBT #2 Thickened Sludge #58 (20001-9311)											
1808015-35	C	% Solids, Total Volatile	08/01/18 13:45	SM 2540G	8/2/18 16:36	**81.5**	%		0.01		AV
1808044-35	C	% Solids, Total Volatile	08/06/18 13:50	SM 2540G	8/7/18 16:16	**82.4**	%		0.01		NGF
1808065-35	C	% Solids, Total Volatile	08/08/18 10:59	SM 2540G	8/9/18 15:56	**81.8**	%		0.01		JAH
1808094-35	C	% Solids, Total Volatile	08/13/18 13:51	SM 2540G	8/14/18 16:30	**81.5**	%		0.01		JAH
1808115-35	C	% Solids, Total Volatile	08/15/18 15:19	SM 2540G	8/16/18 16:22	**80.6**	%		0.01		IYC
1808144-35	C	% Solids, Total Volatile	08/20/18 12:10	SM 2540G	8/21/18 15:40	**80.9**	%		0.01		NGF
1808158-35	C	% Solids, Total Volatile	08/22/18 10:15	SM 2540G	8/23/18 16:33	**80.4**	%		0.01		IYC
1808188-35	C	% Solids, Total Volatile	08/27/18 10:14	SM 2540G	8/28/18 16:52	**80.7**	%		0.01		AV
1808206-35	C	% Solids, Total Volatile	08/29/18 13:35	SM 2540G	8/31/18 06:54	**80.3**	%		0.01		IYC
GBT #3 Thickened Sludge #58 (20001-9313)											
1808015-38	C	% Solids, Total Volatile	08/01/18 13:48	SM 2540G	8/2/18 16:36	**81.6**	%		0.01		AV
1808044-38	C	% Solids, Total Volatile	08/06/18 13:49	SM 2540G	8/7/18 16:16	**82.0**	%		0.01		NGF
1808065-38	C	% Solids, Total Volatile	08/08/18 10:55	SM 2540G	8/9/18 15:56	**81.7**	%		0.01		JAH
1808094-38	C	% Solids, Total Volatile	08/13/18 13:47	SM 2540G	8/14/18 16:30	**81.1**	%		0.01		JAH
1808115-38	C	% Solids, Total Volatile	08/15/18 15:22	SM 2540G	8/16/18 16:22	**81.9**	%		0.01		IYC
1808144-38	C	% Solids, Total Volatile	08/20/18 12:10	SM 2540G	8/21/18 15:40	**81.5**	%		0.01		NGF
1808158-38	C	% Solids, Total Volatile	08/22/18 10:05	SM 2540G	8/23/18 16:33	**80.3**	%		0.01		IYC
1808188-38	C	% Solids, Total Volatile	08/27/18 10:16	SM 2540G	8/28/18 16:52	**81.2**	%		0.01		AV

Qualifier Definitions

D2	Sample required dilution due to high concentration of target analyte.
M5	Analyte concentration was determined by the method of standard addition (MSA).
Q6	Sample was received above recommended temperature.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction
EB	Equipment Blank

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1808098-01

PROJECT & LOCATION: Regional Biosolids Facility Management - Dewatered Cake Biosolids

PROJECT-LOCATION NUMBER: 20002-5703 (XXXXX-XXXX)

SAMPLE START DATE: 08/13/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 0850 (Military time)

CLIENT: Deputy Director-Treatment

SAMPLE END DATE: 08/13/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 2305 (Military time)

SAMPLER(S): Vasquez, Mondragon (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ AZPDES ☐ IWC ☐ Investigative ☐ Reuse ☐ Air ☒ 503 ☐ Process Control ☐ Other

Matrix: ☒ Biosolids ☐ Groundwater ☐ Industrial ☐ Soil ☐ Stormwater ☐ Surface Water ☐ Wastewater ☐ Air ☐ Other

Aluminum					Titanium					Acrolein and Acrylonitrile		
Antimony					Vanadium					Dioxin GC/SIM/MS Scan		
Arsenic					Zinc					Organochlorine Pesticides & PCBs		
Barium					PPMs *					Purgeable Organics (GCMS)		
Beryllium					TCLP Metals					Semivolatile Organics (GCMS)		
Boron					503 Metals **				■	Bis(2-ethylhexyl) phthalate		
Cadmium					Dissolved Cr+6					Digester Gas		
Calcium										Oil and Grease		
Chromium					Ammonia as N				■	Organic Carbon, Total		
Cobalt					Chloride					Organic Carbon, Dissolved		
Copper					Cyanide, Total					TCLP Herbicides (Contract Lab)		
Hardness					Cyanide, Amenable					TCLP Pesticides		
Iron					Fluoride					TCLP Semivolatile Organics		
Lead					Ignitability					TCLP Volatile Organics		
Magnesium					Nitrate as N				■	TTHM		
Manganese					Nitrite as N				■	Total Petroleum Hydrocarbons		
Mercury **				■	Nitrate/Nitrite as N					Volatile Acids		
Mercury LL					Nitrogen, Total Kjeldahl					Other		
Molybdenum					Nitrogen, Total as N				■	Other		
Nickel					Orthophosphate as P							
Potassium					Phosphorus, Total as P							
Selenium					Sulfate					Chronic *P. promelas*		
Silver **				■	Sulfide					Chronic *C. dubia*		
Sodium					Other					Chronic *Selenastrum capricornutum*		
Thallium					Other					Other		
Tin												

Alkalinity				Chlorine *Hach 10014*		µg/L	
BOD				Specific Conductance *SM 2510 B*		µmhos/cm	
COD				Oxygen, Dissolved *SM 4500-O G*		mg/L	
Coliform, Fecal				pH @ pH Temp *SM 4500-H B*	@	pH Units @ ° C	
Coliform, Total				Temperature *SM 2550 B*		° C	
Specific Conductance				Total Depth of Well		feet	
E. coli				Depth to Water		feet	
Oxygen, Dissolved				Other			
pH							
Solids, Total **			■				
Solids, Total Dissolved							
Solids, Total Suspended							
Solids, Total Volatile							
Solids, Volatile Suspended							
Other							

Paint Filter		

Comments/Instructions:
Poured off the daily sample 1808094-08

Septum Blank Prep Date & Initials:

See 1808094-08 for COC

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

# of Bottles Delivered: 2 GOJ

Transported on Ice: ☐ YES ☒ NO

Temperature: 2.0 °C

Initials: GOJ

Q6 qualifier? ☒ YES ☐ NO

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*
** *Ag, As, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Selenium, Thallium, Zn*

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY
WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 11/02/2018
Laboratory License: AZO159

Sample Analysis Report

Regional Biosolids Facility Management

September 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Chraft

11·5·18
Date

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
Thickener Underflow #2	1809066-24	Water	9/11/2018 1:56:00	9/11/2018 6:59:00	Q6
Thickener Underflow #4	1809066-28	Water	9/11/2018 1:57:00	9/11/2018 6:59:00	Q6
Thickener Underflow #1	1809066-22	Water	9/11/2018 1:55:00	9/11/2018 6:59:00	Q6
Thickener Underflow #1	1809089-22	Water	9/13/2018 0:45:00	9/13/2018 6:52:00	Q6
Thickener Underflow #2	1809089-24	Water	9/13/2018 0:43:00	9/13/2018 6:52:00	Q6
Thickener Underflow #4	1809089-28	Water	9/13/2018 0:41:00	9/13/2018 6:52:00	Q6
Thickener Underflow #4	1809125-28	Water	9/18/2018 0:50:00	9/18/2018 7:30:00	Q6
GBT #3 Thickened Sludge #58	1809125-38	Water	9/17/2018 16:03:00	9/18/2018 7:30:00	Q6
Thickener Underflow #1	1809143-22	Water	9/20/2018 1:30:00	9/20/2018 6:50:00	Q6
Thickener Underflow #2	1809143-24	Water	9/20/2018 1:33:00	9/20/2018 6:50:00	Q6
Digester #1 to Centrifuge	1809118-20	Water	9/16/2018 16:00:00	9/17/2018 7:26:00	Q6
Digester #3 to Centrifuge	1809118-22	Water	9/16/2018 11:50:00	9/17/2018 7:26:00	Q6
Digester #4 to Centrifuge	1809118-23	Water	9/16/2018 20:30:00	9/17/2018 7:26:00	Q6
Digester #5 to Centrifuge	1809118-24	Water	9/16/2018 7:15:00	9/17/2018 7:26:00	Q6
Digester #6 to Centrifuge	1809118-25	Water	9/16/2018 2:30:00	9/17/2018 7:26:00	Q6
Thickener Underflow #1	1809125-22	Water	9/18/2018 0:30:00	9/18/2018 7:30:00	Q6
Thickener Underflow #2	1809125-24	Water	9/18/2018 0:40:00	9/18/2018 7:30:00	Q6
Thickener Underflow #4	1809143-28	Water	9/20/2018 1:40:00	9/20/2018 6:50:00	Q6
GBT #1 Thickened Sludge #58	1809143-32	Water	9/19/2018 9:50:00	9/20/2018 6:50:00	Q6
GBT #3 Thickened Sludge #58	1809143-38	Water	9/19/2018 9:49:00	9/20/2018 6:50:00	Q6
Digester #1 to Centrifuge	1809162-20	Water	9/23/2018 14:40:00	9/24/2018 7:45:00	Q6
Digester #3 to Centrifuge	1809162-22	Water	9/23/2018 8:50:00	9/24/2018 7:45:00	Q6
Digester #4 to Centrifuge	1809162-23	Water	9/23/2018 2:30:00	9/24/2018 7:45:00	Q6
Digester #5 to Centrifuge	1809162-24	Water	9/23/2018 4:30:00	9/24/2018 7:45:00	Q6
Digester #6 to Centrifuge	1809162-25	Water	9/23/2018 11:45:00	9/24/2018 7:45:00	Q6
Thickener Underflow #4	1809170-28	Water	9/25/2018 0:34:00	9/25/2018 7:10:00	Q6
GBT #1 Thickened Sludge #58	1809170-32	Water	9/24/2018 13:40:00	9/25/2018 7:10:00	Q6
Thickener Underflow #1	1809185-22	Water	9/27/2018 1:05:00	9/27/2018 7:30:00	Q6
Digester #1 to Centrifuge	1810001-20	Water	9/30/2018 11:00:00	10/1/2018 7:27:00	Q6
Thickener Underflow #1	1809170-22	Water	9/25/2018 0:32:00	9/25/2018 7:10:00	Q6
Thickener Underflow #3	1809170-26	Water	9/25/2018 0:50:00	9/25/2018 7:10:00	Q6
GBT #3 Thickened Sludge #58	1809170-38	Water	9/24/2018 13:40:00	9/25/2018 7:10:00	Q6
Digester #1 to Centrifuge	1809176-19	Water	9/25/2018 11:45:00	9/26/2018 6:55:00	Q6
Digester #3 to Centrifuge	1809176-21	Water	9/25/2018 20:30:00	9/26/2018 6:55:00	Q6
Digester #4 to Centrifuge	1809176-22	Water	9/25/2018 14:22:00	9/26/2018 6:55:00	Q6
Digester #5 to Centrifuge	1809176-23	Water	9/25/2018 3:28:00	9/26/2018 6:55:00	Q6
Digester #6 to Centrifuge	1809176-24	Water	9/25/2018 8:40:00	9/26/2018 6:55:00	Q6
Thickener Underflow #3	1809185-26	Water	9/27/2018 1:07:00	9/27/2018 7:30:00	Q6
Thickener Underflow #4	1809185-28	Water	9/27/2018 1:10:00	9/27/2018 7:30:00	Q6
GBT #1 Thickened Sludge #58	1809185-32	Water	9/26/2018 14:10:00	9/27/2018 7:30:00	Q6
GBT #3 Thickened Sludge #58	1809185-38	Water	9/26/2018 14:10:00	9/27/2018 7:30:00	Q6
Digester #3 to Centrifuge	1810001-22	Water	9/30/2018 4:30:00	10/1/2018 7:27:00	Q6
Digester #4 to Centrifuge	1810001-23	Water	9/30/2018 16:30:00	10/1/2018 7:27:00	Q6
Digester #5 to Centrifuge	1810001-24	Water	9/30/2018 2:30:00	10/1/2018 7:27:00	Q6
Digester #6 to Centrifuge	1810001-25	Water	9/30/2018 8:40:00	10/1/2018 7:27:00	Q6

Laboratory License #

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
Thickened Sludge to AvraGro Storage (20002-0200)											
Cross Reference 1809066-09											
1809070-01	C	Ammonia	09/10/18 9:00	EPA 350.1	9/12/18 14:20	**17300**	mg/kg dry	0.20	0.79		JGB
1809070-01	C	Arsenic	09/10/18 9:00	EPA 6010D	10/12/18 15:07	**ND**	mg/kg dry		17.45		MLB
1809070-01	C	Cadmium	09/10/18 9:00	EPA 6010D	10/12/18 13:37	**ND**	mg/kg dry		6.98		MLB
1809070-01	C	Chromium	09/10/18 9:00	EPA 6010D	10/12/18 13:37	**29.9**	mg/kg dry		17.45		MLB
1809070-01	C	Copper	09/10/18 9:00	EPA 6010D	10/12/18 13:37	**427**	mg/kg dry		17.45		MLB
1809070-01	C	Lead	09/10/18 9:00	EPA 6010D	10/12/18 13:37	**ND**	mg/kg dry		17.45		MLB
1809070-01	C	Mercury	09/10/18 9:00	EPA 7471B	10/4/18 14:12	**0.90**	mg/kg dry		0.01		MJC
1809070-01	C	Molybdenum	09/10/18 9:00	EPA 6010D	10/12/18 13:37	**13.8**	mg/kg dry		6.98		MLB
1809070-01	C	Nickel	09/10/18 9:00	EPA 6010D	10/12/18 13:37	**21.9**	mg/kg dry		17.45		MLB
1809070-01	C	Nitrite	09/10/18 9:00	SM4500-NO2	9/11/18 14:20	**6.98**	mg/kg dry	0.31	3.14		MJC
1809070-01	C	Total Kjeldahl Nitrogen	09/10/18 9:00	EPA 351.2	9/20/18 18:28	**67817**	mg/kg dry	2.74	22.58	D2	HAV
1809070-01	C	Nitrogen Total Biosolids	09/10/18 9:00	Calculated	9/20/18 18:28	**67827**	mg/kg dry	0.17	1.44		HAV
1809070-01	C	Selenium	09/10/18 9:00	EPA 6010D	10/12/18 15:07	**ND**	mg/kg dry		34.89		MLB
1809070-01	C	Silver	09/10/18 9:00	EPA 6010D	10/12/18 13:37	**2.97**	mg/kg dry		1.74		MLB
1809070-01	C	Zinc	09/10/18 9:00	EPA 6010D	10/12/18 13:37	**774**	mg/kg dry		17.45		MLB
1809070-01	C	% Solids	09/10/18 9:00	SM 2540G	9/12/18 13:25	**6.36**	%		0.01		DEB
Thick. to AvraGro (20001-5701)											
Cross Reference 1809070-01											
1809066-09	C	% Solids	09/10/18 9:00	SM 2540G	9/11/18 14:24	**6.24**	%		0.01	N1	AV
1809066-09	C	Solids Total Grams	09/10/18 9:00	NA	9/11/18 11:24	**509.6**	g				AV
Thickener Underflow #1 (20001-0700)											
1809066-22	D	% Solids, Total Volatile	09/11/18 1:55	SM 2540G	9/11/18 16:33	**84.6**	%		0.01		AV
1809089-22	D	% Solids, Total Volatile	09/13/18 0:45	SM 2540G	9/14/18 07:51	**89.5**	%		0.01		ESW
1809125-22	D	% Solids, Total Volatile	09/18/18 0:30	SM 2540G	9/19/18 06:59	**86.4**	%		0.01		ANM
1809143-22	D	% Solids, Total Volatile	09/20/18 1:30	SM 2540G	9/21/18 06:56	**77.8**	%		0.01		ANM
1809170-22	D	% Solids, Total Volatile	09/25/18 0:32	SM 2540G	9/25/18 16:21	**90.5**	%		0.01		ANM
1809185-22	D	% Solids, Total Volatile	09/27/18 1:05	SM 2540G	9/27/18 16:29	**88.9**	%		0.01		ANM
Thickener Underflow #2 (20001-0900)											
1809014-24	D	% Solids, Total Volatile	09/04/18 2:40	SM 2540G	9/4/18 17:26	**84.9**	%		0.01		DEB
1809036-24	D	% Solids, Total Volatile	09/06/18 2:00	SM 2540G	9/6/18 16:08	**87.7**	%		0.01		TDA
1809066-24	D	% Solids, Total Volatile	09/11/18 1:56	SM 2540G	9/11/18 16:33	**89.1**	%		0.01		AV
1809089-24	D	% Solids, Total Volatile	09/13/18 0:43	SM 2540G	9/14/18 07:51	**90.9**	%		0.01		ESW
1809125-24	D	% Solids, Total Volatile	09/18/18 0:40	SM 2540G	9/19/18 06:59	**85.0**	%		0.01		ANM
1809143-24	D	% Solids, Total Volatile	09/20/18 1:33	SM 2540G	9/21/18 06:56	**80.7**	%		0.01		ANM
Thickener Underflow #3 (20001-1100)											
1809014-26	D	% Solids, Total Volatile	09/04/18 2:50	SM 2540G	9/4/18 17:26	**81.7**	%		0.01		DEB
1809036-26	D	% Solids, Total Volatile	09/06/18 2:15	SM 2540G	9/6/18 16:08	**89.5**	%		0.01		TDA
1809170-26	D	% Solids, Total Volatile	09/25/18 0:50	SM 2540G	9/25/18 16:21	**89.1**	%		0.01		ANM
1809185-26	D	% Solids, Total Volatile	09/27/18 1:07	SM 2540G	9/27/18 16:29	**88.9**	%		0.01		ANM
Thickener Underflow #4 (20001-1300)											
1809014-28	D	% Solids, Total Volatile	09/04/18 3:00	SM 2540G	9/4/18 17:26	**85.9**	%		0.01		DEB
1809036-28	D	% Solids, Total Volatile	09/06/18 2:22	SM 2540G	9/6/18 16:08	**87.1**	%		0.01		TDA
1809066-28	D	% Solids, Total Volatile	09/11/18 1:57	SM 2540G	9/11/18 16:33	**89.6**	%		0.01		AV
1809089-28	D	% Solids, Total Volatile	09/13/18 0:41	SM 2540G	9/14/18 07:51	**88.0**	%		0.01		ESW
1809125-28	D	% Solids, Total Volatile	09/18/18 0:50	SM 2540G	9/19/18 06:59	**85.7**	%		0.01		ANM
1809143-28	D	% Solids, Total Volatile	09/20/18 1:40	SM 2540G	9/21/18 06:56	**79.6**	%		0.01		ANM
1809170-28	D	% Solids, Total Volatile	09/25/18 0:34	SM 2540G	9/25/18 16:21	**88.1**	%		0.01		ANM
1809185-28	D	% Solids, Total Volatile	09/27/18 1:10	SM 2540G	9/27/18 16:29	**88.7**	%		0.01		ANM
Digester #1 to Centrifuge (20001-2101)											
1809028-19	C	% Solids, Total Volatile	09/04/18 10:40	SM 2540G	9/5/18 15:33	**75.9**	%		0.01		TDA
1809044-20	C	% Solids, Total Volatile	09/06/18 8:30	SM 2540G	9/7/18 15:40	**74.7**	%		0.01		NGF
1809059-20	C	% Solids, Total Volatile	09/09/18 11:20	SM 2540G	9/10/18 16:08	**74.4**	%		0.01		JAH
1809077-19	C	% Solids, Total Volatile	09/11/18 8:35	SM 2540G	9/12/18 15:39	**74.4**	%		0.01		DEB
1809103-20	C	% Solids, Total Volatile	09/13/18 5:50	SM 2540G	9/14/18 15:47	**75.0**	%		0.01		ESW
1809118-20	C	% Solids, Total Volatile	09/16/18 16:00	SM 2540G	9/17/18 15:15	**76.9**	%		0.01		IYC
1809135-19	C	% Solids, Total Volatile	09/18/18 14:00	SM 2540G	9/19/18 15:17	**73.3**	%		0.01		TDA

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Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1809150-20	C	% Solids, Total Volatile	09/20/18 10:30	SM 2540G	9/21/18 16:10	**76.0**	%		0.01		ANM
1809162-20	C	% Solids, Total Volatile	09/23/18 14:40	SM 2540G	9/24/18 16:27	**75.9**	%		0.01		NGF
1809176-19	C	% Solids, Total Volatile	09/25/18 11:45	SM 2540G	9/26/18 15:44	**78.5**	%		0.01		ANM
1809191-20	C	% Solids, Total Volatile	09/27/18 8:30	SM 2540G	9/28/18 15:44	**75.0**	%		0.01		ANM
1810001-20	C	% Solids, Total Volatile	09/30/18 11:00	SM 2540G	10/1/18 15:14	**74.4**	%		0.01		JAH
Digester #3 to Centrifuge (20001-2301)											
1809028-21	C	% Solids, Total Volatile	09/04/18 19:40	SM 2540G	9/5/18 15:33	**72.5**	%		0.01		TDA
1809044-22	C	% Solids, Total Volatile	09/06/18 2:10	SM 2540G	9/7/18 15:40	**74.3**	%		0.01		NGF
1809059-22	C	% Solids, Total Volatile	09/09/18 4:30	SM 2540G	9/10/18 16:08	**75.7**	%		0.01		JAH
1809077-21	C	% Solids, Total Volatile	09/11/18 1:30	SM 2540G	9/12/18 15:39	**74.7**	%		0.01		DEB
1809103-22	C	% Solids, Total Volatile	09/13/18 14:10	SM 2540G	9/14/18 15:47	**73.3**	%		0.01		ESW
1809118-22	C	% Solids, Total Volatile	09/16/18 11:50	SM 2540G	9/17/18 15:15	**75.6**	%		0.01		IYC
1809135-21	C	% Solids, Total Volatile	09/18/18 7:00	SM 2540G	9/19/18 15:17	**73.7**	%		0.01		TDA
1809150-22	C	% Solids, Total Volatile	09/20/18 4:30	SM 2540G	9/21/18 16:10	**75.6**	%		0.01		ANM
1809162-22	C	% Solids, Total Volatile	09/23/18 8:50	SM 2540G	9/24/18 16:27	**75.4**	%		0.01		NGF
1809176-21	C	% Solids, Total Volatile	09/25/18 20:30	SM 2540G	9/26/18 15:44	**73.6**	%		0.01		ANM
1809191-22	C	% Solids, Total Volatile	09/27/18 2:30	SM 2540G	9/28/18 15:44	**73.6**	%		0.01		ANM
1810001-22	C	% Solids, Total Volatile	09/30/18 4:30	SM 2540G	10/1/18 15:14	**72.6**	%		0.01		JAH
Digester #4 to Centrifuge (20001-2401)											
1809028-22	C	% Solids, Total Volatile	09/04/18 13:30	SM 2540G	9/5/18 15:33	**74.7**	%		0.01		TDA
1809044-23	C	% Solids, Total Volatile	09/06/18 10:50	SM 2540G	9/7/18 15:40	**74.3**	%		0.01		NGF
1809059-23	C	% Solids, Total Volatile	09/09/18 14:10	SM 2540G	9/10/18 16:08	**75.3**	%		0.01		JAH
1809077-22	C	% Solids, Total Volatile	09/11/18 11:20	SM 2540G	9/12/18 15:39	**73.3**	%		0.01		DEB
1809103-23	C	% Solids, Total Volatile	09/13/18 8:00	SM 2540G	9/14/18 15:47	**74.0**	%		0.01		ESW
1809118-23	C	% Solids, Total Volatile	09/16/18 20:30	SM 2540G	9/17/18 15:15	**73.2**	%		0.01		IYC
1809135-22	C	% Solids, Total Volatile	09/18/18 2:40	SM 2540G	9/19/18 15:17	**74.0**	%		0.01		TDA
1809150-23	C	% Solids, Total Volatile	09/20/18 13:30	SM 2540G	9/21/18 16:10	**73.5**	%		0.01		ANM
1809162-23	C	% Solids, Total Volatile	09/23/18 2:30	SM 2540G	9/24/18 16:27	**75.3**	%		0.01		NGF
1809176-22	C	% Solids, Total Volatile	09/25/18 14:22	SM 2540G	9/26/18 15:44	**73.4**	%		0.01		ANM
1809191-23	C	% Solids, Total Volatile	09/27/18 10:40	SM 2540G	9/28/18 15:44	**73.8**	%		0.01		ANM
1810001-23	C	% Solids, Total Volatile	09/30/18 16:30	SM 2540G	10/1/18 15:14	**74.7**	%		0.01		JAH
Digester #5 to Centrifuge (20001-2501)											
1809028-23	C	% Solids, Total Volatile	09/04/18 16:10	SM 2540G	9/5/18 15:33	**75.3**	%		0.01		TDA
1809044-24	C	% Solids, Total Volatile	09/06/18 13:55	SM 2540G	9/7/18 15:40	**74.7**	%		0.01		NGF
1809059-24	C	% Solids, Total Volatile	09/09/18 2:37	SM 2540G	9/10/18 16:08	**75.4**	%		0.01		JAH
1809077-23	C	% Solids, Total Volatile	09/11/18 14:10	SM 2540G	9/12/18 15:39	**75.3**	%		0.01		DEB
1809103-24	C	% Solids, Total Volatile	09/13/18 11:00	SM 2540G	9/14/18 15:47	**72.5**	%		0.01		ESW
1809118-24	C	% Solids, Total Volatile	09/16/18 7:15	SM 2540G	9/17/18 15:15	**76.9**	%		0.01		IYC
1809135-23	C	% Solids, Total Volatile	09/18/18 4:20	SM 2540G	9/19/18 15:17	**77.3**	%		0.01		TDA
1809150-24	C	% Solids, Total Volatile	09/20/18 2:40	SM 2540G	9/21/18 16:10	**74.4**	%		0.01		ANM
1809162-24	C	% Solids, Total Volatile	09/23/18 4:30	SM 2540G	9/24/18 16:27	**76.2**	%		0.01		NGF
1809176-23	C	% Solids, Total Volatile	09/25/18 3:28	SM 2540G	9/26/18 15:44	**75.0**	%		0.01		ANM
1809191-24	C	% Solids, Total Volatile	09/27/18 14:40	SM 2540G	9/28/18 15:44	**74.1**	%		0.01		ANM
1810001-24	C	% Solids, Total Volatile	09/30/18 2:30	SM 2540G	10/1/18 15:14	**74.6**	%		0.01		JAH
Digester #6 to Centrifuge (20001-2601)											
1809028-24	C	% Solids, Total Volatile	09/04/18 7:30	SM 2540G	9/5/18 15:33	**74.3**	%		0.01		TDA
1809044-25	C	% Solids, Total Volatile	09/06/18 4:10	SM 2540G	9/7/18 15:40	**73.8**	%		0.01		NGF
1809059-25	C	% Solids, Total Volatile	09/09/18 7:25	SM 2540G	9/10/18 16:08	**75.4**	%		0.01		JAH
1809077-24	C	% Solids, Total Volatile	09/11/18 20:55	SM 2540G	9/12/18 15:39	**73.2**	%		0.01		DEB
1809103-25	C	% Solids, Total Volatile	09/13/18 2:30	SM 2540G	9/14/18 15:47	**73.4**	%		0.01		ESW
1809118-25	C	% Solids, Total Volatile	09/16/18 2:30	SM 2540G	9/17/18 15:15	**76.5**	%		0.01		IYC
1809135-24	C	% Solids, Total Volatile	09/18/18 11:00	SM 2540G	9/19/18 15:17	**73.6**	%		0.01		TDA
1809150-25	C	% Solids, Total Volatile	09/20/18 8:00	SM 2540G	9/21/18 16:10	**74.2**	%		0.01		ANM
1809162-25	C	% Solids, Total Volatile	09/23/18 11:45	SM 2540G	9/24/18 16:27	**76.5**	%		0.01		NGF
1809176-24	C	% Solids, Total Volatile	09/25/18 8:40	SM 2540G	9/26/18 15:44	**73.6**	%		0.01		ANM
1809191-25	C	% Solids, Total Volatile	09/27/18 6:00	SM 2540G	9/28/18 15:44	**77.1**	%		0.01		ANM
1810001-25	C	% Solids, Total Volatile	09/30/18 8:40	SM 2540G	10/1/18 15:14	**73.9**	%		0.01		JAH
GBT #1 Thickened Sludge #58 (20001-9309)											
1809014-32	C	% Solids, Total Volatile	09/03/18 13:10	SM 2540G	9/4/18 17:26	**80.4**	%		0.01		DEB

Laboratory License #

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1809036-32	C	% Solids, Total Volatile	09/05/18 15:40	SM 2540G	9/6/18 16:08	**81.3**	%		0.01		TDA
1809066-32	C	% Solids, Total Volatile	09/10/18 13:25	SM 2540G	9/11/18 16:33	**80.9**	%		0.01		AV
1809089-32	C	% Solids, Total Volatile	09/12/18 16:30	SM 2540G	9/14/18 07:51	**79.8**	%		0.01		ESW
1809125-32	C	% Solids, Total Volatile	09/17/18 16:07	SM 2540G	9/19/18 06:59	**81.3**	%		0.01		ANM
1809143-32	C	% Solids, Total Volatile	09/19/18 9:50	SM 2540G	9/21/18 06:56	**80.5**	%		0.01		ANM
1809170-32	C	% Solids, Total Volatile	09/24/18 13:40	SM 2540G	9/25/18 16:21	**80.0**	%		0.01		ANM
1809185-32	C	% Solids, Total Volatile	09/26/18 14:10	SM 2540G	9/27/18 16:29	**80.7**	%		0.01		ANM
GBT #2 Thickened Sludge #58			**(20001-9311)**								
1809014-35	C	% Solids, Total Volatile	09/03/18 13:15	SM 2540G	9/4/18 17:26	**80.6**	%		0.01		DEB
1809036-35	C	% Solids, Total Volatile	09/05/18 15:55	SM 2540G	9/6/18 16:08	**80.7**	%		0.01		TDA
1809066-35	C	% Solids, Total Volatile	09/10/18 13:23	SM 2540G	9/11/18 16:33	**79.5**	%		0.01		AV
1809089-35	C	% Solids, Total Volatile	09/12/18 16:29	SM 2540G	9/14/18 07:51	**79.7**	%		0.01		ESW
GBT #3 Thickened Sludge #58			**(20001-9313)**								
1809125-38	C	% Solids, Total Volatile	09/17/18 16:03	SM 2540G	9/19/18 06:59	**80.9**	%		0.01		ANM
1809143-38	C	% Solids, Total Volatile	09/19/18 9:49	SM 2540G	9/21/18 06:56	**79.7**	%		0.01		ANM
1809170-38	C	% Solids, Total Volatile	09/24/18 13:40	SM 2540G	9/25/18 16:21	**79.7**	%		0.01		ANM
1809185-38	C	% Solids, Total Volatile	09/26/18 14:10	SM 2540G	9/27/18 16:29	**81.0**	%		0.01		ANM

Qualifier Definitions

D2	Sample required dilution due to high concentration of target analyte.
N1	See case narrative.
Q6	Sample was received above recommended temperature.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction
EB	Equipment Blank

Case Narrative(s)

1809066-09

Solids, Total %, SM2540D: Less than method required 25.0 g of sample weighed out for analysis (24.02g analyzed). ESW 10/15/18

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1809070-01

PROJECT & LOCATION: Regional Biosolids Facility Management - Thickened sludge to AvraGro

PROJECT-LOCATION NUMBER: 20002-0200 (XXXXX-XXXX)

SAMPLE START DATE: 09/10/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 0815 (Military time)

CLIENT: Deputy Director-Treatment

SAMPLE END DATE: 09/10/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0900 (Military time)

SAMPLER(S): Walker/Montemayor (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ AZPDES ☐ IWC ☐ Investigative ☐ Reuse ☐ Air ■ 503 ☐ Process Control ☐ Other

Matrix: ■ Biosolids ☐ Groundwater ☐ Industrial ☐ Soil ☐ Stormwater ☐ Surface Water ☐ Wastewater ☐ Air ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	X		☐	■
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	X		☐	■
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	☐	☐	☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	■
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	■
Chloride	☐	☐
Cyanide, Total	☐	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	■
Nitrite as N	☐	■
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	■
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other	☐	☐
Other	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other	☐	☐
Other	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total	☐	■
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other	☐	☐

OTHER	D	C
Paint Filter	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions:
Monthly pour off. Poured off the daily sample 1809066-09

Septum Blank Prep Date & Initials:

Chain of Custody Record (Signatures Only)

See 1809066-09 for COC

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

of Bottles Delivered: 2 GDS

Transported on Ice: ☐ YES ☒ NO

Lab Receipt

Temperature: 16 °C

Initials: GDS

Q6 qualifier? ☒ YES ☐ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*
** *Ag, As, Ba, Cd, Cr, Cu, Pb, Mo, Ni, Se, Tl, V, Zn*

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY
WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 11/29/2018
Laboratory License: AZO159

Sample Analysis Report

Regional Biosolids Facility Management

October 2018

Sample Integrity

SAMPLE RECEIPT:	Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.
HOLDING TIMES:	All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.
PRESERVATION:	Samples requiring preservation were verified prior to sample analysis.
QA/QC CRITERIA:	All analyses met method criteria, except as noted in the report with data qualifiers.

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Chatt

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

12·3·18
Date

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
Thickener Underflow #1	1810009-22	Water	10/2/2018 1:00:00	10/2/2018 6:20:00	Q6
Thickener Underflow #3	1810009-26	Water	10/2/2018 0:58:00	10/2/2018 6:20:00	Q6
Thickener Underflow #4	1810009-28	Water	10/2/2018 0:35:00	10/2/2018 6:20:00	Q6
GBT #1 Thickened Sludge #58	1810009-32	Water	10/1/2018 10:15:00	10/2/2018 6:20:00	Q6
GBT #3 Thickened Sludge #58	1810009-38	Water	10/1/2018 10:17:00	10/2/2018 6:20:00	Q6
Digester #1 to Centrifuge	1810020-19	Water	10/2/2018 10:00:00	10/3/2018 6:58:00	Q6
Digester #3 to Centrifuge	1810020-21	Water	10/2/2018 3:38:00	10/3/2018 6:58:00	Q6
Digester #4 to Centrifuge	1810020-22	Water	10/2/2018 14:45:00	10/3/2018 6:58:00	Q6
Digester #5 to Centrifuge	1810020-23	Water	10/2/2018 2:30:00	10/3/2018 6:58:00	Q6
Digester #6 to Centrifuge	1810020-24	Water	10/2/2018 8:45:00	10/3/2018 6:58:00	Q6
Thickener Underflow #1	1810030-22	Water	10/4/2018 0:38:00	10/4/2018 7:33:00	Q6
Thickener Underflow #3	1810030-26	Water	10/4/2018 0:40:00	10/4/2018 7:33:00	Q6
Thickener Underflow #4	1810030-28	Water	10/4/2018 0:42:00	10/4/2018 7:33:00	Q6
GBT #1 Thickened Sludge #58	1810030-32	Water	10/3/2018 14:44:00	10/4/2018 7:33:00	Q6
GBT #3 Thickened Sludge #58	1810030-38	Water	10/3/2018 14:40:00	10/4/2018 7:33:00	Q6
Digester #1 to Centrifuge	1810039-20	Water	10/4/2018 8:00:00	10/5/2018 7:45:00	Q6
Digester #3 to Centrifuge	1810039-22	Water	10/4/2018 2:00:00	10/5/2018 7:45:00	Q6
Digester #4 to Centrifuge	1810039-23	Water	10/4/2018 11:00:00	10/5/2018 7:45:00	Q6
Digester #5 to Centrifuge	1810039-24	Water	10/4/2018 14:00:00	10/5/2018 7:45:00	Q6
Digester #6 to Centrifuge	1810039-25	Water	10/4/2018 4:15:00	10/5/2018 7:45:00	Q6
Thickener Underflow #1	1810109-22	Water	10/16/2018 0:45:00	10/16/2018 7:20:00	Q6
Thickener Underflow #3	1810109-26	Water	10/16/2018 0:50:00	10/16/2018 7:20:00	Q6
Thickener Underflow #1	1810123-22	Water	10/18/2018 2:20:00	10/18/2018 6:59:00	Q6
Thickener Underflow #3	1810123-26	Water	10/18/2018 2:22:00	10/18/2018 6:59:00	Q6
Dewatered Cake Biosolids	1810064-01	Biosolids	10/8/2018 23:05:00	10/9/2018 9:23:00	Q6
Thickener Underflow #4	1810109-28	Water	10/16/2018 0:55:00	10/16/2018 7:20:00	Q6
Thickener Underflow #4	1810123-28	Water	10/18/2018 2:23:00	10/18/2018 6:59:00	Q6
Thickener Underflow #1	1810153-22	Water	10/23/2018 0:15:00	10/23/2018 8:05:00	Q6
Thickener Underflow #3	1810153-26	Water	10/23/2018 0:20:00	10/23/2018 8:05:00	Q6
Thickener Underflow #4	1810153-28	Water	10/23/2018 0:30:00	10/23/2018 8:05:00	Q6
GBT #1 Thickened Sludge #58	1810153-32	Water	10/22/2018 16:30:00	10/23/2018 8:05:00	Q6
GBT #2 Thickened Sludge #58	1810153-35	Water	10/22/2018 16:34:00	10/23/2018 8:05:00	Q6
Thickener Underflow #1	1810172-22	Water	10/25/2018 0:15:00	10/25/2018 7:05:00	Q6
Thickener Underflow #3	1810172-26	Water	10/25/2018 0:25:00	10/25/2018 7:05:00	Q6
Thickener Underflow #4	1810172-28	Water	10/25/2018 0:30:00	10/25/2018 7:05:00	Q6
GBT #1 Thickened Sludge #58	1810172-32	Water	10/24/2018 17:25:00	10/25/2018 7:05:00	Q6
Digester #1 to Centrifuge	1810197-20	Water	10/28/2018 8:05:00	10/29/2018 6:50:00	Q6
Digester #2 to Centrifuge	1810197-21	Water	10/28/2018 16:30:00	10/29/2018 6:50:00	Q6
Digester #3 to Centrifuge	1810197-22	Water	10/28/2018 2:30:00	10/29/2018 6:50:00	Q6
Digester #4 to Centrifuge	1810197-23	Water	10/28/2018 11:45:00	10/29/2018 6:50:00	Q6
Digester #5 to Centrifuge	1810197-24	Water	10/28/2018 14:55:00	10/29/2018 6:50:00	Q6
Digester #6 to Centrifuge	1810197-25	Water	10/28/2018 4:35:00	10/29/2018 6:50:00	Q6
GBT #2 Thickened Sludge #58	1810172-35	Water	10/24/2018 17:26:00	10/25/2018 7:05:00	Q6

Laboratory License #

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
Dewatered Cake Biosolids (20002-5703)											
Cross Reference 1810060-08											
1810064-01	C	Ammonia	10/08/18 23:05	EPA 350.1	10/15/18 15:30	**7420**	mg/kg dry	0.08	0.30		MGA
1810064-01	C	Arsenic	10/08/18 23:05	EPA 6010D	10/18/18 13:29	**ND**	mg/kg dry		12.49		MLB
1810064-01	C	Cadmium	10/08/18 23:05	EPA 6010D	10/18/18 11:28	**ND**	mg/kg dry		5.00		MLB
1810064-01	C	Chromium	10/08/18 23:05	EPA 6010D	10/18/18 11:28	**32.2**	mg/kg dry		12.49		MLB
1810064-01	C	Copper	10/08/18 23:05	EPA 6010D	10/18/18 11:28	**433**	mg/kg dry		12.49		MLB
1810064-01	C	Lead	10/08/18 23:05	EPA 6010D	10/18/18 13:29	**ND**	mg/kg dry		12.49		MLB
1810064-01	C	Mercury	10/08/18 23:05	EPA 7471B	10/30/18 14:02	**1.47**	mg/kg dry		0.01		MJC
1810064-01	C	Molybdenum	10/08/18 23:05	EPA 6010D	10/18/18 11:28	**12.8**	mg/kg dry		5.00		MLB
1810064-01	C	Nickel	10/08/18 23:05	EPA 6010D	10/18/18 11:28	**22.9**	mg/kg dry		12.49		MLB
1810064-01	C	Nitrite	10/08/18 23:05	SM4500-NO2	10/10/18 11:37	**2.92**	mg/kg dry	0.14	1.20		JGB
1810064-01	C	Total Kjeldahl Nitrogen	10/08/18 23:05	EPA 351.2	10/19/18 11:31	**77066**	mg/kg dry	1.74	23.94	D2	MGA
1810064-01	C	Nitrogen Total Biosolids	10/08/18 23:05	Calculated	10/19/18 11:31	**77068**	mg/kg dry	0.29	4.00		MGA
1810064-01	C	Selenium	10/08/18 23:05	EPA 6010D	10/18/18 13:29	**ND**	mg/kg dry		24.98		MLB
1810064-01	C	Silver	10/08/18 23:05	EPA 6010D	10/18/18 17:12	**2.21**	mg/kg dry		1.25		MLB
1810064-01	C	Zinc	10/08/18 23:05	EPA 6010D	10/18/18 11:28	**749**	mg/kg dry		12.49		MLB
1810064-01	C	% Solids	10/08/18 23:05	SM 2540G	10/10/18 07:30	**16.71**	%		0.01		NGF
Dewatered Cake Biosolids (20001-5703)											
Cross Reference 1810064-01											
1810060-08	C	% Solids	10/08/18 23:05	SM 2540G	10/10/18 07:30	**16.71**	%		0.01		NGF
1810060-08	C	Solids Total Grams	10/08/18 23:05	NA	10/9/18 11:40	**529.3**	g				ANM
Thickener Underflow #1 (20001-0700)											
1810009-22	D	% Solids, Total Volatile	10/02/18 1:00	SM 2540G	10/2/18 15:47	**84.0**	%		0.01		ANM
1810030-22	D	% Solids, Total Volatile	10/04/18 0:38	SM 2540G	10/4/18 16:27	**87.9**	%		0.01		ANM
1810060-22	D	% Solids, Total Volatile	10/09/18 0:38	SM 2540G	10/9/18 16:32	**86.5**	%		0.01		ANM
1810082-22	D	% Solids, Total Volatile	10/11/18 0:33	SM 2540G	10/12/18 06:57	**88.9**	%		0.01		ANM
1810109-22	D	% Solids, Total Volatile	10/16/18 0:45	SM 2540G	10/16/18 16:13	**88.8**	%		0.01		ANM
1810123-22	D	% Solids, Total Volatile	10/18/18 2:20	SM 2540G	10/18/18 15:58	**90.2**	%		0.01		ANM
1810153-22	D	% Solids, Total Volatile	10/23/18 0:15	SM 2540G	10/23/18 16:15	**89.8**	%		0.01		ANM
1810172-22	D	% Solids, Total Volatile	10/25/18 0:15	SM 2540G	10/25/18 15:25	**89.1**	%		0.01		NGF
1810204-22	D	% Solids, Total Volatile	10/30/18 1:25	SM 2540G	10/30/18 16:28	**89.7**	%		0.01		ANM
Thickener Underflow #3 (20001-1100)											
1810009-26	D	% Solids, Total Volatile	10/02/18 0:58	SM 2540G	10/2/18 15:47	**83.8**	%		0.01		ANM
1810030-26	D	% Solids, Total Volatile	10/04/18 0:40	SM 2540G	10/4/18 16:27	**88.6**	%		0.01		ANM
1810060-26	D	% Solids, Total Volatile	10/09/18 0:36	SM 2540G	10/9/18 16:32	**87.8**	%		0.01		ANM
1810082-26	D	% Solids, Total Volatile	10/11/18 0:30	SM 2540G	10/12/18 06:57	**86.4**	%		0.01		ANM
1810109-26	D	% Solids, Total Volatile	10/16/18 0:50	SM 2540G	10/16/18 16:13	**87.6**	%		0.01		ANM
1810123-26	D	% Solids, Total Volatile	10/18/18 2:22	SM 2540G	10/18/18 15:58	**89.8**	%		0.01		ANM
1810153-26	D	% Solids, Total Volatile	10/23/18 0:20	SM 2540G	10/23/18 16:15	**88.1**	%		0.01		ANM
1810172-26	D	% Solids, Total Volatile	10/25/18 0:25	SM 2540G	10/25/18 15:25	**89.0**	%		0.01		NGF
1810204-26	D	% Solids, Total Volatile	10/30/18 1:30	SM 2540G	10/30/18 16:28	**88.7**	%		0.01		ANM
Thickener Underflow #4 (20001-1300)											
1810009-28	D	% Solids, Total Volatile	10/02/18 0:35	SM 2540G	10/2/18 15:47	**82.4**	%		0.01		ANM
1810030-28	D	% Solids, Total Volatile	10/04/18 0:42	SM 2540G	10/4/18 16:27	**85.6**	%		0.01		ANM
1810060-28	D	% Solids, Total Volatile	10/09/18 0:40	SM 2540G	10/9/18 16:32	**86.9**	%		0.01		ANM
1810082-28	D	% Solids, Total Volatile	10/11/18 0:35	SM 2540G	10/12/18 06:57	**86.6**	%		0.01		ANM
1810109-28	D	% Solids, Total Volatile	10/16/18 0:55	SM 2540G	10/16/18 16:13	**84.8**	%		0.01		ANM
1810123-28	D	% Solids, Total Volatile	10/18/18 2:23	SM 2540G	10/18/18 15:58	**86.4**	%		0.01		ANM
1810153-28	D	% Solids, Total Volatile	10/23/18 0:30	SM 2540G	10/23/18 16:15	**89.2**	%		0.01		ANM
1810172-28	D	% Solids, Total Volatile	10/25/18 0:30	SM 2540G	10/25/18 15:25	**87.2**	%		0.01		NGF
1810204-28	D	% Solids, Total Volatile	10/30/18 1:35	SM 2540G	10/30/18 16:28	**87.7**	%		0.01		ANM
Digester #1 to Centrifuge (20001-2101)											
1810020-19	C	% Solids, Total Volatile	10/02/18 10:00	SM 2540G	10/3/18 15:27	**75.6**	%		0.01		DEB
1810039-20	C	% Solids, Total Volatile	10/04/18 8:00	SM 2540G	10/5/18 16:02	**75.0**	%		0.01		ANM
1810051-20	C	% Solids, Total Volatile	10/07/18 11:42	SM 2540G	10/8/18 14:37	**74.6**	%		0.01		AV
1810069-19	C	% Solids, Total Volatile	10/09/18 7:40	SM 2540G	10/10/18 14:44	**75.9**	%		0.01		NGF
1810088-20	C	% Solids, Total Volatile	10/11/18 3:35	SM 2540G	10/12/18 15:11	**75.6**	%		0.01		ANM

Laboratory License #

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1810103-20	C	% Solids, Total Volatile	10/14/18 7:30	SM 2540G	10/15/18 15:22	**74.7**	%		0.01		AV
1810116-19	C	% Solids, Total Volatile	10/16/18 3:45	SM 2540G	10/17/18 15:46	**75.6**	%		0.01		NGF
1810131-20	C	% Solids, Total Volatile	10/18/18 2:40	SM 2540G	10/19/18 15:18	**74.1**	%		0.01		ANM
1810145-20	C	% Solids, Total Volatile	10/21/18 1:44	SM 2540G	10/22/18 15:21	**74.1**	%		0.01		ANM
1810164-19	C	% Solids, Total Volatile	10/23/18 2:45	SM 2540G	10/24/18 16:10	**73.1**	%		0.01		ANM
1810180-20	C	% Solids, Total Volatile	10/25/18 8:30	SM 2540G	10/26/18 15:49	**73.6**	%		0.01		DEB
1810197-20	C	% Solids, Total Volatile	10/28/18 8:05	SM 2540G	10/29/18 14:55	**74.7**	%		0.01		NGF
1810214-19	C	% Solids, Total Volatile	10/30/18 14:07	SM 2540G	10/31/18 16:00	**73.5**	%		0.01		NGF
Digester #2 to Centrifuge (20001-2201)											
1810145-21	C	% Solids, Total Volatile	10/21/18 12:55	SM 2540G	10/22/18 15:21	**73.1**	%		0.01		ANM
1810164-20	C	% Solids, Total Volatile	10/23/18 10:40	SM 2540G	10/24/18 16:10	**73.1**	%		0.01		ANM
1810180-21	C	% Solids, Total Volatile	10/25/18 16:30	SM 2540G	10/26/18 15:49	**68.0**	%		0.01		DEB
1810197-21	C	% Solids, Total Volatile	10/28/18 16:30	SM 2540G	10/29/18 14:55	**72.2**	%		0.01		NGF
1810214-20	C	% Solids, Total Volatile	10/30/18 4:25	SM 2540G	10/31/18 16:00	**73.5**	%		0.01		NGF
Digester #3 to Centrifuge (20001-2301)											
1810020-21	C	% Solids, Total Volatile	10/02/18 3:38	SM 2540G	10/3/18 15:27	**75.0**	%		0.01		DEB
1810039-22	C	% Solids, Total Volatile	10/04/18 2:00	SM 2540G	10/5/18 16:02	**73.8**	%		0.01		ANM
1810051-22	C	% Solids, Total Volatile	10/07/18 4:30	SM 2540G	10/8/18 14:37	**75.6**	%		0.01		AV
1810069-21	C	% Solids, Total Volatile	10/09/18 1:45	SM 2540G	10/10/18 14:44	**74.3**	%		0.01		NGF
1810088-22	C	% Solids, Total Volatile	10/11/18 14:25	SM 2540G	10/12/18 15:11	**73.8**	%		0.01		ANM
1810103-22	C	% Solids, Total Volatile	10/14/18 2:35	SM 2540G	10/15/18 15:22	**74.1**	%		0.01		AV
1810116-21	C	% Solids, Total Volatile	10/16/18 14:30	SM 2540G	10/17/18 15:46	**73.8**	%		0.01		NGF
1810131-22	C	% Solids, Total Volatile	10/18/18 11:00	SM 2540G	10/19/18 15:18	**75.3**	%		0.01		ANM
1810145-22	C	% Solids, Total Volatile	10/21/18 11:25	SM 2540G	10/22/18 15:21	**73.3**	%		0.01		ANM
1810164-21	C	% Solids, Total Volatile	10/23/18 14:40	SM 2540G	10/24/18 16:10	**74.6**	%		0.01		ANM
1810180-22	C	% Solids, Total Volatile	10/25/18 2:45	SM 2540G	10/26/18 15:49	**73.8**	%		0.01		DEB
1810197-22	C	% Solids, Total Volatile	10/28/18 2:30	SM 2540G	10/29/18 14:55	**74.0**	%		0.01		NGF
1810214-21	C	% Solids, Total Volatile	10/30/18 8:15	SM 2540G	10/31/18 16:00	**70.8**	%		0.01		NGF
Digester #4 to Centrifuge (20001-2401)											
1810020-22	C	% Solids, Total Volatile	10/02/18 14:45	SM 2540G	10/3/18 15:27	**72.7**	%		0.01		DEB
1810039-23	C	% Solids, Total Volatile	10/04/18 11:00	SM 2540G	10/5/18 16:02	**76.8**	%		0.01		ANM
1810051-23	C	% Solids, Total Volatile	10/07/18 14:30	SM 2540G	10/8/18 14:37	**77.1**	%		0.01		AV
1810069-22	C	% Solids, Total Volatile	10/09/18 11:40	SM 2540G	10/10/18 14:44	**74.4**	%		0.01		NGF
1810088-23	C	% Solids, Total Volatile	10/11/18 8:30	SM 2540G	10/12/18 15:11	**75.6**	%		0.01		ANM
1810103-23	C	% Solids, Total Volatile	10/14/18 11:25	SM 2540G	10/15/18 15:22	**74.1**	%		0.01		AV
1810116-22	C	% Solids, Total Volatile	10/16/18 7:25	SM 2540G	10/17/18 15:46	**74.7**	%		0.01		NGF
1810131-23	C	% Solids, Total Volatile	10/18/18 4:15	SM 2540G	10/19/18 15:18	**74.3**	%		0.01		ANM
1810145-23	C	% Solids, Total Volatile	10/21/18 4:11	SM 2540G	10/22/18 15:21	**74.6**	%		0.01		ANM
1810164-22	C	% Solids, Total Volatile	10/23/18 4:45	SM 2540G	10/24/18 16:10	**73.1**	%		0.01		ANM
1810180-23	C	% Solids, Total Volatile	10/25/18 10:30	SM 2540G	10/26/18 15:49	**72.5**	%		0.01		DEB
1810197-23	C	% Solids, Total Volatile	10/28/18 11:45	SM 2540G	10/29/18 14:55	**73.1**	%		0.01		NGF
1810214-22	C	% Solids, Total Volatile	10/30/18 15:30	SM 2540G	10/31/18 16:00	**74.6**	%		0.01		NGF
Digester #5 to Centrifuge (20001-2501)											
1810020-23	C	% Solids, Total Volatile	10/02/18 2:30	SM 2540G	10/3/18 15:27	**76.7**	%		0.01		DEB
1810039-24	C	% Solids, Total Volatile	10/04/18 14:00	SM 2540G	10/5/18 16:02	**75.7**	%		0.01		ANM
1810051-24	C	% Solids, Total Volatile	10/07/18 2:45	SM 2540G	10/8/18 14:37	**76.2**	%		0.01		AV
1810069-23	C	% Solids, Total Volatile	10/09/18 14:20	SM 2540G	10/10/18 14:44	**74.4**	%		0.01		NGF
1810088-24	C	% Solids, Total Volatile	10/11/18 11:30	SM 2540G	10/12/18 15:11	**75.6**	%		0.01		ANM
1810103-24	C	% Solids, Total Volatile	10/14/18 14:40	SM 2540G	10/15/18 15:22	**74.3**	%		0.01		AV
1810116-23	C	% Solids, Total Volatile	10/16/18 11:40	SM 2540G	10/18/18 15:58	**73.3**	%		0.01		ANM
1810131-24	C	% Solids, Total Volatile	10/18/18 8:30	SM 2540G	10/19/18 15:18	**74.3**	%		0.01		ANM
1810145-24	C	% Solids, Total Volatile	10/21/18 8:50	SM 2540G	10/22/18 15:21	**73.5**	%		0.01		ANM
1810164-23	C	% Solids, Total Volatile	10/23/18 7:25	SM 2540G	10/24/18 16:10	**73.8**	%		0.01		ANM
1810180-24	C	% Solids, Total Volatile	10/25/18 14:40	SM 2540G	10/26/18 15:49	**72.7**	%		0.01		DEB
1810197-24	C	% Solids, Total Volatile	10/28/18 14:55	SM 2540G	10/29/18 14:55	**75.6**	%		0.01		NGF
1810214-23	C	% Solids, Total Volatile	10/30/18 0:50	SM 2540G	10/31/18 16:00	**75.0**	%		0.01		NGF
Digester #6 to Centrifuge (20001-2601)											
1810020-24	C	% Solids, Total Volatile	10/02/18 8:45	SM 2540G	10/3/18 15:27	**74.2**	%		0.01		DEB
1810039-25	C	% Solids, Total Volatile	10/04/18 4:15	SM 2540G	10/5/18 16:02	**75.0**	%		0.01		ANM

Laboratory License #

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1810051-25	C	% Solids, Total Volatile	10/07/18 9:20	SM 2540G	10/8/18 14:37	**75.4**	%		0.01		AV
1810069-24	C	% Solids, Total Volatile	10/09/18 3:35	SM 2540G	10/10/18 14:44	**72.6**	%		0.01		NGF
1810088-25	C	% Solids, Total Volatile	10/11/18 2:00	SM 2540G	10/12/18 15:11	**75.3**	%		0.01		ANM
1810103-25	C	% Solids, Total Volatile	10/14/18 3:49	SM 2540G	10/15/18 15:22	**73.8**	%		0.01		AV
1810116-24	C	% Solids, Total Volatile	10/16/18 2:00	SM 2540G	10/17/18 15:46	**74.7**	%		0.01		NGF
1810131-25	C	% Solids, Total Volatile	10/18/18 14:20	SM 2540G	10/19/18 15:18	**73.8**	%		0.01		ANM
1810145-25	C	% Solids, Total Volatile	10/21/18 15:55	SM 2540G	10/22/18 15:21	**72.6**	%		0.01		ANM
1810164-24	C	% Solids, Total Volatile	10/23/18 15:50	SM 2540G	10/24/18 16:10	**72.7**	%		0.01		ANM
1810180-25	C	% Solids, Total Volatile	10/25/18 4:45	SM 2540G	10/26/18 15:49	**72.2**	%		0.01		DEB
1810197-25	C	% Solids, Total Volatile	10/28/18 4:35	SM 2540G	10/29/18 14:55	**73.8**	%		0.01		NGF
1810214-24	C	% Solids, Total Volatile	10/30/18 10:45	SM 2540G	10/31/18 16:00	**73.3**	%		0.01		NGF
GBT #1 Thickened Sludge #58			**(20001-9309)**								
1810009-32	C	% Solids, Total Volatile	10/01/18 10:15	SM 2540G	10/2/18 15:47	**81.3**	%		0.01		ANM
1810030-32	C	% Solids, Total Volatile	10/03/18 14:44	SM 2540G	10/4/18 16:27	**79.8**	%		0.01		ANM
1810060-32	C	% Solids, Total Volatile	10/08/18 13:16	SM 2540G	10/9/18 16:32	**79.5**	%		0.01		ANM
1810082-32	C	% Solids, Total Volatile	10/10/18 13:48	SM 2540G	10/12/18 06:57	**80.4**	%		0.01		ANM
1810123-32	C	% Solids, Total Volatile	10/17/18 14:20	SM 2540G	10/18/18 15:58	**80.7**	%		0.01		ANM
1810153-32	C	% Solids, Total Volatile	10/22/18 16:30	SM 2540G	10/23/18 16:15	**81.5**	%		0.01		ANM
1810172-32	C	% Solids, Total Volatile	10/24/18 17:25	SM 2540G	10/25/18 15:25	**82.8**	%		0.01		NGF
1810204-32	C	% Solids, Total Volatile	10/29/18 12:13	SM 2540G	10/30/18 16:28	**81.1**	%		0.01		ANM
1811001-32	C	% Solids, Total Volatile	10/31/18 13:59	SM 2540G	11/1/18 15:59	**82.1**	%		0.01		ANM
GBT #2 Thickened Sludge #58			**(20001-9311)**								
1810109-35	C	% Solids, Total Volatile	10/15/18 18:10	SM 2540G	10/16/18 16:13	**81.1**	%		0.01		ANM
1810123-35	C	% Solids, Total Volatile	10/17/18 14:25	SM 2540G	10/18/18 15:58	**79.8**	%		0.01		ANM
1810153-35	C	% Solids, Total Volatile	10/22/18 16:34	SM 2540G	10/23/18 16:15	**80.3**	%		0.01		ANM
1810172-35	C	% Solids, Total Volatile	10/24/18 17:26	SM 2540G	10/25/18 15:25	**82.0**	%		0.01		NGF
1810204-35	C	% Solids, Total Volatile	10/29/18 12:15	SM 2540G	10/30/18 16:28	**81.2**	%		0.01		ANM
1811001-35	C	% Solids, Total Volatile	10/31/18 14:00	SM 2540G	11/1/18 15:59	**81.7**	%		0.01		ANM
GBT #3 Thickened Sludge #58			**(20001-9313)**								
1810009-38	C	% Solids, Total Volatile	10/01/18 10:17	SM 2540G	10/2/18 15:47	**81.2**	%		0.01		ANM
1810030-38	C	% Solids, Total Volatile	10/03/18 14:40	SM 2540G	10/4/18 16:27	**80.5**	%		0.01		ANM
1810060-38	C	% Solids, Total Volatile	10/08/18 13:18	SM 2540G	10/9/18 16:32	**79.8**	%		0.01		ANM
1810082-38	C	% Solids, Total Volatile	10/10/18 13:45	SM 2540G	10/12/18 06:57	**81.2**	%		0.01		ANM
1810109-38	C	% Solids, Total Volatile	10/15/18 18:05	SM 2540G	10/16/18 16:13	**80.8**	%		0.01		ANM

Qualifier Definitions

D2	Sample required dilution due to high concentration of target analyte.
Q6	Sample was received above recommended temperature.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction
EB	Equipment Blank

Case Narrative(s)

None

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1810069-01

PROJECT & LOCATION: Regional Biosolids Facility Management - Dewatered Cake Biosolids

PROJECT-LOCATION NUMBER: 20002-5703 (XXXXX-XXXX)

SAMPLE START DATE: 10/08/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 1020 (Military time)

CLIENT: Deputy Director-Treatment

SAMPLE END DATE: 10/08/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 2305 (Military time)

SAMPLER(S): Vasquez, Mondragon (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ☐ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

Aluminum	Titanium	Acrolein and Acrylonitrile	Alkalinity
Antimony	Vanadium	Dioxin GC/SIM/MS Scan	BOD
Arsenic	Zinc	Organochlorine Pesticides & PCBs	COD
Barium	PPMs *	Purgeable Organics (GCMS)	Coliform, Fecal
Beryllium	TCLP Metals	Semivolatile Organics (GCMS)	Coliform, Total
Boron		Bis(2-ethylhexyl) phthalate	Specific Conductance
Cadmium	Dissolved Cr+6	Digester Gas	*E. coli*
Calcium		Oil and Grease	Oxygen, Dissolved
Chromium		Organic Carbon, Total	pH
Cobalt		Organic Carbon, Dissolved	Solids, Total
Copper	Chloride	TCLP Herbicides (Contract Lab)	Solids, Total Dissolved
Hardness	Cyanide, Total	TCLP Pesticides	Solids, Total Suspended
Iron	Cyanide, Amenable	TCLP Semivolatile Organics	Solids, Total Volatile
Lead	Fluoride	TCLP Volatile Organics	Solids, Volatile Suspended
Magnesium	Ignitability	TTHM	Other
Manganese		Total Petroleum Hydrocarbons	
		Volatile Acids	Paint Filter
Mercury LL	Nitrate/Nitrite as N	Other	
Molybdenum	Nitrogen, Total Kjeldahl	Other	
Nickel			
Potassium	Orthophosphate as P	Chronic *P. promelas*	
Selenium	Phosphorus, Total as P	Chronic *C. dubia*	
	Sulfate	Chronic *Selenastrum capricornutum*	
Sodium	Sulfide	Other	
Thallium	Other		
Tin	Other		

☐ Chlorine (Hach 10014)		µg/L
☐ Specific Conductance (SM 2510 B)		µmhos/cm
☐ Oxygen, Dissolved (SM 4500-O G)		mg/L
☐ pH @ pH Temp (SM 4500-H B)	@	pH Units @ ° C
☐ Temperature (SM 2550 B)		° C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions:
Poured off the daily sample 1810060-08

Septum Blank Prep Date & Initials:

See 1810060-08 for COC

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

# of Bottles Delivered: 2 GOS

Transported on Ice: ☐ YES ☒ NO

Temperature: 19 ° C

Initials: GOS

Q6 qualifier? ☒ YES ☐ NO

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*

** *Al, Ba, Ca, Fe, Mg, Mn, K, Na, Zn*

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY
WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 12/28/2018
Laboratory License: AZO159

Sample Analysis Report

Regional Biosolids Facility Management

November 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Arnatt

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

1·3·19
Date

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled		Date Received		Sample Qualifiers
Thickener Underflow #1	1811136-22	Water	11/20/2018	3:05:00	11/20/2018	6:59:00	Q6
Thickener Underflow #2	1811136-24	Water	11/20/2018	3:07:00	11/20/2018	6:59:00	Q6
Thickener Underflow #3	1811136-26	Water	11/20/2018	3:09:00	11/20/2018	6:59:00	Q6
Dewatered Cake Biosolids	1811140-01	Biosolids	11/19/2018	22:12:00	11/20/2018	8:55:00	Q6
Thickener Underflow #1	1811178-22	Water	11/27/2018	0:15:00	11/27/2018	7:29:00	Q6
Thickener Underflow #2	1811178-24	Water	11/27/2018	0:30:00	11/27/2018	7:29:00	Q6
Thickener Underflow #3	1811178-26	Water	11/27/2018	0:35:00	11/27/2018	7:29:00	Q6
Thickener Underflow #4	1811178-28	Water	11/27/2018	0:40:00	11/27/2018	7:29:00	Q6
Thickener Underflow #1	1811196-22	Water	11/29/2018	1:17:00	11/29/2018	6:54:00	Q6
Thickener Underflow #2	1811196-24	Water	11/29/2018	1:22:00	11/29/2018	6:54:00	Q6
Thickener Underflow #3	1811196-26	Water	11/29/2018	1:15:00	11/29/2018	6:54:00	Q6
Thickener Underflow #4	1811196-28	Water	11/29/2018	1:20:00	11/29/2018	6:54:00	Q6

Laboratory Liaison#

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
Dewatered Cake Biosolids (20002-5703)											
Cross Reference 1811136-08											
1811140-01RE3	C	Ammonia	11/19/18 22:12	EPA 350.1	12/14/18 15:05	**8610**	mg/kg dry	7.55	29.27	N1	AJH
1811140-01	C	Arsenic	11/19/18 22:12	EPA 6010D	12/20/18 16:17	**ND**	mg/kg dry		6.34		MLB
1811140-01	C	Cadmium	11/19/18 22:12	EPA 6010D	12/20/18 16:17	**ND**	mg/kg dry		2.54		MLB
1811140-01	C	Chromium	11/19/18 22:12	EPA 6010D	12/20/18 16:17	**29.0**	mg/kg dry		6.34		MLB
1811140-01	C	Copper	11/19/18 22:12	EPA 6010D	12/20/18 16:17	**359**	mg/kg dry		6.34		MLB
1811140-01	C	Lead	11/19/18 22:12	EPA 6010D	12/20/18 16:17	**10.3**	mg/kg dry		6.34		MLB
1811140-01	C	Mercury	11/19/18 22:12	EPA 7471B	12/13/18 15:22	**0.74**	mg/kg dry		0.01		MJC
1811140-01	C	Molybdenum	11/19/18 22:12	EPA 6010D	12/20/18 16:17	**11.5**	mg/kg dry		2.54		MLB
1811140-01	C	Nickel	11/19/18 22:12	EPA 6010D	12/20/18 16:17	**21.1**	mg/kg dry		6.34		MLB
1811140-01	C	Nitrite	11/19/18 22:12	SM4500-NO2	11/20/18 12:24	**2.25**	mg/kg dry	0.14	1.17		JGB
1811140-01	C	Total Kjeldahl Nitrogen	11/19/18 22:12	EPA 351.2	12/2/18 15:30	**68295**	mg/kg dry	1.70	14.05	D2	MGA
1811140-01	C	Nitrogen Total Biosolids	11/19/18 22:12	Calculated	12/2/18 15:30	**68298**	mg/kg dry	0.29	2.40		MGA
1811140-01	C	Selenium	11/19/18 22:12	EPA 6010D	12/20/18 16:17	**ND**	mg/kg dry		12.68		MLB
1811140-01	C	Silver	11/19/18 22:12	EPA 6010D	12/20/18 16:17	**3.32**	mg/kg dry		0.63		MLB
1811140-01RE1	C	Zinc	11/19/18 22:12	EPA 6010D	12/20/18 16:27	**688**	mg/kg dry		31.70	D2	MLB
1811140-01	C	% Solids	11/19/18 22:12	SM 2540G	11/21/18 07:48	**17.08**	%		0.01		ANM
Dewatered Cake Biosolids (20001-5703)											
Cross Reference 1811140-01											
1811136-08	C	% Solids	11/19/18 22:20	SM 2540G	11/21/18 07:48	**17.07**	%		0.01		ANM
1811136-08	C	Solids Total Grams	11/19/18 22:20	NA	11/20/18 09:08	**546.3**	g				ANM
Thickener Underflow #1 (20001-0700)											
1811001-22	D	% Solids, Total Volatile	11/01/18 1:05	SM 2540G	11/1/18 15:59	**87.0**	%		0.01		ANM
1811035-22	D	% Solids, Total Volatile	11/06/18 0:15	SM 2540G	11/6/18 16:20	**89.0**	%		0.01		ANM
1811057-22	D	% Solids, Total Volatile	11/08/18 2:10	SM 2540G	11/8/18 15:57	**87.3**	%		0.01		ANM
1811086-22	D	% Solids, Total Volatile	11/13/18 1:05	SM 2540G	11/13/18 15:39	**86.5**	%		0.01		ANM
1811107-22	D	% Solids, Total Volatile	11/15/18 1:10	SM 2540G	11/15/18 15:22	**87.2**	%		0.01		NGF
1811136-22	D	% Solids, Total Volatile	11/20/18 3:05	SM 2540G	11/20/18 15:46	**88.1**	%		0.01		NGF
1811178-22	D	% Solids, Total Volatile	11/27/18 0:15	SM 2540G	11/27/18 15:47	**88.0**	%		0.01		ANM
1811196-22	D	% Solids, Total Volatile	11/29/18 1:17	SM 2540G	11/29/18 16:02	**89.5**	%		0.01		ANM
Thickener Underflow #2 (20001-0900)											
1811086-24	D	% Solids, Total Volatile	11/13/18 1:10	SM 2540G	11/13/18 15:39	**86.5**	%		0.01		ANM
1811107-24	D	% Solids, Total Volatile	11/15/18 1:15	SM 2540G	11/15/18 15:22	**88.6**	%		0.01		NGF
1811136-24	D	% Solids, Total Volatile	11/20/18 3:07	SM 2540G	11/20/18 15:46	**87.9**	%		0.01		NGF
1811178-24	D	% Solids, Total Volatile	11/27/18 0:30	SM 2540G	11/27/18 15:47	**88.7**	%		0.01		ANM
1811196-24	D	% Solids, Total Volatile	11/29/18 1:22	SM 2540G	11/29/18 16:02	**90.3**	%		0.01		ANM
Thickener Underflow #3 (20001-1100)											
1811001-26	D	% Solids, Total Volatile	11/01/18 1:12	SM 2540G	11/1/18 15:59	**89.8**	%		0.01		ANM
1811035-26	D	% Solids, Total Volatile	11/06/18 0:30	SM 2540G	11/6/18 16:20	**88.2**	%		0.01		ANM
1811057-26	D	% Solids, Total Volatile	11/08/18 2:15	SM 2540G	11/8/18 15:57	**89.8**	%		0.01		ANM
1811107-26	D	% Solids, Total Volatile	11/15/18 1:05	SM 2540G	11/15/18 15:22	**85.8**	%		0.01		NGF
1811136-26	D	% Solids, Total Volatile	11/20/18 3:09	SM 2540G	11/20/18 15:46	**89.0**	%		0.01		NGF
1811178-26	D	% Solids, Total Volatile	11/27/18 0:35	SM 2540G	11/27/18 15:47	**91.7**	%		0.01		ANM
1811196-26	D	% Solids, Total Volatile	11/29/18 1:15	SM 2540G	11/29/18 16:02	**88.6**	%		0.01		ANM
Thickener Underflow #4 (20001-1300)											
1811001-28	D	% Solids, Total Volatile	11/01/18 1:18	SM 2540G	11/1/18 15:59	**87.6**	%		0.01		ANM
1811035-28	D	% Solids, Total Volatile	11/06/18 0:40	SM 2540G	11/6/18 16:20	**87.9**	%		0.01		ANM
1811057-28	D	% Solids, Total Volatile	11/08/18 2:20	SM 2540G	11/8/18 15:57	**87.3**	%		0.01		ANM
1811086-28	D	% Solids, Total Volatile	11/13/18 1:30	SM 2540G	11/13/18 15:39	**87.2**	%		0.01		ANM
1811178-28	D	% Solids, Total Volatile	11/27/18 0:40	SM 2540G	11/27/18 15:47	**86.8**	%		0.01		ANM
1811196-28	D	% Solids, Total Volatile	11/29/18 1:20	SM 2540G	11/29/18 16:02	**88.9**	%		0.01		ANM
Digester #1 to Centrifuge (20001-2101)											
1811010-20	C	% Solids, Total Volatile	11/01/18 2:30	SM 2540G	11/2/18 15:02	**74.4**	%		0.01		ANM
1811025-20	C	% Solids, Total Volatile	11/04/18 2:40	SM 2540G	11/5/18 15:22	**75.3**	%		0.01		NGF
1811046-19	C	% Solids, Total Volatile	11/06/18 8:50	SM 2540G	11/7/18 15:42	**73.5**	%		0.01		ANM
1811067-20	C	% Solids, Total Volatile	11/08/18 13:15	SM 2540G	11/9/18 15:31	**74.4**	%		0.01		ANM
1811095-19	C	% Solids, Total Volatile	11/13/18 2:30	SM 2540G	11/14/18 15:23	**73.8**	%		0.01		ANM

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1811116-20	C	% Solids, Total Volatile	11/15/18 8:20	SM 2540G	11/16/18 15:48	**74.0**	%		0.01		ANM
1811130-20	C	% Solids, Total Volatile	11/18/18 7:30	SM 2540G	11/19/18 16:09	**74.4**	%		0.01		AV
1811145-19	C	% Solids, Total Volatile	11/20/18 14:50	SM 2540G	11/21/18 15:06	**76.2**	%		0.01		NGF
1811171-20	C	% Solids, Total Volatile	11/25/18 2:35	SM 2540G	11/26/18 15:15	**75.0**	%		0.01		NGF
1811187-19	C	% Solids, Total Volatile	11/27/18 7:25	SM 2540G	11/28/18 15:34	**76.4**	%		0.01		ANM
1811202-20	C	% Solids, Total Volatile	11/29/18 11:40	SM 2540G	11/30/18 14:52	**75.8**	%		0.01		ANM
Digester #2 to Centrifuge (20001-2201)											
1811010-21	C	% Solids, Total Volatile	11/01/18 10:05	SM 2540G	11/2/18 15:02	**76.9**	%		0.01		ANM
1811025-21	C	% Solids, Total Volatile	11/04/18 11:55	SM 2540G	11/5/18 15:22	**79.2**	%		0.01		NGF
1811046-20	C	% Solids, Total Volatile	11/06/18 16:20	SM 2540G	11/7/18 15:42	**76.7**	%		0.01		ANM
1811067-21	C	% Solids, Total Volatile	11/08/18 4:15	SM 2540G	11/9/18 15:31	**74.5**	%		0.01		ANM
1811095-20	C	% Solids, Total Volatile	11/13/18 11:00	SM 2540G	11/14/18 15:23	**76.3**	%		0.01		ANM
1811116-21	C	% Solids, Total Volatile	11/15/18 16:10	SM 2540G	11/16/18 15:48	**75.0**	%		0.01		ANM
1811130-21	C	% Solids, Total Volatile	11/18/18 16:00	SM 2540G	11/19/18 16:09	**74.1**	%		0.01		AV
1811145-20	C	% Solids, Total Volatile	11/20/18 3:45	SM 2540G	11/21/18 15:06	**77.4**	%		0.01		NGF
1811171-21	C	% Solids, Total Volatile	11/25/18 11:40	SM 2540G	11/26/18 15:15	**76.8**	%		0.01		NGF
1811187-20	C	% Solids, Total Volatile	11/27/18 14:25	SM 2540G	11/28/18 15:34	**74.2**	%		0.01		ANM
1811202-21	C	% Solids, Total Volatile	11/29/18 1:10	SM 2540G	11/30/18 14:52	**74.6**	%		0.01		ANM
Digester #3 to Centrifuge (20001-2301)											
1811010-22	C	% Solids, Total Volatile	11/01/18 13:30	SM 2540G	11/2/18 15:02	**74.0**	%		0.01		ANM
1811025-22	C	% Solids, Total Volatile	11/04/18 14:55	SM 2540G	11/5/18 15:22	**73.8**	%		0.01		NGF
1811046-21	C	% Solids, Total Volatile	11/06/18 1:10	SM 2540G	11/7/18 15:42	**73.5**	%		0.01		ANM
1811067-22	C	% Solids, Total Volatile	11/08/18 8:00	SM 2540G	11/9/18 15:31	**73.1**	%		0.01		ANM
1811095-21	C	% Solids, Total Volatile	11/13/18 14:15	SM 2540G	11/14/18 15:23	**74.2**	%		0.01		ANM
1811116-22	C	% Solids, Total Volatile	11/15/18 2:25	SM 2540G	11/16/18 15:48	**72.8**	%		0.01		ANM
1811130-22	C	% Solids, Total Volatile	11/18/18 1:45	SM 2540G	11/19/18 16:09	**74.7**	%		0.01		AV
1811145-21	C	% Solids, Total Volatile	11/20/18 8:35	SM 2540G	11/21/18 15:06	**74.7**	%		0.01		NGF
1811171-22	C	% Solids, Total Volatile	11/25/18 14:36	SM 2540G	11/26/18 15:15	**75.3**	%		0.01		NGF
1811187-21	C	% Solids, Total Volatile	11/27/18 2:45	SM 2540G	11/28/18 15:34	**74.3**	%		0.01		ANM
1811202-22	C	% Solids, Total Volatile	11/29/18 4:15	SM 2540G	11/30/18 14:52	**74.0**	%		0.01		ANM
Digester #4 to Centrifuge (20001-2401)											
1811010-23	C	% Solids, Total Volatile	11/01/18 6:05	SM 2540G	11/2/18 15:02	**73.8**	%		0.01		ANM
1811025-23	C	% Solids, Total Volatile	11/04/18 4:10	SM 2540G	11/5/18 15:22	**77.1**	%		0.01		NGF
1811046-22	C	% Solids, Total Volatile	11/06/18 11:55	SM 2540G	11/7/18 15:42	**75.3**	%		0.01		ANM
1811067-23	C	% Solids, Total Volatile	11/08/18 16:15	SM 2540G	11/9/18 15:31	**73.5**	%		0.01		ANM
1811095-22	C	% Solids, Total Volatile	11/13/18 3:35	SM 2540G	11/14/18 15:23	**73.2**	%		0.01		ANM
1811116-23	C	% Solids, Total Volatile	11/15/18 11:00	SM 2540G	11/16/18 15:48	**73.3**	%		0.01		ANM
1811130-23	C	% Solids, Total Volatile	11/18/18 11:00	SM 2540G	11/19/18 16:09	**75.0**	%		0.01		AV
1811145-22	C	% Solids, Total Volatile	11/20/18 16:10	SM 2540G	11/21/18 15:06	**74.7**	%		0.01		NGF
1811171-23	C	% Solids, Total Volatile	11/25/18 4:35	SM 2540G	11/26/18 15:15	**74.1**	%		0.01		NGF
1811187-22	C	% Solids, Total Volatile	11/27/18 11:10	SM 2540G	11/28/18 15:34	**73.5**	%		0.01		ANM
1811202-23	C	% Solids, Total Volatile	11/29/18 14:40	SM 2540G	11/30/18 14:52	**78.9**	%		0.01		ANM
Digester #5 to Centrifuge (20001-2501)											
1811010-24	C	% Solids, Total Volatile	11/01/18 8:35	SM 2540G	11/2/18 15:02	**75.3**	%		0.01		ANM
1811025-24	C	% Solids, Total Volatile	11/04/18 16:40	SM 2540G	11/5/18 15:22	**75.0**	%		0.01		NGF
1811046-23	C	% Solids, Total Volatile	11/06/18 14:50	SM 2540G	11/7/18 15:42	**74.3**	%		0.01		ANM
1811067-24	C	% Solids, Total Volatile	11/08/18 1:30	SM 2540G	11/9/18 15:31	**73.6**	%		0.01		ANM
1811095-23	C	% Solids, Total Volatile	11/13/18 9:00	SM 2540G	11/14/18 15:23	**74.3**	%		0.01		ANM
1811116-24	C	% Solids, Total Volatile	11/15/18 13:30	SM 2540G	11/16/18 15:48	**71.6**	%		0.01		ANM
1811130-24	C	% Solids, Total Volatile	11/18/18 14:05	SM 2540G	11/19/18 16:09	**73.8**	%		0.01		AV
1811145-23	C	% Solids, Total Volatile	11/20/18 2:30	SM 2540G	11/21/18 15:06	**73.8**	%		0.01		NGF
1811171-24	C	% Solids, Total Volatile	11/25/18 8:45	SM 2540G	11/26/18 15:15	**77.0**	%		0.01		NGF
1811187-23	C	% Solids, Total Volatile	11/27/18 15:50	SM 2540G	11/28/18 15:34	**77.0**	%		0.01		ANM
1811202-24	C	% Solids, Total Volatile	11/29/18 16:10	SM 2540G	11/30/18 14:52	**74.7**	%		0.01		ANM
Digester #6 to Centrifuge (20001-2601)											
1811010-25	C	% Solids, Total Volatile	11/01/18 15:42	SM 2540G	11/2/18 15:02	**75.0**	%		0.01		ANM
1811025-25	C	% Solids, Total Volatile	11/04/18 8:45	SM 2540G	11/5/18 15:22	**75.9**	%		0.01		NGF
1811046-24	C	% Solids, Total Volatile	11/06/18 4:00	SM 2540G	11/7/18 15:42	**73.0**	%		0.01		ANM
1811067-25	C	% Solids, Total Volatile	11/08/18 10:30	SM 2540G	11/9/18 15:31	**76.7**	%		0.01		ANM

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1811095-24	C	% Solids, Total Volatile	11/13/18 16:20	SM 2540G	11/14/18 15:23	**77.6**	%		0.01		ANM
1811116-25	C	% Solids, Total Volatile	11/15/18 3:30	SM 2540G	11/16/18 15:48	**73.4**	%		0.01		ANM
1811130-25	C	% Solids, Total Volatile	11/18/18 4:00	SM 2540G	11/19/18 16:09	**75.0**	%		0.01		AV
1811145-24	C	% Solids, Total Volatile	11/20/18 11:30	SM 2540G	11/21/18 15:06	**75.0**	%		0.01		NGF
1811171-25	C	% Solids, Total Volatile	11/25/18 16:35	SM 2540G	11/26/18 15:15	**76.6**	%		0.01		NGF
1811187-24	C	% Solids, Total Volatile	11/27/18 5:45	SM 2540G	11/28/18 15:34	**74.2**	%		0.01		ANM
1811202-25	C	% Solids, Total Volatile	11/29/18 8:40	SM 2540G	11/30/18 14:52	**75.7**	%		0.01		ANM
GBT #1 Thickened Sludge #58			**(20001-9309)**								
1811035-32	C	% Solids, Total Volatile	11/05/18 10:48	SM 2540G	11/6/18 16:20	**81.2**	%		0.01		ANM
1811057-32	C	% Solids, Total Volatile	11/07/18 14:20	SM 2540G	11/8/18 15:57	**82.0**	%		0.01		ANM
1811086-32	C	% Solids, Total Volatile	11/12/18 12:17	SM 2540G	11/13/18 15:39	**81.4**	%		0.01		ANM
1811107-32	C	% Solids, Total Volatile	11/14/18 12:10	SM 2540G	11/15/18 15:22	**81.5**	%		0.01		NGF
1811136-32	C	% Solids, Total Volatile	11/19/18 16:05	SM 2540G	11/20/18 15:46	**80.3**	%		0.01		NGF
1811196-32	C	% Solids, Total Volatile	11/28/18 15:30	SM 2540G	11/29/18 16:02	**81.5**	%		0.01		ANM
GBT #2 Thickened Sludge #58			**(20001-9311)**								
1811035-35	C	% Solids, Total Volatile	11/05/18 10:49	SM 2540G	11/6/18 16:20	**81.9**	%		0.01		ANM
1811057-35	C	% Solids, Total Volatile	11/07/18 14:20	SM 2540G	11/8/18 15:57	**81.4**	%		0.01		ANM
1811086-35	C	% Solids, Total Volatile	11/12/18 12:15	SM 2540G	11/13/18 15:39	**80.0**	%		0.01		ANM
1811107-35	C	% Solids, Total Volatile	11/14/18 12:10	SM 2540G	11/15/18 15:22	**81.2**	%		0.01		NGF
1811136-35	C	% Solids, Total Volatile	11/19/18 16:05	SM 2540G	11/20/18 15:46	**81.6**	%		0.01		NGF
1811178-35	C	% Solids, Total Volatile	11/26/18 13:07	SM 2540G	11/27/18 15:47	**83.2**	%		0.01		ANM
GBT #3 Thickened Sludge #58			**(20001-9313)**								
1811178-38	C	% Solids, Total Volatile	11/26/18 13:10	SM 2540G	11/27/18 15:47	**81.3**	%		0.01		ANM
1811196-38	C	% Solids, Total Volatile	11/28/18 15:10	SM 2540G	11/29/18 16:02	**80.7**	%		0.01		ANM

Qualifier Definitions

D2	Sample required dilution due to high concentration of target analyte.
N1	See case narrative.
Q6	Sample was received above recommended temperature.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction
EB	Equipment Blank

Case Narrative(s)

1811140-01,RE1,2,3
Ammonia EPA 350.1 - Initial result was quite different from the historical value. Sample was reanalyzed several times, but results were inconsistent. Sample was homogenized by hand and reanalyzed the fourth time. MSA was done, but the R2 value was less than 0.995 and the MSA value could not be used. The result for the third reshot was reported. AJH12/17/2018 - edited JEC 12/21/18

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1811140-01

PROJECT & LOCATION: Regional Biosolids Facility Management - Dewatered Cake Biosolids

PROJECT-LOCATION NUMBER: 20002-5703 (XXXXX-XXXX)

SAMPLE START DATE: 11/19/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 1020 (Military time)

CLIENT: Deputy Director-Treatment

SAMPLE END DATE: 11/19/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 2212 (Military time)

SAMPLER(S): Vasquez, Montemayor (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ AZPDES ☐ IWC ☐ Investigative ☐ Reuse ☐ Air ■ 503 ☐ Process Control ☐ Other

Matrix: ■ Biosolids ☐ Groundwater ☐ Industrial ☐ Soil ☐ Stormwater ☐ Surface Water ☐ Wastewater ☐ Air ☐ Other

Aluminum	Titanium	Acrolein and Acrylonitrile	Alkalinity	☐ Chlorine (Hach 10014) µg/L
Antimony	Vanadium	Dioxin GC/SIM/MS Scan	BOD	☐ Specific Conductance (SM 2510 B) µmhos/cm
Arsenic	Zinc	Organochlorine Pesticides & PCBs	COD	☐ Oxygen, Dissolved (SM 4500-O G) mg/L
Barium	PPMs *	Purgeable Organics (GCMS)	Coliform, Fecal	☐ pH @ pH Temp (SM 4500-H B) @ pH Units @ °C
Beryllium	TCLP Metals	Semivolatile Organics (GCMS)	Coliform, Total	☐ Temperature (SM 2550 B) °C
Boron	[redacted]	Bis(2-ethylhexyl) phthalate	Specific Conductance	☐ Total Depth of Well feet
Cadmium	Dissolved Cr+6	Digester Gas	*E. coli*	☐ Depth to Water feet
Calcium		Oil and Grease	Oxygen, Dissolved	☐ Other
Chromium	[redacted]	Organic Carbon, Total	pH	
Cobalt	Chloride	Organic Carbon, Dissolved	[redacted]	
Copper	Cyanide, Total	TCLP Herbicides (Contract Lab)	Solids, Total Dissolved	
Hardness	Cyanide, Amenable	TCLP Pesticides	Solids, Total Suspended	
Iron	Fluoride	TCLP Semivolatile Organics	Solids, Total Volatile	
Lead	Ignitability	TCLP Volatile Organics	Solids, Volatile Suspended	
Magnesium	[redacted]	TTHM	Other	
Manganese	Nitrate/Nitrite as N	Total Petroleum Hydrocarbons	Paint Filter	
[redacted]	Nitrogen, Total Kjeldahl	Volatile Acids		
Mercury LL	[redacted]	Other		
Molybdenum	Orthophosphate as P	Other		
Nickel	Phosphorus, Total as P	Chronic *P. promelas*		
Potassium	Sulfate	Chronic *C. dubia*		
Selenium	Sulfide	Chronic *Selenastrum capricornutum*		
[redacted]	Other	Other		
Sodium	Other			
Thallium				
Tin				

Comments/Instructions:
Poured off the daily sample 1811136-08

Septum Blank Prep Date & Initials:

See 1811136-08 for COC

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

# of Bottles Delivered: 2 Cas

Transported on Ice: ☐ YES ☒ NO

Temperature: 9 °C

Initials: GS

Q6 qualifier? ☒ YES ☐ NO

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*
Laboratory Control Number: [illegible] Zn

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY
WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 01/29/2019
Laboratory License: AZO159

Sample Analysis Report

Regional Biosolids Facility Management

December 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By: Jenelle Chaffee

1·31·19
Date

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
GBT #1 Thickened Sludge #58	1812039-32	Water	12/5/2018 14:40:00	12/6/2018 7:33:00	Q6
Dewatered Cake Biosolids	1812073-01	Biosolids	12/10/2018 23:05:00	12/11/2018 9:13:00	Q6
Thickener Underflow #1	1812092-22	Water	12/13/2018 2:40:00	12/13/2018 7:37:00	Q6
Digester #1 to Centrifuge	1812100-20	Water	12/13/2018 2:30:00	12/14/2018 8:04:00	Q6
Digester #2 to Centrifuge	1812100-21	Water	12/13/2018 10:10:00	12/14/2018 8:04:00	Q6
Digester #3 to Centrifuge	1812100-22	Water	12/13/2018 14:00:00	12/14/2018 8:04:00	Q6
Digester #4 to Centrifuge	1812100-23	Water	12/13/2018 4:40:00	12/14/2018 8:04:00	Q6
Digester #5 to Centrifuge	1812100-24	Water	12/13/2018 8:30:00	12/14/2018 8:04:00	Q6
Digester #6 to Centrifuge	1812100-25	Water	12/13/2018 16:11:00	12/14/2018 8:04:00	Q6
Thickener Underflow #1	1812039-22	Water	12/6/2018 0:55:00	12/6/2018 7:33:00	Q6
Thickener Underflow #2	1812039-24	Water	12/6/2018 1:00:00	12/6/2018 7:33:00	Q6
Thickener Underflow #3	1812039-26	Water	12/6/2018 1:05:00	12/6/2018 7:33:00	Q6
Thickener Underflow #4	1812039-28	Water	12/6/2018 1:10:00	12/6/2018 7:33:00	Q6
Thickener Underflow #2	1812092-24	Water	12/13/2018 2:42:00	12/13/2018 7:37:00	Q6
Thickener Underflow #3	1812092-26	Water	12/13/2018 2:45:00	12/13/2018 7:37:00	Q6
Thickener Underflow #4	1812092-28	Water	12/13/2018 2:47:00	12/13/2018 7:37:00	Q6

Laboratory License #

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
Dewatered Cake Biosolids (20002-5703)											
Cross Reference 1812069-08											
1812073-01	C	Ammonia	12/10/18 23:05	EPA 350.1	12/14/18 14:30	**7940**	mg/kg dry	0.08	0.31		AJH
1812073-01	C	Arsenic	12/10/18 23:05	EPA 6010D	12/20/18 16:20	**7.80**	mg/kg dry		6.21		MLB
1812073-01	C	Cadmium	12/10/18 23:05	EPA 6010D	12/20/18 16:20	**ND**	mg/kg dry		2.48		MLB
1812073-01	C	Chromium	12/10/18 23:05	EPA 6010D	12/20/18 16:20	**28.2**	mg/kg dry		6.21		MLB
1812073-01	C	Copper	12/10/18 23:05	EPA 6010D	12/20/18 16:20	**340**	mg/kg dry		6.21		MLB
1812073-01	C	Lead	12/10/18 23:05	EPA 6010D	12/20/18 16:20	**11.0**	mg/kg dry		6.21		MLB
1812073-01	C	Mercury	12/10/18 23:05	EPA 7471B	12/13/18 15:39	**1.21**	mg/kg dry		0.02		MJC
1812073-01	C	Molybdenum	12/10/18 23:05	EPA 6010D	12/20/18 16:20	**10.6**	mg/kg dry		2.48		MLB
1812073-01	C	Nickel	12/10/18 23:05	EPA 6010D	12/20/18 16:20	**20.2**	mg/kg dry		6.21		MLB
1812073-01	C	Nitrite	12/10/18 23:05	SM4500-NO2	12/11/18 12:56	**3.86**	mg/kg dry	0.14	1.22		JGB
1812073-01	C	Total Kjeldahl Nitrogen	12/10/18 23:05	EPA 351.2	12/22/18 12:01	**73298**	mg/kg dry	1.78	14.66	D2	MGA
1812073-01	C	Nitrogen Total Biosolids	12/10/18 23:05	Calculated	12/22/18 12:01	**73304**	mg/kg dry	0.29	2.40		MGA
1812073-01	C	Selenium	12/10/18 23:05	EPA 6010D	12/20/18 16:20	**ND**	mg/kg dry		12.42		MLB
1812073-01	C	Silver	12/10/18 23:05	EPA 6010D	12/20/18 16:20	**2.89**	mg/kg dry		0.62		MLB
1812073-01RE1	C	Zinc	12/10/18 23:05	EPA 6010D	12/20/18 16:30	**655**	mg/kg dry		31.05	D2	MLB
1812073-01	C	% Solids	12/10/18 23:05	SM 2540G	12/12/18 07:37	**16.37**	%		0.01		ANM
Dewatered Cake Biosolids (20001-5703)											
Cross Reference 1812073-01											
1812069-08	C	% Solids	12/10/18 23:05	SM 2540G	12/12/18 07:37	**16.36**	%		0.01		ANM
1812069-08	C	Solids Total Grams	12/10/18 23:05	NA	12/11/18 11:39	**551**	g				ANM
Thickener Underflow #1 (20001-0700)											
1812021-22	D	% Solids, Total Volatile	12/04/18 0:45	SM 2540G	12/4/18 16:37	**88.9**	%		0.01		NGF
1812039-22	D	% Solids, Total Volatile	12/06/18 0:55	SM 2540G	12/6/18 16:07	**89.8**	%		0.01		ANM
1812069-22	D	% Solids, Total Volatile	12/11/18 0:15	SM 2540G	12/11/18 16:30	**89.5**	%		0.01		ANM
1812092-22	D	% Solids, Total Volatile	12/13/18 2:40	SM 2540G	12/13/18 15:30	**90.3**	%		0.01		ANM
1812126-22	D	% Solids, Total Volatile	12/18/18 1:10	SM 2540G	12/19/18 07:25	**89.8**	%		0.01		ANM
1812142-22	D	% Solids, Total Volatile	12/20/18 1:10	SM 2540G	12/20/18 16:07	**88.6**	%		0.01		ANM
1812179-22	D	% Solids, Total Volatile	12/27/18 0:50	SM 2540G	12/27/18 16:00	**90.3**	%		0.01		SDR
Thickener Underflow #2 (20001-0900)											
1812021-24	D	% Solids, Total Volatile	12/04/18 0:50	SM 2540G	12/4/18 16:37	**90.3**	%		0.01		NGF
1812039-24	D	% Solids, Total Volatile	12/06/18 1:00	SM 2540G	12/6/18 16:07	**88.9**	%		0.01		ANM
1812069-24	D	% Solids, Total Volatile	12/11/18 0:20	SM 2540G	12/11/18 16:30	**87.7**	%		0.01		ANM
1812092-24	D	% Solids, Total Volatile	12/13/18 2:42	SM 2540G	12/13/18 15:30	**90.9**	%		0.01		ANM
1812126-24	D	% Solids, Total Volatile	12/18/18 1:08	SM 2540G	12/19/18 07:25	**89.0**	%		0.01		ANM
1812142-24	D	% Solids, Total Volatile	12/20/18 1:14	SM 2540G	12/20/18 16:07	**89.9**	%		0.01		ANM
1812179-24	D	% Solids, Total Volatile	12/27/18 0:49	SM 2540G	12/27/18 16:00	**89.3**	%		0.01		SDR
Thickener Underflow #3 (20001-1100)											
1812021-26	D	% Solids, Total Volatile	12/04/18 0:55	SM 2540G	12/4/18 16:37	**90.3**	%		0.01		NGF
1812039-26	D	% Solids, Total Volatile	12/06/18 1:05	SM 2540G	12/6/18 16:07	**88.9**	%		0.01		ANM
1812069-26	D	% Solids, Total Volatile	12/11/18 0:28	SM 2540G	12/11/18 16:30	**88.5**	%		0.01		ANM
1812092-26	D	% Solids, Total Volatile	12/13/18 2:45	SM 2540G	12/13/18 15:30	**88.9**	%		0.01		ANM
1812126-26	D	% Solids, Total Volatile	12/18/18 1:04	SM 2540G	12/19/18 07:25	**89.2**	%		0.01		ANM
1812142-26	D	% Solids, Total Volatile	12/20/18 1:19	SM 2540G	12/20/18 16:07	**88.2**	%		0.01		ANM
1812179-26	D	% Solids, Total Volatile	12/27/18 0:46	SM 2540G	12/27/18 16:00	**89.3**	%		0.01		SDR
Thickener Underflow #4 (20001-1300)											
1812021-28	D	% Solids, Total Volatile	12/04/18 1:00	SM 2540G	12/4/18 16:37	**87.7**	%		0.01		NGF
1812039-28	D	% Solids, Total Volatile	12/06/18 1:10	SM 2540G	12/6/18 16:07	**89.0**	%		0.01		ANM
1812069-28	D	% Solids, Total Volatile	12/11/18 0:40	SM 2540G	12/11/18 16:30	**87.8**	%		0.01		ANM
1812092-28	D	% Solids, Total Volatile	12/13/18 2:47	SM 2540G	12/13/18 15:30	**89.3**	%		0.01		ANM
1812126-28	D	% Solids, Total Volatile	12/18/18 1:06	SM 2540G	12/19/18 07:25	**87.1**	%		0.01		ANM
1812142-28	D	% Solids, Total Volatile	12/20/18 1:24	SM 2540G	12/20/18 16:07	**88.0**	%		0.01		ANM
1812179-28	D	% Solids, Total Volatile	12/27/18 0:47	SM 2540G	12/27/18 16:00	**88.5**	%		0.01		SDR
Digester #1 to Centrifuge (20001-2101)											
1812009-20	C	% Solids, Total Volatile	12/02/18 14:45	SM 2540G	12/3/18 15:32	**74.0**	%		0.01		DEB
1812028-19	C	% Solids, Total Volatile	12/04/18 1:00	SM 2540G	12/5/18 16:08	**75.3**	%		0.01		AV
1812046-20	C	% Solids, Total Volatile	12/06/18 8:00	SM 2540G	12/7/18 15:47	**77.0**	%		0.01		ANM

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1812063-20	C	% Solids, Total Volatile	12/09/18 7:45	SM 2540G	12/10/18 15:44	**75.9**	%		0.01		NGF
1812082-19	C	% Solids, Total Volatile	12/11/18 13:45	SM 2540G	12/12/18 16:13	**75.4**	%		0.01		ANM
1812100-20	C	% Solids, Total Volatile	12/13/18 2:30	SM 2540G	12/14/18 16:01	**73.5**	%		0.01		ANM
1812115-20	C	% Solids, Total Volatile	12/16/18 2:15	SM 2540G	12/17/18 14:49	**76.4**	%		0.01		NGF
1812132-19	C	% Solids, Total Volatile	12/18/18 7:43	SM 2540G	12/19/18 15:38	**76.4**	%		0.01		ANM
1812148-20	C	% Solids, Total Volatile	12/20/18 14:30	SM 2540G	12/21/18 15:38	**75.0**	%		0.01		ANM
1812162-20	C	% Solids, Total Volatile	12/23/18 14:20	SM 2540G	12/24/18 16:00	**76.1**	%		0.01		SDR
1812173-19	C	% Solids, Total Volatile	12/25/18 2:15	SM 2540G	12/26/18 15:29	**79.4**	%		0.01		IYC
1812185-20	C	% Solids, Total Volatile	12/27/18 6:50	SM 2540G	12/28/18 15:53	**61.6**	%		0.01		SDR
1812198-20	C	% Solids, Total Volatile	12/30/18 7:30	SM 2540G	12/31/18 16:13	**78.2**	%		0.01		IYC
Digester #2 to Centrifuge (20001-2201)											
1812009-21	C	% Solids, Total Volatile	12/02/18 4:15	SM 2540G	12/3/18 15:32	**78.6**	%		0.01		DEB
1812028-20	C	% Solids, Total Volatile	12/04/18 11:45	SM 2540G	12/5/18 16:08	**76.6**	%		0.01		AV
1812046-21	C	% Solids, Total Volatile	12/06/18 16:00	SM 2540G	12/7/18 15:47	**79.4**	%		0.01		ANM
1812063-21	C	% Solids, Total Volatile	12/09/18 16:00	SM 2540G	12/10/18 15:44	**80.0**	%		0.01		NGF
1812082-20	C	% Solids, Total Volatile	12/11/18 3:30	SM 2540G	12/12/18 16:13	**73.1**	%		0.01		ANM
1812100-21	C	% Solids, Total Volatile	12/13/18 10:10	SM 2540G	12/14/18 16:01	**75.0**	%		0.01		ANM
1812115-21	C	% Solids, Total Volatile	12/16/18 11:20	SM 2540G	12/17/18 14:49	**78.6**	%		0.01		NGF
1812132-20	C	% Solids, Total Volatile	12/18/18 2:40	SM 2540G	12/19/18 15:38	**74.4**	%		0.01		ANM
1812148-21	C	% Solids, Total Volatile	12/20/18 5:50	SM 2540G	12/21/18 15:38	**76.8**	%		0.01		ANM
1812162-21	C	% Solids, Total Volatile	12/23/18 4:40	SM 2540G	12/24/18 16:00	**75.6**	%		0.01		SDR
1812173-20	C	% Solids, Total Volatile	12/25/18 11:10	SM 2540G	12/26/18 15:29	**77.8**	%		0.01		IYC
1812185-21	C	% Solids, Total Volatile	12/27/18 16:05	SM 2540G	12/30/18 15:44	**76.8**	%		0.01		JAH
1812198-21	C	% Solids, Total Volatile	12/30/18 15:50	SM 2540G	12/31/18 16:13	**79.2**	%		0.01		IYC
Digester #3 to Centrifuge (20001-2301)											
1812009-22	C	% Solids, Total Volatile	12/02/18 8:30	SM 2540G	12/3/18 15:32	**74.0**	%		0.01		DEB
1812028-21	C	% Solids, Total Volatile	12/04/18 14:50	SM 2540G	12/5/18 16:08	**74.7**	%		0.01		AV
1812046-22	C	% Solids, Total Volatile	12/06/18 1:35	SM 2540G	12/7/18 15:47	**75.3**	%		0.01		ANM
1812063-22	C	% Solids, Total Volatile	12/09/18 2:20	SM 2540G	12/10/18 15:44	**73.5**	%		0.01		NGF
1812082-21	C	% Solids, Total Volatile	12/11/18 8:30	SM 2540G	12/12/18 16:13	**79.3**	%		0.01		ANM
1812100-22	C	% Solids, Total Volatile	12/13/18 14:00	SM 2540G	12/14/18 16:01	**73.6**	%		0.01		ANM
1812115-22	C	% Solids, Total Volatile	12/16/18 13:40	SM 2540G	12/17/18 14:49	**77.4**	%		0.01		NGF
1812132-21	C	% Solids, Total Volatile	12/18/18 1:55	SM 2540G	12/19/18 15:38	**76.1**	%		0.01		ANM
1812148-22	C	% Solids, Total Volatile	12/20/18 8:30	SM 2540G	12/21/18 15:38	**74.3**	%		0.01		ANM
1812162-22	C	% Solids, Total Volatile	12/23/18 7:30	SM 2540G	12/24/18 16:00	**75.9**	%		0.01		SDR
1812173-21	C	% Solids, Total Volatile	12/25/18 14:30	SM 2540G	12/26/18 15:29	**76.9**	%		0.01		IYC
1812185-22	C	% Solids, Total Volatile	12/27/18 1:50	SM 2540G	12/28/18 15:53	**76.4**	%		0.01		SDR
1812198-22	C	% Solids, Total Volatile	12/30/18 1:40	SM 2540G	12/31/18 16:13	**77.1**	%		0.01		IYC
Digester #4 to Centrifuge (20001-2401)											
1812009-23	C	% Solids, Total Volatile	12/02/18 16:30	SM 2540G	12/3/18 15:32	**74.7**	%		0.01		DEB
1812028-22	C	% Solids, Total Volatile	12/04/18 4:00	SM 2540G	12/5/18 16:08	**75.0**	%		0.01		AV
1812046-23	C	% Solids, Total Volatile	12/06/18 11:05	SM 2540G	12/7/18 15:47	**74.7**	%		0.01		ANM
1812063-23	C	% Solids, Total Volatile	12/09/18 11:45	SM 2540G	12/10/18 15:44	**75.9**	%		0.01		NGF
1812082-22	C	% Solids, Total Volatile	12/11/18 16:40	SM 2540G	12/12/18 16:13	**74.1**	%		0.01		ANM
1812100-23	C	% Solids, Total Volatile	12/13/18 4:40	SM 2540G	12/14/18 16:01	**75.3**	%		0.01		ANM
1812115-23	C	% Solids, Total Volatile	12/16/18 23:50	SM 2540G	12/17/18 14:49	**77.0**	%		0.01		NGF
1812132-22	C	% Solids, Total Volatile	12/18/18 11:40	SM 2540G	12/19/18 15:38	**77.1**	%		0.01		ANM
1812148-23	C	% Solids, Total Volatile	12/20/18 16:00	SM 2540G	12/21/18 15:38	**75.8**	%		0.01		ANM
1812162-23	C	% Solids, Total Volatile	12/23/18 16:00	SM 2540G	12/24/18 16:00	**76.5**	%		0.01		SDR
1812173-22	C	% Solids, Total Volatile	12/25/18 4:40	SM 2540G	12/26/18 15:29	**75.5**	%		0.01		IYC
1812185-23	C	% Solids, Total Volatile	12/27/18 9:55	SM 2540G	12/28/18 15:53	**73.6**	%		0.01		SDR
1812198-23	C	% Solids, Total Volatile	12/30/18 10:42	SM 2540G	12/31/18 16:13	**76.8**	%		0.01		IYC
Digester #5 to Centrifuge (20001-2501)											
1812009-24	C	% Solids, Total Volatile	12/02/18 2:40	SM 2540G	12/3/18 15:32	**74.4**	%		0.01		DEB
1812028-23	C	% Solids, Total Volatile	12/04/18 7:20	SM 2540G	12/5/18 16:08	**74.4**	%		0.01		AV
1812046-24	C	% Solids, Total Volatile	12/06/18 14:20	SM 2540G	12/7/18 15:47	**76.2**	%		0.01		ANM
1812063-24	C	% Solids, Total Volatile	12/09/18 13:05	SM 2540G	12/10/18 15:44	**74.4**	%		0.01		NGF
1812082-23	C	% Solids, Total Volatile	12/11/18 2:00	SM 2540G	12/12/18 16:13	**75.6**	%		0.01		ANM
1812100-24	C	% Solids, Total Volatile	12/13/18 8:30	SM 2540G	12/14/18 16:01	**75.3**	%		0.01		ANM

Laboratory License #

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1812115-24	C	% Solids, Total Volatile	12/16/18 8:30	SM 2540G	12/17/18 14:49	**74.5**	%		0.01		NGF
1812132-23	C	% Solids, Total Volatile	12/18/18 14:00	SM 2540G	12/19/18 15:38	**74.7**	%		0.01		ANM
1812148-24	C	% Solids, Total Volatile	12/20/18 1:29	SM 2540G	12/21/18 15:38	**76.2**	%		0.01		ANM
1812162-24	C	% Solids, Total Volatile	12/23/18 2:00	SM 2540G	12/24/18 16:00	**76.9**	%		0.01		SDR
1812173-23	C	% Solids, Total Volatile	12/25/18 8:40	SM 2540G	12/26/18 15:29	**76.2**	%		0.01		IYC
1812185-24	C	% Solids, Total Volatile	12/27/18 13:10	SM 2540G	12/28/18 15:53	**76.2**	%		0.01		SDR
1812198-24	C	% Solids, Total Volatile	12/30/18 14:05	SM 2540G	12/31/18 16:13	**77.0**	%		0.01		IYC
Digester #6 to Centrifuge (20001-2601)											
1812009-25	C	% Solids, Total Volatile	12/02/18 11:40	SM 2540G	12/3/18 15:32	**73.4**	%		0.01		DEB
1812028-24	C	% Solids, Total Volatile	12/04/18 16:25	SM 2540G	12/5/18 16:08	**76.4**	%		0.01		AV
1812046-25	C	% Solids, Total Volatile	12/06/18 3:50	SM 2540G	12/7/18 15:47	**75.8**	%		0.01		ANM
1812063-25	C	% Solids, Total Volatile	12/09/18 6:10	SM 2540G	12/10/18 15:44	**77.3**	%		0.01		NGF
1812082-24	C	% Solids, Total Volatile	12/11/18 11:40	SM 2540G	12/12/18 16:13	**74.6**	%		0.01		ANM
1812100-25	C	% Solids, Total Volatile	12/13/18 16:11	SM 2540G	12/14/18 16:01	**75.0**	%		0.01		ANM
1812115-25	C	% Solids, Total Volatile	12/16/18 16:20	SM 2540G	12/17/18 14:49	**75.0**	%		0.01		NGF
1812132-24	C	% Solids, Total Volatile	12/18/18 3:38	SM 2540G	12/19/18 15:38	**76.7**	%		0.01		ANM
1812148-25	C	% Solids, Total Volatile	12/20/18 10:45	SM 2540G	12/21/18 15:38	**75.0**	%		0.01		ANM
1812162-25	C	% Solids, Total Volatile	12/23/18 11:00	SM 2540G	12/24/18 16:00	**75.0**	%		0.01		SDR
1812173-24	C	% Solids, Total Volatile	12/25/18 16:00	SM 2540G	12/26/18 15:29	**77.0**	%		0.01		IYC
1812185-25	C	% Solids, Total Volatile	12/27/18 4:10	SM 2540G	12/28/18 15:53	**74.6**	%		0.01		SDR
1812198-25	C	% Solids, Total Volatile	12/30/18 4:30	SM 2540G	12/31/18 16:13	**77.6**	%		0.01		IYC
GBT #1 Thickened Sludge #58 (20001-9309)											
1812021-32	C	% Solids, Total Volatile	12/03/18 13:20	SM 2540G	12/4/18 16:37	**82.9**	%		0.01		NGF
1812039-32	C	% Solids, Total Volatile	12/05/18 14:40	SM 2540G	12/6/18 16:07	**82.5**	%		0.01		ANM
1812069-32	C	% Solids, Total Volatile	12/10/18 10:18	SM 2540G	12/11/18 16:30	**80.5**	%		0.01		ANM
1812092-32	C	% Solids, Total Volatile	12/12/18 12:15	SM 2540G	12/13/18 15:30	**81.1**	%		0.01		ANM
1812126-32	C	% Solids, Total Volatile	12/17/18 15:23	SM 2540G	12/19/18 07:25	**81.8**	%		0.01		ANM
1812142-32	C	% Solids, Total Volatile	12/19/18 14:54	SM 2540G	12/20/18 16:07	**82.0**	%		0.01		ANM
1812179-32	C	% Solids, Total Volatile	12/26/18 12:54	SM 2540G	12/27/18 16:00	**82.8**	%		0.01		SDR
GBT #3 Thickened Sludge #58 (20001-9313)											
1812021-38	C	% Solids, Total Volatile	12/03/18 13:20	SM 2540G	12/4/18 16:37	**83.2**	%		0.01		NGF
1812069-38	C	% Solids, Total Volatile	12/10/18 10:16	SM 2540G	12/11/18 16:30	**80.8**	%		0.01		ANM
1812092-38	C	% Solids, Total Volatile	12/12/18 12:17	SM 2540G	12/13/18 15:30	**81.5**	%		0.01		ANM
1812126-38	C	% Solids, Total Volatile	12/17/18 15:20	SM 2540G	12/19/18 07:25	**81.5**	%		0.01		ANM
1812142-38	C	% Solids, Total Volatile	12/19/18 14:57	SM 2540G	12/20/18 16:07	**82.4**	%		0.01		ANM
1812179-38	C	% Solids, Total Volatile	12/26/18 12:51	SM 2540G	12/27/18 16:00	**82.5**	%		0.01		SDR

Qualifier Definitions

D2	Sample required dilution due to high concentration of target analyte.
Q6	Sample was received above recommended temperature.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction
EB	Equipment Blank

Case Narrative(s)

None

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1812073-01

PROJECT & LOCATION: Regional Biosolids Facility Management - Dewatered Cake Biosolids

PROJECT-LOCATION NUMBER: 20002-5703 (XXXXX-XXXX)

SAMPLE START DATE: 12/10/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 1010 (Military time)

CLIENT: Deputy Director-Treatment

SAMPLE END DATE: 12/10/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 2305 (Military time)

SAMPLER(S): Vasquez, Montemayor (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ AZPDES ☐ IWC ☐ Investigative ☐ Reuse ☐ Air ☐ 503 ☐ Process Control ☐ Other

Matrix: ☒ Biosolids ☐ Groundwater ☐ Industrial ☐ Soil ☐ Stormwater ☐ Surface Water ☐ Wastewater ☐ Air ☐ Other

Aluminum	Titanium	Acrolein and Acrylonitrile	Alkalinity	Chlorine (Hach 10014) µg/L
Antimony	Vanadium	Dioxin GC/SIM/MS Scan	BOD	Specific Conductance (SM 2510 B) µmhos/cm
Arsenic	Zinc	Organochlorine Pesticides & PCBs	COD	Oxygen, Dissolved (SM 4500-O G) mg/L
Barium	PPMs *	Purgeable Organics (GCMS)	Coliform, Fecal	pH @ pH Temp (SM 4500-H B) @ pH Units @ °C
Beryllium	TCLP Metals	Semivolatile Organics (GCMS)	Coliform, Total	Temperature (SM 2550 B) °C
Boron	503 Metals ☒	Bis(2-ethylhexyl) phthalate	Specific Conductance	Total Depth of Well feet
Cadmium	Dissolved Cr+6	Digester Gas	*E. coli*	Depth to Water feet
Calcium		Oil and Grease	Oxygen, Dissolved	Other
Chromium	Ammonia as N ☒	Organic Carbon, Total	pH	
Cobalt	Chloride	Organic Carbon, Dissolved	Solids, Total ☒	
Copper	Cyanide, Total	TCLP Herbicides (Contract Lab)	Solids, Total Dissolved	
Hardness	Cyanide, Amenable	TCLP Pesticides	Solids, Total Suspended	
Iron	Fluoride	TCLP Semivolatile Organics	Solids, Total Volatile	
Lead	Ignitability	TCLP Volatile Organics	Solids, Volatile Suspended	
Magnesium	Nitrate as N ☒	TTHM	Other	
Manganese	Nitrite as N ☒	Total Petroleum Hydrocarbons		
Mercury ☒	Nitrate/Nitrite as N	Volatile Acids	Paint Filter	
Mercury LL	Nitrogen, Total Kjeldahl	Other		
Molybdenum	Nitrogen, Total as N ☒	Other		
Nickel	Orthophosphate as P			
Potassium	Phosphorus, Total as P	Chronic *P. promelas*		
Selenium	Sulfate	Chronic *C. dubia*		
Silver ☒	Sulfide	Chronic *Selenastrum capricornutum*		
Sodium	Other	Other		
Thallium	Other			
Tin				

Comments/Instructions:
Poured off the daily sample 1812069-08

Septum Blank Prep Date & Initials:

See 1812069-08 for COC

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

# of Bottles Delivered: 2 GCS

Transported on Ice: ☐ YES ☒ NO

Temperature: 17 °C

Initials: GCS

Q6 qualifier? ☒ YES ☐ NO

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*
LAB USE ONLY: *Al, Ba, Ca, Fe, K, Mg, Na, Zn*

COC-Single Revision 2 Revised: 03/12/2015

SECTION 4

LAND APPLICATION EVENTS LABORATORY ANALYSES

Crop Plant and Harvest Schedule

AVRAGRO SYSTEMS, INC.
LAND APPLICATION CONTRACTOR
2018

PIMA COUNTY
REGIONAL BIOSOLIDS MANAGEMENT FACILITY
TRES RIOS WRF
AZPDES NO. AZ0020001

ANNUAL BIOSOLIDS REPORT 2018

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ANNUAL BIOSOLIDS REPORT 2018

REGIONAL WATER
RECLAMATION DEPARTMENT

TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

Plant and Harvest Dates 2018

Field ID	Crop	Plant Date	Harvest Date
JK-7	Barley	11/4/2018	5/15/2019
JK-8	Wheat	2/15/2019	7/5/2019
JK-9	Pasture Grass	11/5/2018	bi-monthly
JK-13	Cotton	4/20/2018	12/20/2018
JK-16	Wheat	4/20/2018	12/20/2018
JK-26	Cotton	4/20/2018	12/20/2018
JK-27	Cotton	4/20/2018	12/20/2018
JK-28	Cotton	4/20/2018	12/20/2018
JK-29	Cotton	4/20/2019	12/15/2019
JK-30	Cotton	4/20/2018	12/20/2018
JK-41	grain sourgum	4/10/2018	1/5/2019
GL-1	Cotton	4/28/2018	12/20/2018
LIM-1	Cotton	4/20/2018	12/20/2018
Pima-1	Pasture	11/5/2018	bi-monthly
LDS-9d	Wheat/Corn	1/22/2018	6/20/18 & 1/25/19
Lawrence (CL52-53, CL39-40, Chapman 1A,2	Cotton	4/5/2019	8/8/2019
TH-3S	Barley	2/10/2019	6/28/2019

CERTIFICATION

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.32(b)(5) was prepared for each site on which bulk sewage sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

Project(s):

Pima County, AZ Liquid

Reporting Period: January 2018 – December 2018

Name: John Kai, Jr. Avragro Systems Inc.

Signature: _____ Date: 1-18-19

ARIZONA
DEPARTMENT OF ENVIRONMENTAL QUALITY
AZPDES Individual Permits Unit
1110 W Washington Street
Phoenix, Arizona 85007
(602) 771-4689 (voicemail) (602) 771-4505 (fax)
Email to: biosolids@azdeq.gov

BIOSOLIDS OR SEWAGE SLUDGE ANNUAL REPORT FORM

1. **Program Information:** All preparers (Generators) and Land Applicators Must complete the following.

Reporting Start Date:1/1/2018	**Reporting End Date: 12/31/2018**
Date:1/15/2019	**AZPDES Permit # (if applicable):**Click here to enter text.
Company name (Preparer / Applicator): Avragro Systems Inc.	
Contact Name: John Kai	**Manager**
Address:PO Box 91708, Tucson, AZ 85752 **Phone:** 520-990-8888	**E-mail:johnkaijr@yahoo.com, avragroarizona@gmail.com**

Please select one of the following options pertaining to your obligation to submit a Biosolids Annual Report. My facility is a:

☐ POTW with a design flow equal to or greater than 1 MGD Per Day

☐ POTW that serves 10,000 people or more

☐ Class I Sludge Management Facility as defined by 40 CFR 503.9

☒ Biosolids Applicator (Complete Section 5 only)

☐Other Click here to enter text.

What is the estimated total of volume of biosolids or sewage sludge generated at your facility (in dry metric tons)?

Click here to enter text.

Were all biosolids removed from your facility sent to a landfill for disposal? No

If yes, provide the name and address of the landfill(s). Click here to enter text.

If all biosolids or sewage sludge was sent to a landfill for disposal, you do not need to complete the remainder of this form, as it is only applicable to facilities preparing bisolids or sewage sludge for land application.

Certification: I certify, under penalty of law, that the information and descriptions, have been made under my direction and supervision and under a system designed to ensure that qualified personnel properly gather and evaluate the information used to determine whether the applicable biosolids requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

Signature: Title: VICE-PRESIDENT	Date: 1-16-2019

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

2. Generator/Preparers - Biosolids Storage and Treatment Processes

2.1 Please check the box next to the following biosolids or sewage sludge storage practices and treatment processes used on the sewage sludge or biosolids generated or produced at your facility during the reporting period.

Storage Practices

☐ Biosolids are stored in lined lagoons or impoundments

☐ Biosolids stored directly on the ground

Physical Treatment Processes

☐ Preliminary Operations (e.g. sludge grinding, degritting, blending

☑ Thickening (e.g. gravity floatation, centrifugation, belt filter press, vacuum filter)

☐ Sludge lagoon

Pathogen Reduction Operations (PSRP)

☐ Aerobic Digestion

☐ Air Drying (or "sludge drying beds")

☒ Anaerobic Digestion

☐ Lower Temperature Composting

☐ Lime Stabilization

Process to Further Reduce Pathogens (PFRP)

☐ Higher Temperature Composting

☐ Heat Drying (e.g. flash dryer, spray dryer, rotary dryer)

☐ Heat Treatment (Liquid sewage sludge is heated to temp of 356 °F (180 °C) or higher for 30 minutes

☐ Thermophilic Aerobic Digestion

☐ Beta Ray Irradiation

☐ Gamma Ray Irradiation

☐ Pasteurization

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

3.4. Were biosolids removed from your facility for land application? Include all recipients, including haulers, name, phone number, land applicators, composters, drying facilities, EQB bagging facilities, bulk composting, etc.

Name of Facility	**********FILL OUT*****	
Management Practice Type:	Click here to enter text.	
Handler or Preparer Type:	Click here to enter text.	
Management Practice Detail:	Click here to enter text.	
Bag or Bulk Container:	Choose an item.	
	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	Click here to enter text.	Click here to enter text.
Pathogen Testing	Choose an item.	Not applicable
Pathogen Reduction Method	Choose an item.	Choose an item.
Vector Attraction Reduction Method	Choose an item.	Choose an item.
Storage Locations	Click here to enter text.	Click here to enter text.

4. Generators/Preparers : Biosolids or Sewage Sludge Analytical Methods

Arizona regulations specify that representative samples of sewage sludge that is land applied, placed on a surface disposal site, or fired in s sewage sludge incinerator, must be collected and analyzed. These regulations specify the analytical methods that must be used to analyzed samples of sewage sludge.

Parameter	*Method Number or Author*	*Results (if tested)*	*Comments (required if other)*
Pathogens			
76Ascaris ova.	Choose an item.	Click here to enter text.	Click here to enter text.
Fecal Coliform	Choose an item.	Click here to enter text.	Click here to enter text.
Helminth ova.	Choose an item.	Click here to enter text.	Click here to enter text.
Salmonella sp. Bacteria	Choose an item.	Click here to enter text.	Click here to enter text.
Total Cultural Viruses	Choose an item.	Click here to enter text.	Click here to enter text.
Metals			
Arsenic	Choose an item.	Click here to enter text.	Click here to enter text.
Beryllium	Choose an item.	Click here to enter text.	Click here to enter text.
Cadmium	Choose an item.	Click here to enter text.	Click here to enter text.
Chromium	Choose an item.	Click here to enter text.	Click here to enter text.
Copper	Choose an item.	Click here to enter text.	Click here to enter text.
Lead	Choose an item.	Click here to enter text.	Click here to enter text.
Mercury	Choose an item.	Click here to enter text.	Click here to enter text.
Molybdenum	Choose an item.	Click here to enter text.	Click here to enter text.

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

Nickel	Choose an item.	Click here to enter text.	Click here to enter text.
Selenium	Choose an item.	Click here to enter text.	Click here to enter text.
Zinc	Choose an item.	Click here to enter text.	Click here to enter text.
Nitrogen Compounds			
Ammonia Nitrogen	Choose an item.	Click here to enter text.	Click here to enter text.
Nitrate Nitrogen	Choose an item.	Click here to enter text.	Click here to enter text.
Nitrogen	Choose an item.	Click here to enter text.	Click here to enter text.
Organic Nitrogen	Choose an item.	Click here to enter text.	Click here to enter text.
Total Kjeldahl Nitrogen	Choose an item.	Click here to enter text.	Click here to enter text.
Other Analytes			
Fixed Solids	Choose an item.	Click here to enter text.	Click here to enter text.
Paint Filter Test	Choose an item.	Click here to enter text.	Click here to enter text.
pH	Choose an item.	Click here to enter text.	Click here to enter text.
Specific Oxygen Uptake Rate	Choose an item.	Click here to enter text.	Click here to enter text.
TCLP	Choose an item.	Click here to enter text.	Click here to enter text.
Temperature	Choose an item.	Click here to enter text.	Click here to enter text.
Total Solids	Choose an item.	Click here to enter text.	Click here to enter text.
Volatile Solids	Choose an item.	Click here to enter text.	Click here to enter text.
No Analytical Methods Used	Choose an item.	Click here to enter text.	Click here to enter text.

ARIZONA
DEPARTMENT OF ENVIRONMENTAL QUALITY
AZPDES Individual Permits Unit
1110 W Washington Street
Phoenix, Arizona 85007
(602) 771-4689 (voicemail) (602) 771-4505 (fax)
Email to: biosolids@azdeq.gov

5. Land Applicators: Specific information to be completed by Land Applicators Only

Application Site / Location	Field ID	Amount of Biosolids Applied (in dry tons)	Preparer	Pathogen Treatment Method	Vector Attraction Reduction Method	Loading Rate	Nitrogen Conc. (Organic + ammonium)	Type of Crop Grown After Application	Agronomic Rate of Crop Grown	The Cumulative Concentration of Pollutants (kilograms per hectare) in Soil				
Example: *ABC Farms, Aztec AZ*	*1A*	*350 tons*	*Aztec WWTP*	*Class B Alt. 2*	*Option 9*	*Tons or Kg/acre*		*Corn*						
1. Kai Farms Marana, AZ	JK-7	706.02	Pima County WWTP	Class B, Alt 5	Option 1	.35	12.1	Barley	250	As=.7367	Cd=.3089	Cr=4.3659	Cu=57.4893	Pb=4.1724
										Hg=.1663	Mo=1.4547	Ni=2.6625	Se=.6003	Zn=114.6895
2. Kai Farms Marana, AZ	JK-9	3409.39	Pima County WWTP	Class B, Alt 5	Option 1	2.59	100.5	Pasture Grass	1000	As=.3620	Cd=.1816	Cr=2.7919	Cu=35.3587	Pb=2.4547
										Hg=.1093	Mo=.9074	Ni=1.6598	Se=.4669	Zn=69.4754

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

3. Kai Farms Marana, AZ	JK-13	276.22	Pima County WWTP	Class B, Alt 5	Option 1	2.33	101.3	Cotton	360	As=1.1956	Cd=.4395	Cr=6.3983	Cu=70.8622	Pb=4.622
										Hg=.2457	Mo=2.6003	Ni=3.6785	Se=.8583	Zn=129.0610
4. Charles Lawrence Casa Grande , AZ	C52-53, C39-40, Chapman 1A/2	897.22	Pima County WWTP	Class B, Alt 5	Option 1	6.00	52	Cotton	400	As=0	Cd=0	Cr=.2742	Cu=3.7258	Pb=.1973
										Hg=.0085	Mo=.1195	Ni=.2127	Se=0	Zn=6.7796
5. Thomas Hum Marana, AZ	TH3S	202.32	Pima County WWTP	Class B, Alt 5	Option 1	.35	12.1	Barley	250	As=0	Cd=0	Cr=.1533	Cu=2.0443	Pb=.0664
										Hg=.0049	Mo=.0664	Ni=.1175	Se=0	Zn=3.5775

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

Marana, AZ			County WWTP								1		734	01
										Hg=.193	Mo=2.1558	Ni=3.0351	Se=.682	Zn=121.8981
7. Kai Farms Marana, AZ	JK-26	805.40	Pima County WWTP	Class B, Alt 5	Option 1	6.74	276.7	Cotton	360	As=.7494	Cd=.3081	Cr=5.0309	Cu=53.6355	Pb=3.3567
										Hg=.1489	Mo=1.7439	Ni=3.1398	Se=.6848	Zn=100.6011
8. Kai Farms Marana, AZ	JK-27	270.84	Pima County WWTP	Class B, Alt 5	Option 1	3.94	154.23	Cotton	360	As=.8501	Cd=.3668	Cr=4.3646	Cu=55.3893	Pb=3.7569
										Hg=.1461	Mo=1.516	Ni=2.6552	Se=.5979	Zn=92.35

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

9. Kai Farms Marana, AZ	JK-28	183.86	Pima County WWTP	Class B, Alt 5	Option 1	3.28	121.5	Cotton	360	As=.4468	Cd=.2208	Cr=3.355	Cu=37.0427	Pb=3.1921
										Hg=.1124	Mo=.911	Ni=1.8174	Se=.363	Zn=60.843
10. Kai Farms Marana, AZ	JK-29	1841.03	Pima County WWTP	Class B, Alt 5	Option 1	1.28	42.3	Cotton	360	As=1.2894	Cd=.4523	Cr=6.7173	Cu=75.4792	Pb=4.7265
										Hg=.2533	Mo=2.743	Ni=3.905	Se=.9536	Zn=135.938
11. Kai Farms Marana, AZ	JK-30	390.18	Pima County WWTP	Class B, Alt 5	Option 1	1.77	58.3	Cotton	360	As=.9055	Cd=.3739	Cr=5.3978	Cu=66.2612	Pb=4.53
										Hg=.1944	Mo=2.1933	Ni=3.1	Se=.7046	Zn=123.7967

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

12. Kai Farms Marana, AZ	JK-41	273.81	Pima County WWTP	Class B, Alt 5	Option 1	6.4	251.0	Wheat	360	As=.378	Cd=.1553	Cr=1.23131.2714	Cu=15.6885	Pb=.8298
										Hg=.1064	Mo=.9415	Ni=.8543	Se=.3745	Zn=29.3692
13. Kai Farms Marana, AZ	JK-8	83.92	Pima County WWTP	Class B, Alt 5	Option 1			Wheat	360	As=1.0934	Cd=.4562	Cr=6.5236	Cu=89.0992	Pb=5.2449
										Hg=.2655	Mo=3.0478	Ni=4.4687	Se=1.033	Zn=155.2047
14. T&T Farms Marana, AZ	GL-1	508.53	Pima County WWTP	Class B, Alt 5	Option 1	1.89	69.9	Cotton	360	As=.6354	Cd=.2945	Cr=4.5713	Cu=48.8062	Pb=4.065
										Hg=.1628	Mo=1.3967	Ni=2.465	Se=.4898	Zn=84.4369

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

15. Farms Marana, AZ	LIM-1	436.25	Pima County WWTP	Class B, Alt 5	Option 1	1.86	74.12	Cotton	360	As=.7253	Cd=.2613	Cr=5.4131	Cu=49.707	Pb=3.0395
										Hg=.1561	Mo=1.4716	Ni=2.5755	Se=.6528	Zn=102.1848
16. Post Farms Marana, AZ	LDS-9	157.36	Pima County WWTP	Class B, Alt 5	Option 1	.35	12.1	Barley	250	As=.0476	Cd=.015	Cr=.1483	Cu=1.7146	Pb=.0781
										Hg=.004	Mo=.0526	Ni=.1011	Se=.0318	Zn=3.2078
17. Pima County Farms Marana, AZ	Pima-1	1551.78	Pima County WWTP	Class B, Alt 5	Option 1	.66	23.6	Pasture	1000	As=1.2458	Cd=.4142	Cr=6.2495	Cu=83.9092	Pb=4.9366
										Hg=.2705	Mo=3.0334	Ni=4.0389	Se=1.0558	Zn=159.5813

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

18.										As=	Cd=	Cr=	Cu=	Pb=
										Hg=	Mo=	Ni=	Se=	Zn=
		Click here to enter text.	Pima County WWTP	Class B, Alt 5	Option 1	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	As=Click here to enter text.	Cd=Click here to enter text.	Cr=Click here to enter text.	Cu=Click here to enter text.	Pb=Click here to enter text.
										Hg=Click here to enter text.	Mo=Click here to enter text.	Ni=Click here to enter text.	Se=Click here to enter text.	Zn=Click here to enter text.
		Click here to enter text.	Pima County WWTP	Class B, Alt 5	Option 1	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	As=Click here to enter text.	Cd=Click here to enter text.	Cr=Click here to enter text.	Cu=Click here to enter text.	Pb=Click here to enter text.
										Hg=Click here to enter text.	Mo=Click here to enter text.	Ni=Click here to enter text.	Se=Click here to enter text.	Zn=

		Click here to enter text.	Pima County WWTP	Class B, Alt 5	Option 1	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	As=Click here to enter text.	Cd=Click here to enter text.	Cr=Click here to enter text.	Cu=Click here to enter text.	Pb=Click here to enter text.

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

										Hg=Click here to enter text.	Mo=Click here to enter text.	Ni=Click here to enter text.	Se=Click here to enter text.	Zn=Click here to enter text.
		Click here to enter text.	Pima County WWTP	Class B, Alt 5	Option 1	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	As=Click here to enter text.	Cd=Click here to enter text.	Cr=Click here to enter text.	Cu=Click here to enter text.	Pb=Click here to enter text.
										Hg=Click here to enter text.	Mo=Click here to enter text.	Ni=Click here to enter text.	Se=Click here to enter text.	Zn=Click here to enter text.
	Click here to enter text.	Click here to enter text.	Pima County WWTP	Class B, Alt 5	Option 1	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	As=Click here to enter text.	Cd=Click here to enter text.	Cr=Click here to enter text.	Cu=Click here to enter text.	Pb=Click here to enter text.
										Hg=Click here to enter text.	Mo=Click here to enter text.	Ni=Click here to enter text.	Se=Click here to enter text.	Zn=

Report Number: 18-039-0201
Account Number: 16010

Waypoint ANALYTICAL

7621 Whitepine Road, Richmond, VA 23237
Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

Project : Pima Co 1/14/2018 2:30PM

Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

REPORT OF ANALYSIS

Date Sampled: 1/14/2018 14:30:00
Date Received: 02/08/2018 00:00
Date Reported: 02/16/2018

Lab Number : 58511
Sample Id : Pima Co 1/14/18

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	12.44	124400	100.0	JM	02/08/2018 15:30	SM-2540G
Moisture *	87.55		100.0	JM	02/08/2018 15:30	SM-2540G
Total Kjeldahl Nitrogen	8.19	81900	50.0	R D	02/09/2018 09:30	SM-4500-NH3C-TKN
Total Phosphorus	2.78	27800	100	MOS	02/14/2018 16:21	6010C
Total Potassium	0.26	2550	100	MOS	02/14/2018 16:21	6010C
Total Sulfur	1.24	12400	100	MOS	02/14/2018 16:21	6010C
Total Calcium	3.01	30100	100	MOS	02/14/2018 16:21	6010C
Total Magnesium	0.66	6580	100	MOS	02/13/2018 18:13	6010C
Total Sodium	0.13	1310	100	MOS	02/13/2018 18:13	6010C
Total Iron		22600	100	MOS	02/14/2018 16:21	6010C
Total Aluminum		2690	100	SMC	02/15/2018 15:05	6010C
Total Manganese		137	5.00	MOS	02/13/2018 18:13	6010C
Total Copper		275	5.00	MOS	02/13/2018 18:13	6010C
Total Zinc		560	5.00	MOS	02/13/2018 18:13	6010C
Ammonia Nitrogen	1.98	19800	50.0	R D	02/09/2018 09:30	SM-4500-NH3C
Organic N	6.21	62100	50.0		02/09/2018 09:30	CALCULATION
Nitrate+Nitrite-N		<2.26	2.26	MMT	02/12/2018 15:30	4500NO3F-2011

All values are on a dry weight basis except as noted by asterisk. Detection limit on all N series is on a wet basis.

Pauric McGroary

Pauric McGroary
Agronomist

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Account Number: 16010

Waypoint ANALYTICAL

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Project : Pima Co 1/14/2018 2:30PM

Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

REPORT OF ANALYSIS

Date Sampled: 1/14/2018 14:30:00
Date Received: 02/08/2018 00:00
Date Reported: 02/16/2018

Lab Number : 58511
Sample Id : Pima Co 1/14/18

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Cadmium		<2.00	2.00	MOS	02/14/2018 16:21	6010C
Total Chromium		29.5	5.00	MOS	02/14/2018 16:21	6010C
Total Nickel		22.8	5.00	MOS	02/14/2018 16:21	6010C
Total Lead		10.3	5.00	MOS	02/14/2018 16:21	6010C
Total Arsenic		9.22	3.00	MOS	02/14/2018 16:21	6010C
Total Mercury		0.561	0.400	MOS	02/13/2018 16:08	SW-7471B
Total Selenium		7.00	5.00	MOS	02/14/2018 16:21	6010C
pH *	8.3		1.0	JM	02/09/2018 09:30	9045D
Total Molybdenum		11.1	5.00	MOS	02/14/2018 16:21	6010C
Chloride		685	200	R D	02/09/2018 09:30	SM-4500Cl-D
Total Boron		54.7	3.00	MOS	02/14/2018 16:21	6010C

Comments:
AZ CERT# 0629
PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.
AG TO FOLLOW

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Report Number: 18-039-0202
Account Number: 16010

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Project : Pima Co 1/31/2018 1:30pm

Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

REPORT OF ANALYSIS

Date Sampled: 1/31/2018 13:30:00
Date Received: 02/08/2018 00:00
Date Reported: 02/16/2018

Lab Number : 58512
Sample Id : Pima Co 1/31/18

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	12.85	128500	100.0	JM	02/08/2018 15:30	SM-2540G
Moisture *	87.14		100.0	JM	02/08/2018 15:30	SM-2540G
Total Kjeldahl Nitrogen	7.32	73200	50.0	R D	02/09/2018 09:30	SM-4500-NH3C-TKN
Total Phosphorus	2.72	27200	100	MOS	02/14/2018 16:25	6010C
Total Potassium	0.25	2460	100	MOS	02/14/2018 16:25	6010C
Total Sulfur	1.20	12000	100	MOS	02/14/2018 16:25	6010C
Total Calcium	3.00	30000	100	MOS	02/14/2018 16:25	6010C
Total Magnesium	0.61	6070	100	MOS	02/13/2018 18:17	6010C
Total Sodium	0.12	1240	100	MOS	02/13/2018 18:17	6010C
Total Iron		22400	100	MOS	02/14/2018 16:25	6010C
Total Aluminum		2720	100	SMC	02/15/2018 15:09	6010C
Total Manganese		139	5.00	MOS	02/13/2018 18:17	6010C
Total Copper		268	5.00	MOS	02/13/2018 18:17	6010C
Total Zinc		536	5.00	MOS	02/13/2018 18:17	6010C
Ammonia Nitrogen	1.71	17100	50.0	R D	02/09/2018 09:30	SM-4500-NH3C
Organic N	5.61	56100	50.0		02/09/2018 09:30	CALCULATION
Nitrate+Nitrite-N		165	2.17	MMT	02/12/2018 15:30	4500NO3F-2011

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Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 1/31/2018 1:30pm

REPORT OF ANALYSIS

Date Sampled: 1/31/2018 13:30:00
Date Received: 02/08/2018 00:00
Date Reported: 02/16/2018

Lab Number : 58512
Sample Id : Pima Co 1/31/18

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Cadmium		<2.00	2.00	MOS	02/14/2018 16:25	6010C
Total Chromium		27.4	5.00	MOS	02/14/2018 16:25	6010C
Total Nickel		30.0	5.00	MOS	02/14/2018 16:25	6010C
Total Lead		12.4	5.00	MOS	02/14/2018 16:25	6010C
Total Arsenic		9.12	3.00	MOS	02/14/2018 16:25	6010C
Total Mercury		0.583	0.400	MOS	02/13/2018 16:10	SW-7471B
Total Selenium		6.89	5.00	MOS	02/14/2018 16:25	6010C
pH *	8.0		1.0	JM	02/09/2018 09:30	9045D
Total Molybdenum		11.0	5.00	MOS	02/14/2018 16:25	6010C
Chloride		562	200	R D	02/09/2018 09:30	SM-4500Cl-D
Total Boron		58.3	3.00	MOS	02/14/2018 16:25	6010C

Comments:
AZ CERT# 0629
PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.
AG TO FOLLOW

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Report Number: 18-082-0203
Account Number: 16010

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Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 2/10/18

REPORT OF ANALYSIS

Lab Number : 59381
Sample Id : Pima Co

Date Sampled: 2/10/2018 13:30:00
Date Received: 03/23/2018 00:00
Date Reported: 03/30/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	13.04	130400	100.0	R D	03/23/2018 14:15	SM-2540G
Moisture *	86.95		100.0	R D	03/23/2018 14:15	SM-2540G
Total Kjeldahl Nitrogen	7.49	74900	50.0	R D	03/27/2018 08:45	SM-4500-NH3C-TKN
Total Phosphorus	2.65	26500	100	SMC	03/26/2018 13:59	6010C
Total Potassium	0.19	1940	100	SMC	03/26/2018 13:59	6010C
Total Sulfur	1.10	11000	100	SMC	03/26/2018 13:59	6010C
Total Calcium	2.92	29200	100	SMC	03/26/2018 13:59	6010C
Total Magnesium	0.64	6410	100	SMC	03/26/2018 13:59	6010C
Total Sodium	0.11	1070	100	SMC	03/26/2018 13:59	6010C
Total Iron		19400	100	SMC	03/26/2018 13:59	6010C
Total Aluminum		2330	100	SMC	03/26/2018 13:59	6010C
Total Manganese		190	5.00	SMC	03/26/2018 13:59	6010C
Total Copper		293	5.00	SMC	03/26/2018 13:59	6010C
Total Zinc		552	5.00	SMC	03/26/2018 13:59	6010C
Ammonia Nitrogen	2.23	22300	50.0	R D	03/26/2018 09:00	SM-4500-NH3C
Organic N	5.26	52600	50.0		03/26/2018 09:00	CALCULATION
Nitrate+Nitrite-N		<2.30	2.30	MMT	03/27/2018 07:55	4500NO3F-2011

Not Input

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Page: 2 of 2

Report Number: 18-082-0203
Account Number: 16010

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www.waypointanalytical.com

Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 2/10/18

REPORT OF ANALYSIS

Lab Number : 59381
Sample Id : Pima Co

Date Sampled: 2/10/2018 13:30:00
Date Received: 03/23/2018 00:00
Date Reported: 03/30/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Cadmium		<2.00	2.00	SMC	03/26/2018 13:59	6010C
Total Chromium		27.5	5.00	SMC	03/26/2018 13:59	6010C
Total Nickel		30.9	5.00	JTR	03/28/2018 13:11	6010C
Total Lead		10.5	5.00	JTR	03/28/2018 13:11	6010C
Total Arsenic		8.21	3.00	SMC	03/26/2018 13:59	6010C
Total Mercury		0.460	0.0133	KKM	03/29/2018 13:13	7471A
Total Selenium		7.63	5.00	SMC	03/26/2018 13:59	6010C
d use pH*	8.3		~~1.0~~	JM	03/26/2018 09:00	9045D
Total Molybdenum		10.1	5.00	SMC	03/26/2018 13:59	6010C
Chloride		642	200	R D	03/26/2018 09:00	SM-4500Cl-D
Total Boron		49.6	3.00	SMC	03/26/2018 13:59	6010C

Comments:
AZ CERT# 0629
PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.
AG TO FOLLOW

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Page: 1 of 2

Report Number: 18-082-0204
Account Number: 16010

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Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 2/26/18

REPORT OF ANALYSIS

Lab Number : 59382
Sample Id : Pima Co

Date Sampled: 2/26/2018 13:45:00
Date Received: 03/23/2018 00:00
Date Reported: 03/30/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	13.71	137100	100.0	R D	03/23/2018 14:15	SM-2540G
Moisture *	86.28		100.0	R D	03/23/2018 14:15	SM-2540G
Total Kjeldahl Nitrogen	8.16	81600	50.0	R D	03/27/2018 08:45	SM-4500-NH3C-TKN
Total Phosphorus	2.58	25800	100	SMC	03/26/2018 14:03	6010C
Total Potassium	0.19	1860	100	SMC	03/26/2018 14:03	6010C
Total Sulfur	1.07	10700	100	SMC	03/26/2018 14:03	6010C
Total Calcium	2.99	29900	100	SMC	03/26/2018 14:03	6010C
Total Magnesium	0.57	5700	100	SMC	03/26/2018 14:03	6010C
Total Sodium	0.11	1120	100	SMC	03/26/2018 14:03	6010C
Total Iron		20200	100	SMC	03/26/2018 14:03	6010C
Total Aluminum		2140	100	SMC	03/26/2018 14:03	6010C
Total Manganese		156	5.00	SMC	03/26/2018 14:03	6010C
Total Copper		305	5.00	SMC	03/26/2018 14:03	6010C
Total Zinc		565	5.00	SMC	03/26/2018 14:03	6010C
Ammonia Nitrogen	1.79	17900	50.0	R D	03/26/2018 09:00	SM-4500-NH3C
~~Organic N~~	6.37	~~63700~~	50.0		03/26/2018 09:00	CALCULATION
Nitrate+Nitrite-N		<2.31	2.31	MMT	03/27/2018 07:56	4500NO3F-2011

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Page: 2 of 2

Report Number: 18-082-0204
Account Number: 16010

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Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 2/26/18

REPORT OF ANALYSIS

Lab Number : 59382
Sample Id : Pima Co

Date Sampled: 2/26/2018 13:45:00
Date Received: 03/23/2018 00:00
Date Reported: 03/30/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Cadmium		<2.00	2.00	SMC	03/26/2018 14:03	6010C
Total Chromium		27.2	5.00	SMC	03/26/2018 14:03	6010C
Total Nickel		31.9	5.00	JTR	03/28/2018 13:16	6010C
Total Lead		11.2	5.00	JTR	03/28/2018 13:16	6010C
Total Arsenic		9.00	3.00	SMC	03/26/2018 14:03	6010C
Total Mercury		0.510	0.0133	KKM	03/29/2018 13:17	7471A
Total Selenium		7.71	5.00	SMC	03/26/2018 14:03	6010C
pH *	8.4		1.0	JM	03/26/2018 09:00	9045D
Total Molybdenum		10.2	5.00	SMC	03/26/2018 14:03	6010C
Chloride		524	200	R D	03/26/2018 09:00	SM-4500Cl-D
Total Boron		50.3	3.00	SMC	03/26/2018 14:03	6010C

Comments:
AZ CERT# 0629
PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.
AG TO FOLLOW

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Report Number: 18-124-0205
Account Number: 16010

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Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 3/10/18

REPORT OF ANALYSIS

Date Sampled: 3/10/2018 13:00:00
Date Received: 05/04/2018 00:00
Date Reported: 05/11/2018

Lab Number : 60532
Sample Id : Pima Co

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	17.55	175500	100.0	BW1	05/04/2018 14:45	SM-2540G
Moisture *	82.44		100.0	BW1	05/04/2018 14:45	SM-2540G
Total Kjeldahl Nitrogen	6.38	63800	50.0	R D	05/08/2018 08:20	SM-4500-NH3C-TKN
Phosphorus	2.91	29100	50.0	KKM	05/10/2018 18:04	6010C
Potassium	0.26	2600	50.0	KKM	05/10/2018 18:04	6010C
Sulfur	1.28	12800	50.0	KKM	05/10/2018 18:04	6010C
Calcium	3.51	35100	50.0	KKM	05/10/2018 18:04	6010C
Magnesium	0.66	6560	5.00	BKN	05/09/2018 20:56	6010C
Sodium	0.17	1660	25.0	BKN	05/09/2018 20:56	6010C
Iron		24600	50.0	KKM	05/10/2018 18:04	6010C
Aluminum		3350	5.00	BKN	05/09/2018 20:56	6010C
Manganese		200	0.500	KKM	05/09/2018 20:56	6010C
Copper		393	0.250	BKN	05/09/2018 20:56	6010C
Zinc		654	0.500	KKM	05/10/2018 17:59	6010C
Ammonia Nitrogen	2.45	24500	50.0	R D	05/08/2018 08:20	SM-4500-NH3C
Organic N	3.93	~~39300~~	50.0		05/08/2018 08:20	CALCULATION
Nitrate+Nitrite-N		<2.43	2.43	MMT	05/08/2018 11:22	4500NO3F-2011

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Report Number: 18-124-0205
Account Number: 16010

Waypoint ANALYTICAL

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Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 3/10/18

REPORT OF ANALYSIS

Date Sampled: 3/10/2018 13:00:00
Date Received: 05/04/2018 00:00
Date Reported: 05/11/2018

Lab Number : 60532
Sample Id : Pima Co

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Cadmium		1.76	0.100	BKN	05/09/2018 20:56	6010C
Chromium		29.2	0.250	BKN	05/09/2018 20:56	6010C
Nickel		31.7	0.250	KKM	05/10/2018 17:59	6010C
Total Lead		11.7	0.300	BKN	05/09/2018 20:56	6010C
Arsenic		7.07	1.00	KKM	05/10/2018 17:59	6010C
Total Mercury		0.501	0.400	SMC	05/08/2018 14:37	SW-7471B
Selenium		8.16	0.500	KKM	05/10/2018 17:59	6010C
~~pH*~~	~~8.7~~		1.0	JM	05/07/2018 09:00	9045D
Molybdenum		13.3	0.250	BKN	05/09/2018 20:56	6010C
Chloride		726	200	R D	05/07/2018 09:00	SM-4500Cl-D
Boron		63.5	2.50	BKN	05/09/2018 20:56	6010C
Silver		3.71	0.250	BKN	05/09/2018 20:56	6010C

Comments:
AZ CERT# 0629
AMMONIA-N, PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.

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Pauric McGroary

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Pauric McGroary
Agronomist

Page 3 of 4

Report Number: 18-124-0206
Account Number: 16010

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Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 3/27/18

REPORT OF ANALYSIS

Lab Number : 60533
Sample Id : Pima Co

Date Sampled: 3/27/2018 13:00:00
Date Received: 05/04/2018 00:00
Date Reported: 05/11/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Cadmium		1.72	0.100	BKN	05/09/2018 21:01	6010C
Chromium		26.3	0.250	BKN	05/09/2018 21:01	6010C
Nickel		29.4	0.250	KKM	05/10/2018 18:19	6010C
Total Lead		11.3	0.300	BKN	05/09/2018 21:01	6010C
Arsenic		6.37	1.00	KKM	05/10/2018 18:19	6010C
Total Mercury		0.465	0.400	SMC	05/08/2018 14:39	SW-7471B
Selenium		8.12	0.500	KKM	05/10/2018 18:19	6010C
pH *	8.6		1.0	JM	05/07/2018 09:00	9045D
Molybdenum		12.3	0.250	BKN	05/09/2018 21:01	6010C
Chloride		619	200	R D	05/07/2018 09:00	SM-4500Cl-D
Boron		61.9	2.50	BKN	05/09/2018 21:01	6010C
Silver		3.76	0.250	BKN	05/09/2018 21:01	6010C

Comments:
AZ CERT# 0629
AMMONIA-N, PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.

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Report Number: 18-124-9207
Account Number: 16010

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Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 4/13/18

REPORT OF ANALYSIS

Lab Number : 60534
Sample Id : Pima Co

Date Sampled: 4/13/2018 15:00:00
Date Received: 05/04/2018 00:00
Date Reported: 05/22/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	12.56	~~125600~~	100.0	BW1	05/04/2018 14:45	SM-2540G
Moisture *	87.43		100.0	BW1	05/04/2018 14:45	SM-2540G
Total Kjeldahl Nitrogen	7.36	73600	50.0	R D	05/07/2018 09:00	SM-4500-NH3C-TKN
Phosphorus	2.83	28300	50.0	KKM	05/10/2018 18:34	6010C
Potassium	0.25	2480	50.0	KKM	05/10/2018 18:34	6010C
Sulfur	1.16	11600	50.0	KKM	05/10/2018 18:34	6010C
Calcium	3.16	31600	50.0	KKM	05/10/2018 18:34	6010C
Magnesium	0.65	6530	5.00	BKN	05/09/2018 21:06	6010C
Sodium	0.15	1530	25.0	BKN	05/09/2018 21:06	6010C
Iron		23000	50.0	KKM	05/10/2018 18:34	6010C
Aluminum		2710	5.00	BKN	05/09/2018 21:06	6010C
Manganese		190	0.500	KKM	05/09/2018 21:06	6010C
Copper		355	0.250	BKN	05/09/2018 21:06	6010C
Zinc		605	0.500	KKM	05/10/2018 18:29	6010C
Ammonia Nitrogen	2.01	20100	50.0	R D	05/08/2018 08:20	SM-4500-NH3C
Organic N	5.35	~~53500~~	50.0		05/07/2018 09:00	CALCULATION
Nitrate+Nitrite-N		<2.35	2.35	MMT	05/08/2018 11:23	4500NO3F-2011

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Report Number: 18-124-9207
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Rob Fehrmann
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Marana , AZ 85653

Project : Pima Co 4/13/18

REPORT OF ANALYSIS

Lab Number : 60534
Sample Id : Pima Co

Date Sampled: 4/13/2018 15:00:00
Date Received: 05/04/2018 00:00
Date Reported: 05/22/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Cadmium		1.57	0.100	BKN	05/09/2018 21:06	6010C
Chromium		25.8	0.250	BKN	05/09/2018 21:06	6010C
Nickel		22.1	0.250	KKM	05/10/2018 18:29	6010C
Total Lead		9.85	0.300	BKN	05/09/2018 21:06	6010C
Arsenic		6.83	1.00	KKM	05/10/2018 18:29	6010C
Total Mercury		0.447	0.400	SMC	05/08/2018 14:42	SW-7471B
Selenium		7.38	0.500	KKM	05/10/2018 18:29	6010C
pH *	8.5		1.0	JM	05/07/2018 09:00	9045D
Molybdenum		12.2	0.250	BKN	05/09/2018 21:06	6010C
Chloride		766	200	R D	05/07/2018 09:00	SM-4500Cl-D
Boron		56.4	2.50	BKN	05/09/2018 21:06	6010C
Silver		3.45	0.250	BKN	05/09/2018 21:06	6010C

Comments:
AZ CERT# 0629
AMMONIA-N, PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.

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Report Number: 18-124-0208
Account Number: 16010

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Project : Pima Co 4/30/18

REPORT OF ANALYSIS

Lab Number : 60535
Sample Id : Pima Co

Date Sampled: 4/30/2018 16:00:00
Date Received: 05/04/2018 00:00
Date Reported: 05/11/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	14.43	144300	100.0	BW1	05/04/2018 14:45	SM-2540G
Moisture *	85.56		100.0	BW1	05/04/2018 14:45	SM-2540G
Total Kjeldahl Nitrogen	6.72	67200	50.0	R D	05/07/2018 09:00	SM-4500-NH3C-TKN
Phosphorus	2.78	27800	50.0	KKM	05/10/2018 18:44	6010C
Potassium	0.24	2400	50.0	KKM	05/10/2018 18:44	6010C
Sulfur	1.15	11500	50.0	KKM	05/10/2018 18:44	6010C
Calcium	3.13	31300	50.0	KKM	05/10/2018 18:44	6010C
Magnesium	0.64	6350	5.00	BKN	05/09/2018 21:11	6010C
Sodium	0.15	1530	25.0	BKN	05/09/2018 21:11	6010C
Iron		22800	50.0	KKM	05/10/2018 18:44	6010C
Aluminum		2680	5.00	BKN	05/09/2018 21:11	6010C
Manganese		185	0.500	KKM	05/09/2018 21:11	6010C
Copper		348	0.250	BKN	05/09/2018 21:11	6010C
Zinc		616	0.500	KKM	05/10/2018 18:39	6010C
Ammonia Nitrogen	1.77	17700	50.0	R D	05/08/2018 08:20	SM-4500-NH3C
~~Organic N~~	4.95	~~49500~~	50.0		05/07/2018 09:00	CALCULATION
Nitrate+Nitrite-N		<2.38	2.38	MMT	05/08/2018 11:24	4500NO3F-2011

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Report Number: 18-124-0208
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Marana , AZ 85653

Project : Pima Co 4/30/18

REPORT OF ANALYSIS

Lab Number : 60535
Sample Id : Pima Co

Date Sampled: 4/30/2018 16:00:00
Date Received: 05/04/2018 00:00
Date Reported: 05/11/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Cadmium		1.57	0.100	BKN	05/09/2018 21:11	6010C
Chromium		25.7	0.250	BKN	05/09/2018 21:11	6010C
Nickel		21.7	0.250	KKM	05/10/2018 18:39	6010C
Total Lead		9.39	0.300	BKN	05/09/2018 21:11	6010C
Arsenic		6.76	1.00	KKM	05/10/2018 18:39	6010C
Total Mercury		0.418	0.400	SMC	05/08/2018 14:49	SW-7471B
Selenium		6.81	0.500	KKM	05/10/2018 18:39	6010C
pH *	8.5		1.0	JM	05/07/2018 09:00	9045D
Molybdenum		12.0	0.250	BKN	05/09/2018 21:11	6010C
Chloride		751	200	R D	05/07/2018 09:00	SM-4500Cl-D
Boron		55.7	2.50	BKN	05/09/2018 21:11	6010C
Silver		3.36	0.250	BKN	05/09/2018 21:11	6010C

Comments:
AZ CERT# 0629
AMMONIA-N, PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.

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Report Number: 18-264-0203
Account Number: 16010

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Project : Pima Co 5/15/18

REPORT OF ANALYSIS

Lab Number : 62822
Sample Id : Pima Co 5/15/18

Date Sampled: 5/15/2018 13:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	14.52	145200	100.0	R D	09/21/2018 15:00	SM-2540G
Moisture *	85.47		100.0	R D	09/21/2018 15:00	SM-2540G
Total Kjeldahl Nitrogen	6.34	63400	50.0	R D	09/24/2018 08:40	SM-4500-NH3C-TKN
Phosphorus	3.29	32900	50.0	KKM	09/27/2018 01:11	6010D
Potassium	0.24	2360	50.0	KKM	09/27/2018 01:11	6010D
Sulfur	1.49	14900	50.0	KKM	09/27/2018 01:11	6010D
Calcium	4.14	41400	100	KKM	09/27/2018 01:11	6010D
Magnesium	0.63	6300	50.0	KKM	09/27/2018 01:11	6010D
Sodium	0.15	1490	250	KKM	09/27/2018 01:11	6010D
Iron		32000	50.0	KKM	09/27/2018 01:11	6010D
Aluminum		3530	50.0	KKM	09/27/2018 01:11	6010D
Manganese		339	5.00	KKM	09/27/2018 01:11	6010D
Copper		487	2.50	KKM	09/27/2018 01:11	6010D
Zinc		894	5.00	KKM	09/27/2018 01:11	6010D
Ammonia Nitrogen	3.06	30600	50.0	R D	09/24/2018 08:40	SM-4500-NH3C
Organic N	3.28	32800	50.0		09/24/2018 08:40	CALCULATION
Nitrate+Nitrite-N		<2.31	2.31	MMT	09/25/2018 12:15	4500NO3F-2011

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B - Analyte detected in blank **H - Beyond Holding Time**

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Marana , AZ 85653

Project : Pima Co 5/15/18

REPORT OF ANALYSIS

Date Sampled: 5/15/2018 13:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

Lab Number : 62822
Sample Id : Pima Co 5/15/18

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Cadmium		1.42	1.00	KKM	09/27/2018 01:11	6010D
Chromium		39.5	2.50	KKM	09/27/2018 01:11	6010D
Nickel		29.0	2.50	KKM	09/27/2018 01:11	6010D
Lead		12.0	3.00	KKM	09/27/2018 01:11	6010D
Arsenic		11.3	5.00	KKM	09/27/2018 01:11	6010D
Mercury		0.800	0.400	MMT	09/26/2018 11:41	SW-7471B
Selenium		10.6	5.00	KKM	09/27/2018 01:11	6010D
pH *	8.9		1.0	R D	09/24/2018 08:40	9045D
Molybdenum		15.8	2.50	KKM	09/27/2018 01:11	6010D
Chloride		782	200	R D	09/24/2018 08:40	SM-4500Cl-D
Boron		53.3	25.0	KKM	09/27/2018 01:11	6010D
Silver		4.85	2.50	KKM	09/27/2018 01:11	6010D

Comments:
AZ CERT# 0629
AMMONIA-N, PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.

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Report Number: 18-264-0204
Account Number: 16010

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Send To: Avra Gro Systems Inc
Rob Fehrmann
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Project : Pima Co 5/26/18

REPORT OF ANALYSIS

Date Sampled: 5/26/2018 00:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

Lab Number : 62823
Sample Id : Pima Co 5/26/18

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	11.64	116400	100.0	R D	09/21/2018 15:00	SM-2540G
Moisture *	88.35		100.0	R D	09/21/2018 15:00	SM-2540G
Total Kjeldahl Nitrogen	6.82	68200	50.0	R D	09/24/2018 08:40	SM-4500-NH3C-TKN
Phosphorus	3.19	31900	50.0	KKM	09/27/2018 01:16	6010D
Potassium	0.24	2440	50.0	KKM	09/27/2018 01:16	6010D
Sulfur	1.54	15400	50.0	KKM	09/27/2018 01:16	6010D
Calcium	4.19	41900	100	KKM	09/27/2018 01:16	6010D
Magnesium	0.55	5470	50.0	KKM	09/27/2018 01:16	6010D
Sodium	0.15	1470	250	KKM	09/27/2018 01:16	6010D
Iron		32500	50.0	KKM	09/27/2018 01:16	6010D
Aluminum		3170	50.0	KKM	09/27/2018 01:16	6010D
Manganese		245	5.00	KKM	09/27/2018 01:16	6010D
Copper		500	2.50	KKM	09/27/2018 01:16	6010D
Zinc		910	5.00	KKM	09/27/2018 01:16	6010D
Ammonia Nitrogen	3.18	31800	50.0	R D	09/24/2018 08:40	SM-4500-NH3C
Organic N	3.64	36400	50.0		09/24/2018 08:40	CALCULATION
Nitrate+Nitrite-N		<2.45	2.45	MMT	09/25/2018 12:18	4500NO3F-2011

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Account Number: 16010

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Project : Pima Co 5/26/18

REPORT OF ANALYSIS

Date Sampled: 5/26/2018 00:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

Lab Number : 62823
Sample Id : Pima Co 5/26/18

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Cadmium		1.43	1.00	KKM	09/27/2018 01:16	6010D
Chromium		37.4	2.50	KKM	09/27/2018 01:16	6010D
Nickel		28.7	2.50	KKM	09/27/2018 01:16	6010D
Lead		11.7	3.00	KKM	09/27/2018 01:16	6010D
Arsenic		12.0	5.00	KKM	09/27/2018 01:16	6010D
Mercury		0.700	0.400	MMT	09/26/2018 11:49	SW-7471B
Selenium		11.1	5.00	KKM	09/27/2018 01:16	6010D
pH *	8.8		1.0	R D	09/24/2018 08:40	9045D
Molybdenum		16.3	2.50	KKM	09/27/2018 01:16	6010D
Chloride		816	200	R D	09/24/2018 08:40	SM-4500Cl-D
Boron		54.8	25.0	KKM	09/27/2018 01:16	6010D
Silver		4.87	2.50	KKM	09/27/2018 01:16	6010D

Comments:
AZ CERT# 0629
AMMONIA-N, PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.

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Report Number: 18-264-0205
Account Number: 16010

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Send To: Avra Gro Systems Inc
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Marana , AZ 85653

Project : Pima Co 6/10/18

Lab Number : 62824
Sample Id : Pima Co 6/10/18

REPORT OF ANALYSIS

Date Sampled: 6/10/2018 14:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	20.83	208300	100.0	R D	09/21/2018 15:00	SM-2540G
Moisture *	79.16		100.0	R D	09/21/2018 15:00	SM-2540G
Total Kjeldahl Nitrogen	6.14	61400	50.0	R D	09/24/2018 08:40	SM-4500-NH3C-TKN
Phosphorus	3.30	33000	50.0	KKM	09/27/2018 01:21	6010D
Potassium	0.28	2830	50.0	KKM	09/27/2018 01:21	6010D
Sulfur	1.66	16600	50.0	KKM	09/27/2018 01:21	6010D
Calcium	4.12	41200	100	KKM	09/27/2018 01:21	6010D
Magnesium	0.56	5640	50.0	KKM	09/27/2018 01:21	6010D
Sodium	0.17	1660	250	KKM	09/27/2018 01:21	6010D
Iron		32400	50.0	KKM	09/27/2018 01:21	6010D
Aluminum		2980	50.0	KKM	09/27/2018 01:21	6010D
Manganese		232	5.00	KKM	09/27/2018 01:21	6010D
Copper		467	2.50	KKM	09/27/2018 01:21	6010D
Zinc		863	5.00	KKM	09/27/2018 01:21	6010D
Ammonia Nitrogen	2.51	25100	50.0	R D	09/24/2018 08:40	SM-4500-NH3C
Organic N	3.63	36300	50.0		09/24/2018 08:40	CALCULATION
Nitrate+Nitrite-N		<2.45	2.45	MMT	09/25/2018 12:19	4500NO3F-2011

All values are on a dry weight basis except as noted by asterisk. Detection limit on all N series is on a wet basis.

B - Analyte detected in blank **H - Beyond Holding Time**

Pauric McGroary

Pauric McGroary
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Report Number: 18-264-0205
Account Number: 16010

Waypoint ANALYTICAL

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Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 6/10/18

Lab Number : 62824
Sample Id : Pima Co 6/10/18

REPORT OF ANALYSIS

Date Sampled: 6/10/2018 14:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Cadmium		1.32	1.00	KKM	09/27/2018 01:21	6010D
Chromium		38.7	2.50	KKM	09/27/2018 01:21	6010D
Nickel		30.6	2.50	KKM	09/27/2018 01:21	6010D
Lead		11.9	3.00	KKM	09/27/2018 01:21	6010D
Arsenic		12.1	5.00	KKM	09/27/2018 01:21	6010D
Mercury		0.704	0.400	MMT	09/26/2018 11:51	SW-7471B
Selenium		10.7	5.00	KKM	09/27/2018 01:21	6010D
pH *	8.7		1.0	R D	09/24/2018 08:40	9045D
Molybdenum		17.3	2.50	KKM	09/27/2018 01:21	6010D
Chloride		1070	200	R D	09/24/2018 08:40	SM-4500Cl-D
Boron		60.4	25.0	KKM	09/27/2018 01:21	6010D
Silver		4.71	2.50	KKM	09/27/2018 01:21	6010D

Comments:
AZ CERT# 0629
AMMONIA-N, PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.

All values are on a dry weight basis except as noted by asterisk. Detection limit on all N series is on a wet basis.
B - Analyte detected in blank **H - Beyond Holding Time**

Pauric McGroary

Pauric McGroary
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Report Number: 18-264-0206
Account Number: 16010

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Marana , AZ 85653

Project : Pima Co 6/29/18

Lab Number : 62825
Sample Id : Pima Co 6/29/18

REPORT OF ANALYSIS

Date Sampled: 6/29/2018 10:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	16.85	168500	100.0	R D	09/21/2018 15:00	SM-2540G
Moisture *	83.14		100.0	R D	09/21/2018 15:00	SM-2540G
Total Kjeldahl Nitrogen	5.74	57400	50.0	R D	09/24/2018 08:40	SM-4500-NH3C-TKN
Phosphorus	3.22	32200	50.0	KKM	09/27/2018 01:26	6010D
Potassium	0.23	2290	50.0	KKM	09/27/2018 01:26	6010D
Sulfur	1.40	14000	50.0	KKM	09/27/2018 01:26	6010D
Calcium	4.05	40500	100	KKM	09/27/2018 01:26	6010D
Magnesium	0.61	6080	50.0	KKM	09/27/2018 01:26	6010D
Sodium	0.13	1290	250	KKM	09/27/2018 01:26	6010D
Iron		31200	50.0	KKM	09/27/2018 01:26	6010D
Aluminum		2990	50.0	KKM	09/27/2018 01:26	6010D
Manganese		234	5.00	KKM	09/27/2018 01:26	6010D
Copper		474	2.50	KKM	09/27/2018 01:26	6010D
Zinc		865	5.00	KKM	09/27/2018 01:26	6010D
Ammonia Nitrogen	3.30	33000	50.0	R D	09/24/2018 08:40	SM-4500-NH3C
Organic N	2.44	24400	50.0		09/24/2018 08:40	CALCULATION
Nitrate+Nitrite-N		<2.35	2.35	MMT	09/25/2018 12:20	4500NO3F-2011

All values are on a dry weight basis except as noted by asterisk. Detection limit on all N series is on a wet basis.

B - Analyte detected in blank **H - Beyond Holding Time**

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Report Number: 18-264-0206
Account Number: 16010

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Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 6/29/18

REPORT OF ANALYSIS

Lab Number : 62825
Sample Id : Pima Co 6/29/18

Date Sampled: 6/29/2018 10:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Cadmium		1.36	1.00	KKM	09/27/2018 01:26	6010D
Chromium		38.2	2.50	KKM	09/27/2018 01:26	6010D
Nickel		28.2	2.50	KKM	09/27/2018 01:26	6010D
Lead		12.2	3.00	KKM	09/27/2018 01:26	6010D
Arsenic		11.7	5.00	KKM	09/27/2018 01:26	6010D
Mercury		0.807	0.400	MMT	09/26/2018 11:53	SW-7471B
Selenium		11.0	5.00	KKM	09/27/2018 01:26	6010D
pH *	8.9		1.0	R D	09/24/2018 08:40	9045D
Molybdenum		15.2	2.50	KKM	09/27/2018 01:26	6010D
Chloride		811	200	R D	09/24/2018 08:40	SM-4500Cl-D
Boron		52.7	25.0	KKM	09/27/2018 01:26	6010D
Silver		4.14	2.50	KKM	09/27/2018 01:26	6010D

Comments:
AZ CERT# 0629
AMMONIA-N, PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.

All values are on a dry weight basis except as noted by asterisk. Detection limit on all N series is on a wet basis.
B - Analyte detected In blank **H - Beyond Holding Time**

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Report Number: 18-264-0207
Account Number: 16010

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Marana , AZ 85653

Project : Pima Co 7/10/18

REPORT OF ANALYSIS

Lab Number : 62826
Sample Id : Pima Co 7/10/18

Date Sampled: 7/10/2018 15:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	14.21	142100	100.0	R D	09/21/2018 15:00	SM-2540G
Moisture *	85.78		100.0	R D	09/21/2018 15:00	SM-2540G
Total Kjeldahl Nitrogen	6.90	69000	50.0	R D	09/25/2018 12:00	SM-4500-NH3C-TKN
Phosphorus	3.05	30500	50.0	KKM	09/27/2018 01:31	6010D
Potassium	0.21	2120	50.0	KKM	09/27/2018 01:31	6010D
Sulfur	1.40	14000	50.0	KKM	09/27/2018 01:31	6010D
Calcium	3.94	39400	100	KKM	09/27/2018 01:31	6010D
Magnesium	0.63	6290	50.0	KKM	09/27/2018 01:31	6010D
Sodium	0.13	1250	250	KKM	09/27/2018 01:31	6010D
Iron		28600	50.0	KKM	09/27/2018 01:31	6010D
Aluminum		3020	50.0	KKM	09/27/2018 01:31	6010D
Manganese		214	5.00	KKM	09/27/2018 01:31	6010D
Copper		467	2.50	KKM	09/27/2018 01:31	6010D
Zinc		867	5.00	KKM	09/27/2018 01:31	6010D
Ammonia Nitrogen	2.39	23900	50.0	R D	09/25/2018 12:00	SM-4500-NH3C
Organic N	4.51	~~45100~~	50.0		09/25/2018 12:00	CALCULATION
Nitrate+Nitrite-N		<2.31	2.31	MMT	09/25/2018 12:21	4500NO3F-2011

All values are on a dry weight basis except as noted by asterisk. Detection limit on all N series is on a wet basis.

B - Analyte detected in blank **H - Beyond Holding Time**

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Report Number: 18-264-0207
Account Number: 16010

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Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 7/10/18

Lab Number : 62826
Sample Id : Pima Co 7/10/18

REPORT OF ANALYSIS

Date Sampled: 7/10/2018 15:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Cadmium		1.30	1.00	KKM	09/27/2018 01:31	6010D
Chromium		41.5	2.50	KKM	09/27/2018 01:31	6010D
Nickel		26.8	2.50	KKM	09/27/2018 01:31	6010D
Lead		12.4	3.00	KKM	09/27/2018 01:31	6010D
Arsenic		11.5	5.00	KKM	09/27/2018 01:31	6010D
Mercury		0.732	0.400	MMT	09/26/2018 11:56	SW-7471B
Selenium		9.49	5.00	KKM	09/27/2018 01:31	6010D
pH *	8.9		1.0	R D	09/24/2018 08:40	9045D
Molybdenum		14.2	2.50	KKM	09/27/2018 01:31	6010D
Chloride		656	200	R D	09/24/2018 08:40	SM-4500Cl-D
Boron		49.4	25.0	KKM	09/27/2018 01:31	6010D
Silver		4.90	2.50	KKM	09/27/2018 01:31	6010D

Comments:
AZ CERT# 0629
AMMONIA-N, PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.

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Page 5 of 7

Report Number: 18-264-0208
Account Number: 16010

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Marana , AZ 85653

Project : Pima Co 7/24/18

Lab Number : 62827
Sample Id : Pima Co 7/24/18

REPORT OF ANALYSIS

Date Sampled: 7/24/2018 11:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	13.93	139300	100.0	R D	09/21/2018 15:00	SM-2540G
Moisture *	86.06		100.0	R D	09/21/2018 15:00	SM-2540G
Total Kjeldahl Nitrogen	7.39	73900	50.0	R D	09/25/2018 08:30	SM-4500-NH3C-TKN
Phosphorus	2.95	29500	50.0	KKM	09/27/2018 01:36	6010D
Potassium	0.22	2240	50.0	KKM	09/27/2018 01:36	6010D
Sulfur	1.50	15000	50.0	KKM	09/27/2018 01:36	6010D
Calcium	3.95	39500	100	KKM	09/27/2018 01:36	6010D
Magnesium	0.60	5980	50.0	KKM	09/27/2018 01:36	6010D
Sodium	0.13	1320	250	KKM	09/27/2018 01:36	6010D
Iron		28800	50.0	KKM	09/27/2018 01:36	6010D
Aluminum		3080	50.0	KKM	09/27/2018 01:36	6010D
Manganese		215	5.00	KKM	09/27/2018 01:36	6010D
Copper		477	2.50	KKM	09/27/2018 01:36	6010D
Zinc		889	5.00	KKM	09/27/2018 01:36	6010D
Ammonia Nitrogen	3.03	30300	50.0	R D	09/24/2018 08:40	SM-4500-NH3C
Organic N	4.36	43600	50.0		09/24/2018 08:40	CALCULATION
Nitrate+Nitrite-N		<2.37	2.37	MMT	09/25/2018 12:21	4500NO3F-2011

All values are on a dry weight basis except as noted by asterisk. Detection limit on all N series is on a wet basis.

B - Analyte detected in blank **H - Beyond Holding Time**

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Report Number: 18-264-0208
Account Number: 16010

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11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 7/24/18

REPORT OF ANALYSIS

Lab Number : 62827
Sample Id : Pima Co 7/24/18

Date Sampled: 7/24/2018 11:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Cadmium		1.38	1.00	KKM	09/27/2018 01:36	6010D
Chromium		36.8	2.50	KKM	09/27/2018 01:36	6010D
Nickel		25.7	2.50	KKM	09/27/2018 01:36	6010D
Lead		13.1	3.00	KKM	09/27/2018 01:36	6010D
Arsenic		12.2	5.00	KKM	09/27/2018 01:36	6010D
Mercury		0.757	0.400	MMT	09/26/2018 11:58	SW-7471B
Selenium		10.5	5.00	KKM	09/27/2018 01:36	6010D
pH *	9.0		1.0	R D	09/24/2018 08:40	9045D
Molybdenum		15.6	2.50	KKM	09/27/2018 01:36	6010D
Chloride		782	200	R D	09/24/2018 08:40	SM-4500Cl-D
Boron		50.5	25.0	KKM	09/27/2018 01:36	6010D
Silver		4.74	2.50	KKM	09/27/2018 01:36	6010D

Comments:
AZ CERT# 0629
AMMONIA-N, PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.

All values are on a dry weight basis except as noted by asterisk. Detection limit on all N series is on a wet basis.
B - Analyte detected in blank **H - Beyond Holding Time**

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Report Number: 18-264-0209
Account Number: 16010

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Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 8/5/18

REPORT OF ANALYSIS

Lab Number : 62828
Sample Id : Pima Co 8/5/18

Date Sampled: 8/5/2018 15:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg¹)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	14.65	146500	100.0	R D	09/21/2018 15:00	SM-2540G
Moisture *	85.34		100.0	R D	09/21/2018 15:00	SM-2540G
Total Kjeldahl Nitrogen	7.78	77800	50.0	R D	09/25/2018 08:30	SM-4500-NH3C-TKN
Phosphorus	2.99	29900	50.0	KKM	09/27/2018 01:41	6010D
Potassium	0.22	2200	50.0	KKM	09/27/2018 01:41	6010D
Sulfur	1.47	14700	50.0	KKM	09/27/2018 01:41	6010D
Calcium	3.94	39400	100	KKM	09/27/2018 01:41	6010D
Magnesium	0.61	6070	50.0	KKM	09/27/2018 01:41	6010D
Sodium	0.12	1240	250	KKM	09/27/2018 01:41	6010D
Iron		28400	50.0	KKM	09/27/2018 01:41	6010D
Aluminum		3190	50.0	KKM	09/27/2018 01:41	6010D
Manganese		206	5.00	KKM	09/27/2018 01:41	6010D
Copper		490	2.50	KKM	09/27/2018 01:41	6010D
Zinc		887	5.00	KKM	09/27/2018 01:41	6010D
Ammonia Nitrogen	2.67	26700	50.0	R D	09/24/2018 08:40	SM-4500-NH3C
Organic N	5.11	51100	50.0		09/24/2018 08:40	CALCULATION
Nitrate+Nitrite-N		<2.35	2.35	MMT	09/25/2018 12:24	4500NO3F-2011

All values are on a dry weight basis except as noted by asterisk. Detection limit on all N series is on a wet basis.

B - Analyte detected in blank **H - Beyond Holding Time**

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Report Number: 18-264-0209
Account Number: 16010

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Marana , AZ 85653

Project : Pima Co 8/5/18

REPORT OF ANALYSIS

Lab Number : 62828
Sample Id : Pima Co 8/5/18

Date Sampled: 8/5/2018 15:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Cadmium		1.29	1.00	KKM	09/27/2018 01:41	6010D
Chromium		35.7	2.50	KKM	09/27/2018 01:41	6010D
Nickel		25.6	2.50	KKM	09/27/2018 01:41	6010D
Lead		13.2	3.00	KKM	09/27/2018 01:41	6010D
Arsenic		11.6	5.00	KKM	09/27/2018 01:41	6010D
Mercury		0.737	0.400	MMT	09/26/2018 12:00	SW-7471B
Selenium		11.9	5.00	KKM	09/27/2018 01:41	6010D
pH *	8.9		1.0	R D	09/24/2018 08:40	9045D
Molybdenum		14.1	2.50	KKM	09/27/2018 01:41	6010D
Chloride		787	200	R D	09/24/2018 08:40	SM-4500Cl-D
Boron		50.4	25.0	KKM	09/27/2018 01:41	6010D
Silver		4.12	2.50	KKM	09/27/2018 01:41	6010D

Comments:
AZ CERT# 0629
AMMONIA-N, PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.

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B - Analyte detected in blank **H - Beyond Holding Time**

Pauric McGroary

Pauric McGroary
Agronomist

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Report Number: 18-264-0210
Account Number: 16010

Waypoint ANALYTICAL

7621 Whitepine Road, Richmond, VA 23237
Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 8/20/18

REPORT OF ANALYSIS

Lab Number : 62829
Sample Id : Pima Co 8/20/18

Date Sampled: 8/20/2018 14:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	15.59	155900	100.0	R D	09/21/2018 15:00	SM-2540G
Moisture *	84.40		100.0	R D	09/21/2018 15:00	SM-2540G
Total Kjeldahl Nitrogen	6.92	69200	50.0	R D	09/25/2018 08:30	SM-4500-NH3C-TKN
Phosphorus	2.92	29200	50.0	KKM	09/27/2018 01:46	6010D
Potassium	0.21	2050	50.0	KKM	09/27/2018 01:46	6010D
Sulfur	1.52	15200	50.0	KKM	09/27/2018 01:46	6010D
Calcium	3.92	39200	100	KKM	09/27/2018 01:46	6010D
Magnesium	0.60	6040	50.0	KKM	09/27/2018 01:46	6010D
Sodium	0.12	1160	250	KKM	09/27/2018 01:46	6010D
Iron		27400	50.0	KKM	09/27/2018 01:46	6010D
Aluminum		3190	50.0	KKM	09/27/2018 01:46	6010D
Manganese		203	5.00	KKM	09/27/2018 01:46	6010D
Copper		496	2.50	KKM	09/27/2018 01:46	6010D
Zinc		904	5.00	KKM	09/27/2018 01:46	6010D
Ammonia Nitrogen	2.55	25500	50.0	R D	09/24/2018 08:40	SM-4500-NH3C
Organic N	4.37	43700	50.0		09/24/2018 08:40	CALCULATION
Nitrate+Nitrite-N		<2.44	2.44	MMT	09/25/2018 12:25	4500NO3F-2011

All values are on a dry weight basis except as noted by asterisk. Detection limit on all N series is on a wet basis.

B - Analyte detected in blank **H - Beyond Holding Time**

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Account Number: 16010

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Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 8/20/18

REPORT OF ANALYSIS

Lab Number : 62829
Sample Id : Pima Co 8/20/18

Date Sampled: 8/20/2018 14:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Cadmium		1.35	1.00	KKM	09/27/2018 01:46	6010D
Chromium		35.9	2.50	KKM	09/27/2018 01:46	6010D
Nickel		25.7	2.50	KKM	09/27/2018 01:46	6010D
Lead		13.4	3.00	KKM	09/27/2018 01:46	6010D
Arsenic		11.4	5.00	KKM	09/27/2018 01:46	6010D
Mercury		0.693	0.400	MMT	09/26/2018 12:03	SW-7471B
Selenium		10.0	5.00	KKM	09/27/2018 01:46	6010D
pH *	8.8		1.0	R D	09/24/2018 08:40	9045D
Molybdenum		13.9	2.50	KKM	09/27/2018 01:46	6010D
Chloride		768	200	R D	09/24/2018 08:40	SM-4500Cl-D
Boron		50.4	25.0	KKM	09/27/2018 01:46	6010D
Silver		4.25	2.50	KKM	09/27/2018 01:46	6010D

Comments:
AZ CERT# 0629
AMMONIA-N, PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.

All values are on a dry weight basis except as noted by asterisk. Detection limit on all N series is on a wet basis.
B - Analyte detected in blank **H - Beyond Holding Time**

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Report Number: 18-264-0211
Account Number: 16010

Waypoint ANALYTICAL

7621 Whitepine Road, Richmond, VA 23237
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www.waypointanalytical.com

Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 9/3/18

Lab Number : 62830
Sample Id : Pima Co 9/3/18

REPORT OF ANALYSIS

Date Sampled: 9/3/2018 15:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Total Solids *	15.31	153100	100.0	R D	09/21/2018 15:00	SM-2540G
Moisture *	84.68		100.0	R D	09/21/2018 15:00	SM-2540G
Total Kjeldahl Nitrogen	6.98	69800	50.0	R D	09/25/2018 08:30	SM-4500-NH3C-TKN
Phosphorus	2.86	28600	50.0	KKM	09/27/2018 01:51	6010D
Potassium	0.20	2020	50.0	KKM	09/27/2018 01:51	6010D
Sulfur	1.29	12900	50.0	KKM	09/27/2018 01:51	6010D
Calcium	3.54	35400	100	KKM	09/27/2018 01:51	6010D
Magnesium	0.58	5800	50.0	KKM	09/27/2018 01:51	6010D
Sodium	0.12	1160	250	KKM	09/27/2018 01:51	6010D
Iron		27300	50.0	KKM	09/27/2018 01:51	6010D
Aluminum		3000	50.0	KKM	09/27/2018 01:51	6010D
Manganese		191	5.00	KKM	09/27/2018 01:51	6010D
Copper		457	2.50	KKM	09/27/2018 01:51	6010D
Zinc		822	5.00	KKM	09/27/2018 01:51	6010D
Ammonia Nitrogen	2.23	22300	50.0	R D	09/24/2018 08:40	SM-4500-NH3C
Organic N	4.75	47500	50.0		09/24/2018 08:40	CALCULATION
Nitrate+Nitrite-N		<2.34	2.34	MMT	09/25/2018 12:26	4500NO3F-2011

All values are on a dry weight basis except as noted by asterisk. Detection limit on all N series is on a wet basis.

B - Analyte detected in blank **H - Beyond Holding Time**

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Report Number: 18-264-0211
Account Number: 16010

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www.waypointanalytical.com

Send To: Avra Gro Systems Inc
Rob Fehrmann
11661 W Grierr Rd
Marana , AZ 85653

Project : Pima Co 9/3/18

REPORT OF ANALYSIS

Lab Number : 62830
Sample Id : Pima Co 9/3/18

Date Sampled: 9/3/2018 15:00:00
Date Received: 09/21/2018 00:00
Date Reported: 09/27/2018

PARAMETER	RESULT (%)	RESULT (mg/kg)	QUANTITATION LIMIT (mg/kg*)	ANALYST	ANALYSIS DATE/TIME	METHOD
Cadmium		1.22	1.00	KKM	09/27/2018 01:51	6010D
Chromium		33.4	2.50	KKM	09/27/2018 01:51	6010D
Nickel		24.0	2.50	KKM	09/27/2018 01:51	6010D
Lead		12.4	3.00	KKM	09/27/2018 01:51	6010D
Arsenic		10.6	5.00	KKM	09/27/2018 01:51	6010D
Mercury		0.736	0.400	MMT	09/26/2018 12:05	SW-7471B
Selenium		9.17	5.00	KKM	09/27/2018 01:51	6010D
pH *	9.0		1.0	R D	09/24/2018 08:40	9045D
Molybdenum		13.4	2.50	KKM	09/27/2018 01:51	6010D
Chloride		758	200	R D	09/24/2018 08:40	SM-4500Cl-D
Boron		48.4	25.0	KKM	09/27/2018 01:51	6010D
Silver		3.90	2.50	KKM	09/27/2018 01:51	6010D
Barium		225	5.00	KKM	09/27/2018 01:51	6010D

Comments:
AZ CERT# 0629
AMMONIA-N, PH, CHLORIDE, & SULFUR NOT FOR COMPLIANCE TESTING.

All values are on a dry weight basis except as noted by asterisk. Detection limit on all N series is on a wet basis.
B - Analyte detected in blank **H - Beyond Holding Time**

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-111741-1
Client Project/Site: Pima Co

For:
Avra Gro Systems Inc.
11661 W. Grierr Road
Marana, Arizona 85653

Attn: Rob Fehrman

Authorized for release by:
11/8/2018 3:26:11 PM

Mary Hamilton, Project Manager I
(602)437-3340
mary.hamilton@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Sample Summary 5
Detection Summary 6
Client Sample Results 8
QC Sample Results 10
QC Association Summary 19
Lab Chronicle 23
Certification Summary 25
Method Summary 26
Chain of Custody 27
Receipt Checklists 30

Definitions/Glossary

Client: Avra Gro Systems Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-111741-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

Metals

Qualifier	Qualifier Description
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
R4	MS/MSD RPD exceeded the method control limit. Recovery met acceptance criteria.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.

General Chemistry

Qualifier	Qualifier Description
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.
N1	See case narrative.
D2	Sample required dilution due to high concentration of analyte.
H1	Sample analysis performed past holding time.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Avra Gro Systems Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-111741-1

Job ID: 550-111741-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-111741-1

Comments
No additional comments.

Receipt
The samples were received on 10/16/2018 1:58 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.6° C.

Receipt Exceptions
The Chain-of-Custody (COC) was incomplete as received; some of the methods requested were missing specific parameters. The client was notified and provided a list for of parameters.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method(s) Moisture: The sample duplicate (DU) precision for analytical batch 550-159435 was outside control limits. Sample non-homogeneity was suspected. As such, these data have been reported and qualified with R8 flags.

Method(s) DI Leach: The associated samples were too absorbent to produce a 1:1 sample weight to water ratio for analysis of pH by method EPA 9045D; Pima Co 9/24/2018 3:00 pm (550-111741-1), Pima Co 10/9/2018 2:30 pm (550-111741-2) and (550-111741-A-2 DU). The initial sample amount used was reduced to produce a non-conformance final sample weight to water ratio. Data has been reported and qualified with N1 flags.

Method(s) SM 4500 NH3 D: The following sample was received at the laboratory with less than 6 days remaining on the 28 day analytical holding time for Ammonia by method SM 4500NH3_D: Pima Co 9/24/2018 3:00 pm (550-111741-1). Due to an oversight, the soon-expiring holding time was missed and the sample did not get analyzed within the method holding time requirement. Data has been reported and qualified with an H1 flag.

Method(s) 351.2: The following samples were received at the laboratory with less than 6 days remaining on the 28 day analytical holding time for Total Kjeldahl Nitrogen (TKN) by method EPA 351.2: Pima Co 9/24/2018 3:00 pm (550-111741-1). Due to an oversight, the soon-expiring holding time was missed and the sample did not get analyzed within the method holding time requirement. Data has been reported and qualified with an H1 flag.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Avra Gro Systems Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-111741-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-111741-1	Pima Co 9/24/2018 3:00 pm	Solid	09/24/18 15:00	10/16/18 13:58
550-111741-2	Pima Co 10/9/2018 2:30 pm	Solid	10/09/18 14:30	10/16/18 13:58

Detection Summary

Client: Avra Gro Systems Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-111741-1

Client Sample ID: Pima Co 10/9/2018 2:30 pm (Continued) Lab Sample ID: 550-111741-2

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Mercury	2.2		0.35		mg/Kg	1	☼	7471B	Total/NA
pH	7.7	H5 N1	1.7		SU	1		9045D	Soluble

This Detection Summary does not include radiochemical test results.

TestAmerica Phoenix

11/8/2018

Client Sample Results

Client: Avra Gro Systems Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-111741-1

Client Sample ID: Pima Co 9/24/2018 3:00 pm
Date Collected: 09/24/18 15:00
Date Received: 10/16/18 13:58

Lab Sample ID: 550-111741-1
Matrix: Solid
Percent Solids: 19.7

Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	17		5.0		mg/Kg	☼		10/23/18 09:27	1
Nitrite as N	91		5.0		mg/Kg	☼		10/23/18 09:27	1
Nitrate Nitrite as N	110		5.0		mg/Kg	☼		10/23/18 09:27	1
Chloride	4700		99		mg/Kg	☼		10/23/18 09:27	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	3100		51		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Arsenic	ND		15		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Barium	250		25		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Boron	64		51		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Cadmium	ND		2.5		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Calcium	32000		130		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Chromium	25		10		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Copper	430		13		mg/Kg	☼	10/18/18 05:36	10/19/18 01:00	1
Iron	26000		51		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Lead	12		5.1		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Magnesium	6600		130		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Manganese	170		10		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Molybdenum	13		10		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Nickel	22		10		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Potassium	2100		130		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Selenium	ND		25		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Silver	ND		13		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Sodium	1100		250		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1
Zinc	640		25		mg/Kg	☼	10/18/18 05:36	10/18/18 17:21	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfur	14000		240		mg/Kg	☼	10/18/18 20:34	10/19/18 23:45	1
Phosphorus	23000		100		mg/Kg	☼	10/20/18 11:04	10/22/18 18:12	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.99		0.29		mg/Kg	☼	10/22/18 14:10	10/22/18 17:32	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	80.3		0.1		%			10/17/18 08:05	1
Percent Solids	19.7		0.1		%			10/17/18 08:05	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	77000	D2 H1 M3	9800		mg/Kg	☼	10/24/18 11:45	10/25/18 13:04	40
Ammonia	13000	D2 H1	250		mg/Kg	☼		10/25/18 09:43	10
Analyte	**Result**	**Qualifier**	**RL**	**RL**	**Unit**	**D**	**Prepared**	**Analyzed**	**Dil Fac**
pH	7.7	H5 N1	1.7		SU			10/23/18 16:00	1

TestAmerica Phoenix

Client Sample Results

Client: Avra Gro Systems Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-111741-1

Client Sample ID: Pima Co 10/9/2018 2:30 pm
Date Collected: 10/09/18 14:30
Date Received: 10/16/18 13:58

Lab Sample ID: 550-111741-2
Matrix: Solid
Percent Solids: 16.4

Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		6.0		mg/Kg	☼		10/23/18 10:04	1
Nitrite as N	ND		6.0		mg/Kg	☼		10/23/18 10:04	1
Nitrate Nitrite as N	ND		6.0		mg/Kg	☼		10/23/18 10:04	1
Chloride	**660**		120		mg/Kg	☼		10/23/18 18:25	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**3400**		60		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Arsenic	ND		18		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Barium	**270**		30		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Boron	**71**		60		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Cadmium	ND		3.0		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Calcium	**36000**		150		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Chromium	**29**		12		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Copper	**470**		15		mg/Kg	☼	10/18/18 05:36	10/19/18 01:02	1
Iron	**32000**		60		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Lead	**15**		6.0		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Magnesium	**7500**		150		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Manganese	**210**		12		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Molybdenum	**13**		12		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Nickel	**23**		12		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Potassium	**2500**		150		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Selenium	ND		30		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Silver	ND		15		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Sodium	**1200**		300		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1
Zinc	**700**		30		mg/Kg	☼	10/18/18 05:36	10/18/18 17:24	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfur	**11000**		290		mg/Kg	☼	10/18/18 20:34	10/19/18 23:50	1
Phosphorus	**19000**		110		mg/Kg	☼	10/20/18 11:04	10/22/18 18:07	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**2.2**		0.35		mg/Kg	☼	10/22/18 14:10	10/22/18 17:34	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**83.6**		0.1		%			10/17/18 08:05	1
Percent Solids	**16.4**		0.1		%			10/17/18 08:05	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	**76000**	**D2**	12000		mg/Kg	☼	10/24/18 11:45	10/25/18 13:11	40
Ammonia	**14000**	**D2 M3**	300		mg/Kg	☼		10/25/18 09:51	10
Analyte	**Result**	**Qualifier**	**RL**	**RL**	**Unit**	**D**	**Prepared**	**Analyzed**	**Dil Fac**
pH	**7.7**	**H5 N1**	1.7		SU			10/23/18 16:00	1

TestAmerica Phoenix

Lab Chronicle

Client: Avra Gro Systems Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-111741-1

Client Sample ID: Pima Co 9/24/2018 3:00 pm

Lab Sample ID: 550-111741-1
Matrix: Solid

Date Collected: 09/24/18 15:00
Date Received: 10/16/18 13:58

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1	159435		YET	TAL PHX
					(Start)	10/17/18 08:05		
					(End)	10/18/18 07:25		
Soluble	Leach	DI Leach			160013	10/23/18 12:10	MRR	TAL PHX
Soluble	Analysis	9045D		1	160061	10/23/18 16:00	MRR	TAL PHX

Client Sample ID: Pima Co 9/24/2018 3:00 pm

Lab Sample ID: 550-111741-1
Matrix: Solid
Percent Solids: 19.7

Date Collected: 09/24/18 15:00
Date Received: 10/16/18 13:58

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			159927	10/22/18 15:45	NEL	TAL PHX
Soluble	Analysis	9056A		1	160024	10/23/18 09:27	NEL	TAL PHX
Total/NA	Prep	3050B			159563	10/18/18 05:36	SGO	TAL PHX
Total/NA	Analysis	6010C		1	159675	10/18/18 17:21	ARE	TAL PHX
Total/NA	Prep	3050B			159563	10/18/18 05:36	SGO	TAL PHX
Total/NA	Analysis	6010C		1	159699	10/19/18 01:00	ARE	TAL PHX
Total/NA	Prep	3051A			551471	10/20/18 11:04	CAP	TAL NSH
Total/NA	Analysis	6010D		1	551979	10/22/18 18:12	BLG	TAL NSH
Total/NA	Prep	3051A			551165	10/18/18 20:34	CAP	TAL NSH
Total/NA	Analysis	6010D		1	551476	10/19/18 23:45	LDC	TAL NSH
Total/NA	Prep	7471B			159914	10/22/18 14:10	JTG	TAL PHX
Total/NA	Analysis	7471B		1	159938	10/22/18 17:32	JTG	TAL PHX
Soluble	Leach	DI Leach			160124	10/24/18 09:55	DGS	TAL PHX
Soluble	Prep	351.2			160133	10/24/18 11:45	DGS	TAL PHX
Soluble	Analysis	351.2		40	160283	10/25/18 13:04	DGS	TAL PHX
Soluble	Leach	Acid DI leach			160141	10/24/18 12:30	DGS	TAL PHX
Soluble	Analysis	SM 4500 NH3 D		10	160252	10/25/18 09:43	DGS	TAL PHX

Client Sample ID: Pima Co 10/9/2018 2:30 pm

Lab Sample ID: 550-111741-2
Matrix: Solid

Date Collected: 10/09/18 14:30
Date Received: 10/16/18 13:58

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1	159435		YET	TAL PHX
					(Start)	10/17/18 08:05		
					(End)	10/18/18 07:25		
Soluble	Leach	DI Leach			160013	10/23/18 12:10	MRR	TAL PHX
Soluble	Analysis	9045D		1	160061	10/23/18 16:00	MRR	TAL PHX

TestAmerica Phoenix

Lab Chronicle

Client: Avra Gro Systems Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-111741-1

Client Sample ID: Pima Co 10/9/2018 2:30 pm **Lab Sample ID: 550-111741-2**
Date Collected: 10/09/18 14:30 **Matrix: Solid**
Date Received: 10/16/18 13:58 **Percent Solids: 16.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			159927	10/22/18 15:45	NEL	TAL PHX
Soluble	Analysis	9056A		1	160024	10/23/18 10:04	NEL	TAL PHX
Soluble	Leach	DI Leach			159927	10/22/18 15:45	NEL	TAL PHX
Soluble	Analysis	9056A		1	160024	10/23/18 18:25	NEL	TAL PHX
Total/NA	Prep	3050B			159563	10/18/18 05:36	SGO	TAL PHX
Total/NA	Analysis	6010C		1	159675	10/18/18 17:24	ARE	TAL PHX
Total/NA	Prep	3050B			159563	10/18/18 05:36	SGO	TAL PHX
Total/NA	Analysis	6010C		1	159699	10/19/18 01:02	ARE	TAL PHX
Total/NA	Prep	3051A			551471	10/20/18 11:04	CAP	TAL NSH
Total/NA	Analysis	6010D		1	551979	10/22/18 18:07	BLG	TAL NSH
Total/NA	Prep	3051A			551165	10/18/18 20:34	CAP	TAL NSH
Total/NA	Analysis	6010D		1	551476	10/19/18 23:50	LDC	TAL NSH
Total/NA	Prep	7471B			159914	10/22/18 14:10	JTG	TAL PHX
Total/NA	Analysis	7471B		1	159938	10/22/18 17:34	JTG	TAL PHX
Soluble	Leach	DI Leach			160124	10/24/18 09:55	DGS	TAL PHX
Soluble	Prep	351.2			160133	10/24/18 11:45	DGS	TAL PHX
Soluble	Analysis	351.2		40	160283	10/25/18 13:11	DGS	TAL PHX
Soluble	Leach	Acid DI leach			160141	10/24/18 12:30	DGS	TAL PHX
Soluble	Analysis	SM 4500 NH3 D		10	160252	10/25/18 09:51	DGS	TAL PHX

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Avra Gro Systems Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-111741-1

Laboratory: TestAmerica Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0728	06-09-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0473	05-05-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6010D	3051A	Solid	Sulfur

Method Summary

Client: Avra Gro Systems Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-111741-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL PHX
6010C	Metals (ICP)	SW846	TAL PHX
6010D	Metals (ICP)	SW846	TAL NSH
7471B	Mercury (CVAA)	SW846	TAL PHX
2540G	SM 2540G	SM22	TAL PHX
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL PHX
9045D	pH	SW846	TAL PHX
SM 4500 NH3 D	Ammonia	SM	TAL PHX
3050B	Preparation, Metals	SW846	TAL PHX
3051A	Preparation, Metals, Microwave Assisted	SW846	TAL NSH
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL PHX
7471B	Preparation, Mercury	SW846	TAL PHX
Acid DI leach	Acidified Deionized Water Leach	None	TAL PHX
DI Leach	Deionized Water Leaching Procedure	ASTM	TAL PHX

Protocol References:

ASTM = ASTM International
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SM22 = Standard Methods For The Examination Of Water And Wastewater, 22nd Edition
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix
4625 East Cotton Ctr Blvd Suite 189
Phoenix, AZ 85040
Phone (602) 437-3340 Fax (602) 454-9303

Chain of Custody Record

550-111741

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Client Information (Sub Contract Lab)

Client Contact: Shipping/Receiving	Sampler:	Lab PM: Hamilton, Mary	COC No: 550-22548.1
Company: TestAmerica Laboratories, Inc	Phone:	E-Mail: mary.hamilton@testamericainc.com	State of Origin: Arizona
Address: 2960 Foster Creighton Drive, ,	Due Date Requested: 10/26/2018	Accreditations Required (See note): State Program - Arizona	Page: Page 1 of 1
City: Nashville	TAT Requested (days):		Job #: 550-111741-1
State, Zip: TN, 37204			Preservation Codes:
Phone: 615-726-0177(Tel) 615-726-3404(Fax)	PO #:		
Email:	WO #:		
Project Name: Pima Co	Project #: 55011924		
Site:	SSOW#:		

Analysis Requested

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8010D/3061A (MOD) Custom Metals List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Pima Co 9/24/2018 3:00 pm (550-111741-1)	9/24/18	15:00 Arizona		Solid			X		
Pima Co 10/9/2018 2:30 p (550-111741-2)	10/9/18	14:30 Arizona		Solid			X		

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does no currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [illegible] 10-17-18 16:45	Date/Time:	Company: AS	Received by: [illegible]	Date/Time: 10/18/18 10:00	Company: TA-VAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 3.0		

Ver: 09/20/2016

Login Sample Receipt Checklist

Client: Avra Gro Systems Inc.

Job Number: 550-111741-1

Login Number: 111741
List Number: 1
Creator: Maycock, Lisa

List Source: TestAmerica Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-113500-1
Client Project/Site: Avra Gro Systems Inc - Solids

For:
Avra Gro Systems Inc.
11661 W. Grierr Road
Marana, Arizona 85653

Attn: Rob Fehrman

Authorized for release by:
12/7/2018 5:02:37 PM

Mary Hamilton, Project Manager I
(602)437-3340
mary.hamilton@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Avra Gro Systems Inc.
Project/Site: Avra Gro Systems Inc - Solids

TestAmerica Job ID: 550-113500-1

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Sample Summary 5
Detection Summary 6
Client Sample Results 8
QC Sample Results 11
QC Association Summary 20
Lab Chronicle 25
Certification Summary 28
Method Summary 29
Chain of Custody 30
Receipt Checklists 33

Definitions/Glossary

Client: Avra Gro Systems Inc.
Project/Site: Avra Gro Systems Inc - Solids

TestAmerica Job ID: 550-113500-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.
R12	RPD/RSD exceeded the method acceptance limit. Result less than 5 times the PQL..

Metals

Qualifier	Qualifier Description
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.

General Chemistry

Qualifier	Qualifier Description
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.
D2	Sample required dilution due to high concentration of analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Avra Gro Systems Inc.
Project/Site: Avra Gro Systems Inc - Solids

TestAmerica Job ID: 550-113500-1

Job ID: 550-113500-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-113500-1

Comments
No additional comments.

Receipt
The samples were received on 11/15/2018 3:01 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.4° C.

Receipt Exceptions
The Chain-of-Custody (COC) was incomplete as received; some of the methods requested were missing specific parameters. The client provided a list for of parameters based on a previous report, and the samples were logged in under TestAmerica project ID 55011924 that had been built from these parameters.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method(s) 6010C: The initial calibration verification low (ICVL) result for batch 550-162399 was above the upper control limit for Cadmium. Sample results were non-detects, and have been reported as qualified data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Avra Gro Systems Inc.
Project/Site: Avra Gro Systems Inc - Solids

TestAmerica Job ID: 550-113500-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-113500-1	Pima Co 10/31/2018 3:00pm	Solid	10/31/18 15:00	11/15/18 15:01
550-113500-2	Pima Co 11/5/2018 2:30 p	Solid	11/05/18 14:30	11/15/18 15:01
550-113500-3	Pima Co 11/15/2018 9:30 am	Solid	11/15/18 09:30	11/15/18 15:01

5

Detection Summary

Client: Avra Gro Systems Inc.
Project/Site: Avra Gro Systems Inc - Solids

TestAmerica Job ID: 550-113500-1

Client Sample ID: Pima Co 10/31/2018 3:00pm — Lab Sample ID: 550-113500-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrite as N	19		6.2		mg/Kg	1	☼	9056A	Soluble
Nitrate Nitrite as N	19		6.2		mg/Kg	1	☼	9056A	Soluble
Chloride	6700		120		mg/Kg	1	☼	9056A	Soluble
Sodium	1200		310		mg/Kg	1	☼	6010C	Total/NA
Calcium	38000		150		mg/Kg	1	☼	6010C	Total/NA
Iron	36000		61		mg/Kg	1	☼	6010C	Total/NA
Magnesium	7100		150		mg/Kg	1	☼	6010C	Total/NA
Boron	74		61		mg/Kg	1	☼	6010C	Total/NA
Aluminum	3300		61		mg/Kg	1	☼	6010C	Total/NA
Manganese	230		12		mg/Kg	1	☼	6010C	Total/NA
Barium	280		31		mg/Kg	1	☼	6010C	Total/NA
Molybdenum	14		12		mg/Kg	1	☼	6010C	Total/NA
Nickel	24		12		mg/Kg	1	☼	6010C	Total/NA
Copper	430		15		mg/Kg	1	☼	6010C	Total/NA
Lead	27		6.1		mg/Kg	1	☼	6010C	Total/NA
Chromium	32		12		mg/Kg	1	☼	6010C	Total/NA
Potassium	2300		150		mg/Kg	1	☼	6010C	Total/NA
Zinc	810		31		mg/Kg	1	☼	6010C	Total/NA
Sulfur	15000		280		mg/Kg	1	☼	6010D	Total/NA
P	29000		110		mg/Kg	1	☼	6010D	Total/NA
Nitrogen, Kjeldahl	83000	D2 M3	6100		mg/Kg	20	☼	351.2	Soluble
Ammonia	12000	D2	310		mg/Kg	10	☼	SM 4500 NH3 D	Soluble

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.89		0.37		mg/Kg	1	☼	7471B	Total/NA
pH	7.6	H5	1.7		SU	1		9045D	Soluble

Client Sample ID: Pima Co 11/5/2018 2:30 p — Lab Sample ID: 550-113500-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrite as N	14		6.5		mg/Kg	1	☼	9056A	Soluble
Nitrate Nitrite as N	14		6.5		mg/Kg	1	☼	9056A	Soluble
Chloride	8500		130		mg/Kg	1	☼	9056A	Soluble
Sodium	1400		330		mg/Kg	1	☼	6010C	Total/NA
Calcium	38000		160		mg/Kg	1	☼	6010C	Total/NA
Iron	34000		65		mg/Kg	1	☼	6010C	Total/NA
Magnesium	7600		160		mg/Kg	1	☼	6010C	Total/NA
Boron	75		65		mg/Kg	1	☼	6010C	Total/NA
Aluminum	3300		65		mg/Kg	1	☼	6010C	Total/NA
Manganese	230		13		mg/Kg	1	☼	6010C	Total/NA
Barium	290		33		mg/Kg	1	☼	6010C	Total/NA
Molybdenum	14		13		mg/Kg	1	☼	6010C	Total/NA
Nickel	25		13		mg/Kg	1	☼	6010C	Total/NA
Copper	440		16		mg/Kg	1	☼	6010C	Total/NA
Lead	15		6.5		mg/Kg	1	☼	6010C	Total/NA
Chromium	32		13		mg/Kg	1	☼	6010C	Total/NA
Potassium	2500		160		mg/Kg	1	☼	6010C	Total/NA
Zinc	820		33		mg/Kg	1	☼	6010C	Total/NA
Sulfur	16000		310		mg/Kg	1	☼	6010D	Total/NA
P	28000		120		mg/Kg	1	☼	6010D	Total/NA
Nitrogen, Kjeldahl	90000	D2	6400		mg/Kg	20	☼	351.2	Soluble

This Detection Summary does not include radiochemical test results.

TestAmerica Phoenix

Detection Summary

Client: Avra Gro Systems Inc.
Project/Site: Avra Gro Systems Inc - Solids

TestAmerica Job ID: 550-113500-1

Client Sample ID: Pima Co 11/5/2018 2:30 p (Continued) — Lab Sample ID: 550-113500-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ammonia	15000	D2	330		mg/Kg	10	☼	SM 4500 NH3 D	Soluble

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.96		0.39		mg/Kg	1	☼	7471B	Total/NA
pH	7.6	H5	1.7		SU	1		9045D	Soluble

Client Sample ID: Pima Co 11/15/2018 9:30 am — Lab Sample ID: 550-113500-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6500		130		mg/Kg	1	☼	9056A	Soluble
Sodium	1200		320		mg/Kg	1	☼	6010C	Total/NA
Calcium	35000		160		mg/Kg	1	☼	6010C	Total/NA
Iron	34000		64		mg/Kg	1	☼	6010C	Total/NA
Magnesium	6300		160		mg/Kg	1	☼	6010C	Total/NA
Boron	70		64		mg/Kg	1	☼	6010C	Total/NA
Aluminum	3000		64		mg/Kg	1	☼	6010C	Total/NA
Manganese	230		13		mg/Kg	1	☼	6010C	Total/NA
Barium	270		32		mg/Kg	1	☼	6010C	Total/NA
Molybdenum	13		13		mg/Kg	1	☼	6010C	Total/NA
Nickel	23		13		mg/Kg	1	☼	6010C	Total/NA
Copper	400		16		mg/Kg	1	☼	6010C	Total/NA
Lead	13		6.4		mg/Kg	1	☼	6010C	Total/NA
Chromium	29		13		mg/Kg	1	☼	6010C	Total/NA
Potassium	2200		160		mg/Kg	1	☼	6010C	Total/NA
Zinc	760		32		mg/Kg	1	☼	6010C	Total/NA
Sulfur	12000		280		mg/Kg	1	☼	6010D	Total/NA
P	22000		110		mg/Kg	1	☼	6010D	Total/NA
Nitrogen, Kjeldahl	71000	D2	6200		mg/Kg	20	☼	351.2	Soluble
Ammonia	11000	D2	320		mg/Kg	10	☼	SM 4500 NH3 D	Soluble

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.78		0.38		mg/Kg	1	☼	7471B	Total/NA
pH	7.7	H5	1.7		SU	1		9045D	Soluble

This Detection Summary does not include radiochemical test results.

TestAmerica Phoenix

Client Sample Results

Client: Avra Gro Systems Inc.
Project/Site: Avra Gro Systems Inc - Solids

TestAmerica Job ID: 550-113500-1

Client Sample ID: Pima Co 10/31/2018 3:00pm

Date Collected: 10/31/18 15:00
Date Received: 11/15/18 15:01

Lab Sample ID: 550-113500-1
Matrix: Solid
Percent Solids: 16.0

Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		6.2		mg/Kg	☼		11/29/18 05:40	1
Nitrite as N	**19**		6.2		mg/Kg	☼		11/29/18 05:40	1
Nitrate Nitrite as N	**19**		6.2		mg/Kg	☼		11/29/18 05:40	1
Chloride	**6700**		120		mg/Kg	☼		11/29/18 05:40	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**1200**		310		mg/Kg	☼	12/04/18 06:32	12/05/18 08:24	1
Calcium	**38000**		150		mg/Kg	☼	11/16/18 17:13	11/20/18 01:35	1
Iron	**36000**		61		mg/Kg	☼	11/16/18 17:13	11/30/18 05:27	1
Silver	ND		15		mg/Kg	☼	11/16/18 17:13	11/20/18 01:35	1
Magnesium	**7100**		150		mg/Kg	☼	11/16/18 17:13	11/20/18 01:35	1
Boron	**74**		61		mg/Kg	☼	11/16/18 17:13	11/20/18 01:35	1
Aluminum	**3300**		61		mg/Kg	☼	11/16/18 17:13	11/20/18 01:35	1
Manganese	**230**		12		mg/Kg	☼	11/16/18 17:13	11/20/18 01:35	1
Cadmium	ND		3.1		mg/Kg	☼	11/16/18 17:13	11/20/18 01:35	1
Barium	**280**		31		mg/Kg	☼	11/16/18 17:13	11/20/18 01:35	1
Molybdenum	**14**		12		mg/Kg	☼	11/16/18 17:13	11/20/18 01:35	1
Nickel	**24**		12		mg/Kg	☼	11/16/18 17:13	11/20/18 01:35	1
Arsenic	ND		18		mg/Kg	☼	11/16/18 17:13	11/20/18 01:35	1
Copper	**430**		15		mg/Kg	☼	11/16/18 17:13	11/30/18 05:27	1
Lead	**27**		6.1		mg/Kg	☼	11/16/18 17:13	11/30/18 05:27	1
Chromium	**32**		12		mg/Kg	☼	11/16/18 17:13	11/20/18 01:35	1
Potassium	**2300**		150		mg/Kg	☼	11/16/18 17:13	11/20/18 01:35	1
Zinc	**810**		31		mg/Kg	☼	11/16/18 17:13	11/20/18 01:35	1
Selenium	ND		31		mg/Kg	☼	11/16/18 17:13	11/20/18 01:35	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfur	**15000**		280		mg/Kg	☼	11/17/18 18:46	11/22/18 13:09	1
P	**29000**		110		mg/Kg	☼	11/17/18 18:46	11/19/18 16:32	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.89**		0.37		mg/Kg	☼	11/23/18 14:42	11/25/18 14:56	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**84.0**		0.1		%			11/16/18 09:45	1
Percent Solids	**16.0**		0.1		%			11/16/18 09:45	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	**83000**	**D2 M3**	6100		mg/Kg	☼	11/26/18 16:00	11/27/18 11:45	20
Ammonia	**12000**	**D2**	310		mg/Kg	☼		11/28/18 15:17	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.6**	**H5**	1.7		SU			11/26/18 19:17	1

TestAmerica Phoenix

Client Sample Results

Client: Avra Gro Systems Inc.
Project/Site: Avra Gro Systems Inc - Solids

TestAmerica Job ID: 550-113500-1

Client Sample ID: Pima Co 11/5/2018 2:30 p

Date Collected: 11/05/18 14:30
Date Received: 11/15/18 15:01

Lab Sample ID: 550-113500-2

Matrix: Solid
Percent Solids: 15.0

Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		6.5		mg/Kg	☼		11/29/18 06:35	1
Nitrite as N	**14**		6.5		mg/Kg	☼		11/29/18 06:35	1
Nitrate Nitrite as N	**14**		6.5		mg/Kg	☼		11/29/18 06:35	1
Chloride	**8500**		130		mg/Kg	☼		11/29/18 06:35	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**1400**		330		mg/Kg	☼	12/04/18 06:32	12/05/18 08:26	1
Calcium	**38000**		160		mg/Kg	☼	11/16/18 17:13	11/20/18 01:37	1
Iron	**34000**		65		mg/Kg	☼	11/16/18 17:13	11/30/18 05:29	1
Silver	ND		16		mg/Kg	☼	11/16/18 17:13	11/20/18 01:37	1
Magnesium	**7600**		160		mg/Kg	☼	11/16/18 17:13	11/20/18 01:37	1
Boron	**75**		65		mg/Kg	☼	11/16/18 17:13	11/20/18 01:37	1
Aluminum	**3300**		65		mg/Kg	☼	11/16/18 17:13	11/20/18 01:37	1
Manganese	**230**		13		mg/Kg	☼	11/16/18 17:13	11/20/18 01:37	1
Cadmium	ND		3.3		mg/Kg	☼	11/16/18 17:13	11/20/18 01:37	1
Barium	**290**		33		mg/Kg	☼	11/16/18 17:13	11/20/18 01:37	1
Molybdenum	**14**		13		mg/Kg	☼	11/16/18 17:13	11/20/18 01:37	1
Nickel	**25**		13		mg/Kg	☼	11/16/18 17:13	11/20/18 01:37	1
Arsenic	ND		20		mg/Kg	☼	11/16/18 17:13	11/20/18 01:37	1
Copper	**440**		16		mg/Kg	☼	11/16/18 17:13	11/30/18 05:29	1
Lead	**15**		6.5		mg/Kg	☼	11/16/18 17:13	11/30/18 05:29	1
Chromium	**32**		13		mg/Kg	☼	11/16/18 17:13	11/20/18 01:37	1
Potassium	**2500**		160		mg/Kg	☼	11/16/18 17:13	11/20/18 01:37	1
Zinc	**820**		33		mg/Kg	☼	11/16/18 17:13	11/20/18 01:37	1
Selenium	ND		33		mg/Kg	☼	11/16/18 17:13	11/20/18 01:37	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfur	**16000**		310		mg/Kg	☼	11/17/18 18:46	11/22/18 13:14	1
P	**28000**		120		mg/Kg	☼	11/17/18 18:46	11/19/18 16:37	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.96**		0.39		mg/Kg	☼	11/23/18 14:42	11/25/18 15:10	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**85.0**		0.1		%			11/16/18 09:45	1
Percent Solids	**15.0**		0.1		%			11/16/18 09:45	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	**90000**	**D2**	6400		mg/Kg	☼	11/26/18 16:00	11/27/18 11:52	20
Ammonia	**15000**	**D2**	330		mg/Kg	☼		11/28/18 15:25	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.6**	**H5**	1.7		SU			11/26/18 19:17	1

TestAmerica Phoenix

Accreditation/Certification Summary

Client: Avra Gro Systems Inc.
Project/Site: Avra Gro Systems Inc - Solids

TestAmerica Job ID: 550-113500-1

Laboratory: TestAmerica Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0728	06-09-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0473	05-05-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6010D	3051A	Solid	Sulfur

Method Summary

Client: Avra Gro Systems Inc.
Project/Site: Avra Gro Systems Inc - Solids

TestAmerica Job ID: 550-113500-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL PHX
6010C	Metals (ICP)	SW846	TAL PHX
6010D	Metals (ICP)	SW846	TAL NSH
7471B	Mercury (CVAA)	SW846	TAL PHX
2540G	SM 2540G	SM22	TAL PHX
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL PHX
9045D	pH	SW846	TAL PHX
SM 4500 NH3 D	Ammonia	SM	TAL PHX
3050B	Preparation, Metals	SW846	TAL PHX
3051A	Preparation, Metals, Microwave Assisted	SW846	TAL NSH
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL PHX
7471B	Preparation, Mercury	SW846	TAL PHX
Acid DI leach	Acidified Deionized Water Leach	None	TAL PHX
DI Leach	Deionized Water Leaching Procedure	ASTM	TAL PHX

Protocol References:

ASTM = ASTM International
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SM22 = Standard Methods For The Examination Of Water And Wastewater, 22nd Edition
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-114824-1
Client Project/Site: Pima Co

For:
Avra Gro Systems, Inc.
2305 W Ruthrauff Rd
Tucson, Arizona 85705

Attn: Jihong Kai

Authorized for release by:
12/31/2018 10:31:06 AM

Mary Hamilton, Project Manager I
(602)437-3340
mary.hamilton@testamericainc.com

LINKS

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Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Case Narrative

Client: Avra Gro Systems, Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-114824-1

Job ID: 550-114824-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-114824-1

Comments
No additional comments.

Receipt
The samples were received on 12/12/2018 2:51 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

HPLC/IC
Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Nitrate as N, Nitrite as N and Nitrate and NItrite as N by method EPA 9056A associated with analytical batch 550-165478 were outside control limits. Sample matrix interference was suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Avra Gro Systems, Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-114824-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-114824-1	Pima Co12/2018 3rd	Solid	12/03/18 10:00	12/12/18 14:51
550-114824-2	Pima Co12/2018 11th	Solid	12/11/18 14:41	12/12/18 14:51

5

Detection Summary

Client: Avra Gro Systems, Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-114824-1

Client Sample ID: Pima Co12/2018 3rd — Lab Sample ID: 550-114824-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6800	M3	130		mg/Kg	1	☼	9056A	Soluble
Aluminum	3300		66		mg/Kg	1	☼	6010C	Total/NA
Barium	280		33		mg/Kg	1	☼	6010C	Total/NA
Boron	69		66		mg/Kg	1	☼	6010C	Total/NA
Calcium	34000		160		mg/Kg	1	☼	6010C	Total/NA
Chromium	30		13		mg/Kg	1	☼	6010C	Total/NA
Copper	400		16		mg/Kg	1	☼	6010C	Total/NA
Iron	36000		66		mg/Kg	1	☼	6010C	Total/NA
Lead	13		6.6		mg/Kg	1	☼	6010C	Total/NA
Magnesium	7600		160		mg/Kg	1	☼	6010C	Total/NA
Manganese	230		13		mg/Kg	1	☼	6010C	Total/NA
Molybdenum	13		13		mg/Kg	1	☼	6010C	Total/NA
Nickel	23		13		mg/Kg	1	☼	6010C	Total/NA
Potassium	2500		160		mg/Kg	1	☼	6010C	Total/NA
Sodium	1200		330		mg/Kg	1	☼	6010C	Total/NA
Zinc	700		33		mg/Kg	1	☼	6010C	Total/NA
Sulfur	13000		280		mg/Kg	1	☼	6010D	Total/NA
P	28000		110		mg/Kg	1	☼	6010D	Total/NA
Nitrogen, Kjeldahl	80000	D2	6200		mg/Kg	20	☼	351.2	Soluble
Ammonia	12000	D2 M3	330		mg/Kg	10	☼	SM 4500 NH3 D	Soluble
Analyte	**Result**	**Qualifier**	**RL**	**RL**	**Unit**	**Dil Fac**	**D**	**Method**	**Prep Type**
Mercury	0.96		0.35		mg/Kg	1	☼	7471B	Total/NA
pH	7.6	H5	1.7		SU	1		9045D	Soluble

Client Sample ID: Pima Co12/2018 11th — Lab Sample ID: 550-114824-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8200		160		mg/Kg	1	☼	9056A	Soluble
Aluminum	3100		81		mg/Kg	1	☼	6010C	Total/NA
Barium	260		41		mg/Kg	1	☼	6010C	Total/NA
Calcium	32000		200		mg/Kg	1	☼	6010C	Total/NA
Chromium	30		16		mg/Kg	1	☼	6010C	Total/NA
Copper	390		20		mg/Kg	1	☼	6010C	Total/NA
Iron	35000		81		mg/Kg	1	☼	6010C	Total/NA
Lead	11		8.1		mg/Kg	1	☼	6010C	Total/NA
Magnesium	6400		200		mg/Kg	1	☼	6010C	Total/NA
Manganese	210		16		mg/Kg	1	☼	6010C	Total/NA
Nickel	22		16		mg/Kg	1	☼	6010C	Total/NA
Potassium	2600		200		mg/Kg	1	☼	6010C	Total/NA
Sodium	1400		410		mg/Kg	1	☼	6010C	Total/NA
Zinc	690		41		mg/Kg	1	☼	6010C	Total/NA
Sulfur	13000		390		mg/Kg	1	☼	6010D	Total/NA
P	28000		160		mg/Kg	1	☼	6010D	Total/NA
Nitrogen, Kjeldahl	76000	D2 M3	7900		mg/Kg	20	☼	351.2	Soluble
Ammonia	11000	D2	410		mg/Kg	10	☼	SM 4500 NH3 D	Soluble
Analyte	**Result**	**Qualifier**	**RL**	**RL**	**Unit**	**Dil Fac**	**D**	**Method**	**Prep Type**
Mercury	0.71		0.44		mg/Kg	1	☼	7471B	Total/NA
pH	7.5	H5	1.7		SU	1		9045D	Soluble

This Detection Summary does not include radiochemical test results.

TestAmerica Phoenix

Client Sample Results

Client: Avra Gro Systems, Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-114824-1

Client Sample ID: Pima Co12/2018 3rd **Lab Sample ID: 550-114824-1**
Date Collected: 12/03/18 10:00 **Matrix: Solid**
Date Received: 12/12/18 14:51 **Percent Solids: 15.1**

Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND	M2	6.4		mg/Kg	☼		12/26/18 16:56	1
Nitrite as N	ND	M2	6.4		mg/Kg	☼		12/26/18 16:56	1
Nitrate Nitrite as N	ND	M2	6.4		mg/Kg	☼		12/26/18 16:56	1
Chloride	**6800**	**M3**	130		mg/Kg	☼		12/26/18 16:56	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**3300**		66		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Arsenic	ND		20		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Barium	**280**		33		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Boron	**69**		66		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Cadmium	ND		3.3		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Calcium	**34000**		160		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Chromium	**30**		13		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Copper	**400**		16		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Iron	**36000**		66		mg/Kg	☼	12/19/18 04:51	12/27/18 22:37	1
Lead	**13**		6.6		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Magnesium	**7600**		160		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Manganese	**230**		13		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Molybdenum	**13**		13		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Nickel	**23**		13		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Potassium	**2500**		160		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Selenium	ND		33		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Silver	ND		16		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Sodium	**1200**		330		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1
Zinc	**700**		33		mg/Kg	☼	12/19/18 04:51	12/19/18 16:56	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfur	**13000**		280		mg/Kg	☼	12/14/18 14:58	12/15/18 19:35	1
P	**28000**		110		mg/Kg	☼	12/14/18 14:58	12/15/18 19:35	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.96**		0.35		mg/Kg	☼	12/18/18 15:11	12/18/18 17:46	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**84.9**		0.1		%			12/13/18 07:30	1
Percent Solids	**15.1**		0.1		%			12/13/18 07:30	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	**80000**	**D2**	6200		mg/Kg	☼	12/13/18 12:15	12/17/18 10:21	20
Ammonia	**12000**	**D2 M3**	330		mg/Kg	☼		12/13/18 13:18	10
Analyte	**Result**	**Qualifier**	**RL**	**RL**	**Unit**	**D**	**Prepared**	**Analyzed**	**Dil Fac**
pH	**7.6**	**H5**	1.7		SU			12/20/18 16:24	1

TestAmerica Phoenix

Accreditation/Certification Summary

Client: Avra Gro Systems, Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-114824-1

Laboratory: TestAmerica Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0728	06-09-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0473	05-05-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6010D	3051A	Solid	Sulfur

Method Summary

Client: Avra Gro Systems, Inc.
Project/Site: Pima Co

TestAmerica Job ID: 550-114824-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL PHX
6010C	Metals (ICP)	SW846	TAL PHX
6010D	Metals (ICP)	SW846	TAL NSH
7471B	Mercury (CVAA)	SW846	TAL PHX
2540G	SM 2540G	SM22	TAL PHX
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL PHX
9045D	pH	SW846	TAL PHX
SM 4500 NH3 D	Ammonia	SM	TAL PHX
3050B	Preparation, Metals	SW846	TAL PHX
3051A	Preparation, Metals, Microwave Assisted	SW846	TAL NSH
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL PHX
7471B	Preparation, Mercury	SW846	TAL PHX
Acid DI leach	Acidified Deionized Water Leach	None	TAL PHX
DI Leach	Deionized Water Leaching Procedure	ASTM	TAL PHX

Protocol References:

ASTM = ASTM International
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SM22 = Standard Methods For The Examination Of Water And Wastewater, 22nd Edition
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

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REGIONAL WATER
RECLAMATION DEPARTMENT

TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

End of Volume 1 of 2

ANNUAL BIOSOLIDS REPORT 2018

PIMA COUNTY
REGIONAL WASTEWATER RECLAMATION DEPARTMENT
PIMA COUNTY, ARIZONA

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ANNUAL BIOSOLIDS REPORT 2018

REGIONAL WATER
RECLAMATION DEPARTMENT

TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

PIMA COUNTY

ANNUAL BIOSOLIDS REPORT

CALENDAR YEAR 2018

Sustainable Resource BIOSOLIDS

Volume 2 of 2

REGIONAL WATER
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TUCSON, ARIZONA

PIMA COUNTY
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ANNUAL BIOSOLIDS REPORT 2018

REGIONAL WATER
RECLAMATION DEPARTMENT

TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

SECTION 5

AGUA NUEVA WRF
AZPDES NO. AZ0026107

2018 PREPARER FORM

AND

SAMPLING AND ANALYSES
PRIORITY POLLUTANTS
TCLP
HAZARDOUSNESS

ANNUAL BIOSOLIDS REPORT 2018

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ANNUAL BIOSOLIDS REPORT 2018

REGIONAL WATER
RECLAMATION DEPARTMENT

TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

ARIZONA
DEPARTMENT OF ENVIRONMENTAL QUALITY
AZPDES Individual Permits Unit
1110 W Washington Street
Phoenix, Arizona 85007
(602) 771-4689 (voicemail) (602) 771-4505 (fax)
Email to: biosolids@azdeq.gov

BIOSOLIDS OR SEWAGE SLUDGE ANNUAL REPORT FORM

1. **Program Information:** All preparers (Generators) and Land Applicators Must complete the following.

Reporting Start Date:1/1/2018	**Reporting End Date: 12/31/2018**
Date:2/19/2018	**AZPDES Permit # (if applicable):AZ00026107** **Pima County Agua Nueva WRF** **2947 Calle Agua Nueva, Tucson, AZ 85745**
Company name (Preparer / Applicator): Preparer, Pima County Regional Water Reclamation Department	
Contact Name: Houssam Eljerdi	**Title: Technical Services Manager**
Address: 7101 N. Casa Grande Highway **Phone:** (520) 724 - 6100	Tucson, AZ 85743 - 8618 **E-mail: Houssam.eljerdi@pima.gov**

Please select one of the following options pertaining to your obligation to submit a Biosolids Annual Report. My facility is a:

☒ POTW with a design flow equal to or greater than 1 MGD Per Day

☐ POTW that serves 10,000 people or more

☒ Class I Sludge Management Facility as defined by 40 CFR 503.9

☐ Biosolids Applicator (Complete Section 5 only)

☐Other Click here to enter text.

What is the estimated total of volume of biosolids or sewage sludge generated at your facility (in dry metric tons)?

Pima County Agua Nueva WRF pumps its Raw primary sludge and its Raw Waste Activated Sludge to Tres Rios WRF				
	Untreated Sewage Sludge, Metric Dry Tons		CLASS A Biosolids	Class B Biosolids
Metric Dry Tons	**Primary Sludge**	**Waste Activated Sludge**	Not applicable	Not applicable
	4,828	**4,604**		

Were all biosolids removed from your facility sent to a landfill for disposal? No

If yes, provide the name and address of the landfill(s). Not Applicable

If all biosolids or sewage sludge was sent to a landfill for disposal, you do not need to complete the remainder of this form, as it is only applicable to facilities preparing Biosolids or sewage sludge for land application.

Certification: I certify, under penalty of law, that the information and descriptions, have been made under my direction and supervision and under a system designed to ensure that qualified personnel properly gather and evaluate the information used to determine whether the applicable biosolids requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

Signature:	Date:
Title: Jeff P. Prevatt; Deputy Director - Treatment	February 19, 2019

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

2. Generator/Preparers - Biosolids Storage and Treatment Processes

2.1 Please check the box next to the following biosolids or sewage sludge storage practices and treatment processes used on the sewage sludge or biosolids generated or produced at your facility during the reporting period.

Storage Practices

☐ Biosolids are stored in lined lagoons or impoundments

☐ Biosolids stored directly on the ground

Physical Treatment Processes

☒ Preliminary Operations (e.g. sludge grinding, degritting, blending

☒ Thickening (e.g. gravity floatation, centrifugation, belt filter press, vacuum filter)

☐ Sludge lagoon

Pathogen Reduction Operations (PSRP)

☐ Aerobic Digestion

☐ Air Drying (or "sludge drying beds")

☐ Anaerobic Digestion

☐ Lower Temperature Composting

☐ Lime Stabilization

Process to Further Reduce Pathogens (PFRP)

☐ Higher Temperature Composting

☐ Heat Drying (e.g. flash dryer, spray dryer, rotary dryer)

☐ Heat Treatment (Liquid sewage sludge is heated to temp of 356 °F (180 °C) or higher for 30 minutes

☐ Thermophilic Aerobic Digestion

☐ Beta Ray Irradiation

☐ Gamma Ray Irradiation

☐ Pasteurization

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

3. Generators/Preparers: Disposition of Biosolids or Sewage Treatment Sludge:

3.1 At the beginning of the year, did you have any biosolids or sewage sludge stored on site or remaining from previous years? Include any amount that is being stored anywhere. No

If yes provide the following information:

	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable
Storage Locations	**No Storage** **Pima County Agua Nueva WRF daily pumps its Raw primary sludge and its Raw Waste Activated Sludge to Tres Rios WRF**	Not applicable

3.2 At the end of the year, are any biosolids or sewage sludge stored on site? No

If yes, provide the following information:

	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable
Storage Locations	**No Storage** **Pima County Agua Nueva WRF daily pumps its Raw primary sludge and its Raw Waste Activated Sludge to Tres Rios WRF**	Not applicable

3.3 Were biosolids or sewage sludge received from another facility during the year, such as another wastewater treatment plant or another APP permitted facility for further processing? Yes

If yes provide the following information for each facility. Click the plus sign to create as many tables as needed.

Name of Facility	Pima County Avra Valley WRF; AZPDES AZ0024121, APP-100642		
Location:	10000 W. Snyder Hill Road, Tucson, AZ 85735		
	Untreated Sewage Sludge	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight Metric Dry Tons	**442** **Five Hundred and Forty**	Not applicable	Not applicable

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

Name of Facility	Pima County Avra Valley WRF; AZPDES AZ0024121, APP-100642		
Location:	10000 W. Snyder Hill Road, Tucson, AZ 85735		
	Untreated Sewage Sludge	CLASS A Biosolids	Class B Biosolids
Pathogen Testing	Not applicable	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable	Not applicable
Storage Locations Storage Locations (Continued)	**No Storage** **Pima County Transports the Sludge from Avra Valley WRF by Tanker Truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Agua Nueva WRF**	Not applicable	Not applicable

Name of Facility	Pima County Corona de Tucson WRF; APP-100644		
Location:	1100 W. Sahuarita Road, Corona de Tucson, 85711		
	Untreated Sewage Sludge	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight Metric Dry Tons	**112** **One Hundred and Twelve**	Not applicable	Not applicable
Pathogen Testing	Not applicable	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable	Not applicable
Storage Locations	**No Storage** **Pima County Transports the Sludge from Corona de Tucson WRF by Tanker Truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Agua Nueva WRF**	Not applicable	Not applicable

Enter any content that you want to repeat, including other content controls. You can also insert this control around table rows in order to repeat parts of a table.

3.4. Were biosolids removed from your facility for land application? Include all recipients, including haulers, name, phone number, land applicators, composters, drying facilities, EQB bagging facilities, bulk composting, etc.

Name of Facility	**No Biosolids were removed from Agua Nueva WRF for land application** **Pima County Agua Nueva WRF daily pumps its raw primary sludge and its raw Waste Activated Sludge to Tres Rios WRF**	
Management Practice Type:	Not Applicable	
Handler or Preparer Type:	Not Applicable	
Management Practice Detail:	Not Applicable	
Bag or Bulk Container:	Not Applicable	
	CLASS A Biosolids	Class B Biosolids

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

Name of Facility	**No Biosolids were removed from Agua Nueva WRF for land application** **Pima County Agua Nueva WRF daily pumps its raw primary sludge and its raw Waste Activated Sludge to Tres Rios WRF**	
Dry Ton Weight	None	None
Pathogen Testing	Not Applicable	Not applicable
Pathogen Reduction Method	Not Applicable	Not Applicable
Vector Attraction Reduction Method	Not Applicable	Not Applicable
Storage Locations	Not Applicable	Not Applicable

4. Generators/Preparers : Biosolids or Sewage Sludge Analytical Methods

Arizona regulations specify that representative samples of sewage sludge that is land applied, placed on a surface disposal site, or fired in s sewage sludge incinerator, must be collected and analyzed. These regulations specify the analytical methods that must be used to analyzed samples of sewage sludge.

Parameter	*Method Number or Author*	*Results (if tested)*	*Comments (required if other)*
Pathogens			
Ascaris ova.	Not applicable	Not applicable	Not applicable
Fecal Coliform	Not Applicable	Not Applicable	Not Applicable
Helminth ova.	Not Applicable	Not Applicable	Not Applicable
Salmonella sp. Bacteria	Not Applicable	Not Applicable	Not Applicable
Total Cultural Viruses	Not Applicable	Not Applicable	Not Applicable
Metals			
Arsenic	EPA Method 6010 - Arsenic (ICP-OES)	< 16.17 / < 34.23 / < 5.46	Mean / Maximum / Minimum
Beryllium	Choose an item.	< 3.23 / < 6.85 / < 1.09	Mean / Maximum / Minimum
Cadmium	EPA Method 6010 - Cadmium (ICP-OES)	< 6.47 / < 13.69 / < 2.19	Mean / Maximum / Minimum
Chromium	EPA Method 6010 - Chromium (ICP-OES)	< 16.23 / < 34.23 / < 5.46	Mean / Maximum / Minimum
Copper	EPA Method 6010 - Copper (ICP-OES)	132 / 351 / 22	Mean / Maximum / Minimum
Lead	EPA Method 6010 - Lead (ICP-OES)	< 16.17 / < 34.23 / < 5.46	Mean / Maximum / Minimum
Mercury	EPA Method 7471 - Mercury (CVAA)	0.46 / 0.77 / 0.26	Mean / Maximum / Minimum
Molybdenum	EPA Method 6010 - Molybdenum (ICP-OES)	< 6.53 / < 13.69 / 2.43	Mean / Maximum / Minimum

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

Parameter	*Method Number or Author*	*Results (if tested)*	*Comments (required if other)*
Nickel	EPA Method 6010 - Nickel (ICP-OES)	< 16.17 / < 34.23 / < 5.46	Mean / Maximum / Minimum
Selenium	EPA Method 6010 - Selenium (ICP-OES)	< 29.85 / < 64.46 / < 10.93	Mean / Maximum / Minimum
Zinc	EPA Method 6010 - Zinc (ICP-OES)	306 / 754 / 58	Mean / Maximum / Minimum
Nitrogen Compounds			
Ammonia Nitrogen	Not applicable	Not applicable	Not applicable
Nitrate Nitrogen	Not applicable	Not applicable	Not applicable
Nitrogen	Not applicable	Not applicable	Not applicable
Organic Nitrogen	Not applicable	Not applicable	Not applicable
Total Kjeldahl Nitrogen	Not applicable	Not applicable	Not applicable
Other Analytes			
Fixed Solids	Not applicable	Not applicable	Not applicable
Paint Filter Test	Not Applicable	Not Applicable	Not Applicable
pH	Not Applicable	7.2 / 7.6 / 6.5	Not Applicable
Specific Oxygen Uptake Rate	Not Applicable	Not Applicable	Not Applicable
TCLP	Other TCLP Analytical Method	**Total Amount Does Not Exceed 20X TCLP Screening Value.** **Sample Analysis Results Included in Section 5 of this Report**	Click here to enter text.
Temperature	Not applicable	Not applicable	Not applicable
Total Solids	Standard Method 2540 - Total Solids	DAF primary Sludge, % Solids Content **1.16 / 2.44 / 0.76** Waste Activated Sludge, % Solids Content **0.72 / 1.10 / 0.50**	Mean / Maximum / Minimum
Volatile Solids	Not applicable	Not applicable	Not applicable
No Analytical Methods Used	**Sample Analysis Results Included in Section 5 of this Report**		

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 06/04/2018
Laboratory License: AZO159

Sample Analysis Report

Agua Nueva WRF

January 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

6 25 18
Date

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801092-01	C	Dimethyl phthalate	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	0.58	4.00	D1, D7	SJM
1801092-01	C	Di-n-butyl phthalate	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	2.50	12.00	D1, D7	SJM
1801092-01	C	Di-n-octyl phthalate	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	2.55	12.00	D1, D7	SJM
1801092-01	C	Fluoranthene	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	1.32	4.00	D1, D7	SJM
1801092-01	C	Fluorene	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	1.54	4.00	D1, D7	SJM
1801092-01	C	Hexachlorobenzene	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	0.62	4.00	D1, D7	SJM
1801092-01	C	Hexachlorobutadiene	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	1.01	4.00	D1, D7	SJM
1801092-01	C	Hexachlorocyclopentadiene	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	4.23	12.00	D1, D7	SJM
1801092-01	C	Hexachloroethane	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	1.26	4.00	D1, D7	SJM
1801092-01	C	Indeno(1,2,3-cd)pyrene	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	2.83	12.00	D1, D7	SJM
1801092-01	C	Isophorone	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	1.66	4.00	D1, D7	SJM
1801092-01	C	Naphthalene	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	1.77	4.00	D1, D7	SJM
1801092-01	C	n-Decane	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	1.95	4.00	D1, D7	SJM
1801092-01	C	Nitrobenzene	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	2.10	12.00	D1, D7	SJM
1801092-01	C	N-Nitrosodimethylamine	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	2.09	12.00	D1, D7, PC3	SJM
1801092-01	C	N-Nitrosodi-n-propylamine	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	2.43	12.00	D1, D7	SJM
1801092-01	C	N-Nitrosodiphenylamine	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	6.08	20.00	D1, D7	SJM
1801092-01	C	n-Octadecane	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	2.18	12.00	D1, D7	SJM
1801092-01	C	Pentachlorophenol	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	4.02	12.00	D1, D7	SJM
1801092-01	C	Phenanthrene	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	1.63	4.00	D1, D7	SJM
1801092-01	C	Phenol	01/12/18 6:00	EPA 625	1/30/18 18:26	16.6	ug/L	2.59	12.00	D1, D7	SJM
1801092-01	C	Pyrene	01/12/18 6:00	EPA 625	1/30/18 18:26	ND	ug/L	1.38	4.00	D1, D7	SJM
1801092-01	C	1,2-Diphenylhydrazine	01/12/18 6:00	EPA 8270C	1/30/18 18:26	ND	ug/L	1.16	4.00	D1, D7	SJM
1801092-01RE1	C	Copper	01/12/18 6:00	EPA 200.8	2/7/18 16:47	40.4	ug/L	0.36	2.00	D1	JB
1801092-01RE2	C	Zinc	01/12/18 6:00	EPA 200.8	2/7/18 16:53	190	ug/L	0.23	10.00	D2	JB

Thickened Sludge Pump (26107-0600)

1801087-01	C	Flashpoint	01/12/18 6:00	1020B	1/17/18 15:41	>201	Degrees F	72.0	72.0		AP *
* Analysis Performed by:TestAmerica Irvine - See attached contract lab report for official results.											
1801087-01	C	Sulfide	01/12/18 6:00	9034	1/18/18 14:55	ND	mg/Kg dry	2100	4200	E8	KMY*
* Analysis Performed by:TestAmerica Irvine - See attached contract lab report for official results.											
1801087-01	C	2,4-D	01/12/18 6:00	8151A	1/19/18 16:32	ND	ug/L	490	980	E8	JML *
1801087-01	C	Silvex (2,4,5-TP)	01/12/18 6:00	8151A	1/19/18 16:32	ND	ug/L	490	980	E8	JML *
* Analysis Performed by:TestAmerica Nashville - See attached contract lab report for official results.											
1801087-01	C	Cyanide, Total	01/12/18 6:00	9014	1/17/18 16:21	ND	mg/Kg dry	17	41	E8	NEL *
* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.											
1801087-01	C	Corrosivity	01/12/18 6:00	9040C	1/15/18 18:45	6.5	SU	1.7	1.7	H5	NEL *
1801087-01	C	pH	01/12/18 6:00	9040C	1/15/18 18:45	6.5	SU	1.7	1.7	H5	NEL *
* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.											
1801087-01	C	Percent Solids	01/12/18 6:00	2540G	1/15/18 13:58	1	%	0.1	0.1		YET *
* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.											
1801089-01	C	Antimony	01/12/18 6:00	EPA 6010D	1/24/18 09:37	ND	mg/kg dry		5.46		MLB
1801089-01	C	Arsenic	01/12/18 6:00	EPA 6010D	1/24/18 09:37	ND	mg/kg dry		5.46		MLB
1801089-01	C	Beryllium	01/12/18 6:00	EPA 6010D	1/24/18 09:37	ND	mg/kg dry		1.09		MLB
1801089-01	C	Cadmium	01/12/18 6:00	EPA 6010D	1/24/18 09:37	ND	mg/kg dry		2.19		MLB
1801089-01	C	Chromium	01/12/18 6:00	EPA 6010D	1/24/18 09:37	ND	mg/kg dry		5.46		MLB
1801089-01	C	Copper	01/12/18 6:00	EPA 6010D	1/24/18 09:37	53.9	mg/kg dry		5.46		MLB
1801089-01	C	Lead	01/12/18 6:00	EPA 6010D	1/24/18 11:17	ND	mg/kg dry		5.46		MLB
1801089-01	C	Mercury	01/12/18 6:00	EPA 7471B	1/29/18 15:48	0.17	mg/kg dry		0.01		DML
1801089-01	C	Molybdenum	01/12/18 6:00	EPA 6010D	1/24/18 09:37	2.43	mg/kg dry		2.19		MLB
1801089-01	C	Nickel	01/12/18 6:00	EPA 6010D	1/24/18 09:37	ND	mg/kg dry		5.46		MLB
1801089-01	C	Selenium	01/12/18 6:00	EPA 6010D	1/24/18 09:37	ND	mg/kg dry		10.93		MLB
1801089-01	C	Silver	01/12/18 6:00	EPA 6010D	1/24/18 12:29	ND	mg/kg dry		0.55		MLB
1801089-01	C	Arsenic	01/12/18 6:00	TCLP/EPA 6010D	2/8/18 16:44	ND	mg/L		0.03		MLB
1801089-01	C	Barium	01/12/18 6:00	TCLP/EPA 6010D	2/6/18 16:53	0.193	mg/L		0.03		MLB
1801089-01	C	Cadmium	01/12/18 6:00	TCLP/EPA 6010D	2/6/18 16:53	ND	mg/L		0.01		MLB
1801089-01	C	Chromium	01/12/18 6:00	TCLP/EPA 6010D	2/6/18 16:53	ND	mg/L		0.03		MLB

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801089-01	C	Lead	01/12/18 6:00	TCLP/EPA 6010D	2/6/18 16:53	**ND**	mg/L		0.03		MLB
1801089-01	C	Mercury	01/12/18 6:00	TCLP/EPA 7470A	2/26/18 12:25	**ND**	mg/L		0.00		DML
1801089-01	C	Selenium	01/12/18 6:00	TCLP/EPA 6010D	2/6/18 16:53	**ND**	mg/L		0.05		MLB
1801089-01	C	Silver	01/12/18 6:00	TCLP/EPA 6010D	2/6/18 16:53	**ND**	mg/L		0.0026		MLB
1801089-01	C	Thallium	01/12/18 6:00	EPA 6010D	1/24/18 09:37	**ND**	mg/kg dry		5.46		MLB
1801089-01	C	Zinc	01/12/18 6:00	EPA 6010D	1/24/18 09:37	**151**	mg/kg dry		5.46		MLB
1801089-01	C	% Solids	01/12/18 6:00	SM 2540G	1/13/18 13:25	**1.56**	%		0.01		JEL
1801089-01	C	Acrolein	01/12/18 6:00	EPA 624	1/16/18 21:28	**0.282**	mg/kg dry	0.00360	0.01	V1	SRM
1801089-01	C	Acrylonitrile	01/12/18 6:00	EPA 624	1/16/18 21:28	**ND**	mg/kg dry	0.00280	0.01		SRM
1801089-01	C	4,4-DDD	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00006	0.00155	D1, D7	KLH
1801089-01	C	4,4-DDE	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00003	0.00155	D1, D7	KLH
1801089-01	C	4,4-DDT	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00006	0.00155	D1, D7	KLH
1801089-01	C	Aldrin	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00006	0.00155	D1, D7	KLH
1801089-01	C	alpha-BHC	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00004	0.00155	D1, D7	KLH
1801089-01	C	beta-BHC	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00009	0.00155	D1, D7	KLH
1801089-01	C	Chlordane	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00025	0.01	D1, D7	KLH
1801089-01	C	delta-BHC	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00007	0.00155	D1, D7	KLH
1801089-01	C	Dieldrin	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00015	0.00310	D1, D7	KLH
1801089-01	C	Endosulfan I	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00004	0.00155	D1, D7	KLH
1801089-01	C	Endosulfan II	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00003	0.00155	D1, D7	KLH
1801089-01	C	Endosulfan sulfate	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00004	0.00155	D1, D7	KLH
1801089-01	C	Endrin	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00010	0.00155	D1, D7	KLH
1801089-01	C	Endrin aldehyde	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00011	0.00155	D1, D7	KLH
1801089-01	C	gamma-BHC (Lindane)	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00007	0.00155	D1, D7	KLH
1801089-01	C	Heptachlor	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00005	0.00155	D1, D7	KLH
1801089-01	C	Heptachlor Epoxide	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00004	0.00155	D1, D7	KLH
1801089-01	C	PCB 1016	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00006	0.00310	D1, D7	KLH
1801089-01	C	PCB 1221	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00017	0.01	D1, D7	KLH
1801089-01	C	PCB 1232	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00007	0.01	D1, D7	KLH
1801089-01	C	PCB 1242	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00013	0.01	D1, D7	KLH
1801089-01	C	PCB 1248	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00010	0.01	D1, D7	KLH
1801089-01	C	PCB 1254	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00019	0.01	D1, D7	KLH
1801089-01	C	PCB 1260	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00007	0.00310	D1, D7	KLH
1801089-01	C	Total PCBs	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00016	0.01	D1, D7	KLH
1801089-01	C	Toxaphene	01/12/18 6:00	EPA 625	1/17/18 17:16	**ND**	mg/kg dry	0.00094	0.02	D1, D7	KLH
1801089-01	C	Methoxychlor	01/12/18 6:00	EPA 8270C	1/17/18 17:16	**ND**	mg/kg dry		0.00155	D1, D7	KLH
1801089-01	C	1,1,1-Trichloroethane	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.0002	0.00064		SRM
1801089-01	C	1,1,2,2-Tetrachloroethane	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.00006	0.00064		SRM
1801089-01	C	1,1,2-Trichloroethane	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.00009	0.00064		SRM
1801089-01	C	1,1-Dichloroethane	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.0002	0.00064		SRM
1801089-01	C	1,1-Dichloroethene	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.0001	0.00064		SRM
1801089-01	C	1,2-Dichlorobenzene	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.00008	0.00064		SRM
1801089-01	C	1,2-Dichloroethane	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.00009	0.00064		SRM
1801089-01	C	1,2-Dichloropropane	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.0001	0.00064		SRM
1801089-01	C	1,3-Dichlorobenzene	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.00008	0.00064		SRM
1801089-01	C	1,4-Dichlorobenzene	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.0002	0.00064		SRM
1801089-01	C	2-Chloroethyl vinyl ether	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.0003	0.00128		SRM
1801089-01	C	Benzene	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.0001	0.00064		SRM
1801089-01	C	Bromodichloromethane	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.0002	0.00064		SRM
1801089-01	C	Bromoform	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.0003	0.00064		SRM
1801089-01	C	Bromomethane	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.0001	0.00064		SRM
1801089-01	C	Carbon Tetrachloride	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.0004	0.00064		SRM
1801089-01	C	Chlorobenzene	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.00006	0.00064		SRM
1801089-01	C	Chloroethane	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.0002	0.00064		SRM
1801089-01	C	Chloroform	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.0001	0.00064		SRM
1801089-01	C	Chloromethane	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.0002	0.00064		SRM
1801089-01	C	cis-1,3-Dichloropropene	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.00009	0.00064		SRM
1801089-01	C	Dibromochloromethane	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.00006	0.00064		SRM
1801089-01	C	Ethyl Benzene	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.00009	0.00064		SRM
1801089-01	C	Methylene Chloride	01/12/18 6:00	EPA 624	1/16/18 17:23	**ND**	mg/kg dry	0.0002	0.00064		SRM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801089-01	C	Tetrachloroethene	01/12/18 6:00	EPA 624	1/16/18 17:23	ND	mg/kg dry	0.0002	0.00064		SRM
1801089-01	C	Toluene	01/12/18 6:00	EPA 624	1/16/18 17:23	ND	mg/kg dry	0.0001	0.00064		SRM
1801089-01	C	Total Trihalomethanes	01/12/18 6:00	EPA 624	1/16/18 17:23	ND	mg/kg dry	0.0003	0.00064		SRM
1801089-01	C	trans-1,2-Dichloroethene	01/12/18 6:00	EPA 624	1/16/18 17:23	ND	mg/kg dry	0.0001	0.00064		SRM
1801089-01	C	trans-1,3-Dichloropropene	01/12/18 6:00	EPA 624	1/16/18 17:23	ND	mg/kg dry	0.0001	0.00064		SRM
1801089-01	C	Trichloroethene	01/12/18 6:00	EPA 624	1/16/18 17:23	ND	mg/kg dry	0.0001	0.00064		SRM
1801089-01	C	Trichlorofluoromethane	01/12/18 6:00	EPA 624	1/16/18 17:23	ND	mg/kg dry	0.0003	0.00064		SRM
1801089-01	C	Vinyl chloride	01/12/18 6:00	EPA 624	1/16/18 17:23	ND	mg/kg dry	0.0002	0.00064		SRM
1801089-01	C	1,2,4-Trichlorobenzene	01/12/18 6:00	EPA 8260	1/16/18 17:23	ND	mg/kg dry		0.00064		SRM
1801089-01	C	1,2-Dibromo-3-chloropropane	01/12/18 6:00	EPA 8260	1/16/18 17:23	ND	mg/kg dry		0.00128		SRM
1801089-01	C	1,2-Dibromoethane	01/12/18 6:00	EPA 8260	1/16/18 17:23	ND	mg/kg dry		0.00064		SRM
1801089-01	C	cis-1,2-Dichloroethene	01/12/18 6:00	EPA 8260	1/16/18 17:23	ND	mg/kg dry		0.00064		SRM
1801089-01	C	m,p-Xylenes	01/12/18 6:00	EPA 8260	1/16/18 17:23	ND	mg/kg dry		0.00128		SRM
1801089-01	C	Methyl Ethyl Ketone	01/12/18 6:00	EPA 8260	1/16/18 17:23	ND	mg/kg dry		0.00064		SRM
1801089-01	C	o-Xylene	01/12/18 6:00	EPA 8260	1/16/18 17:23	ND	mg/kg dry		0.00064		SRM
1801089-01	C	Styrene	01/12/18 6:00	EPA 8260	1/16/18 17:23	ND	mg/kg dry		0.00064		SRM
1801089-01	C	Xylenes, total	01/12/18 6:00	EPA 8260	1/16/18 17:23	ND	mg/kg dry		0.00128		SRM
1801089-01	C	2,3,7,8-TCDD - Dioxin Scan	01/12/18 6:00	EPA 625	2/5/18 12:53	ND	ug/kg dry		1.60		SJM
1801089-01	C	1,2,4-Trichlorobenzene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	2,3-Dichloroaniline	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.02	D1, D7	SJM
1801089-01	C	2,4,6-Trichlorophenol	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.001	0.01	D1, D7	SJM
1801089-01	C	2,4-Dichlorophenol	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	2,4-Dimethylphenol	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.004	0.02	D1, D7	SJM
1801089-01	C	2,4-Dinitrophenol	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.009	0.03	D1, D7	SJM
1801089-01	C	2,4-Dinitrotoluene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.02	D1, D7	SJM
1801089-01	C	2,6-Dinitrotoluene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.001	0.01	D1, D7	SJM
1801089-01	C	2-Chloronaphthalene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.001	0.01	D1, D7	SJM
1801089-01	C	2-Chlorophenol	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.001	0.01	D1, D7	SJM
1801089-01	C	2-Methyl-4,6-dinitrophenol	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.005	0.02	D1, D7	SJM
1801089-01	C	2-Methylphenol	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.001	0.01	D1, D7	SJM
1801089-01	C	2-Nitrophenol	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.003	0.02	D1, D7	SJM
1801089-01	C	3,3-Dichlorobenzidine	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	4-Bromophenyl phenyl ether	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.001	0.01	D1, D7	SJM
1801089-01	C	4-Chloro-3-methylphenol	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.02	D1, D7	SJM
1801089-01	C	4-Chlorophenyl phenyl ether	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.001	0.01	D1, D7	SJM
1801089-01	C	4-Methylphenol	01/12/18 6:00	EPA 625	1/30/18 16:34	10.06	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	4-Nitrophenol	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.005	0.02	D1, D7	SJM
1801089-01	C	Acenaphthene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	Acenaphthylene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	Anthracene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	Benzidine	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.007	0.03	D1, D7	SJM
1801089-01	C	Benzo[a]anthracene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.001	0.01	D1, D7	SJM
1801089-01	C	Benzo[a]pyrene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	Benzo[b]fluoranthene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	Benzo[ghi]perylene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.003	0.02	D1, D7	SJM
1801089-01	C	Benzo[k]fluoranthene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.02	D1, D7	SJM
1801089-01	C	bis(2-chloroethoxy)methane	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	bis(2-chloroethyl)ether	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.02	D1, D7	SJM
1801089-01	C	bis(2-chloroisopropyl)ether	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	bis(2-ethylhexyl)phthalate	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.003	0.02	D1, D7	SJM
1801089-01	C	Butylbenzylphthalate	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	Carbazole	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.003	0.02	D1, D7	SJM
1801089-01	C	Chrysene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.001	0.01	D1, D7	SJM
1801089-01	C	Dibenzo(a,h)anthracene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.003	0.02	D1, D7	SJM
1801089-01	C	Diethyl phthalate	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.02	D1, D7	SJM
1801089-01	C	Dimethyl phthalate	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.0006	0.01	D1, D7	SJM
1801089-01	C	Di-n-butyl phthalate	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.02	D1, D7	SJM
1801089-01	C	Di-n-octyl phthalate	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.003	0.02	D1, D7	SJM
1801089-01	C	Fluoranthene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.001	0.01	D1, D7	SJM
1801089-01	C	Fluorene	01/12/18 6:00	EPA 625	1/30/18 16:34	ND	mg/kg dry	0.002	0.01	D1, D7	SJM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801089-01	C	Hexachlorobenzene	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.0006	0.01	D1, D7	SJM
1801089-01	C	Hexachlorobutadiene	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.001	0.01	D1, D7	SJM
1801089-01	C	Hexachlorocyclopentadiene	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.004	0.02	D1, D7	SJM
1801089-01	C	Hexachloroethane	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.001	0.01	D1, D7	SJM
1801089-01	C	Indeno(1,2,3-cd)pyrene	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.003	0.02	D1, D7	SJM
1801089-01	C	Isophorone	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	Naphthalene	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	n-Decane	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	Nitrobenzene	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.002	0.02	D1, D7	SJM
1801089-01	C	N-Nitrosodimethylamine	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.002	0.02	D1, D7, PC3	SJM
1801089-01	C	N-Nitrosodi-n-propylamine	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.002	0.02	D1, D7	SJM
1801089-01	C	N-Nitrosodiphenylamine	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.006	0.03	D1, D7	SJM
1801089-01	C	n-Octadecane	01/12/18 6:00	EPA 625	1/30/18 16:34	**9.59**	mg/kg dry	0.002	0.02	D1, D7	SJM
1801089-01	C	Pentachlorophenol	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.004	0.02	D1, D7	SJM
1801089-01	C	Phenanthrene	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	Phenol	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.003	0.02	D1, D7	SJM
1801089-01	C	Pyrene	01/12/18 6:00	EPA 625	1/30/18 16:34	**ND**	mg/kg dry	0.001	0.01	D1, D7	SJM
1801089-01	C	1,2-Diphenylhydrazine	01/12/18 6:00	EPA 8270C	1/30/18 16:34	**ND**	mg/kg dry	0.001	0.01	D1, D7	SJM
1801089-01	C	1,4-Dichlorobenzene	01/12/18 6:00	EPA 8270C	1/30/18 16:34	**ND**	mg/kg dry	0.005	0.02	D1, D7	SJM
1801089-01	C	2,4,5-Trichlorophenol	01/12/18 6:00	EPA 8270C	1/30/18 16:34	**ND**	mg/kg dry	0.003	0.02	D1, D7	SJM
1801089-01	C	3 & 4-Methylphenol	01/12/18 6:00	EPA 8270C	1/30/18 16:34	**12.2**	mg/kg dry	0.001	0.02	D1, D7	SJM
1801089-01	C	Pyridine	01/12/18 6:00	EPA 8270C	1/30/18 16:34	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1801089-01	C	Chlordane	01/12/18 6:00	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	1.38	3.00	N7	KLH
1801089-01	C	Endrin	01/12/18 6:00	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	0.200	0.50	N7	KLH
1801089-01	C	gamma-BHC (Lindane)	01/12/18 6:00	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	0.270	0.50	N7	KLH
1801089-01	C	Heptachlor	01/12/18 6:00	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	0.270	0.50	N7	KLH
1801089-01	C	Heptachlor Epoxide	01/12/18 6:00	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	0.290	0.50	N7	KLH
1801089-01	C	Methoxychlor	01/12/18 6:00	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	0.270	0.50	N7	KLH
1801089-01	C	Toxaphene	01/12/18 6:00	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	3.79	6.00	N7	KLH
1801089-01	C	1,1-Dichloroethene	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 17:23	**NA**	ug/L		0.50	N7	SRM
1801089-01	C	1,2-Dichloroethane	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 17:23	**NA**	ug/L		0.50	N7	SRM
1801089-01	C	1,4-Dichlorobenzene	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 17:23	**NA**	ug/L		0.50	N7	SRM
1801089-01	C	Benzene	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 17:23	**NA**	ug/L		0.50	N7	SRM
1801089-01	C	Carbon Tetrachloride	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 17:23	**NA**	ug/L		0.50	N7	SRM
1801089-01	C	Chlorobenzene	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 17:23	**NA**	ug/L		0.50	N7	SRM
1801089-01	C	Chloroform	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 17:23	**NA**	ug/L		0.50	N7	SRM
1801089-01	C	Hexachlorobutadiene	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 17:23	**NA**	ug/L		0.50	N7	SRM
1801089-01	C	Methyl Ethyl Ketone	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 17:23	**NA**	ug/L		0.50	N7	SRM
1801089-01	C	Tetrachloroethene	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 17:23	**NA**	ug/L		0.50	N7	SRM
1801089-01	C	Trichloroethene	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 17:23	**NA**	ug/L		0.50	N7	SRM
1801089-01	C	Vinyl chloride	01/12/18 6:00	TCLP/EPA 8260B	1/16/18 17:23	**NA**	ug/L		0.50	N7	SRM
1801089-01	C	1,4-Dichlorobenzene	01/12/18 6:00	TCLP/EPA 8270C	2/15/18 11:22	**NA**	ug/L dry	1.37	2.00	N7	SJM
1801089-01	C	2,4,5-Trichlorophenol	01/12/18 6:00	TCLP/EPA 8270C	2/15/18 11:22	**NA**	ug/L dry	2.46	10.00	N7	SJM
1801089-01	C	2,4,6-Trichlorophenol	01/12/18 6:00	TCLP/EPA 8270C	2/15/18 11:22	**NA**	ug/L dry	1.14	5.00	N7	SJM
1801089-01	C	2,4-Dinitrotoluene	01/12/18 6:00	TCLP/EPA 8270C	2/15/18 11:22	**NA**	ug/L dry	1.44	5.00	N7	SJM
1801089-01	C	2-Methylphenol	01/12/18 6:00	TCLP/EPA 8270C	2/15/18 11:22	**NA**	ug/L dry	1.09	2.00	N7	SJM
1801089-01	C	3 & 4-Methylphenol	01/12/18 6:00	TCLP/EPA 8270C	2/15/18 11:22	**NA**	ug/L dry	1.07	4.00	N7	SJM
1801089-01	C	Hexachlorobenzene	01/12/18 6:00	TCLP/EPA 8270C	2/15/18 11:22	**NA**	ug/L dry	0.610	2.00	N7	SJM
1801089-01	C	Hexachlorobutadiene	01/12/18 6:00	TCLP/EPA 8270C	2/15/18 11:22	**NA**	ug/L dry	0.880	2.00	N7	SJM
1801089-01	C	Hexachloroethane	01/12/18 6:00	TCLP/EPA 8270C	2/15/18 11:22	**NA**	ug/L dry	1.09	2.00	N7	SJM
1801089-01	C	Nitrobenzene	01/12/18 6:00	TCLP/EPA 8270C	2/15/18 11:22	**NA**	ug/L dry	1.84	5.00	N7	SJM
1801089-01	C	Pentachlorophenol	01/12/18 6:00	TCLP/EPA 8270C	2/15/18 11:22	**NA**	ug/L dry	6.10	10.00	N7	SJM
1801089-01	C	Pyridine	01/12/18 6:00	TCLP/EPA 8270C	2/15/18 11:22	**NA**	ug/L dry	1.55	2.00	N7	SJM

Chlorinated Effluent (26107-7000)

1801040-01	D	Nitrate/Nitrite	01/05/18 9:10	EPA 353.2	1/7/18 13:15	**1.48**	mg/L	0.02	0.20		MGA
1801040-01	D	Total Kjeldahl Nitrogen	01/05/18 9:10	EPA 351.2	1/18/18 09:22	**8.37**	mg/L	0.36	0.80		HAV
1801040-01	D	Nitrogen Total Water	01/05/18 9:10	Calculated	1/18/18 09:22	**9.85**	mg/L	0.36	0.80		HAV

Qualifier Definitions

>201	>201
A	Absence
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D4	Minimum Reporting Limit (MRL) adjusted to reflect sample amount received and analyzed.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.
H6	The filtration was not done within the required 15 minutes of sampling, the sample was filtered in the laboratory.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
L2	The associated blank spike recovery was below laboratory acceptance limits.
L3	The associated blank spike recovery was above method acceptance limits.
L4	The associated blank spike recovery was below method acceptance limits.
L5	The associated blank spike recovery was above laboratory/method acceptance limits. This analyte was not detected in the sample.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
N1	See case narrative.
N7	Additional analysis was not performed based on the "Total" result which was below the requested analyte's MCL/Action level/Trigger Level.
NA	Not Analyzed
PC3	Semi-quantitation is included in the case narrative.
R1	RPD/RSD exceeded the method acceptance limit. See case narrative.
R4	MS/MSD RPD exceeded the method acceptance limit. Recovery met acceptance criteria.
R6	LFB/LFBD RPD exceeded method control limit. Recovery met acceptance criteria.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.

Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction

Case Narrative(s)

1801025-01
EPA Method 624 and 8260 Volatiles. Target analytes flagged with N1 failed the Matrix Spike RPD from the same analytical batch but the spike was performed on a different sample. SRM 01/22/18

1801025-01
EPA Method 625 Semi-volatiles: Target analytes flagged with N1 failed the Matrix Spike from the same extraction batch but the spike was performed on a different sample. SJM 02/07/18

1801056-01
EPA Method 625 Semi-volatiles: Target analytes flagged with N1 failed the Matrix Spike from the same extraction batch but the spike was performed on a different sample. SJM 02/07/18

1801086-01
EPA 531.1: See contract lab report for the R1 case narrative. JD 3/30/18

Semi-Quantitation
Method: 625
1801089-01

Compound Name	Concentration-mg/Kg
N,N-Dimethyl-1-dodecanamine	460
Palmitic Acid	24346
Oleic Acid	37792
Stearic Acid	9947

SJM 02/15/18

1801092-01
EPA Method 624 and 8260 Volatiles. Target analytes flagged with N1 failed the Matrix Spike Percent Recovery from the same analytical batch but the spike was performed on a different sample. SRM 01/23/18

Semi-Quantitation
Method: 625
1801092-01

Compound Name	Concentration-ug/L
2-Butoxyethanol	96
Benzoic Acid	223
Benzeneacetic Acid	120
N,N-Dimethyl-1-dodecanamine	925
Dodecanoic Acid	222
Tetradecanoic Acid	249
Palmitic Acid	35685
Oleic Acid	38215
Stearic Acid	13287

SJM 02/16/18

1801095-01
EPA Method 624 and 8260 Volatiles. Target analytes flagged with N1 failed the Matrix Spike Percent Recovery from the same analytical batch but the spike was performed on a different sample. SRM 01/23/18

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1801087-01

PROJECT & LOCATION: Agua Nueva WRF - Thickened Sludge Pump (Annual)

PROJECT-LOCATION NUMBER: 26107-0600 (XXXXX-XXXX)

SAMPLE START DATE: 01-11-2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE START TIME: 0600 (Military time) CLIENT: IWC

SAMPLE END DATE: 01-12-2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE END TIME: 0600 (Military time) SAMPLER(S): Silva, Echanove, Riccaboni, Martinez (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	☐	☐	☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	☐	☐	☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride 1-12-18	☐	☐
Cyanide, Total (contract)	☐	■
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability (contract)	☐	■
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide (contract)	☐	■
Other	☐	☐
Other	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	■
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other	☐	☐
Other	☐	☐

EFFLUENT TOXICITY TESTING

	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total (contract)	☐	■
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other	☐	☐

OTHER	D	C
Paint Filter	☐	☐
Corrosivity pH (contract)	☐	■
	☐	☐
	☐	☐
	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions: Sent to Test America PO#18-019630 GOS 01-12-18

Septum Blank Prep Date & Initials:

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
		1-11-18	1500
Relinquished by:	Received by:	Date:	Time: (Military time)
	Refrigerator	1-12-18	0130
Relinquished by:	Received by:	Date:	Time: (Military time)
Refrigerator		1-12-18	0630
Relinquished by:	Received by:	Date:	Time: (Military time)
		1-12-18	1036
Relinquished by:	Received by:	Date:	Time: (Military time)
		1-12-18	1430

Sample Integrity/Preservation:

# of Bottles Delivered: 6 GOS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 5.0 °C

Initials:

Q6 qualifier? ☐ YES ☑ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☑	☐	☐
Sample labels match Chain of Custody?	☑	☐	☐
Correct number of sample bottles were delivered?	☑	☐	☐
Custody seals intact?	☐	☐	☑
Within holding time?	☑	☐	☐
Sufficient sample volume for analysis?	☑	☐	☐
Samples are in properly preserved containers?	☑	☐	☐
Sample containers damaged/leaking/frozen?	☐	☑	☐
40 ml vials headspace, > pea-sized air bubble?	☑	☐	☐
Received from a refrigerator?	☐	☑	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

Client Contact	Project Manager: Joe Doranski	Site Contact:	Date:	COC No:
Pima County CRAO Lab	Tel/Fax: 520-724-6032	Lab Contact:	Carrier:	1 of 1 COCs
2955 W. Calle Agua Nueva	Analysis Turnaround Time			Sampler: Mike Silva
Tucson/AZ/85745	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(520) 724-6032 Phone	TAT if different from Below _____			Walk-in Client:
(520) 724-6071 FAX	☑ 2 weeks			Lab Sampling:
Project Name: Sludge	☐ 1 week			
Site: Tres Rios and Agua Nueva WRF	☐ 2 days			Job / SDG No.:
P O # 18-019630	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Total cyanide mg/kg dry	total % solids	Sulfide mg/kg dry	TCLP herbicides	pH/corrosivity	Ignitability	Sample Specific Notes:
Tres Rios WRF Dewatered Cake 20001-5703														BS - biosolids
1801088-01	1/12/18	0600	Comp	BS	6	N		1	1	1	1	1	1	mg/kg dry
Cos 01/12/18 thickened sludge pump														
Agua Nueva WRF 26107-0600														SL - sludge
1801087-01	1/12/18	0600	Comp	BS	6	N		1	1	1	1	1	1	mg/kg dry

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☑Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐Return to Client ☑Disposal by Lab ☐Archive for _____ Months

Special Instructions/QC Requirements & Comments:

3.1°C

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PC CRAO Lab	1-12-18 1052	[signature]	PC CRAO	1-12-18 1052
[signature]	PC CRAO	01-12-18	[signature]	PC CRAO	01-12-18 1156
[signature]	PC CRAO	1-12-18 1430	Received in Laboratory by: [signature]	Company:	Date/Time: 1-12-18 1430

LIMS CHECKLIST FOR SUBCONTRACT DATA

LIMS ID	**1801087-01, 1801088-01**	**DO**	**18-019630**
CONTRACT LAB	**TestAmerica PHX, DEN, NASH, IRV**	**SAMPLE GROUP**	**Sludge**
ANALYSES	**Cyanide sludge, % TS, TCLP Herbicides, pH, Ignitibility, Sulfide**	**REPORT ID**	**550-96234-1**

TRANSFER & CONVERT FILES:	
Was the contract lab spreadsheet file saved to \\Splimsapp\elementshare\TransferIn ?	Y
Was the above mentioned file converted from a .xls file to a .mdb file for each WO#, and further, for each subcontract location, or separate analysis (as applicable), on the contract lab report? (Element>Project Management>Reports)	Y
Was the converted file attached to the sample in LIMS?	Y
VALIDATING CONTRACT LAB REPORT , CHAIN OF CUSTODY(S), AND DO#:	
Contract Lab Report signed and dated?	Y
Copy of contract lab COC included with contract Lab Report?	Y
Contract lab COC verified with CRAO COC(s) for Sample ID, Sample Date, Analysis Requested?	Y
Sample dates and received dates on the CL report, match the CL COC?	Y
CL report includes all requested analysis?	Y
CL licensed in AZ for the reported methods?	Y
Check that DO matches COC in types and number of tests?	N/A
DO received in Pima Core?	Y
CONTRACT LAB REPORT, EXCEL SPREADSHEET, and QC:	
CL report and CL spreadsheet report the same sample results, sample date, and analysis date?	Y
Was a Case Narrative Included in Contract Lab report?	Y
Data packet includes QC Report from primary lab and any secondary subcontract labs?	Y
Did CL report list applicable AZ Data Qualifiers?	Y
Were there any dilutions made to samples that were reported as ND?	N
If so, were they qualified due to matrix interference?	N/A
Was QC included for every analysis method: typically Blk, LCS, MS, MSD?	Y
Did QC pass stated acceptance limits, or was it qualified?	Y
Were samples analyzed within required holding times?	Y
Check that MDLs are below water quality standards, If not notify Belinda Gamboa-Felix? (Cyanide, Hexachlorobenzene)	N/A
Semivolatiles & Volatiles: Check that all analytes were delivered?	N/A
COMPLIANCE LIMIT REVIEW	
Were results compared to the discharge permit?.	N/A
Was Belinda Gamboa-Felix notified of any exceedences?	N/A
WET TESTING SPECIFIC REQUIREMENTS	
Statement of Pass/Fail reflected in End Points?	N/A
Report states if zeolite treatment was utilized?	N/A
Survival and Reproduction or Growth Data included (P. promelas or Ceriodaphnia only)?	N/A
Chemistry data included?	N/A

Reference Toxicant Test Results and Control Chart within limits?	N/A
PMSD Determination included and within acceptable range? (minimum acceptable= 13)	N/A
End Points include TUc, NOEC, LOEC, and IC25?	N/A
Statistics verify endpoints	N/A
Control Charts Updated to include month of analysis	N/A

Reviewer Initials:	**JD**	**Review Date:**	**01-29-18**

PEER/FINAL REVIEW:	PR	FR
LIMS/Excel data matches printed CL report?	JD	
Analysis dates are correct?	JD	
Correct Data Qualifiers included if necessary.	JD	
CRAO report shows result is from Contract Lab?	JD	
CRAO report shows correct Contract Lab (e.g. Test America, Phoenix)?	JD	
DO received in Pima Core	JD	
Analysis set to Reported?		✓

Peer Reviewer Initials:	JD	**Review Date:**	1-30-18
Biomonitor Supervisor Initials:	N/A	**Review Date:**	
Final Reviewer Initials:	JC	**Review Date:**	1.30.18

CORRECTIVE ACTION REPORT:			
Preliminary Review:		Date:	
QA/QC Review:		Date:	
Data Entry:		Date:	
Peer Review:		Date:	
Lab Supervisor:		Date:	

LIMS #:	**DEVIATION:**	**CORRECTIVE ACTION:**

DEVIATIONS FROM ACCEPTABLE QA/QC:

Missing QC Report/Data
Holding Time for analysis exceeded.
Inappropriate dilution performed.
Missing COC.
Missing Data Qualifiers.
Incorrect Analysis Method.
Incorrect Sample IDs.
Other.

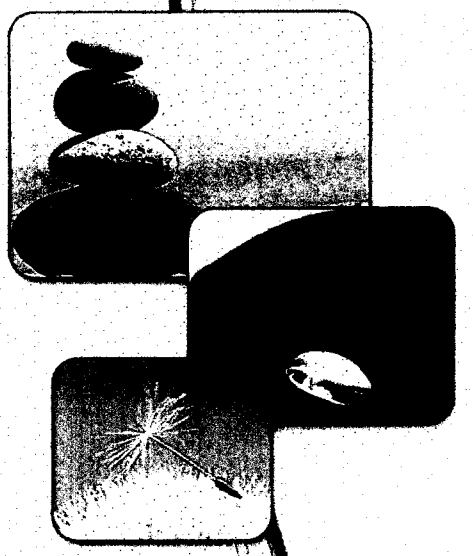
CORRECTIVE ACTION:

Request report correction from Subcontract Lab project manager.
Add missing Data Qualifiers.
Notify data end-user of deviation.
Arrange for resampling.
Other.

1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica SDG: Tres Rios and Agua Nueve WRF
Client Project/Site: Sludge

Pima County WWTP
PO BOX 791
Tucson, Arizona 85701

Attn: Joseph Doranski

Authorized for release by:
1/26/2018 8:45:37 AM

Linda Eshelman, Project Manager II
(602)659-7629

LINKS

Review your project results through
TotalAccess

Have a Question?
Ask The Expert

Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Sample Summary 5
Detection Summary 6
Client Sample Results 7
Surrogate Summary 9
QC Sample Results 10
QC Association Summary 16
Lab Chronicle 19
Certification Summary 21
Method Summary 24
Chain of Custody 25
Receipt Checklists 32

Definitions/Glossary

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C8	Sample RPD between the primary and confirmatory analysis exceeded 40% Per EPA Method 8000C, the lower value was reported as there was no evidence of chromatographic problems.

General Chemistry

Qualifier	Qualifier Description
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
N1	See case narrative.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Job ID: 550-96234-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-96234-1

Comments
No additional comments.

Receipt
The samples were received on 1/12/2018 2:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1° C.

GC Semi VOA
Method(s) 8151A: The closing continuing calibration verification (CCVC) associated with batch 490-490115 recovered above the upper control limit for Silvex (2,4,5-TP). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data has been reported.

Method(s) 8151A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 490-490119 and analytical batch 490-490115.

Method(s) 8151A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 490-491116 and analytical batch 490-491278.

Method(s) 8151A: The %RPD between the primary and confirmation column exceeded 40% for 2,4-D for the following sample: (LCS 490-491116/2-A). The lower value(s) has been reported and qualified in accordance with the laboratory's SOP.

Method(s) 8151A: The %RPD between the primary and confirmation column exceeded 40% for 2,4-D and Silvex (2,4,5-TP) for the following sample: (LCSD 490-491116/3-A). The lower value(s) has been reported and qualified in accordance with the laboratory's SOP.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method(s) 9040C: The pH results by method EPA 9040C for the following samples were outside the instrument calibration range of 1.68 to 12.45: (550-95808-B-1), (550-95808-B-1 DU), (550-96258-D-1) and (550-96258-D-1 DU). The results exceeded the high end of the calibration range, therefore, these data have been reported as greater than 12.45 and qualified with N1 flags.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-96234-1	1801088-01	Solid	01/12/18 06:00	01/12/18 14:30
550-96234-2	1801087-01	Waste	01/12/18 06:00	01/12/18 14:30

Detection Summary

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Client Sample ID: 1801088-01 — Lab Sample ID: 550-96234-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ignitability	Non-Ignitable				NONE	1		1030	Total/NA
Cyanide, Total	1.8	E4	3.6	0.73	mg/Kg	1	☼	9012B	Total/NA
Sulfide	1400		290	290	mg/Kg	1	☼	9034	Total/NA
pH	7.3	H5	1.7	1.7	SU	1		9045D	Soluble

Client Sample ID: 1801087-01 — Lab Sample ID: 550-96234-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Flashpoint	>201		72.0	72.0	Degrees F	1		1020B	Total/NA
pH	6.5	H5	1.7	1.7	SU	1		9040C	Total/NA
Corrosivity	6.5	H5	1.7	1.7	SU	1		9040C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Client Sample ID: 1801088-01

Lab Sample ID: 550-96234-1
Date Collected: 01/12/18 06:00
Matrix: Solid
Date Received: 01/12/18 14:30

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND	E8	100	50	ug/L		01/24/18 13:51	01/25/18 15:01	1
Silvex (2,4,5-TP)	ND	E8	100	50	ug/L		01/24/18 13:51	01/25/18 15:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*49*		*10 - 150*	*01/24/18 13:51*	*01/25/18 15:01*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability	Does not ignite				NONE			01/19/18 15:03	1
Percent moisture	86.1		0.1	0.1	%			01/15/18 13:58	1
Percent Solids	13.9		0.1	0.1	%			01/15/18 13:58	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.3	H5	1.7	1.7	SU			01/15/18 18:30	1

Client Sample ID: 1801088-01

Lab Sample ID: 550-96234-1
Date Collected: 01/12/18 06:00
Matrix: Solid
Date Received: 01/12/18 14:30
Percent Solids: 13.9

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	1.8	E4	3.6	0.73	mg/Kg	☒	01/17/18 07:49	01/17/18 12:31	1
Solids	[illegible]		290	290	mg/Kg	☒	01/16/18 13:22	01/16/18 15:58	1

Client Sample ID: 1801087-01

Lab Sample ID: 550-96234-2
Date Collected: 01/12/18 06:00
Matrix: Waste
Date Received: 01/12/18 14:30

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND	E8	980	490	ug/L		01/19/18 10:36	01/19/18 16:32	1
2,4-D	ND	E8	980	490	ug/L		01/19/18 10:36	01/19/18 16:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*79*		*10 - 150*	*01/19/18 10:36*	*01/19/18 16:32*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>230		72.0	72.0	Degrees F			01/17/18 15:41	1
Percent Solids	1		0.1	0.1	%			01/15/18 13:58	1
pH	0.5	H5	1.7	1.7	SU			01/15/18 18:45	1
pH (Corrosivity)	6.5	H2	1.7	1.7	SU			01/15/18 18:45	1

Client Sample Results

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Client Sample ID: 1801087-01
Date Collected: 01/12/18 06:00
Date Received: 01/12/18 14:30

Lab Sample ID: 550-96234-2
Matrix: Waste
Percent Solids: 1.0

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	E8	41	17	mg/Kg	☼	01/17/18 13:46	01/17/18 16:21	1
Sulfide	ND	E8	4200	2100	mg/Kg	☼	01/17/18 17:57	01/18/18 14:55	1

Surrogate Summary

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: Total/NA**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCAA2 (10-150)
LCS 490-491116/2-A	Lab Control Sample	48
LCSD 490-491116/3-A	Lab Control Sample Dup	44

Surrogate Legend
DCAA = Dichloroacetic acid(Surr)

8

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: TCLP**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCAA2 (10-150)
550-96234-1	1801088-01	49
LB 490-490653/1-F	Method Blank	45

Surrogate Legend
DCAA = Dichloroacetic acid(Surr)

Method: 8151A - Herbicides (GC)

Matrix: Waste **Prep Type: Total/NA**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCAA1 (10-150)
LCS 490-490119/2-A	Lab Control Sample	24

Surrogate Legend
DCAA = Dichloroacetic acid(Surr)

Method: 8151A - Herbicides (GC)

Matrix: Waste **Prep Type: Total/NA**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCAA2 (10-150)
LCSD 490-490119/3-A	Lab Control Sample Dup	23
MB 490-490119/1-A	Method Blank	31

Surrogate Legend
DCAA = Dichloroacetic acid(Surr)

Method: 8151A - Herbicides (GC)

Matrix: Waste **Prep Type: TCLP**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCAA1 (10-150)
550-96234-2	1801087-01	79

Surrogate Legend
DCAA = Dichloroacetic acid(Surr)

Accreditation/Certification Summary

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Laboratory: TestAmerica Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0728	06-09-18

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-19 *
A2LA	ISO/IEC 17025		2907.01	10-31-19
Alabama	State Program	4	40730	09-30-12 *
Alaska (UST)	State Program	10	UST-30	04-05-18
Arizona	State Program	9	AZ0713	12-20-18
Arkansas DEQ	State Program	6	88-0687	06-01-18
California	State Program	9	2513	01-08-18 *
Connecticut	State Program	1	PH-0686	09-30-18
Florida	NELAP	4	E87667	06-30-18
Georgia	State Program	4	N/A	01-08-18 *
Illinois	NELAP	5	200017	04-30-18
Iowa	State Program	7	370	12-01-18
Kansas	NELAP	7	E-10166	04-30-18
Louisiana	NELAP	6	02096	06-30-18
Maine	State Program	1	CO0002	03-03-19
Minnesota	NELAP	5	8-999-405	12-31-18
Nevada	State Program	9	CO0026	07-31-18
New Hampshire	NELAP	1	205310	04-28-18
New Jersey	NELAP	2	CO004	06-30-18
New York	NELAP	2	11964	04-01-18
North Carolina (WW/SW)	State Program	4	358	12-31-18
North Dakota	State Program	8	R-034	01-09-18 *
Oklahoma	State Program	6	8614	08-31-18
Oregon	NELAP	10	4025	01-08-19
Pennsylvania	NELAP	3	68-00664	07-31-18
South Carolina	State Program	4	72002001	01-08-19
Texas	NELAP	6	T104704183-17-14	09-30-18
USDA	Federal		P330-16-00397	12-15-19
Utah	NELAP	8	CO00026	07-31-18
Virginia	NELAP	3	460232	06-14-18
Washington	State Program	10	C583	08-03-18
West Virginia DEP	State Program	3	354	12-31-18
Wisconsin	State Program	5	999615430	08-31-18
Wyoming (UST)	A2LA	8	2907.01	10-31-19

Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0671	10-14-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

12

Accreditation/Certification Summary

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Laboratory: TestAmerica Irvine (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0671	10-14-18

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Nashville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	A2LA		NA: NELAP & A2LA	12-31-19
A2LA	ISO/IEC 17025		0453.07	12-31-19
Alaska (UST)	State Program	10	UST-087	01-01-18 *
Arizona	State Program	9	AZ0473	05-05-18
Arkansas DEQ	State Program	6	88-0737	04-25-18
California	State Program	9	2938	10-31-18
Connecticut	State Program	1	PH-0220	12-31-19
Florida	NELAP	4	E87358	06-30-18
Georgia	State Program	4	E87358(FL)/453.07(A2LA)	06-30-18
Illinois	NELAP	5	200010	12-09-18
Iowa	State Program	7	131	04-01-18
Kansas	NELAP	7	E-10229	12-31-17 *
Kentucky (UST)	State Program	4	19	06-30-18
Kentucky (WW)	State Program	4	90038	12-31-18
Louisiana	NELAP	6	30613	06-30-18
Maine	State Program	1	TN00032	11-03-19
Maryland	State Program	3	316	03-31-18
Massachusetts	State Program	1	M-TN032	06-30-18
Minnesota	NELAP	5	047-999-345	12-31-18
Mississippi	State Program	4	N/A	06-30-18
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-18
New Hampshire	NELAP	1	2963	10-09-18
New Jersey	NELAP	2	TN965	06-30-18
New York	NELAP	2	11342	03-31-18
North Carolina (WW/SW)	State Program	4	387	12-31-18
North Dakota	State Program	8	R-146	06-30-18
Ohio VAP	State Program	5	CL0033	07-06-19
Oklahoma	State Program	6	9412	08-31-18
Oregon	NELAP	10	TN200001	04-27-18
Pennsylvania	NELAP	3	68-00585	06-30-18
Rhode Island	State Program	1	LAO00268	12-30-17 *
South Carolina	State Program	4	84009 (001)	02-28-18
Tennessee	State Program	4	2008	02-23-20
Texas	NELAP	6	T104704077	08-31-18
USDA	Federal		P330-13-00306	12-01-19
Utah	NELAP	8	TN00032	07-31-18
Virginia	NELAP	3	460152	06-14-18
Washington	State Program	10	C789	07-19-18
West Virginia DEP	State Program	3	219	02-28-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

12

Accreditation/Certification Summary

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Laboratory: TestAmerica Nashville (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	998020430	08-31-18
Wyoming (UST)	A2LA	8	453.07	12-31-19

12

Method Summary

Client: Pima County WWTP
Project/Site: Sludge

TestAmerica Job ID: 550-96234-1
SDG: Tres Rios and Agua Nueve WRF

Method	Method Description	Protocol	Laboratory
8151A	Herbicides (GC)	SW846	TAL NSH
1020B	Ignitability, Small Scale Closed-Cup Method	SW846	TAL IRV
1030	Ignitability, Solids	SW846	TAL PHX
2540G	SM 2540G	SM22	TAL PHX
9012B	Cyanide, Total andor Amenable	SW846	TAL DEN
9014	Cyanide	SW846	TAL PHX
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL IRV
9040C	pH	SW846	TAL PHX
9045D	pH	SW846	TAL PHX

Protocol References:

SM22 = SM22

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

13

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax

Chain of Custody Record

F6234

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

1/26/2018

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

Client Contact	Project Manager: Joe Doranski	Site Contact:	Date:	COC No:
Pima County CRAO Lab	Tel/Fax: 520-724-6032	Lab Contact:	Carrier:	1 of 1 COCs
2955 W. Calle Agua Nueva	Analysis Turnaround Time			Sampler: Mike Silva
Tucson/AZ/85745	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(520) 724-6032 Phone	TAT if different from Below _____			Walk-in Client:
(520) 724-6071 FAX	☑ 2 weeks			Lab Sampling:
Project Name: Sludge	☐ 1 week			
Site: Tres Rios and Agua Nueva WRF	☐ 2 days			Job / SDG No.:
P O # 18-	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Total cyanide mg/kg dry	total % solids	Sulfide mg/kg dry	TCLP herbicides	pH/corrosivity	Ignitability	Sample Specific Notes:
Tres Rios WRF Dewatered Cake 20001-5703														BS - biosolids
1801088-01	1/12/18	0600	Comp	BS	6	N		1	1	1	1	1	1	mg/kg dry
CDS 01-12-18 Hydraulical sludge pump														
Agua Nueva WRF 26107-0600														SL - sludge
1801087-01	1/12/18	0600	Comp	BS	6	N		1	1	1	1	1	1	mg/kg dry

550-96234 Chain of Custody

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☑Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐Return to Client ☑Disposal by Lab ☐Archive for _____ Months

Special Instructions/QC Requirements & Comments:

3.1°C CD

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PC CRAO Lab	1-12-18 1052	[signature]	PC CRAO	1-12-18 1052
[signature]	PC CRAO	01-12-18	[signature]	PC CRAO	01-12-18 1156
[signature]	PC CRAO	1-12-18 1430	Received in Laboratory by: [signature]	[signature]	1-12-18 1430

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1801088-01

PROJECT & LOCATION: Tres Rios WRF - Dewatered Cake Biosolids (Annual)

PROJECT-LOCATION NUMBER: 20001-5703 (XXXXX-XXXX)

SAMPLE START DATE: 01/11/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 0600 (Military time)

CLIENT: IWC

SAMPLE END DATE: 01/12/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0600 (Military time)

SAMPLER(S): Silva, Echanove, Riccaboni, Martinez (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ☐ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury			☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *			☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride (pm) 1-12-18	☐	☐
Cyanide, Total (contract)	☐	■
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability (contract)	☐	■
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide (contract)	☐	■
Other	☐	☐
Other	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	■
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other	☐	☐
Other	☐	☐

EFFLUENT TOXICITY TESTING

	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total (contract)	☐	■
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other	☐	☐

OTHER	D	C
Paint Filter	☐	☐
Corrosivity pH (contract)	☐	■
	☐	☐
	☐	☐
	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ ° C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions: To be sent to an outside lab

Sent to Test America DOH 18-
GOS 01-12-18

Septum Blank Prep Date & Initials:

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	1-11-18	1500
[signature]	Refrigerator	1-12-18	0130
Refrigerator	[signature]	1-12-18	0630
[signature]	[signature]	1-12-18	1052
[signature]	[signature]	1-12-18	[illegible]

Sample Integrity/Preservation:

of Bottles Delivered: 6 (pm)

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 6 °C

Initials: GOS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☑	☐	☐
Sample labels match Chain of Custody?	☑	☐	☐
Correct number of sample bottles were delivered?	☑	☐	☐
Custody seals intact?	☐	☐	☑
Within holding time?	☑	☐	☐
Sufficient sample volume for analysis?	☑	☐	☐
Samples are in properly preserved containers?	☑	☐	☐
Sample containers damaged/leaking/frozen?	☐	☑	☐
40 ml vials headspace, > pea-sized air bubble?	☑	☐	☑
Received from a refrigerator?	☐	☑	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1801087-01

PROJECT & LOCATION: Agua Nueva WRF - Thickened Sludge Pump (Annual)

PROJECT-LOCATION NUMBER: 26107-0600 (XXXXX-XXXX)

SAMPLE START DATE: 01-11-2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE START TIME: 0600 (Military time)

CLIENT: IWC

SAMPLE END DATE: 01-12-2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE END TIME: 0600 (Military time)

SAMPLER(S): Silva, Echanove, Riccaboni, Martinez (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	☐	☐	☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	☐	☐	☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride 1-12-18	☐	☐
Cyanide, Total (contract)	☐	■
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability (contract)	☐	■
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide (contract)	☐	■
Other	☐	☐
Other	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	■
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other	☐	☐
Other	☐	☐

EFFLUENT TOXICITY TESTING

	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total (contract)	☐	■
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other	☐	☐

OTHER	D	C
Paint Filter	☐	☐
Corrosivity pH (contract)	☐	■
	☐	☐
	☐	☐
	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions: Sent to Test America DO#18-605 01-12-18

Septum Blank Prep Date & Initials:

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
		1-11-18	1500
Relinquished by:	Received by:	Date:	Time: (Military time)
Refrigerator	Refrigerator	1-12-18	0130
Relinquished by:	Received by:	Date:	Time: (Military time)
Refrigerator		1-12-18	0630
Relinquished by:	Received by:	Date:	Time: (Military time)
		1-12-18	1036
Relinquished by:	Received by:	Date:	Time: (Military time)
		1-12-18	1430

Sample Integrity/Preservation:

# of Bottles Delivered: 6 GOS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 5.0 °C

Initials:

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☑	☐	☐
Sample labels match Chain of Custody?	☑	☐	☐
Correct number of sample bottles were delivered?	☑	☐	☐
Custody seals intact?	☐	☐	☑
Within holding time?	☑	☐	☐
Sufficient sample volume for analysis?	☑	☐	☐
Samples are in properly preserved containers?	☑	☐	☐
Sample containers damaged/leaking/frozen?	☐	☑	☐
40 ml vials headspace, > pea-sized air bubble?	☑	☐	☐
Received from a refrigerator?	☐	☑	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

TestAmerica Phoenix
4625 East Cotton Ctr Blvd Suite 189
Phoenix, AZ 85040
Phone (602) 437-3340 Fax (602) 454-9303

Chain of Custody Record

TestAmerica

Client Information (Sub Contract Lab)	Sampler	Lab PM: Eshelman, Linda	Carrier Tracking No(s)	COC No: 550-19913.1
Client Contact: Shipping/Receiving	Phone	E-Mail: linda.eshelman@testamericainc.com	State of Origin: Arizona	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Arizona		Job #: 550-96234-1
Address: 4955 Yarrow Street.	Due Date Requested: 1/23/2018			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #			
Email:	WO #			
Project Name: General CRAO Lab	Project #: 55001656			
Site:	SSOW#			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B/9012B_Prep	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X		X	
1801088-01 (550-96234-1)	1/12/18	06:00 Arizona		Solid			X	1	AZ

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does no currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements

Empty Kit Relinquished by	Date	Time	Method of Shipment

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[illegible] 01-15-18	15:40	TA-PHX	[illegible]	1/16/18 0950	TA-DEN
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks
Δ Yes Δ No		2.3°C +0.1 2R #8 Transferred by BB 1/16/18

Ver. 09/20/2016

TestAmerica Phoenix
4625 East Cotton Ctr Blvd Suite 189
Phoenix, AZ 85040
Phone (602) 437-3340 Fax (602) 454-9303

Chain of Custody Record

TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Esheiman, Linda	Carrier Tracking No(s): 7393 7723 4962	COC No: 550-19914 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: linda.esheiman@testamericainc.com	State of Origin: Arizona	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note): State Program - Arizona		Job #: 550-96234-1
Address: 17461 Derian Ave, Suite 100,	Due Date Requested: 1/19/2018			
City: Irvine	TAT Requested (days):			
State, Zip: CA, 92614-5817				
Phone: 949-261-1022(Tel) 949-260-3297(Fax)	PO #			
Email:	WO #			
Project Name: General CRAO Lab	Project #: 55001656			
Site:	SSOW#			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	9034_Calc/9030B	10208	9034_Calc/9031 Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
1801086-01 (550-96234-1)	1/12/18	06:00 Arizona		Solid		X				AZ spl please manually qualify source spls when needed (M & R).
1801087-01 (550-96234-2)	1/12/18	06:00 Arizona		Waste			X	X		

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) — Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[illegible] 01/15-18	15:40	TA-IR-V LAB	[illegible]	1/16/18 10.25	TA-IR-V
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: ☑ Yes ☐ No — Custody Seal No.:

Cooler Temperature(s)°C and Other Remarks: 2.4/2.9 10.66

Ver 09/20/2016

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

550-96234 Chain of Custody

COOLER RECEIPT FORM

Cooler Received/Opened On 1/18/2018 @1050

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 4973 (last 4 digits, FedEx) Courier: FedEx

   IR Gun ID 31470366 pH Strip Lot_____ Chlorine Strip Lot_____

2. Temperature of rep. sample or temp blank when opened: 2.3 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) es

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry Ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

   b. Was there any observable headspace present in any VOA vial? YES...NO...NA

Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) es

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

   b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) es

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) es

I certify that I attached a label with the unique LIMS number to each container (intial) es

21. Were there Non-Conformance Issues at login? YES...NO Was a NCM generated? YES...NO...# es

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

TestAmerica Phoenix
4625 East Cotton Ctr Blvd Suite 189
Phoenix, AZ 85040
Phone (602) 437-3340 Fax (602) 454-9303

Chain of Custody Record

550-96234

America

Client Information (Sub Contract Lab)

Sampler:

Lab PM: Eshelman, Linda

Client Contact: Shipping/Receiving

Phone:

E-Mail: linda.eshelman@testamericainc.com

Arizona

Page 1 of 1

Company: TestAmerica Laboratories, Inc

Accreditations Required (See note): State Program - Arizona

Job #: 550-96234-1

Address: 2960 Foster Creighton Drive, ,

Due Date Requested: 1/19/2018

City: Nashville

TAT Requested (days):

State, Zip: TN, 37204

Phone: 615-726-0177(Tel) 615-726-3404(Fax)

PO #:

Email:

WO #:

Project Name: General CRAO Lab

Project #: 55001656

Site:

SSOW#:

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	8151A/1311_T (MOD) TCLP 8151	8151A/1311_T TCLP 8151	Special Instructions/Note:
			Preservation Code:					
1801088-01 (550-96234-1)	1/12/18	06:00 Arizona		Solid		X		
1801087-01 (550-96234-2)	1/12/18	06:00 Arizona		Waste			X	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does no currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[illegible] 01-18-18	15:40	TAL	[illegible]	1-18-18 10:50	TA-NAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.3

Ver: 09/20/2016

Login Sample Receipt Checklist

Client: Pima County WWTP

Job Number: 550-96234-1
SDG Number: Tres Rios and Agua Nueve WRF

Login Number: 96234
List Number: 1
Creator: Vilaboy, Monica

List Source: TestAmerica Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: Pima County WWTP

Job Number: 550-96234-1
SDG Number: Tres Rios and Agua Nueve WRF

Login Number: 96234
List Number: 2
Creator: Pottruff, Reed W

List Source: TestAmerica Denver
List Creation: 01/16/18 10:46 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Refer to Job Narrative for details.
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Pima County WWTP

Job Number: 550-96234-1
SDG Number: Tres Rios and Agua Nueve WRF

Login Number: 96234
List Number: 3
Creator: Ornelas, Olga

List Source: TestAmerica Irvine
List Creation: 01/16/18 12:30 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1801069-01

PROJECT & LOCATION: Agua Nueva WRF - Thickened Sludge Pump (Annual)

PROJECT-LOCATION NUMBER: 26107-0600 (XXXXX-XXXX)

SAMPLE START DATE: 01/11/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 0600 (Military time)

CLIENT: IWC

SAMPLE END DATE: 01/12/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0600 (Military time)

SAMPLER(S): Silva, Echanove, Riccaboni, Martinez (Print Last Name(s) Only)

Permit Type: ☐ APP ■ AZPDES ☐ IWC ☐ Investigative ☐ Reuse ☐ Air ■ 503 ☐ Process Control ☐ Other

Matrix: ■ Biosolids ☐ Groundwater ☐ Industrial ☐ Soil ☐ Stormwater ☐ Surface Water ☐ Wastewater ☐ Air ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Hardness				
Iron				
Lead				
Magnesium				
Manganese				
Mercury	×			■
Mercury LL				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Thallium				
Tin				

METALS	Tot	Diss	D	C
Titanium				
Vanadium				
Zinc				
PPMs *	×			■
TCLP Metals				■
503 Metals **				■
Dissolved Cr+6				

WET METHODS	D	C
Ammonia as N		
Chloride 1-12-18		
Cyanide, Total		■
Cyanide, Amenable		
Fluoride		
Ignitability		
Nitrate as N		
Nitrite as N		
Nitrate/Nitrite as N		
Nitrogen, Total Kjeldahl		
Nitrogen, Total as N		
Orthophosphate as P		
Phosphorus, Total as P		
Sulfate		
Sulfide		
Other		
Other		

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	■	
Dioxin GC/SIM/MS Scan		■
Organochlorine Pesticides & PCBs		■
Purgeable Organics (GCMS)	■	
Semivolatile Organics (GCMS)		■
Bis(2-ethylhexyl) phthalate		
Digester Gas		
Oil and Grease		
Organic Carbon, Total		
Organic Carbon, Dissolved		
TCLP Herbicides (Contract Lab)		
TCLP Pesticides		■
TCLP Semivolatile Organics		■
TCLP Volatile Organics	■	
TTHM		
Total Petroleum Hydrocarbons		
Volatile Acids		
Other		
Other		

EFFLUENT TOXICITY TESTING

	D	C
Chronic *P. promelas*		
Chronic *C. dubia*		
Chronic *Selenastrum capricornutum*		
Other		

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity		
BOD		
COD		
Coliform, Fecal		
Coliform, Total		
Specific Conductance		
E. coli		
Oxygen, Dissolved		
pH		
Solids, Total		■
Solids, Total Dissolved		
Solids, Total Suspended		
Solids, Total Volatile		
Solids, Volatile Suspended		
Other		

OTHER

	D	C
Paint Filter		

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions: The lab shall composite the four discrete Purgeable Organics and Acrolein/Acrylonitrile samples.

624 + 605 01-16-18

Septum Blank Prep Date & Initials: 11-28-17 | lej

Chain of Custody Record (Signature Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	1-11-18	1500
Relinquished by: [signature]	Received by: Refrigerator	Date: 1-12-18	Time: (Military time) 0130
Relinquished by: Refrigerator	Received by: [signature]	Date: 1-12-18	Time: (Military time) 0630
Relinquished by: [signature]	Received by: [signature]	Date: 1-12-18	Time: (Military time) 1036
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

of Bottles Delivered: 11

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 5.0 °C

Initials: [illegible]

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒		
Sample labels match Chain of Custody?	☒		
Correct number of sample bottles were delivered?	☒		
Custody seals intact?			☒
Within holding time?	☒		
Sufficient sample volume for analysis?	☒		
Samples are in properly preserved containers?	☒		
Sample containers damaged/leaking/frozen?		☒	
40 ml vials headspace, > pea-sized air bubble?	☒		
Received from a refrigerator?		☒	

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT
WATER QUALITY
SAMPLE COLLECTION REPORT

SAMPLE LOCATION: Agua Nueva WRF – Thickened Sludge Pump LIMS: 1801089-01
LOCATION ID: 26107 – 0600 SAMPLERS: Silva, Echanove, Riccabona, Martinez SAMPLE DATE: 1-12-18
Last names only, primary sampler first

Sample D or C	Parameter	Frequency	AUTO MAN	Volume Submitted	Bottle/Preservation
C	Semivolatile Organics	Hand Composite	Man	1000 ml	Amber Glass/None/Ice
C	Organochlorine Pest & PCB's		Man	1000 ml	Amber Glass/None/Ice
C	Dioxin		Man	1000 ml	Amber Glass/None/Ice
C	Priority Pollutant & 503 Metals		Man	1000 ml	Dissolved Metals/None/Ice
		4 Aliquots for the duration of the discharge			
C	Total Solids		Man	1000 ml	General Purpose/None/Ice
C	TCLP Metals		Man	1000 ml	Dissolved Metals/None/Ice
C	TCLP Pesticides		Man	1000 ml	Amber Glass/None/Ice
C	TCLP Semivolatile organics		Man	1000 ml	Amber Glass/None/Ice
To be Composited by the Laboratory					
D	Purgeable Organics	Hand Composite	Man	4 X 40	None/Ice
D	Acrolein/Acrylonitrile		Man	4 X 40	None/Ice
D	TCLP Volatile Organics	4 Aliquots for the duration of the discharge	Man	4 X 40	None/Ice
To be Submitted to an Outside Laboratory					
C	Corrosivity pH	Hand Composite	Man	1000 ml	General Purpose/None/Ice
C	Sulfide (T)		Man	1000 ml	Dissolved Metals/None/Ice
C	Ignitability		Man	1000 ml	Amber Glass/None/Ice
C	Cyanide (T)	4 Aliquots for the duration of the discharge	Man	1000 ml	Dissolved Metals/None/Ice
C	TCLP Herbicides		Man	1000 ml	Amber Glass/None/Ice
C	Total Solids		Man	1000 ml	General None/Ice

	Time
Aliquot #1	0615
Aliquot #2	1220
Aliquot #3	1800
Aliquot #4	2355

4L ~~2L~~ every aliquot @ 1-12-18

1/30/18

Comments:	Thickened Sludge Pump samples are not preserved.
	All Composites including Cyanide can be poured off at the end of the sampling event
	Two Total Solids samples are required. One for our lab, one for the contract lab

PIMA COUNTY WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 07/26/2018
Laboratory License: AZO159

Sample Analysis Report

Agua Nueva WRF

April 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Arratt

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

11·16·18
Date

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
Plant Influent	1804047-01	Water	4/6/2018 6:00:00	4/6/2018 8:26:00	Q6
Plant Effluent	1804047-02	Water	4/6/2018 6:00:00	4/6/2018 8:26:00	Q6
Thickened Sludge Pump	1804047-03	Biosolids	4/6/2018 6:00:00	4/6/2018 8:26:00	Q6
Plant Effluent	1804087-01	Water	4/11/2018 9:00:00	4/11/2018 10:10:00	Q6
Thickened Sludge Pump	1804048-01	Biosolids	4/6/2018 6:00:00	4/6/2018 8:35:00	Q6

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1804047-01	C	Dimethyl phthalate	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	0.58	4.00	D1, D7	SJM
1804047-01	C	Di-n-butyl phthalate	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	2.50	12.00	D1, D7	SJM
1804047-01	C	Di-n-octyl phthalate	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	2.55	12.00	D1, D7	SJM
1804047-01	C	Fluoranthene	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	1.32	4.00	D1, D7	SJM
1804047-01	C	Fluorene	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	1.54	4.00	D1, D7	SJM
1804047-01	C	Hexachlorobenzene	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	0.62	4.00	D1, D7	SJM
1804047-01	C	Hexachlorobutadiene	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	1.01	4.00	D1, D7	SJM
1804047-01	C	Hexachlorocyclopentadiene	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	4.23	12.00	D1, D7	SJM
1804047-01	C	Hexachloroethane	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	1.26	4.00	D1, D7	SJM
1804047-01	C	Indeno(1,2,3-cd)pyrene	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	2.83	12.00	D1, D7	SJM
1804047-01	C	Isophorone	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	1.66	4.00	D1, D7	SJM
1804047-01	C	Naphthalene	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	1.77	4.00	D1, D7	SJM
1804047-01	C	n-Decane	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	1.95	4.00	D1, D7	SJM
1804047-01	C	Nitrobenzene	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	2.10	12.00	D1, D7	SJM
1804047-01	C	N-Nitrosodimethylamine	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	2.09	12.00	D1, D7, PC3	SJM
1804047-01	C	N-Nitrosodi-n-propylamine	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	2.43	12.00	D1, D7	SJM
1804047-01	C	N-Nitrosodiphenylamine	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	6.08	20.00	D1, D7	SJM
1804047-01	C	n-Octadecane	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	2.18	12.00	D1, D7	SJM
1804047-01	C	Pentachlorophenol	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	4.02	12.00	D1, D7	SJM
1804047-01	C	Phenanthrene	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	1.63	4.00	D1, D7	SJM
1804047-01	C	Phenol	04/06/18 6:00	EPA 625	5/19/18 00:16	**16.8**	ug/L	2.59	12.00	D1, D7	SJM
1804047-01	C	Pyrene	04/06/18 6:00	EPA 625	5/19/18 00:16	**ND**	ug/L	1.38	4.00	D1, D7	SJM
1804047-01	C	1,2-Diphenylhydrazine	04/06/18 6:00	EPA 8270C	5/19/18 00:16	**ND**	ug/L	0.98	4.00	D1, D7	SJM
1804047-01RE1	C	Copper	04/06/18 6:00	EPA 200.8	4/24/18 15:54	**46.7**	ug/L	0.36	10.00	D1	JB
1804047-01RE1	C	Zinc	04/06/18 6:00	EPA 200.8	4/24/18 15:54	**137**	ug/L	0.23	10.00	D2	JB
Thickened Sludge Pump (26107-0600)											
1804047-03	C	Antimony	04/06/18 6:00	EPA 6010D	4/20/18 13:38	**ND**	mg/kg dry		34.23		MLB
1804047-03	C	Arsenic	04/06/18 6:00	EPA 6010D	4/20/18 13:38	**ND**	mg/kg dry		34.23		MLB
1804047-03	C	Beryllium	04/06/18 6:00	EPA 6010D	4/20/18 13:38	**ND**	mg/kg dry		6.85		MLB
1804047-03	C	Cadmium	04/06/18 6:00	EPA 6010D	4/20/18 13:38	**ND**	mg/kg dry		13.69		MLB
1804047-03	C	Chromium	04/06/18 6:00	EPA 6010D	4/20/18 13:38	**ND**	mg/kg dry		34.23		MLB
1804047-03	C	Copper	04/06/18 6:00	EPA 6010D	4/20/18 13:38	**351**	mg/kg dry		34.23		MLB
1804047-03	C	Lead	04/06/18 6:00	EPA 6010D	4/20/18 13:38	**ND**	mg/kg dry		34.23		MLB
1804047-03	C	Mercury	04/06/18 6:00	EPA 7471B	4/23/18 14:28	**0.77**	mg/kg dry		0.01		DML
1804047-03	C	Molybdenum	04/06/18 6:00	EPA 6010D	4/20/18 13:38	**ND**	mg/kg dry		13.69		MLB
1804047-03	C	Nickel	04/06/18 6:00	EPA 6010D	4/20/18 13:38	**ND**	mg/kg dry		34.23		MLB
1804047-03	C	Selenium	04/06/18 6:00	EPA 6010D	4/20/18 13:38	**ND**	mg/kg dry		68.46		MLB
1804047-03	C	Silver	04/06/18 6:00	EPA 6010D	4/20/18 13:38	**ND**	mg/kg dry		3.42		MLB
1804047-03	C	Thallium	04/06/18 6:00	EPA 6010D	4/20/18 15:04	**ND**	mg/kg dry		34.23		MLB
1804047-03	C	Zinc	04/06/18 6:00	EPA 6010D	4/20/18 13:38	**745**	mg/kg dry		34.23		MLB
1804047-03	C	% Solids	04/06/18 6:00	SM 2540G	4/7/18 13:30	**0.65**	%		0.01		NGF
1804047-03	C	Acrolein	04/06/18 6:00	EPA 624	4/12/18 20:00	**ND**	mg/kg dry	0.00360	0.02		SRM
1804047-03	C	Acrylonitrile	04/06/18 6:00	EPA 624	4/12/18 20:00	**ND**	mg/kg dry	0.00280	0.02		SRM
1804047-03	C	4,4-DDD	04/06/18 6:00	EPA 625	4/17/18 15:52	**ND**	mg/kg dry	0.00006	0.00432	D1, D7	MSM
1804047-03	C	4,4-DDE	04/06/18 6:00	EPA 625	4/17/18 15:52	**ND**	mg/kg dry	0.00003	0.00432	D1, D7	MSM
1804047-03	C	4,4-DDT	04/06/18 6:00	EPA 625	4/17/18 15:52	**ND**	mg/kg dry	0.00006	0.00432	D1, D7	MSM
1804047-03	C	Aldrin	04/06/18 6:00	EPA 625	4/17/18 15:52	**ND**	mg/kg dry	0.00006	0.00432	D1, D7	MSM
1804047-03	C	alpha-BHC	04/06/18 6:00	EPA 625	4/17/18 15:52	**ND**	mg/kg dry	0.00004	0.00432	D1, D7	MSM
1804047-03	C	beta-BHC	04/06/18 6:00	EPA 625	4/17/18 15:52	**ND**	mg/kg dry	0.00009	0.02	D1, D7	MSM
1804047-03	C	Chlordane	04/06/18 6:00	EPA 625	4/17/18 15:52	**ND**	mg/kg dry	0.00025	0.03	D1, D7	MSM
1804047-03	C	delta-BHC	04/06/18 6:00	EPA 625	4/17/18 15:52	**ND**	mg/kg dry	0.00007	0.00432	D1, D7	MSM
1804047-03	C	Dieldrin	04/06/18 6:00	EPA 625	4/17/18 15:52	**ND**	mg/kg dry	0.00015	0.01	D1, D7	MSM
1804047-03	C	Endosulfan I	04/06/18 6:00	EPA 625	4/17/18 15:52	**ND**	mg/kg dry	0.00004	0.00432	D1, D7	MSM
1804047-03	C	Endosulfan II	04/06/18 6:00	EPA 625	4/17/18 15:52	**ND**	mg/kg dry	0.00003	0.00432	D1, D7	MSM
1804047-03	C	Endosulfan sulfate	04/06/18 6:00	EPA 625	4/17/18 15:52	**ND**	mg/kg dry	0.00004	0.00432	D1, D7, N1	MSM
1804047-03	C	Endrin	04/06/18 6:00	EPA 625	4/17/18 15:52	**ND**	mg/kg dry	0.00010	0.00432	D1, D7	MSM
1804047-03	C	Endrin aldehyde	04/06/18 6:00	EPA 625	4/17/18 15:52	**ND**	mg/kg dry	0.00011	0.00432	D1, D7	MSM
1804047-03	C	gamma-BHC (Lindane)	04/06/18 6:00	EPA 625	4/17/18 15:52	**ND**	mg/kg dry	0.00007	0.00432	D1, D7	MSM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1804047-03	C	Heptachlor	04/06/18 6:00	EPA 625	4/17/18 15:52	ND	mg/kg dry	0.00005	0.00432	D1, D7	MSM
1804047-03	C	Heptachlor Epoxide	04/06/18 6:00	EPA 625	4/17/18 15:52	ND	mg/kg dry	0.00004	0.00432	D1, D7	MSM
1804047-03	C	PCB 1016	04/06/18 6:00	EPA 625	4/17/18 15:52	ND	mg/kg dry	0.00006	0.01	D1, D7	MSM
1804047-03	C	PCB 1221	04/06/18 6:00	EPA 625	4/17/18 15:52	ND	mg/kg dry	0.00017	0.03	D1, D7	MSM
1804047-03	C	PCB 1232	04/06/18 6:00	EPA 625	4/17/18 15:52	ND	mg/kg dry	0.00007	0.03	D1, D7	MSM
1804047-03	C	PCB 1242	04/06/18 6:00	EPA 625	4/17/18 15:52	ND	mg/kg dry	0.00013	0.03	D1, D7	MSM
1804047-03	C	PCB 1248	04/06/18 6:00	EPA 625	4/17/18 15:52	ND	mg/kg dry	0.00010	0.03	D1, D7	MSM
1804047-03	C	PCB 1254	04/06/18 6:00	EPA 625	4/17/18 15:52	ND	mg/kg dry	0.00019	0.03	D1, D7	MSM
1804047-03	C	PCB 1260	04/06/18 6:00	EPA 625	4/17/18 15:52	ND	mg/kg dry	0.00007	0.01	D1, D7	MSM
1804047-03	C	Total PCBs	04/06/18 6:00	EPA 625	4/17/18 15:52	ND	mg/kg dry	0.00016	0.03	D1, D7	MSM
1804047-03	C	Toxaphene	04/06/18 6:00	EPA 625	4/17/18 15:52	ND	mg/kg dry	0.00094	0.07	D1, D7	MSM
1804047-03	C	Methoxychlor	04/06/18 6:00	EPA 8270C	4/17/18 15:52	ND	mg/kg dry	0.00004	0.00432	D1, D7	MSM
1804047-03	C	1,1,1-Trichloroethane	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0002	0.00154		SRM
1804047-03	C	1,1,2,2-Tetrachloroethane	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.00006	0.00154		SRM
1804047-03	C	1,1,2-Trichloroethane	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.00009	0.00154		SRM
1804047-03	C	1,1-Dichloroethane	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0002	0.00154		SRM
1804047-03	C	1,1-Dichloroethene	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0001	0.00154		SRM
1804047-03	C	1,2-Dichlorobenzene	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.00008	0.00154		SRM
1804047-03	C	1,2-Dichloroethane	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.00009	0.00154		SRM
1804047-03	C	1,2-Dichloropropane	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0001	0.00154		SRM
1804047-03	C	1,3-Dichlorobenzene	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.00008	0.00154		SRM
1804047-03	C	1,4-Dichlorobenzene	04/06/18 6:00	EPA 624	4/11/18 15:11	0.04	mg/kg dry	0.0002	0.00154		SRM
1804047-03	C	2-Chloroethyl vinyl ether	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0003	0.00308		SRM
1804047-03	C	Benzene	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0001	0.00154		SRM
1804047-03	C	Bromodichloromethane	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0002	0.00154		SRM
1804047-03	C	Bromoform	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0003	0.00154		SRM
1804047-03	C	Bromomethane	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0001	0.00154		SRM
1804047-03	C	Carbon Tetrachloride	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0004	0.00154		SRM
1804047-03	C	Chlorobenzene	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.00006	0.00154		SRM
1804047-03	C	Chloroethane	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0002	0.00154		SRM
1804047-03	C	Chloroform	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0001	0.00154		SRM
1804047-03	C	Chloromethane	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0002	0.00154		SRM
1804047-03	C	cis-1,3-Dichloropropene	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.00009	0.00154		SRM
1804047-03	C	Dibromochloromethane	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.00006	0.00154		SRM
1804047-03	C	Ethyl Benzene	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.00009	0.00154		SRM
1804047-03	C	Methylene Chloride	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0002	0.00154		SRM
1804047-03	C	Tetrachloroethene	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0002	0.00154		SRM
1804047-03	C	Toluene	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0001	0.00154		SRM
1804047-03	C	Total Trihalomethanes	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0003	0.00154		SRM
1804047-03	C	trans-1,2-Dichloroethene	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0001	0.00154		SRM
1804047-03	C	trans-1,3-Dichloropropene	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0001	0.00154		SRM
1804047-03	C	Trichloroethene	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0001	0.00154		SRM
1804047-03	C	Trichlorofluoromethane	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0003	0.00154		SRM
1804047-03	C	Vinyl chloride	04/06/18 6:00	EPA 624	4/11/18 15:11	ND	mg/kg dry	0.0002	0.00154		SRM
1804047-03	C	1,2,4-Trichlorobenzene	04/06/18 6:00	EPA 8260	4/11/18 15:11	ND	mg/kg dry		0.00154		SRM
1804047-03	C	1,2-Dibromo-3-chloropropane	04/06/18 6:00	EPA 8260	4/11/18 15:11	ND	mg/kg dry		0.00308		SRM
1804047-03	C	1,2-Dibromoethane	04/06/18 6:00	EPA 8260	4/11/18 15:11	ND	mg/kg dry		0.00154		SRM
1804047-03	C	cis-1,2-Dichloroethene	04/06/18 6:00	EPA 8260	4/11/18 15:11	ND	mg/kg dry		0.00154		SRM
1804047-03	C	m,p-Xylenes	04/06/18 6:00	EPA 8260	4/11/18 15:11	ND	mg/kg dry		0.00308		SRM
1804047-03	C	o-Xylene	04/06/18 6:00	EPA 8260	4/11/18 15:11	ND	mg/kg dry		0.00154		SRM
1804047-03	C	Styrene	04/06/18 6:00	EPA 8260	4/11/18 15:11	ND	mg/kg dry		0.00154		SRM
1804047-03	C	Xylenes, total	04/06/18 6:00	EPA 8260	4/11/18 15:11	ND	mg/kg dry		0.00308		SRM
1804047-03	C	2,3,7,8-TCDD - Dioxin Scan	04/06/18 6:00	EPA 625	5/18/18 13:12	ND	ug/kg dry		3.85		SJM
1804047-03	C	1,2,4-Trichlorobenzene	04/06/18 6:00	EPA 625	5/19/18 00:53	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804047-03	C	2,3-Dichloroaniline	04/06/18 6:00	EPA 625	5/19/18 00:53	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1804047-03	C	2,4,6-Trichlorophenol	04/06/18 6:00	EPA 625	5/19/18 00:53	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804047-03	C	2,4-Dichlorophenol	04/06/18 6:00	EPA 625	5/19/18 00:53	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804047-03	C	2,4-Dimethylphenol	04/06/18 6:00	EPA 625	5/19/18 00:53	ND	mg/kg dry	0.004	0.01	D1, D7	SJM
1804047-03	C	2,4-Dinitrophenol	04/06/18 6:00	EPA 625	5/19/18 00:53	ND	mg/kg dry	0.009	0.01	D1, D7	SJM
1804047-03	C	2,4-Dinitrotoluene	04/06/18 6:00	EPA 625	5/19/18 00:53	ND	mg/kg dry	0.002	0.01	D1, D7	SJM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1804047-03	C	2,6-Dinitrotoluene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804047-03	C	2-Chloronaphthalene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804047-03	C	2-Chlorophenol	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804047-03	C	2-Methyl-4,6-dinitrophenol	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.005	0.01	D1, D7	SJM
1804047-03	C	2-Methylphenol	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804047-03	C	2-Nitrophenol	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804047-03	C	3,3-Dichlorobenzidine	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804047-03	C	4-Bromophenyl phenyl ether	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804047-03	C	4-Chloro-3-methylphenol	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804047-03	C	4-Chlorophenyl phenyl ether	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804047-03	C	4-Methylphenol	04/06/18 6:00	EPA 625	5/19/18 00:53	**30.15**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804047-03	C	4-Nitrophenol	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.005	0.01	D1, D7	SJM
1804047-03	C	Acenaphthene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804047-03	C	Acenaphthylene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804047-03	C	Anthracene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804047-03	C	Benzidine	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.007	0.01	D1, D7	SJM
1804047-03	C	Benzo[a]anthracene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804047-03	C	Benzo[a]pyrene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804047-03	C	Benzo[b]fluoranthene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804047-03	C	Benzo[ghi]perylene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804047-03	C	Benzo[k]fluoranthene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804047-03	C	bis(2-chloroethoxy)methane	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804047-03	C	bis(2-chloroethyl)ether	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804047-03	C	bis(2-chloroisopropyl)ether	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.00200	D1, D7, V1	SJM
1804047-03	C	bis(2-ethylhexyl)phthalate	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804047-03	C	Butylbenzylphthalate	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804047-03	C	Carbazole	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804047-03	C	Chrysene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804047-03	C	Dibenzo(a,h)anthracene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804047-03	C	Diethyl phthalate	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804047-03	C	Dimethyl phthalate	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1804047-03	C	Di-n-butyl phthalate	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804047-03	C	Di-n-octyl phthalate	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804047-03	C	Fluoranthene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804047-03	C	Fluorene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804047-03	C	Hexachlorobenzene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1804047-03	C	Hexachlorobutadiene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804047-03	C	Hexachlorocyclopentadiene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1804047-03	C	Hexachloroethane	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804047-03	C	Indeno(1,2,3-cd)pyrene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804047-03	C	Isophorone	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804047-03	C	Naphthalene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804047-03	C	n-Decane	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804047-03	C	Nitrobenzene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804047-03	C	N-Nitrosodimethylamine	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.01	D1, D7, PC3	SJM
1804047-03	C	N-Nitrosodi-n-propylamine	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804047-03	C	N-Nitrosodiphenylamine	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.006	0.01	D1, D7	SJM
1804047-03	C	n-Octadecane	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804047-03	C	Pentachlorophenol	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1804047-03	C	Phenanthrene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804047-03	C	Phenol	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804047-03	C	Pyrene	04/06/18 6:00	EPA 625	5/19/18 00:53	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804047-03	C	1,2-Diphenylhydrazine	04/06/18 6:00	EPA 8270C	5/19/18 00:53	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804048-01	C	Cyanide, Total	04/06/18 6:00	9014	4/11/18 15:35	**ND**	mg/Kg dry	26	61	E8	NEL *

* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.

1804048-01	C	Percent Solids	04/06/18 6:00	2540G	4/9/18 10:20	**0.6**	%	0.1	0.1		YET *

* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.

Qualifier Definitions

A	Absence
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D4	Minimum Reporting Limit (MRL) adjusted to reflect sample amount received and analyzed.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H6	The filtration was not done within the required 15 minutes of sampling, the sample was filtered in the laboratory.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
L4	The associated blank spike recovery was below method acceptance limits.
M1	Matrix spike recovery was high; the associated blank spike recovery was acceptable.
N1	See case narrative.
N7	Additional analysis was not performed based on the "Total" result which was below the requested analyte's MCL/Action level/Trigger Level.
NA	Not Analyzed
NC	Not Calculable
PC3	Semi-quantitation is included in the case narrative.
Q6	Sample was received above recommended temperature.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction

Case Narrative(s)

1804047-01, 02
EPA Method 624 Acrolein and Acrylonitrile. Target analytes flagged with N1 failed the Spike Percent Recovery for Acrolein. The analyte was not detected in the samples. The associated CVS passed. SRM 041918

1804047-02, 03
EPA Method 625/8270 Pesticides: Target analyte Endosulfan Sulfate was flagged with N1and failed the Matrix Spike from the same analytical batch but the spike was performed on a different sample. MSM 042018

Semi-Quantitation
Method: 625
1804047-01

Compound Name	Concentration-ug/L
Benzoic Acid	170
N,N-Dimethyl-1-dodecanamine	354
Palmitic Acid	11671
Oleic Acid	18397
Stearic Acid	5741

SJM 06/06/18

Semi-Quantitation
Method: 625
1804047-03

Compound Name	Concentration-mg/Kg
N,N-Dimethyl-1-dodecanamine	1210
Palmitic Acid	91071
Oleic Acid	168942
Stearic Acid	27292

SJM 06/06/18

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1804047-03

PROJECT & LOCATION: Agua Nueva WRF - Thickened Sludge Pump (Quarterly)

PROJECT-LOCATION NUMBER: 26107-0600 (XXXXX-XXXX)

SAMPLE START DATE: 04-05-2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE START TIME: 0600 (Military time) CLIENT: IWC

SAMPLE END DATE: 04-06-2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE END TIME: 0600 (Military time) SAMPLER(S): Silva, Kaufman, Riccaboni, Martinez (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Hardness				
Iron				
Lead				
Magnesium				
Manganese				
Mercury	×			■
Mercury LL				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Thallium				
Tin				

METALS	Tot	Diss	D	C
Titanium				
Vanadium				
Zinc				
PPMs *	×			■
TCLP Metals				
503 Metals **	×			■
Dissolved Cr+6				

WET METHODS	D	C
Ammonia as N		
Chloride		
Cyanide, Total		
Cyanide, Amenable		
Fluoride		
Ignitability		
Nitrate as N		
Nitrite as N		
Nitrate/Nitrite as N		
Nitrogen, Total Kjeldahl		
Nitrogen, Total as N		
Orthophosphate as P		
Phosphorus, Total as P		
Sulfate		
Sulfide		
Other		
Other		

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	■	
Dioxin GC/SIM/MS Scan		■
Organochlorine Pesticides & PCBs		■
Purgeable Organics (GCMS)	■	
Semivolatile Organics (GCMS)		■
Bis(2-ethylhexyl) phthalate		
Digester Gas		
Oil and Grease		
Organic Carbon, Total		
Organic Carbon, Dissolved		
TCLP Herbicides (Contract Lab)		
TCLP Pesticides		
TCLP Semivolatile Organics		
TCLP Volatile Organics		
TTHM		
Total Petroleum Hydrocarbons		
Volatile Acids		
Other		
Other		

EFFLUENT TOXICITY TESTING

	D	C
Chronic *P. promelas*		
Chronic *C. dubia*		
Chronic *Selenastrum capricornutum*		
Other		

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity		
BOD		
COD		
Coliform, Fecal		
Coliform, Total		
Specific Conductance		
E. coli		
Oxygen, Dissolved		
pH		
Solids, Total		■
Solids, Total Dissolved		
Solids, Total Suspended		
Solids, Total Volatile		
Solids, Volatile Suspended		
Other		

OTHER

	D	C
Paint Filter		

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions: The lab shall composite the four discrete Purgeable Organics and Acrolein/Acrylonitrile samples.
6244 605 04-06-18

Septum Blank Prep Date & Initials: 03-06-2018 lej + mf

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	04-05-18	1530
Relinquished by:	Received by:	Date:	Time: (Military time)
[signature]	Refrigerator	04-06-18	0130
Relinquished by:	Received by:	Date:	Time: (Military time)
Refrigerator	[signature]	04-06-18	0600
Relinquished by:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	04-06-18	0835
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

# of Bottles Delivered: 7 605

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 7 °C

Initials: GOD

Q6 qualifier? ☑ YES ☐ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒		
Sample labels match Chain of Custody?	☒		
Correct number of sample bottles were delivered?	☒		
Custody seals intact?			☒
Within holding time?	☒		
Sufficient sample volume for analysis?	☒		
Samples are in properly preserved containers?	☒		
Sample containers damaged/leaking/frozen?		☒	
40 ml vials headspace, > pea-sized air bubble?	☒		
Received from a refrigerator?		☒	

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*
** *As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn*

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT
WATER QUALITY
SAMPLE COLLECTION REPORT

SAMPLE LOCATION: Agua Nueva WRF – Thickened Sludge Pump LIMS: 1804047-03
LOCATION ID: 26107 – 0600 SAMPLERS: Silva, Kaufman, Riccaboni, Martinez
Last names only, primary sampler first
SAMPLE DATE: 04-06-18

Sample D or C	Parameter	Frequency	AUTO MAN	Volume Submitted	Bottle/Preservation
C	Semivolatile Organics	Hand Composite	Man	1000 ml	Amber Glass/None/Ice
C	Organochlorine Pest & PCB's		Man	1000 ml	Amber Glass/None/Ice
C	Dioxin		Man	1000 ml	Amber Glass/None/Ice
C	Metals (T) + Molybdenum		Man	1000 ml	Dissolved Metals/None/Ice
C	Cyanide (T)	4 Aliquots for the duration of the discharge	Man	1000 ml	Dissolved Metals/None/Ice
C	Total Solids		Man	1000 ml	General Purpose/None/Ice
C	Total Solids		Man	1000 ml	General Purpose/None/Ice
To be Composited by the Laboratory					
D	Purgeable Organics	Hand Composite	Man	4 X 40	None/Ice
D	Acrolein/Acrylonitrile		Man	4 X 40	None/Ice
		4 Aliquots for the duration of the discharge			

Grab 2L each aliquot

	Time
Aliquot #1	4/5/18 0635
Aliquot #2 4.5.18	~~4.5.18~~ 1210
Aliquot #3	4.5.18 1800
Aliquot #4	4.5.18 2350

TR 4.16.18

Comments:	Thickened Sludge Pump samples are not preserved.
	All Composites including Cyanide can be poured off at the end of the sampling event
	Two Total Solids samples are required. One for our lab, one for the contract lab

PIMA COUNTY
WASTEWATER RECLAMATION
COMPLIANCE AND REGULATORY AFFAIRS OFFICE LABORATORY
PIMA COUNTY RWRD
CRAO – LABORATORY SERVICES
2955 W. Calle Agua Nueva Tucson AZ, 85745
Phone: 520-724-6200 Fax: 520-724-6071

FINAL LABORATORY GROUP REPORTS

LIMS # 1804047-03
Parameters: Metals, Ac/Ac, Dioxin Scan, Pesticides, Purgeables, Semi-Volatiles, Total Solids

QA/QC Review

Copy of CoC included with Lab Report.	Yes
Sample IDs verified against CoC.	Yes
Sample dates/times are correct	Yes
Analyses and methods verified against CoC.	Yes
Sample holding times not exceeded.	Yes
Correct Data Qualifiers included if necessary.	Yes
Report Comments included if necessary.	Yes
Case Narratives are correctly formatted.	Yes
NA and N7 Qualifiers included for Amenable Cyanide Analysis?	n/a
Are there exceedences/Not Analyzed/No Results?	n/a
If yes, is there a notification form attached?	n/a
Correct units? (mg/l or µg/l, mg/kg, SU@--°)	Yes
If there are Contract Lab Results, Is there a Contract Lab Checksheet?	n/a
Sample Receipt Checklist?	Yes
Correct Methods?	Yes
MDLS/PQLS	Yes

QA/QC Review date and initials: 09/21/18 lej_____ **Final Review date and initials:** JD 11-07-18

Comments:

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1804048-01

PROJECT & LOCATION: Agua Nueva WRF - Thickened Sludge Pump (Quarterly)

PROJECT-LOCATION NUMBER: 26107-0600 (XXXXX-XXXX)

SAMPLE START DATE: 04-05-2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE START TIME: 0600 (Military time) CLIENT: IWC

SAMPLE END DATE: 04-06-2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE END TIME: 0600 (Military time) SAMPLER(S): Silva, Kaufman, Riccaboni, Martinez (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ☐ 503 ☐ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury			☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *			☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total (contract)	☐	■
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other	☐	☐
Other	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other	☐	☐
Other	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total (contract)	☐	■
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other	☐	☐

OTHER	D	C
Paint Filter	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions: Sent to Test America. COS 04-06-18 DO#18-027679

Septum Blank Prep Date & Initials:

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	R. Riccaloni	04-05-18	1530
R. Riccaloni	Refrigerator	04.06.18	0130
Refrigerator	[signature]	04-06-18	0600
[signature]		04-06-18	0835 ~~0834~~ COS 04-06-18
Relinquished by:	Received by:	Date:	Time: (Military time)
	[signature]	04/06/18	1157

Sample Integrity/Preservation:

# of Bottles Delivered: 2 COS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 7 °C

Initials: COS

Q6 qualifier? ☒ YES ☐ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☒	☐	☒
Received from a refrigerator? COS 04-06-18	☐	☒	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

PIMA COUNTY
WASTEWATER RECLAMATION
COMPLIANCE AND REGULATORY AFFAIRS OFFICE LABORATORY
PIMA COUNTY RWRD
CRAO – LABORATORY SERVICES
2955 W. Calle Agua Nueva Tucson AZ, 85745
Phone: 520-724-6200 Fax: 520-724-6071

FINAL LABORATORY GROUP REPORTS

LIMS # 1804048-01
Parameters: Cyanide, Total Solids (Contract Lab)

QA/QC Review

Copy of CoC included with Lab Report.	Yes
Sample IDs verified against CoC.	Yes
Sample dates/times are correct	Yes
Analyses and methods verified against CoC.	Yes
Sample holding times not exceeded.	Yes
Correct Data Qualifiers included if necessary.	Yes
Report Comments included if necessary.	Yes
Case Narratives are correctly formatted.	n/a
NA and N7 Qualifiers included for Amenable Cyanide Analysis?	n/a
Are there exceedences/Not Analyzed/No Results?	n/a
If yes, is there a notification form attached?	n/a
Correct units? (mg/l or µg/l, mg/kg, SU@--°)	Yes
If there are Contract Lab Results, Is there a Contract Lab Checksheet?	Yes
Sample Receipt Checklist?	Yes
Correct Methods?	Yes
MDLS/PQLS	Yes

QA/QC Review date and initials: 09/21/18 lej_____ **Final Review date and initials:** JRL 11-07-18

Comments:

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax

Agua Nueva WRF Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Joe Doranski	Site Contact:	Date:	COC No:
Pima County CRAO Lab	Tel/Fax: 520-724-6032	Lab Contact:	Carrier:	1 of 1 COCs
2955 W. Calle Agua Nueva	**Analysis Turnaround Time**			Sampler: Mike Silva
Tucson/AZ/85745	☐ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(520) 724-6032 Phone	TAT if different from Below _____			Walk-in Client:
(520) 724-6075 FAX	☑ 2 weeks			Lab Sampling:
Project Name: TR and AN	☐ 1 week			
Site: Tres Rios WRF & Agua Nueva WRF	☐ 2 days			Job / SDG No.:
P O # 18-027679	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Cyanide total mg/kg dry	Total % solids for mg/kg dry	Sample Specific Notes:
Agua Nueva WRF thickened sludge pump 26107-0600										BS - biosolids
1804 048-01	4/6/18	0600	Comp	BS	2	N		1	1	mg/kg dry
Tres Rios WRF dewatered cake biosolids 20001-5703										BS - biosolids
1804 049-01	4/6/18	0600	Comp	BS	2	N		1	1	mg/kg dry

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ | Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PC CRAO Lab	04-06-18/1002	[signature]	PC CRAO	04-04-18 / 1002
Relinquished by: [signature]	Company: PC CRAO	Date/Time:	Received by: Mike Rosa	Company: TA	Date/Time: 4/6/18 1157
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Reference Toxicant Test Results and Control Chart within limits?			N/A
PMSD Determination included and within acceptable range? (minimum acceptable= 13)			N/A
End Points include TUc, NOEC, LOEC, and IC25?			N/A
Statistics verify endpoints			N/A
Control Charts Updated to include month of analysis			N/A
Reviewer Initials:	**ABR**	**Review Date:**	**6-28-18**

PEER/FINAL REVIEW:	PR	FR
LIMS/Excel data matches printed CL report?	✓	
Analysis dates are correct?	✓	
Correct Data Qualifiers included if necessary.	✓	
CRAO report shows result is from Contract Lab?	✓	
CRAO report shows correct Contract Lab (e.g. Test America, Phoenix)?	✓	
DO received in Pima Core	✓	
Analysis set to Reported?		✓

Peer Reviewer Initials:	JH	**Review Date:**	6-28-18
Biomonitor Supervisor Initials:	N/A	**Review Date:**	
Final Reviewer Initials:	JEC	**Review Date:**	7·3·18

CORRECTIVE ACTION REPORT:			
Preliminary Review:		Date:	
QA/QC Review:		Date:	
Data Entry:		Date:	
Peer Review:		Date:	
Lab Supervisor:		Date:	

LIMS #:	**DEVIATION:**	**CORRECTIVE ACTION:**

DEVIATIONS FROM ACCEPTABLE QA/QC:

Missing QC Report/Data
Holding Time for analysis exceeded.
Inappropriate dilution performed.
Missing COC.
Missing Data Qualifiers.
Incorrect Analysis Method.
Incorrect Sample IDs.
Other.

CORRECTIVE ACTION:

Request report correction from Subcontract Lab project manager.
Add missing Data Qualifiers.
Notify data end-user of deviation.
Arrange for resampling.
Other.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-100795-1
TestAmerica SDG: Tres rios WRF & Agua Nueva WRF
Client Project/Site: TR and AN

For:
Pima County WWTP
PO BOX 791
Tucson, Arizona 85701

Attn: Joseph Doranski

Authorized for release by:
4/12/2018 10:38:13 AM

Linda Eshelman, Project Manager II
(602)659-7629
linda.eshelman@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Sample Summary 5
Detection Summary 6
Client Sample Results 7
QC Sample Results 8
QC Association Summary 9
Lab Chronicle 10
Certification Summary 11
Method Summary 12
Chain of Custody 13
Receipt Checklists 14

Definitions/Glossary

Client: Pima County WWTP
Project/Site: TR and AN

TestAmerica Job ID: 550-100795-1
SDG: Tres rios WRF & Agua Nueva WRF

Qualifiers

General Chemistry

Qualifier	Qualifier Description
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pima County WWTP
Project/Site: TR and AN

TestAmerica Job ID: 550-100795-1
SDG: Tres rios WRF & Agua Nueva WRF

Job ID: 550-100795-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-100795-1

Comments
No additional comments.

Receipt
The samples were received on 4/6/2018 2:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Pima County WWTP
Project/Site: TR and AN

TestAmerica Job ID: 550-100795-1
SDG: Tres rios WRF & Agua Nueva WRF

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-100795-1	1804048-01	Waste	04/06/18 06:00	04/06/18 14:15
550-100795-2	1804049-01	Solid	04/06/18 06:00	04/06/18 14:15

Detection Summary

Client: Pima County WWTP
Project/Site: TR and AN

TestAmerica Job ID: 550-100795-1
SDG: Tres rios WRF & Agua Nueva WRF

Client Sample ID: 1804048-01 — Lab Sample ID: 550-100795-1

No Detections.

Client Sample ID: 1804049-01 — Lab Sample ID: 550-100795-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	2.9		2.6	1.1	mg/Kg	1	☼	9014	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Pima County WWTP
Project/Site: TR and AN

TestAmerica Job ID: 550-100795-1
SDG: Tres rios WRF & Agua Nueva WRF

Client Sample ID: 1804048-01 **Lab Sample ID: 550-100795-1**
Date Collected: 04/06/18 06:00 **Matrix: Waste**
Date Received: 04/06/18 14:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	0.6		0.1	0.1	%			04/09/18 10:20	1

Client Sample ID: 1804048-01 **Lab Sample ID: 550-100795-1**
Date Collected: 04/06/18 06:00 **Matrix: Waste**
Date Received: 04/06/18 14:15 **Percent Solids: 0.6**

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	E8	61	26	mg/Kg	☼	04/09/18 16:30	04/11/18 15:35	1

Client Sample ID: 1804049-01 **Lab Sample ID: 550-100795-2**
Date Collected: 04/06/18 06:00 **Matrix: Solid**
Date Received: 04/06/18 14:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	85.1		0.1	0.1	%			04/09/18 10:20	1
Percent Solids	14.9		0.1	0.1	%			04/09/18 10:20	1

Client Sample ID: 1804049-01 **Lab Sample ID: 550-100795-2**
Date Collected: 04/06/18 06:00 **Matrix: Solid**
Date Received: 04/06/18 14:15 **Percent Solids: 14.9**

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	2.9		2.6	1.1	mg/Kg	☼	04/09/18 16:30	04/11/18 15:35	1

Accreditation/Certification Summary

Client: Pima County WWTP
Project/Site: TR and AN

TestAmerica Job ID: 550-100795-1
SDG: Tres rios WRF & Agua Nueva WRF

Laboratory: TestAmerica Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0728	06-09-18

Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: Pima County WWTP
Project/Site: TR and AN

TestAmerica Job ID: 550-100795-1
SDG: Tres rios WRF & Agua Nueva WRF

Method	Method Description	Protocol	Laboratory
2540G	SM 2540G	SM22	TAL PHX
9014	Cyanide	SW846	TAL PHX

Protocol References:

SM22 = SM22

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax

100795

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

4/12/2018

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

Client Contact	Project Manager: Joe Doranski	Site Contact:	Date:	COC No:
Pima County CRAO Lab	Tel/Fax: 520-724-6032	Lab Contact:	Carrier:	1 of 1 COCs
2955 W. Calle Agua Nueva	Analysis Turnaround Time			Sampler: Mike Silva
Tucson/AZ/85745	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(520) 724-6032 Phone	TAT if different from Below _____			Walk-in Client:
(520) 724-6075 FAX	☑ 2 weeks			Lab Sampling:
Project Name: TR and AN	☐ 1 week			
Site: Tres Rios WRF & Agua Nueva WRF	☐ 2 days			Job / SDG No.:
P O # 18-027679	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Cyanide total mg/kg dry	Total % solids for mg/kg dry	Sample Specific Notes:
Agua Nueva WRF thickened sludge pump 26107-0600										BS - biosolids
-01 1804048-01	4/6/18	0600	Comp	BS	2	N		1	1	mg/kg dry
Tres Rios WRF dewatered cake biosolids 20001-5703										BS - biosolids
-02 1804049-01	4/6/18	0600	Comp	BS	2	N		1	1	mg/kg dry

550-100795 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☑Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐Return to Client ☑Disposal by Lab ☐Archive for _____ Months

Special Instructions/QC Requirements & Comments:

0.8°C R

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	PC CRAO	04-06-18/1002	[signature]	PC CRAO	04-04-18 / 1002
Relinquished by: [signature]	Company: PC CRAO	Date/Time:	Received by: [signature]	Company: TA	Date/Time: 4/6/18 1157
Relinquished by: [signature] 1415	Company: 4/6/18	Date/Time:	Received in Laboratory by: [signature]	Company: TA	Date/Time: 4-6-18 1415

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Login Sample Receipt Checklist

Client: Pima County WWTP

Job Number: 550-100795-1
SDG Number: Tres rios WRF & Agua Nueva WRF

Login Number: 100795
List Number: 1
Creator: Gravlin, Andrea

List Source: TestAmerica Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

PIMA COUNTY

WASTEWATER RECLAMATION

COMPLIANCE AND REGULATORY AFFAIRS OFFICE LABORATORY
2955 W Calle Agua Nueva, Tucson, AZ 85745
Telephone: (520) 724-6200

LIMS CHECKLIST FOR SUBCONTRACT DATA

LIMS ID	**1804048-01, 1804049-01**	**DO**	**18-027679**
CONTRACT LAB	**TestAmerica PHX**	**SAMPLE GROUP**	**TR and AN**
ANALYSES	**Percent Solids, Cyanide (Biosolids)**	**REPORT ID**	**550-100795-1**

TRANSFER & CONVERT FILES:	
Was the contract lab spreadsheet file saved to \\Splimsapp\elementshare\TransferIn ?	Y
Was the above mentioned file converted from a .xls file to a .mdb file for each WO#, and further, for each subcontract location, or separate analysis (as applicable), on the contract lab report? (Element>Project Management>Reports)	Y
Was the converted file attached to the sample in LIMS?	Y
VALIDATING CONTRACT LAB REPORT , CHAIN OF CUSTODY(S), AND DO#:	
Contract Lab Report signed and dated?	Y
Copy of contract lab COC included with contract Lab Report?	Y
Contract lab COC verified with CRAO COC(s) for Sample ID, Sample Date, Analysis Requested?	Y
Sample dates and received dates on the CL report, match the CL COC?	Y
CL report includes all requested analysis?	Y
CL licensed in AZ for the reported methods?	Y
Check that DO matches COC in types and number of tests?	N/A
DO received in Pima Core?	N/A
CONTRACT LAB REPORT, EXCEL SPREADSHEET, and QC:	
CL report and CL spreadsheet report the same sample results, sample date, and analysis date?	Y
Was a Case Narrative Included in Contract Lab report?	Y
Data packet includes QC Report from primary lab and any secondary subcontract labs?	Y
Did CL report list applicable AZ Data Qualifiers?	Y
Were there any dilutions made to samples that were reported as ND?	N
If so, were they qualified due to matrix interference?	N/A
Was QC included for every analysis method: typically Blk, LCS, MS, MSD?	Y
Did QC pass stated acceptance limits, or was it qualified?	Y
Were samples analyzed within required holding times?	Y
Check that MDLs are below water quality standards, If not notify Belinda Gamboa-Felix? (Cyanide, Hexachlorobenzene)	Y
Semivolatiles & Volatiles: Check that all analytes were delivered?	N/A
COMPLIANCE LIMIT REVIEW	
Were results compared to the discharge permit?.	N/A
Was Belinda Gamboa-Felix notified of any exceedences?	N/A
WET TESTING SPECIFIC REQUIREMENTS	
Statement of Pass/Fail reflected in End Points?	N/A
Report states if zeolite treatment was utilized?	N/A
Survival and Reproduction or Growth Data included (P. promelas or Ceriodaphnia only)?	N/A
Chemistry data included?	N/A

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 11/21/2018
Laboratory License: AZO159

Sample Analysis Report

Agua Nueva WRF

July 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Pratt

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

12 11 18
Date

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
Thickened Sludge Pump (26107-0600)											
1807097-03	C	Antimony	07/13/18 6:00	EPA 6010D	7/25/18 10:48	**ND**	mg/kg dry		12.17		MLB
1807097-03	C	Arsenic	07/13/18 6:00	EPA 6010D	7/25/18 10:48	**ND**	mg/kg dry		12.17		MLB
1807097-03	C	Beryllium	07/13/18 6:00	EPA 6010D	7/25/18 10:48	**ND**	mg/kg dry		2.43		MLB
1807097-03	C	Cadmium	07/13/18 6:00	EPA 6010D	7/25/18 10:48	**ND**	mg/kg dry		4.87		MLB
1807097-03	C	Chromium	07/13/18 6:00	EPA 6010D	7/25/18 10:48	**12.4**	mg/kg dry		12.17		MLB
1807097-03	C	Copper	07/13/18 6:00	EPA 6010D	7/25/18 10:48	**99.5**	mg/kg dry		12.17		MLB
1807097-03	C	Lead	07/13/18 6:00	EPA 6010D	7/25/18 13:00	**ND**	mg/kg dry		12.17		MLB
1807097-03	C	Mercury	07/13/18 6:00	EPA 7471B	7/26/18 09:37	**0.35**	mg/kg dry		0.01		DML
1807097-03	C	Molybdenum	07/13/18 6:00	EPA 6010D	7/25/18 10:48	**ND**	mg/kg dry		4.87		MLB
1807097-03	C	Nickel	07/13/18 6:00	EPA 6010D	7/25/18 10:48	**ND**	mg/kg dry		12.17		MLB
1807097-03	C	Selenium	07/13/18 6:00	EPA 6010D	7/25/18 10:48	**ND**	mg/kg dry		24.35		MLB
1807097-03	C	Silver	07/13/18 6:00	EPA 6010D	7/25/18 13:00	**1.25**	mg/kg dry		1.22		MLB
1807097-03	C	Thallium	07/13/18 6:00	EPA 6010D	7/25/18 13:00	**ND**	mg/kg dry		12.17		MLB
1807097-03	C	Zinc	07/13/18 6:00	EPA 6010D	7/25/18 10:48	**270**	mg/kg dry		12.17		MLB
1807097-03	C	2-Chloroethylvinyl ether	07/13/18 6:00	EPA 8260	7/23/18 20:39	**ND**	mg/kg dry	3.74	37	E8, D1, H4	LSD *
1807097-03	C	Acrolein	07/13/18 6:00	EPA 8260	7/23/18 20:39	**ND**	mg/kg dry	88	370	E8, D1, H4, V1	LSD *
1807097-03	C	Acrylonitrile	07/13/18 6:00	EPA 8260	7/23/18 20:39	**ND**	mg/kg dry	53.5	185	E8, D1, H4	LSD *
* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.											
1807097-03	C	1,1,1,2-Tetrachloroethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	4.46	37	E8, D1, H4	LSD *
1807097-03	C	1,1,1-Trichloroethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.88	37	E8, D1, H4	LSD *
1807097-03	C	1,1,2,2-Tetrachloroethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	5.9	37	E8, D1, H4	LSD *
1807097-03	C	1,1,2-Trichloroethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	2.15	37	E8, D1, H4	LSD *
1807097-03	C	1,1-Dichloroethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	8	37	E8, D1, H4	LSD *
1807097-03	C	1,1-Dichloroethene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	9.95	37	E8, D1, H4	LSD *
1807097-03	C	1,1-Dichloropropene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	8.86	37	E8, D1, H4	LSD *
1807097-03	C	1,2,3-Trichlorobenzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	4.77	37	E8, D1, H4	LSD *
1807097-03	C	1,2,3-Trichloropropane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	6.91	37	E8, D1, H4	LSD *
1807097-03	C	1,2,4-Trichlorobenzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	5.5	37	E8, D1, H4	LSD *
1807097-03	C	1,2,4-Trimethylbenzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	6.78	37	E8, D1, H4	LSD *
1807097-03	C	1,2-Dibromo-3-chloropropane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	9.04	92.6	E8, D1, H4	LSD *
1807097-03	C	1,2-Dibromoethane (EDB)	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	6.6	37	E8, D1, H4	LSD *
1807097-03	C	1,2-Dichlorobenzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	4.74	37	E8, D1, H4	LSD *
1807097-03	C	1,2-Dichloroethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	9.83	37	E8, D1, H4	LSD *
1807097-03	C	1,2-Dichloropropane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.55	37	E8, D1, H4	LSD *
1807097-03	C	1,3,5-Trimethylbenzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.36	37	E8, D1, H4	LSD *
1807097-03	C	1,3-Dichlorobenzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.3	37	E8, D1, H4	LSD *
1807097-03	C	1,3-Dichloropropane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	4.32	37	E8, D1, H4	LSD *
1807097-03	C	1,4-Dichlorobenzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	6.53	37	E8, D1, H4	LSD *
1807097-03	C	2,2-Dichloropropane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	9.84	37	E8, D1, H4	LSD *
1807097-03	C	2-Butanone	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	65	185	E8, D1, H4	LSD *
1807097-03	C	2-Chlorotoluene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.35	37	E8, D1, H4	LSD *
1807097-03	C	2-Hexanone	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	48.8	185	E8, D1, H4	LSD *
1807097-03	C	4-Chlorotoluene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	6.97	37	E8, D1, H4	LSD *
1807097-03	C	4-Methyl-2-pentanone	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	61.1	185	E8, D1, H4	LSD *
1807097-03	C	Acetone	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	113	370	E8, D1, H4	LSD *
1807097-03	C	Benzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.14	37	E8, D1, H4	LSD *
1807097-03	C	Bromobenzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.1	37	E8, D1, H4	LSD *
1807097-03	C	Bromochloromethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	10.3	37	E8, D1, H4	LSD *
1807097-03	C	Bromodichloromethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.89	37	E8, D1, H4	LSD *
1807097-03	C	Bromoform	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	6.05	37	E8, D1, H4	LSD *
1807097-03	C	Bromomethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	12.6	37	E8, D1, H4	LSD *
1807097-03	C	Carbon disulfide	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	14.8	185	E8, D1, H4	LSD *
1807097-03	C	Carbon Tetrachloride	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	9.84	37	E8, D1, H4	LSD *
1807097-03	C	Chlorobenzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	5.62	37	E8, D1, H4	LSD *
1807097-03	C	Chloroethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	11.4	92.6	E8, D1, H4	LSD *
1807097-03	C	Chloroform	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.81	37	E8, D1, H4	LSD *
1807097-03	C	Chloromethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	9.14	37	E8, D1, H4	LSD *
1807097-03	C	cis-1,2-Dichloroethylene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	9.91	37	E8, D1, H4	LSD *
1807097-03	C	cis-1,3-Dichloropropene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	8.07	37	E8, D1, H4	LSD *

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1807097-03	C	Toxaphene	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00094	0.03	D1, D7	MSM
1807097-03	C	Methoxychlor	07/13/18 6:00	EPA 8270C	8/2/18 16:44	**ND**	mg/kg dry	0.00004	0.00203	D1, D7	MSM
1807097-03	C	2,3,7,8-TCDD - Dioxin Scan	07/13/18 6:00	EPA 625	8/7/18 13:24	**ND**	ug/kg dry		2.13		SJM
1807097-03	C	1,2,4-Trichlorobenzene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807097-03	C	2,3-Dichloroaniline	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807097-03	C	2,4,6-Trichlorophenol	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807097-03	C	2,4-Dichlorophenol	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807097-03	C	2,4-Dimethylphenol	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1807097-03	C	2,4-Dinitrophenol	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.009	0.02	D1, D7	SJM
1807097-03	C	2,4-Dinitrotoluene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807097-03	C	2,6-Dinitrotoluene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807097-03	C	2-Chloronaphthalene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807097-03	C	2-Chlorophenol	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807097-03	C	2-Methyl-4,6-dinitrophenol	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.005	0.01	D1, D7	SJM
1807097-03	C	2-Methylphenol	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807097-03	C	2-Nitrophenol	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807097-03	C	3,3-Dichlorobenzidine	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807097-03	C	4-Bromophenyl phenyl ether	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807097-03	C	4-Chloro-3-methylphenol	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807097-03	C	4-Chlorophenyl phenyl ether	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807097-03	C	4-Methylphenol	07/13/18 6:00	EPA 625	7/25/18 20:41	**12.90**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807097-03	C	4-Nitrophenol	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.005	0.01	D1, D7	SJM
1807097-03	C	Acenaphthene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807097-03	C	Acenaphthylene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807097-03	C	Anthracene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807097-03	C	Benzidine	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.007	0.01	D1, D7	SJM
1807097-03	C	Benzo[a]anthracene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807097-03	C	Benzo[a]pyrene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807097-03	C	Benzo[b]fluoranthene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807097-03	C	Benzo[ghi]perylene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807097-03	C	Benzo[k]fluoranthene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807097-03	C	bis(2-chloroethoxy)methane	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807097-03	C	bis(2-chloroethyl)ether	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807097-03	C	bis(2-chloroisopropyl)ether	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807097-03	C	bis(2-ethylhexyl)phthalate	07/13/18 6:00	EPA 625	7/25/18 20:41	**16.54**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807097-03	C	Butylbenzylphthalate	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807097-03	C	Carbazole	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807097-03	C	Chrysene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807097-03	C	Dibenzo(a,h)anthracene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807097-03	C	Diethyl phthalate	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807097-03	C	Dimethyl phthalate	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1807097-03	C	Di-n-butyl phthalate	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807097-03	C	Di-n-octyl phthalate	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807097-03	C	Fluoranthene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807097-03	C	Fluorene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807097-03	C	Hexachlorobenzene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1807097-03	C	Hexachlorobutadiene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807097-03	C	Hexachlorocyclopentadiene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1807097-03	C	Hexachloroethane	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807097-03	C	Indeno(1,2,3-cd)pyrene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807097-03	C	Isophorone	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807097-03	C	Naphthalene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807097-03	C	n-Decane	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807097-03	C	Nitrobenzene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807097-03	C	N-Nitrosodimethylamine	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.01	D1, D7, PC3	SJM
1807097-03	C	N-Nitrosodi-n-propylamine	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807097-03	C	N-Nitrosodiphenylamine	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.006	0.01	D1, D7	SJM
1807097-03	C	n-Octadecane	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807097-03	C	Pentachlorophenol	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1807097-03	C	Phenanthrene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst	
1807097-03	C	Dibromochloromethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	4.15	37	E8, D1, H4	LSD	*
1807097-03	C	Dibromomethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	6.33	37	E8, D1, H4	LSD	*
1807097-03	C	Dichlorodifluoromethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	20.9	37	E8, D1, H4	LSD	*
1807097-03	C	Dichloromethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	8.81	37	E8, D1, H4	LSD	*
1807097-03	C	Ethylbenzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.42	37	E8, D1, H4	LSD	*
1807097-03	C	Hexachlorobutadiene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.91	37	E8, D1, H4	LSD	*
1807097-03	C	Iodomethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	102	185	E8, D1, H4	LSD	*
1807097-03	C	Isopropylbenzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.08	37	E8, D1, H4	LSD	*
1807097-03	C	m,p-Xylene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	6.5	74	E8, D1, H4	LSD	*
1807097-03	C	Methyl methacrylate	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	79.5	185	E8, D1, H4	LSD	*
1807097-03	C	Methyl-tert-butyl ether	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	28.4	37	E8, D1, H4	LSD	*
1807097-03	C	Naphthalene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	4.08	37	E8, D1, H4	LSD	*
1807097-03	C	n-Butylbenzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	6.99	37	E8, D1, H4	LSD	*
1807097-03	C	n-Propylbenzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	9.44	37	E8, D1, H4	LSD	*
1807097-03	C	o-Xylene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	5.14	37	E8, D1, H4	LSD	*
1807097-03	C	p-Isopropyltoluene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.72	37	E8, D1, H4	LSD	*
1807097-03	C	sec-Butylbenzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	8.44	37	E8, D1, H4	LSD	*
1807097-03	C	Styrene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	5.61	37	E8, D1, H4	LSD	*
1807097-03	C	tert-Butylbenzene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.61	37	E8, D1, H4	LSD	*
1807097-03	C	Tetrachloroethene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	8.77	37	E8, D1, H4	LSD	*
1807097-03	C	Toluene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.82	37	E8, D1, H4	LSD	*
1807097-03	C	Total THMs	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry		37	E8, D1, H4	LSD	*
1807097-03	C	trans-1,2-Dichloroethene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.89	37	E8, D1, H4	LSD	*
1807097-03	C	trans-1,3-Dichloropropene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	5.39	37	E8, D1, H4	LSD	*
1807097-03	C	trans-1,4-Dichloro-2-butene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	111	185	E8, D1, H4	LSD	*
1807097-03	C	Trichloroethene	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	7.72	37	E8, D1, H4	LSD	*
1807097-03	C	Trichlorofluoromethane	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	12.2	37	E8, D1, H4	LSD	*
1807097-03	C	Vinyl chloride	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry	3.89	9.26	E8, D1, H4	LSD	*
1807097-03	C	Xylenes (total)	07/13/18 6:00	EPA 8260B	7/23/18 20:39	**ND**	mg/kg dry		111	E8, D1, H4	LSD	*
* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.												
1807097-03	C	Cyanide, Total	07/13/18 6:00	EPA 9014	7/20/18 10:58	**ND**	mg/kg dry	2.38	9.26	E8	AM	*
* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.												
1807097-03	C	% Solids	07/13/18 6:00	SM 2540 G	7/18/18 16:20	**1**	%		1		SLL	*
* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.												
1807097-03	C	% Solids	07/13/18 6:00	SM 2540G	7/14/18 13:45	**1.18**	%		0.01		TDA	
1807097-03	C	4,4-DDD	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00006	0.00203	D1, D7	MSM	
1807097-03	C	4,4-DDE	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00003	0.00203	D1, D7	MSM	
1807097-03	C	4,4-DDT	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00006	0.00203	D1, D7	MSM	
1807097-03	C	Aldrin	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00006	0.00203	D1, D7, N1	MSM	
1807097-03	C	alpha-BHC	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00004	0.00203	D1, D7, N1	MSM	
1807097-03	C	beta-BHC	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00009	0.01	D1, D7	MSM	
1807097-03	C	Chlordane	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00025	0.02	D1, D7	MSM	
1807097-03	C	delta-BHC	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00007	0.00203	D1, D7	MSM	
1807097-03	C	Dieldrin	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00015	0.00406	D1, D7	MSM	
1807097-03	C	Endosulfan I	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00004	0.00203	D1, D7	MSM	
1807097-03	C	Endosulfan II	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00003	0.00203	D1, D7	MSM	
1807097-03	C	Endosulfan sulfate	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00004	0.00203	D1, D7	MSM	
1807097-03	C	Endrin	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00010	0.00203	D1, D7	MSM	
1807097-03	C	Endrin aldehyde	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00011	0.00203	D1, D7	MSM	
1807097-03	C	gamma-BHC (Lindane)	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00007	0.00203	D1, D7, N1	MSM	
1807097-03	C	Heptachlor	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00005	0.00203	D1, D7, N1	MSM	
1807097-03	C	Heptachlor Epoxide	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00004	0.00203	D1, D7	MSM	
1807097-03	C	PCB 1016	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00006	0.00488	D1, D7	MSM	
1807097-03	C	PCB 1221	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00017	0.01	D7, D1	MSM	
1807097-03	C	PCB 1232	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00007	0.01	D1, D7	MSM	
1807097-03	C	PCB 1242	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00013	0.01	D1, D7	MSM	
1807097-03	C	PCB 1248	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00010	0.01	D1, D7	MSM	
1807097-03	C	PCB 1254	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00019	0.01	D1, D7	MSM	
1807097-03	C	PCB 1260	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00007	0.00406	D1, D7	MSM	
1807097-03	C	Total PCBs	07/13/18 6:00	EPA 625	8/2/18 16:44	**ND**	mg/kg dry	0.00016	0.01	D1, D7	MSM	

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1807097-03	C	Phenol	07/13/18 6:00	EPA 625	7/25/18 20:41	**20.01**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807097-03	C	Pyrene	07/13/18 6:00	EPA 625	7/25/18 20:41	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807097-03	C	1,2-Diphenylhydrazine	07/13/18 6:00	EPA 8270C	7/25/18 20:41	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
Chlorinated Effluent (26107-7000)											
1807040-01	D	Nitrate/Nitrite	07/06/18 10:58	EPA 353.2	7/9/18 10:38	**0.87**	mg/L	0.03	0.20		KMT
1807040-01	D	Total Kjeldahl Nitrogen	07/06/18 10:58	EPA 351.2	7/19/18 13:37	**2.60**	mg/L	0.29	0.80		HAV
1807040-01	D	Nitrogen Total Water	07/06/18 10:58	Calculated	7/19/18 13:37	**3.47**	mg/L	0.29	0.80		HAV
Plant Effluent (26107-7100)											
1807023-01	D	Temperature	07/03/18 12:15	SM2550B	7/3/18 12:15	**35.3**	°C		0.10		SMPLR
1807023-01	D	pH	07/03/18 12:15	SM4500 H B	7/3/18 12:15	**7.5**	pH Units				SMPLR
1807023-01	D	Temp at time of pH, °C	07/03/18 12:15	SM4500 H B	7/3/18 12:15	**33.8**	°C				SMPLR
1807023-01	D	Ammonia	07/03/18 12:15	SM4500-NH3-D	7/5/18 16:10	**0.75**	mg/L	0.07	0.50		KMT
CL Ceriodaphnia dubia Reproduction											
1807055-01	C	LOEC % Effluent	07/09/18 8:00	EPA 1002	7/10/18 13:16	**NC**	N/A	1.0	1.0		OTHER *
1807055-01	C	NOEC % Effluent	07/09/18 8:00	EPA 1002	7/10/18 13:16	**100**	N/A	1.0	1.0		OTHER *
1807055-01	C	TUc (IC25 Based)	07/09/18 8:00	EPA 1002	7/10/18 13:16	**NC**	N/A	1.0	1.0		OTHER *
1807055-01	C	TUc (NOEC Based)	07/09/18 8:00	EPA 1002	7/10/18 13:16	**1.0**	N/A	1.0	1.0		OTHER *
* Analysis Performed by:Bio-Aquatic Testing, Inc. - See attached contract lab report for official results.											
CL Ceriodaphnia dubia Survival											
1807055-01	C	LOEC % Effluent	07/09/18 8:00	EPA 1002	7/10/18 13:16	**NC**	N/A	1.0	1.0		OTHER *
1807055-01	C	NOEC % Effluent	07/09/18 8:00	EPA 1002	7/10/18 13:16	**100**	N/A	1.0	1.0		OTHER *
1807055-01	C	TUc (IC25 Based)	07/09/18 8:00	EPA 1002	7/10/18 13:16	**NC**	N/A	1.0	1.0		OTHER *
1807055-01	C	TUc (NOEC Based)	07/09/18 8:00	EPA 1002	7/10/18 13:16	**1.0**	N/A	1.0	1.0		OTHER *
* Analysis Performed by:Bio-Aquatic Testing, Inc. - See attached contract lab report for official results.											
CL Pimephales promelas Growth											
1807055-01	C	LOEC % Effluent	07/09/18 8:00	EPA 1000	7/10/18 13:00	**NC**	N/A	1.0	1.0		OTHER *
1807055-01	C	NOEC % Effluent	07/09/18 8:00	EPA 1000	7/10/18 13:00	**100**	N/A	1.0	1.0		OTHER *
1807055-01	C	TUc (IC25 Based)	07/09/18 8:00	EPA 1000	7/10/18 13:00	**NC**	N/A	1.0	1.0		OTHER *
1807055-01	C	TUc (NOEC Based)	07/09/18 8:00	EPA 1000	7/10/18 13:00	**1.0**	N/A	1.0	1.0		OTHER *
* Analysis Performed by:Bio-Aquatic Testing, Inc. - See attached contract lab report for official results.											
CL Pimephales promelas Survival											
1807055-01	C	LOEC % Effluent	07/09/18 8:00	EPA 1000	7/10/18 13:00	**NC**	N/A	1.0	1.0		OTHER *
1807055-01	C	NOEC % Effluent	07/09/18 8:00	EPA 1000	7/10/18 13:00	**100**	N/A	1.0	1.0		OTHER *
1807055-01	C	TUc (IC25 Based)	07/09/18 8:00	EPA 1000	7/10/18 13:00	**NC**	N/A	1.0	1.0		OTHER *
1807055-01	C	TUc (NOEC Based)	07/09/18 8:00	EPA 1000	7/10/18 13:00	**1.0**	N/A	1.0	1.0		OTHER *
* Analysis Performed by:Bio-Aquatic Testing, Inc. - See attached contract lab report for official results.											
CL Selenastrum capricornutum											
1807055-02	C	LOEC % Effluent	07/11/18 8:00	EPA 1003	7/12/18 16:20	**NC**	N/A	1.0	1.0		OTHER *
1807055-02	C	NOEC % Effluent	07/11/18 8:00	EPA 1003	7/12/18 16:20	**100**	N/A	1.0	1.0		OTHER *
1807055-02	C	TUc (IC25 Based)	07/11/18 8:00	EPA 1003	7/12/18 16:20	**NC**	N/A	1.0	1.0		OTHER *
1807055-02	C	TUc (NOEC Based)	07/11/18 8:00	EPA 1003	7/12/18 16:20	**1.0**	N/A	1.0	1.0		OTHER *
* Analysis Performed by:Bio-Aquatic Testing, Inc. - See attached contract lab report for official results.											
1807064-01	D	Dissolved Oxygen	07/10/18 10:30	SM4500 O G	7/10/18 10:30	**6.1**	mg/L		0.01		SMPLR
1807064-01	D	Temperature	07/10/18 10:30	SM2550B	7/10/18 10:30	**31.9**	°C		0.10		SMPLR
1807064-01	D	pH	07/10/18 10:30	SM4500 H B	7/10/18 10:30	**7.4**	pH Units				SMPLR
1807064-01	D	Temp at time of pH, °C	07/10/18 10:30	SM4500 H B	7/10/18 10:30	**32.0**	°C				SMPLR
1807064-01	D	Ammonia	07/10/18 10:30	SM4500-NH3-D	7/12/18 10:30	**1.12**	mg/L	0.07	0.50		KMT
1807064-01	D	Antimony	07/10/18 10:30	EPA 200.8	7/23/18 12:54	**0.53**	ug/L	0.21	1.00	J	JB
1807064-01	D	Arsenic	07/10/18 10:30	EPA 200.8	7/23/18 12:54	**4.53**	ug/L	0.07	1.00		JB
1807064-01	D	Barium	07/10/18 10:30	EPA 200.8	7/23/18 12:54	**64.4**	ug/L	0.19	1.00		JB
1807064-01	D	Beryllium	07/10/18 10:30	EPA 200.8	7/23/18 12:54	**ND**	ug/L	0.33	1.00		JB
1807064-01	D	Cadmium	07/10/18 10:30	EPA 200.8	7/23/18 12:54	**ND**	ug/L	0.07	1.00		JB
1807064-01	D	Chromium, Hexavalent	07/10/18 10:30	EPA 200.8	7/10/18 10:30	**NA**	ug/L	0.400	1.00	N7	
1807064-01	D	Chromium	07/10/18 10:30	EPA 200.8	7/23/18 12:54	**1.10**	ug/L	0.03	1.00		JB
1807064-01	D	Copper	07/10/18 10:30	EPA 200.8	7/23/18 12:54	**1.43**	ug/L	0.36	1.00		JB

Qualifier Definitions

H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time.
L1	The associated blank spike recovery was above laboratory acceptance limits.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.
A	Absence
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D4	Minimum Reporting Limit (MRL) adjusted to reflect sample amount received and analyzed.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL), but above the MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H6	The filtration was not done within the required 15 minutes of sampling, the sample was filtered in the laboratory.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
L4	The associated blank spike recovery was below method acceptance limits.
N1	See case narrative.
N7	Additional analysis was not performed based on the "Total" result which was below the requested analyte's MCL/Action level/Trigger Level.
NA	Not Analyzed
NC	Not Calculable
PC3	Semi-quantitation is included in the case narrative.
Q6	Sample was received above recommended temperature.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.

FD	Field Duplicate
FB	Field Blank
UC	Under Construction
EB	Equipment Blank

Case Narrative(s)

1807064-01
EPA Method 625 Semi-Volatiles: Matrix spike and blank spike both fail recovery for 4-Methylphenol. CCV passes QC criteria for this analyte. SJM 07/24/18

Semi-Quantitation
Method: 625
1807097-02

Compound Name	Concentration-ug/L
Palmitic Acid	262
Stearic Acid	171

SJM 08/02/18

Semi-Quantitation
Method: 625
1807097-01

Compound Name	Concentration-ug/L
2-Butoxyethanol	94
Benzoic Acid	108
N,N-Dimethyl-1-dodecanamine	356
Palmitic Acid	10995
Oleic Acid	11075
Stearic Acid	5196

SJM 08/02/18

Semi-Quantitation
Method: 625
1807097-03

Compound Name	Concentration-mg/Kg
N,N-Dimethyl-1-dodecanamine	700
Palmitic Acid	81726
Oleic Acid	96133
Stearic Acid	31028

SJM 08/02/18

1807097-01,-02, -03
EPA Method 625/8270 Pesticides: Target analytes flagged with N1 for this method failed the Matrix Spike RPD from the same extraction batch but the spike was performed on a different sample.
MSM 081618

Semi-Quantitation
Method: 625
1807111-01

Compound Name	Concentration-ug/L
TPH	93

SJM 08/02/18

Semi-Quantitation
Method: 625
1807137-01

Compound Name	Concentration-ug/L
Palmitic Acid	123

SJM 08/10/18

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1807097-03

PROJECT & LOCATION: Agua Nueva WRF - Thickened Sludge Pump (Quarterly)

PROJECT-LOCATION NUMBER: 26107-0600 (XXXXX-XXXX)

SAMPLE START DATE: 07/12/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: 0600 (Military time)

CLIENT: IWC

SAMPLE END DATE: 07/13/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0600 (Military time)

SAMPLER(S): Silva, Valencia, Riccaboni, Martinez, Tomchak (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

7.13.18

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	×		☐	■
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	×		☐	■
TCLP Metals			☐	☐
503 Metals **			☐	■
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total (contract)	☐	■
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other	☐	☐
Other	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile (contract)	■	■
Dioxin GC/SIM/MS Scan	☐	■
Organochlorine Pesticides & PCBs	☐	■
Purgeable Organics (GCMS) (contract)	■	■
Semivolatile Organics (GCMS)	☐	■
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other	☐	☐
Other	☐	☐

EFFLUENT TOXICITY TESTING

	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total (1 of 2 contract)	☐	■
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other	☐	☐

OTHER

	D	C
Paint Filter	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions:
~~The lab shall composite the four discrete Purgeable Organics and Acrolein/Acrylonitrile samples.~~ GCS 07-13-18
GCS 07-13-18
* SAMPLES HAVE BUBBLES, NO 40 mL VIALS FOR SLUDGE. MD 7-13-18. Volatiles sent to Legand TS. GCS 07/13/18 PO# 19-00119 4

Cyanide sent to Legand TS. GCS 07-13-18

Septum Blank Prep Date & Initials:

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	7-12-18	1500
Relinquished by:	Received by:	Date:	Time: (Military time)
[signature]	Refrigerator	7-13-18	0130
Relinquished by:	Received by:	Date:	Time: (Military time)
Refrigerator	[signature]	7-13-18	0830
Relinquished by:	Received by:	Date:	Time: (Military time)
[signature]	Michelle Fermen	7-13-2018	0835
Relinquished by:	Received by:	Date:	Time: (Military time)
Michelle Fermen	Michelle Yatlich	7/14/18	1002

Sample Integrity/Preservation:

of Bottles Delivered: 8 MD

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 5 °C

Initials: GCS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☑	☐	☐
Sample labels match Chain of Custody?	☑	☐	☐
Correct number of sample bottles were delivered?	☑	☐	☐
Custody seals intact?	☐	☐	☑
Within holding time?	☑	☐	☐
Sufficient sample volume for analysis?	☑	☐	☐
Samples are in properly preserved containers?	☑	☐	☐
Sample containers damaged/leaking/frozen?	☐	☑	☐
40 ml vials headspace, > pea-sized air bubble? *	☑	☐	☑ 7-13-18 MD
Received from a refrigerator?	☐	☑	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT
WATER QUALITY
SAMPLE COLLECTION REPORT

SAMPLE LOCATION: Agua Nueva WRF – Thickened Sludge Pump LIMS: 1807097-03
LOCATION ID: 26107 – 0600 SAMPLERS: Silva, Valencia, Riccaboni, Martinez, Tomchak
Last names only, primary sampler first

SAMPLE DATE: 07-13-2018

Sample D or C	Parameter	Frequency	AUTO MAN	Volume Submitted	Bottle/Preservation
C	Semivolatile Organics	Hand Composite	Man	1000 ml	Amber Glass/None/Ice
C	Organochlorine Pest & PCB's		Man	1000 ml	Amber Glass/None/Ice
C	Dioxin		Man	1000 ml	Amber Glass/None/Ice
C	Metals (T) + Molybdenum		Man	1000 ml	Dissolved Metals/None/Ice
C	Cyanide (T)	4 Aliquots for the duration of the discharge	Man	1000 ml	Dissolved Metals/None/Ice
C	Total Solids		Man	1000 ml	General Purpose/None/Ice
C	Total Solids		Man	1000 ml	General Purpose/None/Ice
To be Composited by the Laboratory					
D	Purgeable Organics	Hand Composite	Man	4 X 40	None/Ice
D	Acrolein/Acrylonitrile	4 Aliquots for the duration of the discharge	Man	4 X 40	None/Ice

One 16 oz Soil Jar Per Lab @ 7-13-18

	Time
Aliquot #1 7-12-18	0615
Aliquot #2 7-12-18	1210
Aliquot #3 7.12.18	1800
Aliquot #4 7.13.18	0010

Grab a 2L aliquot each time

Comments:	Thickened Sludge Pump samples are not preserved.
	All Composites including Cyanide can be poured off at the end of the sampling event
	Two Total Solids samples are required. One for our lab, one for the contract lab

CHAIN OF CUSTODY RECORD

LEGEND Technical Services, Inc.
www.legend-group.com
☐ 17631 N. 25th Avenue • Phoenix, AZ 85023 • (602) 324-6100 • Fax (602) 324-6101
☐ 4585 S. Palo Verde Rd, Ste 423 • Tucson, AZ 85714 • (520) 327-1234 • Fax (520) 327-0518

Please Print Clearly

CLIENT INFORMATION

Client Name	Address	City	State	Zip	Phone	Fax Number or Email Address
Pima County CRAO Lab	2955 W Calle Agua Nueva	Tucson	AZ	85745	520-724-6016	joseph.doranski@pima.c

Project Name	Project Number	Contact	P.O. No.	
Volatiles #13		Joe Doranski	19-001154	Fax Results ☐ QC Report ☐ EDD ☒ Email Results ☒ Special Detection Limits ☐

SAMPLE TYPE CODES: DW=Drinking Water; WW=Wastewater; SW=Surface Water; G=Groundwater; S=Soil/Solid; T=Travel Blank; F=Food; G=Sludge/Biosolids; O=Other

TURN AROUND TIME: Laboratory Authorization Required for Rush; ☒ Standard 10 - 15 Day; ☐ Other

REQUESTED ANALYSES

Client's	Date	Time	Sample Location	Composite	Grab	Sample Type	Compliance	No. of Containers	EPA 8260	Ac/Ac & 2-CEVE	Total cyanide (mg	Total % solids	LAB NO
1807096-03	07/13/18	600	Tres Rios WRF - dewatered cake BS	X		G	X	3	X	X	X	X	
20001-5703													
1807097-03	07/13/18	600	Agua Nueva WRF - thickened sludge	X		G	X	3	X	X	X	X	
26107-0600													
						WEEKEND/HOLIDAY SAMPLES							

TO ENSURE COMPLETION OF ANALYSIS, SAMPLES MUST BE RECEIVED AT LEAST 3 HOURS PRIOR TO THE HOLD TIME EXPIRATION

Comments / Special Instructions:

SAMPLE CONDITION UPON RECEIPT (Lab Use)

Intact/Broken/Leaking	6	
Temperature	3.9°C	
Chlorine Present	Y	N
Sulfide Present	Y	N
Preserved	Y	N

RELINQUISHED BY

①	Sampler Signature		Date 7/14/18
	Sampler Printed Name	Greg Spence	Time 1002
②	Signature		Date
	Printed Name		Time
③	Signature		Date
	Printed Name		Time

SAMPLES RECEIVED BY

Signature		Date 7/14/18
Printed Name	Michelle Yatiel	Time 1002
Signature		Date
Printed Name		Time
Signature		Date
Printed Name		Time

WHITE-LAB YELLOW-CLIENT

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 01/07/2019
Laboratory License: AZO159

Sample Analysis Report

Agua Nueva WRF

October 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By: Jenelle Pratt

1·11·19
Date

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

Laboratory License: AZO159

Sample Qualifiers

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Sample Qualifiers
Thickened Sludge Pump	1810093-03	Biosolids	10/12/2018 6:00:00	10/12/2018 8:24:00	Q6

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1810093-01	C	Chrysene	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	1.14	4.00	D1, D7	SJM
1810093-01	C	Dibenzo(a,h)anthracene	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	3.07	12.00	D1, D7	SJM
1810093-01	C	Diethyl phthalate	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	2.24	12.00	D1, D7	SJM
1810093-01	C	Dimethyl phthalate	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	0.58	4.00	D1, D7	SJM
1810093-01	C	Di-n-butyl phthalate	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	2.50	12.00	D1, D7	SJM
1810093-01	C	Di-n-octyl phthalate	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	2.55	12.00	D1, D7	SJM
1810093-01	C	Fluoranthene	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	1.32	4.00	D1, D7	SJM
1810093-01	C	Fluorene	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	1.54	4.00	D1, D7	SJM
1810093-01	C	Hexachlorobenzene	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	0.62	4.00	D1, D7	SJM
1810093-01	C	Hexachlorobutadiene	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	1.01	4.00	D1, D7	SJM
1810093-01	C	Hexachlorocyclopentadiene	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	4.23	12.00	D1, D7	SJM
1810093-01	C	Hexachloroethane	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	1.26	4.00	D1, D7	SJM
1810093-01	C	Indeno(1,2,3-cd)pyrene	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	2.83	12.00	D1, D7	SJM
1810093-01	C	Isophorone	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	1.66	4.00	D1, D7	SJM
1810093-01	C	Naphthalene	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	1.77	4.00	D1, D7	SJM
1810093-01	C	n-Decane	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	1.95	4.00	D1, D7	SJM
1810093-01	C	Nitrobenzene	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	2.10	12.00	D7, D1	SJM
1810093-01	C	N-Nitrosodimethylamine	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	2.09	12.00	D1, D7, PC3	SJM
1810093-01	C	N-Nitrosodi-n-propylamine	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	2.43	12.00	D1, D7	SJM
1810093-01	C	N-Nitrosodiphenylamine	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	6.08	20.00	D1, D7	SJM
1810093-01	C	n-Octadecane	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	2.18	12.00	D1, D7	SJM
1810093-01	C	Pentachlorophenol	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	4.02	12.00	D1, D7	SJM
1810093-01	C	Phenanthrene	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	1.63	4.00	D1, D7	SJM
1810093-01	C	Phenol	10/12/18 6:00	EPA 625	11/1/18 20:32	**22.4**	ug/L	2.59	12.00	D1, D7	SJM
1810093-01	C	Pyrene	10/12/18 6:00	EPA 625	11/1/18 20:32	**ND**	ug/L	1.38	4.00	D1, D7	SJM
1810093-01	C	1,2-Diphenylhydrazine	10/12/18 6:00	EPA 8270C	11/1/18 20:32	**ND**	ug/L	0.98	4.00	D1, D7	SJM
1810093-01RE1	C	Zinc	10/12/18 6:00	EPA 200.8	10/29/18 21:05	**119**	ug/L	0.23	2.00	D1	JB

Thickened Sludge Pump (26107-0600)

1810093-03	C	Antimony	10/12/18 6:00	EPA 6010D	10/18/18 11:44	**ND**	mg/kg dry		12.82		MLB
1810093-03	C	Arsenic	10/12/18 6:00	EPA 6010D	10/18/18 13:41	**ND**	mg/kg dry		12.82		MLB
1810093-03	C	Beryllium	10/12/18 6:00	EPA 6010D	10/18/18 11:44	**ND**	mg/kg dry		2.56		MLB
1810093-03	C	Cadmium	10/12/18 6:00	EPA 6010D	10/18/18 11:44	**ND**	mg/kg dry		5.13		MLB
1810093-03	C	Chromium	10/12/18 6:00	EPA 6010D	10/18/18 11:44	**ND**	mg/kg dry		12.82		MLB
1810093-03	C	Copper	10/12/18 6:00	EPA 6010D	10/18/18 11:44	**22.2**	mg/kg dry		12.82		MLB
1810093-03	C	Lead	10/12/18 6:00	EPA 6010D	10/18/18 13:41	**ND**	mg/kg dry		12.82		MLB
1810093-03	C	Mercury	10/12/18 6:00	EPA 7471B	10/30/18 14:12	**0.26**	mg/kg dry		0.03		MJC
1810093-03	C	Molybdenum	10/12/18 6:00	EPA 6010D	10/18/18 11:44	**ND**	mg/kg dry		5.13		MLB
1810093-03	C	Nickel	10/12/18 6:00	EPA 6010D	10/18/18 11:44	**ND**	mg/kg dry		12.82		MLB
1810093-03	C	Selenium	10/12/18 6:00	EPA 6010D	10/18/18 13:41	**ND**	mg/kg dry		25.63		MLB
1810093-03	C	Silver	10/12/18 6:00	EPA 6010D	10/18/18 17:18	**ND**	mg/kg dry		1.28		MLB
1810093-03	C	Thallium	10/12/18 6:00	EPA 6010D	10/18/18 11:44	**ND**	mg/kg dry		12.82		MLB
1810093-03	C	Zinc	10/12/18 6:00	EPA 6010D	10/18/18 11:44	**57.8**	mg/kg dry		12.82		MLB
1810093-03	C	% Solids	10/12/18 6:00	% calculation	10/30/18 18:03	**0.70**	%				BDP *

* Analysis Performed by:Legend Technical Services, Inc., St. Paul - See attached contract lab report for official results.

1810093-03	C	4,4'-DDD	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.8	15	E8, S12	MRH *
1810093-03	C	4,4'-DDE	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.8	15	E8, S12	MRH *
1810093-03	C	4,4'-DDT	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.8	15	E8, S12	MRH *
1810093-03	C	Aldrin	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.6	15	E8, S12	MRH *
1810093-03	C	alpha-BHC	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.6	15	E8, S12	MRH *
1810093-03	C	alpha-Chlordane	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.8	15	E8, S12	MRH *
1810093-03	C	beta-BHC	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.7	15	E8, S12	MRH *
1810093-03	C	delta-BHC	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.8	15	E8, S12	MRH *
1810093-03	C	Dieldrin	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.8	15	E8, S12	MRH *
1810093-03	C	Endosulfan I	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.7	15	E8, S12	MRH *
1810093-03	C	Endosulfan II	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.8	15	E8, S12	MRH *
1810093-03	C	Endosulfan sulfate	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.9	15	E8, S12	MRH *
1810093-03	C	Endrin	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.7	15	E8, S12	MRH *
1810093-03	C	Endrin aldehyde	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.5	15	E8, S12	MRH *

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst	
1810093-03	C	Endrin ketone	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.7	15	E8, S12	MRH	*
1810093-03	C	gamma-BHC (Lindane)	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.6	15	E8, S12	MRH	*
1810093-03	C	gamma-Chlordane	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.8	15	E8, S12	MRH	*
1810093-03	C	Heptachlor	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.6	15	E8, S12	MRH	*
1810093-03	C	Heptachlor epoxide	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.8	15	E8, S12	MRH	*
1810093-03	C	Methoxychlor	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	2.8	15	E8, S12	MRH	*
1810093-03	C	Toxaphene	10/12/18 6:00	EPA 8081B	10/22/18 21:57	**ND**	mg/kg dry	5.7	30	E8, S12	MRH	*
* Analysis Performed by:Legend Technical Services, Inc., St. Paul - See attached contract lab report for official results.												
1810093-03	C	Aroclor 1016	10/12/18 6:00	EPA 8082A	10/22/18 21:57	**ND**	mg/kg dry	11	75	E8, S12	MRH	*
1810093-03	C	Aroclor 1221	10/12/18 6:00	EPA 8082A	10/22/18 21:57	**ND**	mg/kg dry	20	75	E8, S12	MRH	*
1810093-03	C	Aroclor 1232	10/12/18 6:00	EPA 8082A	10/22/18 21:57	**ND**	mg/kg dry	20	75	E8, S12	MRH	*
1810093-03	C	Aroclor 1242	10/12/18 6:00	EPA 8082A	10/22/18 21:57	**ND**	mg/kg dry	6.4	75	E8, S12	MRH	*
1810093-03	C	Aroclor 1248	10/12/18 6:00	EPA 8082A	10/22/18 21:57	**ND**	mg/kg dry	7.9	75	E8, S12	MRH	*
1810093-03	C	Aroclor 1254	10/12/18 6:00	EPA 8082A	10/22/18 21:57	**ND**	mg/kg dry	9.4	75	E8, S12	MRH	*
1810093-03	C	Aroclor 1260	10/12/18 6:00	EPA 8082A	10/22/18 21:57	**ND**	mg/kg dry	8.7	75	E8, S12	MRH	*
* Analysis Performed by:Legend Technical Services, Inc., St. Paul - See attached contract lab report for official results.												
1810093-03	C	Cyanide, Total	10/12/18 6:00	EPA 9014	10/19/18 16:15	**4.29**	mg/kg dry	3.67	14.3	E4, M2, N1	AM	*
* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.												
1810093-03	C	% Solids	10/12/18 6:00	SM 2540 G	10/18/18 16:50	**0.7**	%		1	R9	SLL	*
* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.												
1810093-03	C	% Solids	10/12/18 6:00	SM 2540G	10/14/18 12:43	**0.97**	%		0.01		DEB	
1810093-03	C	Acrolein	10/12/18 6:00	EPA 624	10/18/18 17:47	**ND**	mg/kg dry	0.0202	0.21	S7, V1	JEL	
1810093-03	C	Acrylonitrile	10/12/18 6:00	EPA 624	10/18/18 17:47	**ND**	mg/kg dry	0.0350	0.21	S7, V1	JEL	
1810093-03	C	1,1,1-Trichloroethane	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.004	0.02		ADP	
1810093-03	C	1,1,2,2-Tetrachloroethane	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.001	0.02		ADP	
1810093-03	C	1,1,2-Trichloroethane	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.002	0.02		ADP	
1810093-03	C	1,1-Dichloroethane	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.003	0.02		ADP	
1810093-03	C	1,1-Dichloroethene	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.002	0.02		ADP	
1810093-03	C	1,2-Dichlorobenzene	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.002	0.02		ADP	
1810093-03	C	1,2-Dichloroethane	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.002	0.02		ADP	
1810093-03	C	1,2-Dichloropropane	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.002	0.02		ADP	
1810093-03	C	1,3-Dichlorobenzene	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.002	0.02		ADP	
1810093-03	C	1,4-Dichlorobenzene	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.003	0.02		ADP	
1810093-03	C	2-Chloroethyl vinyl ether	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.005	0.02		ADP	
1810093-03	C	Benzene	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.002	0.02		ADP	
1810093-03	C	Bromodichloromethane	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.005	0.02		ADP	
1810093-03	C	Bromoform	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.006	0.02		ADP	
1810093-03	C	Bromomethane	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.003	0.02		ADP	
1810093-03	C	Carbon Tetrachloride	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.007	0.02		ADP	
1810093-03	C	Chlorobenzene	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.001	0.02		ADP	
1810093-03	C	Chloroethane	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.004	0.02		ADP	
1810093-03	C	Chloroform	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.003	0.02		ADP	
1810093-03	C	Chloromethane	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.004	0.02		ADP	
1810093-03	C	cis-1,3-Dichloropropene	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.002	0.02		ADP	
1810093-03	C	Dibromochloromethane	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.001	0.02		ADP	
1810093-03	C	Ethyl Benzene	10/12/18 6:00	EPA 624	10/16/18 17:06	**3.76**	mg/kg dry	0.002	0.02	NI	ADP	
1810093-03	C	Methylene Chloride	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.004	0.02		ADP	
1810093-03	C	Tetrachloroethene	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.004	0.02		ADP	
1810093-03	C	Toluene	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.003	0.02		ADP	
1810093-03	C	Total Trihalomethanes	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.006	0.02		ADP	
1810093-03	C	trans-1,2-Dichloroethene	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.003	0.02		ADP	
1810093-03	C	trans-1,3-Dichloropropene	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.002	0.02		ADP	
1810093-03	C	Trichloroethene	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.003	0.02		ADP	
1810093-03	C	Trichlorofluoromethane	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.005	0.02		ADP	
1810093-03	C	Vinyl chloride	10/12/18 6:00	EPA 624	10/16/18 17:06	**ND**	mg/kg dry	0.004	0.02		ADP	
1810093-03	C	1,2,4-Trichlorobenzene	10/12/18 6:00	EPA 8260	10/16/18 17:06	**ND**	mg/kg dry	0.002	0.02		ADP	
1810093-03	C	1,2-Dibromo-3-chloropropane	10/12/18 6:00	EPA 8260	10/16/18 17:06	**ND**	mg/kg dry	0.002	0.04		ADP	
1810093-03	C	1,2-Dibromoethane	10/12/18 6:00	EPA 8260	10/16/18 17:06	**ND**	mg/kg dry	0.002	0.02		ADP	
1810093-03	C	cis-1,2-Dichloroethene	10/12/18 6:00	EPA 8260	10/16/18 17:06	**ND**	mg/kg dry	0.004	0.02		ADP	
1810093-03	C	m,p-Xylenes	10/12/18 6:00	EPA 8260	10/16/18 17:06	**5.79**	mg/kg dry	0.003	0.04	NI	ADP	

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1810093-03	C	o-Xylene	10/12/18 6:00	EPA 8260	10/16/18 17:06	**ND**	mg/kg dry	0.002	0.02		ADP
1810093-03	C	Styrene	10/12/18 6:00	EPA 8260	10/16/18 17:06	**3.04**	mg/kg dry	0.002	0.02	N1	ADP
1810093-03	C	Xylenes, total	10/12/18 6:00	EPA 8260	10/16/18 17:06	**5.79**	mg/kg dry	0.003	0.04	N1	ADP
1810093-03	C	2,3,7,8-TCDD - Dioxin Scan	10/12/18 6:00	EPA 625	11/7/18 15:53	**ND**	ug/kg dry		2.57		SJM
1810093-03	C	1,2,4-Trichlorobenzene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.06	0.33	D1, D7	SJM
1810093-03	C	2,3-Dichloroaniline	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.09	0.99	D1, D7	SJM
1810093-03	C	2,4,6-Trichlorophenol	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.05	0.33	D1, D7	SJM
1810093-03	C	2,4-Dichlorophenol	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.07	0.33	D1, D7	SJM
1810093-03	C	2,4-Dimethylphenol	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.14	0.99	D1, D7	SJM
1810093-03	C	2,4-Dinitrophenol	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.34	1.65	D1, D7	SJM
1810093-03	C	2,4-Dinitrotoluene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.09	0.99	D1, D7	SJM
1810093-03	C	2,6-Dinitrotoluene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.06	0.33	D1, D7	SJM
1810093-03	C	2-Chloronaphthalene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.06	0.33	D1, D7	SJM
1810093-03	C	2-Chlorophenol	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.05	0.33	D1, D7	SJM
1810093-03	C	2-Methyl-4,6-dinitrophenol	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.21	0.99	D1, D7	SJM
1810093-03	C	2-Methylphenol	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.05	0.33	D1, D7	SJM
1810093-03	C	2-Nitrophenol	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.11	0.99	D1, D7	SJM
1810093-03	C	3,3-Dichlorobenzidine	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.09	0.82	D1, D7	SJM
1810093-03	C	4-Bromophenyl phenyl ether	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.05	0.33	D1, D7	SJM
1810093-03	C	4-Chloro-3-methylphenol	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.09	0.99	D1, D7	SJM
1810093-03	C	4-Chlorophenyl phenyl ether	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.05	0.33	D1, D7	SJM
1810093-03	C	4-Methylphenol	10/12/18 6:00	EPA 625	11/1/18 19:17	**22.02**	mg/kg dry	0.07	0.33	D1, D7	SJM
1810093-03	C	4-Nitrophenol	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.19	0.99	D1, D7	SJM
1810093-03	C	Acenaphthene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.06	0.33	D1, D7	SJM
1810093-03	C	Acenaphthylene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.06	0.33	D1, D7	SJM
1810093-03	C	Anthracene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.08	0.33	D7, D1	SJM
1810093-03	C	Benzidine	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.26	1.65	D1, D7	SJM
1810093-03	C	Benzo[a]anthracene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.05	0.33	D1, D7	SJM
1810093-03	C	Benzo[a]pyrene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.08	0.33	D1, D7	SJM
1810093-03	C	Benzo[b]fluoranthene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.06	0.33	D1, D7	SJM
1810093-03	C	Benzo[ghi]perylene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.12	0.99	D1, D7	SJM
1810093-03	C	Benzo[k]fluoranthene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.09	0.99	D1, D7	SJM
1810093-03	C	bis(2-chloroethoxy)methane	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.08	0.33	D1, D7	SJM
1810093-03	C	bis(2-chloroethyl)ether	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.08	0.99	D1, D7	SJM
1810093-03	C	bis(2-chloroisopropyl)ether	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.07	0.33	D1, D7	SJM
1810093-03	C	bis(2-ethylhexyl)phthalate	10/12/18 6:00	EPA 625	11/1/18 19:17	**18.94**	mg/kg dry	0.11	0.99	D1, D7	SJM
1810093-03	C	Butylbenzylphthalate	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.08	0.33	D1, D7	SJM
1810093-03	C	Carbazole	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.11	0.99	D1, D7	SJM
1810093-03	C	Chrysene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.05	0.33	D1, D7	SJM
1810093-03	C	Dibenzo(a,h)anthracene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.12	0.99	D1, D7	SJM
1810093-03	C	Diethyl phthalate	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.09	0.99	D1, D7	SJM
1810093-03	C	Dimethyl phthalate	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.02	0.33	D1, D7	SJM
1810093-03	C	Di-n-butyl phthalate	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.10	0.99	D1, D7	SJM
1810093-03	C	Di-n-octyl phthalate	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.10	0.99	D1, D7	SJM
1810093-03	C	Fluoranthene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.05	0.33	D1, D7	SJM
1810093-03	C	Fluorene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.06	0.33	D1, D7	SJM
1810093-03	C	Hexachlorobenzene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.02	0.33	D1, D7	SJM
1810093-03	C	Hexachlorobutadiene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.04	0.33	D1, D7	SJM
1810093-03	C	Hexachlorocyclopentadiene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.17	0.99	D1, D7	SJM
1810093-03	C	Hexachloroethane	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.05	0.33	D1, D7	SJM
1810093-03	C	Indeno(1,2,3-cd)pyrene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.11	0.99	D1, D7	SJM
1810093-03	C	Isophorone	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.07	0.33	D1, D7	SJM
1810093-03	C	Naphthalene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.07	0.33	D1, D7	SJM
1810093-03	C	n-Decane	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.08	0.33	D1, D7	SJM
1810093-03	C	Nitrobenzene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.08	0.99	D1, D7	SJM
1810093-03	C	N-Nitrosodimethylamine	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.08	0.99	D1, D7, PC3	SJM
1810093-03	C	N-Nitrosodi-n-propylamine	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.10	0.99	D1, D7	SJM
1810093-03	C	N-Nitrosodiphenylamine	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.24	1.65	D1, D7	SJM
1810093-03	C	n-Octadecane	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.09	0.99	D1, D7	SJM
1810093-03	C	Pentachlorophenol	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.16	0.99	D1, D7	SJM

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1810093-03	C	Phenanthrene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.07	0.33	D1, D7	SJM
1810093-03	C	Phenol	10/12/18 6:00	EPA 625	11/1/18 19:17	**13.84**	mg/kg dry	0.10	0.99	D1, D7	SJM
1810093-03	C	Pyrene	10/12/18 6:00	EPA 625	11/1/18 19:17	**ND**	mg/kg dry	0.06	0.33	D1, D7	SJM
1810093-03	C	1,2-Diphenylhydrazine	10/12/18 6:00	EPA 8270C	11/1/18 19:17	**ND**	mg/kg dry	0.04	0.33	D1, D7	SJM
1810093-03	C	1,4-Dichlorobenzene	10/12/18 6:00	EPA 8270C	11/1/18 19:17	**ND**	mg/kg dry	0.05	0.33		SJM
1810093-03	C	2,4,5-Trichlorophenol	10/12/18 6:00	EPA 8270C	11/1/18 19:17	**ND**	mg/kg dry	0.10	0.99		SJM
1810093-03	C	Pyridine	10/12/18 6:00	EPA 8270C	11/1/18 19:17	**ND**	mg/kg dry	0.06	0.33		SJM
Chlorinated Effluent (26107-7000)											
1810038-01	D	Nitrate/Nitrite	10/04/18 14:00	EPA 353.2	10/9/18 12:30	**0.45**	mg/L	0.03	0.20		KMT
1810038-01	D	Total Kjeldahl Nitrogen	10/04/18 14:00	EPA 351.2	10/19/18 11:12	**2.17**	mg/L	0.30	0.80		MGA
1810038-01	D	Nitrogen Total Water	10/04/18 14:00	Calculated	10/19/18 11:12	**2.62**	mg/L	0.30	0.80		MGA
Plant Effluent (26107-7100)											
1810018-01	D	Temperature	10/02/18 13:40	SM2550B	10/2/18 13:40	**30.7**	°C		0.10		SMPLR
1810018-01	D	pH	10/02/18 13:40	SM4500 H B	10/2/18 13:40	**7.6**	pH Units				SMPLR
1810018-01	D	Temp at time of pH, °C	10/02/18 13:40	SM4500 H B	10/2/18 13:40	**30.5**	°C				SMPLR
1810018-01	D	Ammonia	10/02/18 13:40	SM4500-NH3-D	10/8/18 11:58	**0.60**	mg/L	0.07	0.50		KMT
1810093-02	C	Antimony	10/12/18 6:00	EPA 200.8	10/29/18 17:51	**0.43**	ug/L	0.21	1.00	J	JB
1810093-02	C	Arsenic	10/12/18 6:00	EPA 200.8	10/29/18 17:51	**4.77**	ug/L	0.07	1.00		JB
1810093-02	C	Barium	10/12/18 6:00	EPA 200.8	10/29/18 17:51	**64.7**	ug/L	0.19	1.00		JB
1810093-02	C	Beryllium	10/12/18 6:00	EPA 200.8	10/29/18 17:51	**ND**	ug/L	0.33	1.00		JB
1810093-02	C	Cadmium	10/12/18 6:00	EPA 200.8	10/29/18 17:51	**ND**	ug/L	0.07	1.00		JB
1810093-02	C	Calcium	10/12/18 6:00	EPA 200.7	10/26/18 14:14	**78.6**	mg/L	0.44	4.00		MLB
1810093-02	C	Chromium	10/12/18 6:00	EPA 200.8	10/29/18 17:51	**0.60**	ug/L	0.03	1.00	J	JB
1810093-02	C	Copper	10/12/18 6:00	EPA 200.8	10/29/18 17:51	**1.40**	ug/L	0.36	1.00		JB
1810093-02	C	Cyanide	10/12/18 6:00	SM4500-CN-E	10/14/18 15:42	**ND**	ug/L	1.67	5.00		MGA
1810093-02	C	Hardness	10/12/18 6:00	SM 2340B	10/26/18 14:14	**284**	mg/L	2.31	9.99		MLB
1810093-02	C	Iron	10/12/18 6:00	EPA 200.7	10/19/18 14:58	**54.1**	ug/L	23.0	25.00		MLB
1810093-02	C	Lead	10/12/18 6:00	EPA 200.8	10/29/18 17:51	**0.29**	ug/L	0.01	1.00	J	JB
1810093-02	C	Magnesium	10/12/18 6:00	EPA 200.7	10/26/18 14:14	**21.4**	mg/L	0.56	2.00		MLB
1810093-02	C	Mercury	10/12/18 6:00	EPA 245.1	11/1/18 13:10	**ND**	ug/L	0.13	0.20		MJC
1810093-02	C	Nickel	10/12/18 6:00	EPA 200.8	10/29/18 17:51	**0.93**	ug/L	0.24	1.00	J	JB
1810093-02	C	Nitrate/Nitrite	10/12/18 6:00	EPA 353.2	10/17/18 12:21	**3.91**	mg/L	0.03	0.20		KMT
1810093-02	C	Total Kjeldahl Nitrogen	10/12/18 6:00	EPA 351.2	10/19/18 11:40	**2.31**	mg/L	0.30	0.80		MGA
1810093-02	C	Nitrogen Total Water	10/12/18 6:00	Calculated	10/19/18 11:40	**6.22**	mg/L	0.30	0.80		MGA
1810093-02	C	Phosphorus	10/12/18 6:00	EPA 365.1	10/15/18 12:01	**1.04**	mg/L	0.05	0.50		KMT
1810093-02	C	Selenium	10/12/18 6:00	EPA 200.8	10/29/18 17:51	**0.61**	ug/L	0.48	1.00	J	JB
1810093-02	C	Silver	10/12/18 6:00	EPA 200.8	10/29/18 17:51	**0.09**	ug/L	0.03	1.00	J	JB
1810093-02	C	Thallium	10/12/18 6:00	EPA 200.8	10/29/18 17:51	**0.11**	ug/L	0.01	1.00	J	JB
1810093-02	C	Aroclor Total (PCBs)	10/12/18 6:00	[CALC]	10/23/18 03:25	**ND**	ug/L		2.2	E8	MRH *
* Analysis Performed by:Legend Technical Services, Inc., St. Paul - See attached contract lab report for official results.											
1810093-02	C	4,4'-DDD	10/12/18 6:00	EPA 608	10/19/18 20:46	**ND**	ug/L	0.046	0.43	E8	MRH *
1810093-02	C	4,4'-DDE	10/12/18 6:00	EPA 608	10/19/18 20:46	**ND**	ug/L	0.037	0.43	E8	MRH *
1810093-02	C	4,4'-DDT	10/12/18 6:00	EPA 608	10/19/18 20:46	**ND**	ug/L	0.043	0.43	E8	MRH *
1810093-02	C	Aldrin	10/12/18 6:00	EPA 608	10/19/18 20:46	**ND**	ug/L	0.041	0.43	E8	MRH *
1810093-02	C	alpha-BHC	10/12/18 6:00	EPA 608	10/19/18 20:46	**ND**	ug/L	0.037	0.43	E8	MRH *
1810093-02	C	Aroclor 1016	10/12/18 6:00	EPA 608	10/23/18 03:25	**ND**	ug/L	0.13	2.2	E8	MRH *
1810093-02	C	Aroclor 1221	10/12/18 6:00	EPA 608	10/23/18 03:25	**ND**	ug/L	0.44	2.2	E8	MRH *
1810093-02	C	Aroclor 1232	10/12/18 6:00	EPA 608	10/23/18 03:25	**ND**	ug/L	0.23	2.2	E8	MRH *
1810093-02	C	Aroclor 1242	10/12/18 6:00	EPA 608	10/23/18 03:25	**ND**	ug/L	0.14	2.2	E8	MRH *
1810093-02	C	Aroclor 1248	10/12/18 6:00	EPA 608	10/23/18 03:25	**ND**	ug/L	0.26	2.2	E8	MRH *
1810093-02	C	Aroclor 1254	10/12/18 6:00	EPA 608	10/23/18 03:25	**ND**	ug/L	0.14	2.2	E8	MRH *
1810093-02	C	Aroclor 1260	10/12/18 6:00	EPA 608	10/23/18 03:25	**ND**	ug/L	0.11	2.2	E8	MRH *
1810093-02	C	beta-BHC	10/12/18 6:00	EPA 608	10/19/18 20:46	**ND**	ug/L	0.043	0.43	E8	MRH *
1810093-02	C	Chlordane (tech)	10/12/18 6:00	EPA 608	10/19/18 20:46	**ND**	ug/L	0.14	0.86	E8	MRH *
1810093-02	C	delta-BHC	10/12/18 6:00	EPA 608	10/19/18 20:46	**ND**	ug/L	0.045	0.43	E8	MRH *
1810093-02	C	Dieldrin	10/12/18 6:00	EPA 608	10/19/18 20:46	**ND**	ug/L	0.041	0.43	E8	MRH *
1810093-02	C	Endosulfan I	10/12/18 6:00	EPA 608	10/19/18 20:46	**ND**	ug/L	0.041	0.43	E8	MRH *

Qualifier Definitions

S12	Surrogate recovery was low. Data reported per ADEQ policy 0154.000
T2	Cited ADHS licensed method does not contain this analyte as part of method compound list.
<	<1
>	>100
A	Absence
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D4	Minimum Reporting Limit (MRL) adjusted to reflect sample amount received and analyzed.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL), but above the MDL.
E8	Analyte reported to the MDL per project specification. Target analyte was not detected in the sample.
H6	The filtration was not done within the required 15 minutes of sampling, the sample was filtered in the laboratory.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
N1	See case narrative.
N7	Additional analysis was not performed based on the "Total" result which was below the requested analyte's MCL/Action level/Trigger Level.
NA	Not Analyzed
NC	Not Calculable
PC3	Semi-quantitation is included in the case narrative.
Q6	Sample was received above recommended temperature.
R8	Sample RPD exceeded the method acceptance limit.
R9	Sample RPD exceeded the laboratory acceptance limit.
S10	Surrogate recovery was above laboratory and method acceptance limits. See case narrative.
S7	Surrogate recovery was below laboratory and method acceptance limits. Unable to confirm matrix effect.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction
EB	Equipment Blank

1810093-03
EPA 9014 See contract lab report for case narrative. ABR 12-7-18

1810093-01
EPA Method 624/8260 Purgeables: S10 Qualifier: Dibromofluoromethane surrogate recovery was high. Sample was reanalyzed on 10/17/2018 and high surrogate recovery was confirmed.
MCD 12/10/2018

1810093-01, -02
EPA Method 624/8260 Purgeables: N1: 1,1,1-Trichloroethane failed the Matrix Spike RPD from the same extraction batch, but the spike was performed on a different sample.
MCD 12/10/2018. Edited by MCD 1/2/19

1810093-01, -02, -03
EPA Method 624/8260 Purgeables: Due to linear calibration model, trace hits near the reporting limit for analytes flagged with N1 are biased high. MCD 12/12/2018. Edited by MCD 1/2/19

Semi-Quantitation
Method: 625
1810093-02

Compound Name	Concentration-ug/L
Palmitic Acid	187

SJM 12/18/18

Semi-Quantitation
Method: 625
1810093-03

Compound Name	Concentration-mg/Kg
N,N-Dimethyl-1-dodecanamine	1193
Tetradecanoic Acid	439
Palmitic Acid	86327
Oleic Acid	125083
Stearic Acid	32185

SJM 12/18/18

Semi-Quantitation
Method: 625
1810093-01

Compound Name	Concentration-ug/L
Benzoic Acid	171
Benzeneacetic Acid	101
N,N-Dimethyl-1-dodecanamine	782
Dodecanoic Acid	107
Tetradecanoic Acid	173
Palmitic Acid	32186
Oleic Acid	38098
Stearic Acid	15278

SJM 12/18/18

1810150-01
Samples not analyzed for fish or water flea due to culture crashes prior to starting test. JVR 12-10-18

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #13 10/12/18 Project Manager: Joe Doranski	**Reported:** 01/18/19 10:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
1810093-03	18J1650-01	Solid (Dry Weight)	Composite	10/12/18 06:00	10/15/18 14:15
1810092-03	18J1650-02	Solid (Dry Weight)	Composite	10/12/18 06:00	10/15/18 14:15
1810093-01	18J1650-03	Wastewater	Composite	10/12/18 06:00	10/15/18 14:15
1810093-02	18J1650-04	Wastewater	Composite	10/12/18 06:00	10/15/18 14:15
1810092-01	18J1650-05	Wastewater	Composite	10/12/18 06:00	10/15/18 14:15
1810092-02	18J1650-06	Wastewater	Composite	10/12/18 06:00	10/15/18 14:15

Sample Condition Upon Receipt:

Temperature: 2.00 C

All samples were received in acceptable condition unless noted otherwise in the case narrative.

Case Narrative:

Holding Times: All holding times were met unless otherwise qualified.

QA/QC Criteria: All analyses met method requirements unless otherwise qualified.

Certifications: AZ(PHX)0004, AZ(TUC)OOO4, AIHA#102982, CDC ELITE Member.

Accreditation is applicable only to the test methods specified on the scope of accreditation held by LEGEND.

Comments: All reporting limits utilized in this report are from the approved method with the lowest possible levels of detection. All samples were analyzed on a "wet" basis unless designated as "dry weight".

N1- The sample's matrix is solid (dry weight), however, the sample is in a liquid state. The sample was not treated as a solid per the method's SOP. The sample was filtered through a 0.45um filter and was run unpreserved.

This report contains data that were produced by a subcontracted laboratory certified for the fields of testing performed.

Legend Technical Services, St. Paul AZ0557

Bach Pham

651.221.4062

Pima County RWRD CRAO Lab	Project: Pesticides	
2955 W Calle Agua Nueva	Project Number: Pesticides #13 10/12/18	Reported:
Tucson, AZ 85745	Project Manager: Joe Doranski	01/18/19 10:14

1810093-03 (18J1650-01) Solid (Dry Weight) (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Legend Technical Services, Inc. #AZ0557

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PCB 8082A										
Aroclor 1016	<	11	75	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8082A	E8
Aroclor 1221	<	20	75	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8082A	E8
Aroclor 1232	<	20	75	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8082A	E8
Aroclor 1242	<	6.4	75	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8082A	E8
Aroclor 1248	<	7.9	75	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8082A	E8
Aroclor 1254	<	9.4	75	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8082A	E8
Aroclor 1260	<	8.7	75	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8082A	E8
Surrogate: Decachlorobiphenyl			*68.0 %*	*57.5-120*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8082A*	
Surrogate: Tetrachloro-meta-xylene			*56.5 %*	*57.1-114*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8082A*	*S12*
PERCENT SOLIDS										
% Solids	**0.70**			%	1	B7J1118	06/22/18 00:00	10/30/18 18:03	% calculation	
PESTICIDES 8081B										
4,4´-DDD	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
4,4´-DDE	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
4,4´-DDT	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Aldrin	<	2.6	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
alpha-BHC	<	2.6	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
alpha-Chlordane	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
beta-BHC	<	2.7	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
delta-BHC	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Dieldrin	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Endosulfan I	<	2.7	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Endosulfan II	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Endosulfan sulfate	<	2.9	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Endrin	<	2.7	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Endrin aldehyde	<	2.5	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Endrin ketone	<	2.7	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
gamma-BHC (Lindane)	<	2.6	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
gamma-Chlordane	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Heptachlor	<	2.6	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Heptachlor epoxide	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Methoxychlor	<	2.8	15	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Toxaphene	<	5.7	30	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:57	EPA 8081B	E8
Surrogate: Decachlorobiphenyl			*68.5 %*	*52.5-134*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8081B*	
Surrogate: Tetrachloro-meta-xylene			*58.0 %*	*59.6-120*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8081B*	*S12*

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #13 10/12/18 Project Manager: Joe Doranski	**Reported:** 01/18/19 10:14

1810093-03 (18J1650-01) Solid (Dry Weight) (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Inorganic Chemistry										
Cyanide, Total	**4.29**	**3.67**	14.3	mg/kg dry	1	B8J1641	10/19/18 09:13	10/19/18 16:15	EPA 9014	E4, N1
% Solids	**0.7**		1	%	1	B8J1622	10/18/18 16:50	10/18/18 16:50	SM 2540 G	

1810092-03 (18J1650-02) Solid (Dry Weight) (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Legend Technical Services, Inc. #AZ0557

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PCB 8082A										
Aroclor 1016	<	0.97	6.7	mg/kg dry	3	B8J2201	10/22/18 08:26	10/23/18 18:03	EPA 8082A	D1, E8
Aroclor 1221	<	1.8	6.7	mg/kg dry	3	B8J2201	10/22/18 08:26	10/23/18 18:03	EPA 8082A	D1, E8
Aroclor 1232	<	1.8	6.7	mg/kg dry	3	B8J2201	10/22/18 08:26	10/23/18 18:03	EPA 8082A	D1, E8
Aroclor 1242	<	0.57	6.7	mg/kg dry	3	B8J2201	10/22/18 08:26	10/23/18 18:03	EPA 8082A	D1, E8
Aroclor 1248	<	0.23	2.2	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8082A	E8
Aroclor 1254	<	0.28	2.2	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8082A	E8
Aroclor 1260	<	0.26	2.2	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8082A	E8
Surrogate: Decachlorobiphenyl			*66.0 %*	*57.5-120*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8082A*	
Surrogate: Tetrachloro-meta-xylene			*64.0 %*	*57.1-114*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8082A*	
PERCENT SOLIDS										
% Solids	**15**			%	1	B7J1118	06/22/18 00:00	10/30/18 18:03	% calculation	
PESTICIDES 8081B										
4,4´-DDD	<	0.083	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
4,4´-DDE	<	0.083	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
4,4´-DDT	<	0.083	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Aldrin	<	0.078	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
alpha-BHC	<	0.075	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
alpha-Chlordane	<	0.082	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
beta-BHC	<	0.079	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
delta-BHC	<	0.081	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Dieldrin	<	0.082	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Endosulfan I	<	0.080	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Endosulfan II	<	0.082	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Endosulfan sulfate	<	0.084	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Endrin	<	0.079	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Endrin aldehyde	<	0.074	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Endrin ketone	<	0.079	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
gamma-BHC (Lindane)	<	0.078	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
gamma-Chlordane	<	0.081	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Heptachlor	<	0.078	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Heptachlor epoxide	<	0.081	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Methoxychlor	<	0.081	0.44	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8

Pima County RWRD CRAO Lab	Project: Pesticides	
2955 W Calle Agua Nueva	Project Number: Pesticides #13 10/12/18	Reported:
Tucson, AZ 85745	Project Manager: Joe Doranski	01/18/19 10:14

1810092-03 (18J1650-02) Solid (Dry Weight) (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services, Inc. #AZ0557										
PESTICIDES 8081B										
Toxaphene	<	0.17	0.89	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 22:44	EPA 8081B	E8
Surrogate: Decachlorobiphenyl			*67.0 %*	*52.5-134*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8081B*	
Surrogate: Tetrachloro-meta-xylene			*61.5 %*	*59.6-120*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8081B*	
Legend Technical Services of Arizona, Inc.										
Inorganic Chemistry										
Cyanide, Total	**0.333**	**0.171**	0.667	mg/kg dry	1	B8J1641	10/19/18 09:13	10/19/18 16:15	EPA 9014	E4
% Solids	**15**		1	%	1	B8J1622	10/18/18 16:50	10/18/18 16:50	SM 2540 G	R9

1810093-01 (18J1650-03) Wastewater (Composite) Sampled: 10/12/18 06:00 Received: 10/15/18 14:15

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services, Inc. #AZ0557										
PESTICIDES/PCBS 608										
Aroclor Total (PCBs)	<		2.2	ug/L	1	[CALC]	10/19/18 13:41	10/23/18 05:06	[CALC]	
4,4´-DDD	<	0.047	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
4,4´-DDE	<	0.037	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
4,4´-DDT	<	0.043	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Aldrin	<	0.041	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
alpha-BHC	<	0.037	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Aroclor 1016	<	0.13	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:06	EPA 608	E8
Aroclor 1221	<	0.45	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:06	EPA 608	E8
Aroclor 1232	<	0.23	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:06	EPA 608	E8
Aroclor 1242	<	0.14	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:06	EPA 608	E8
Aroclor 1248	<	0.26	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:06	EPA 608	E8
Aroclor 1254	<	0.14	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:06	EPA 608	E8
Aroclor 1260	<	0.11	2.2	ug/L	1	B8J1909	10/19/18 13:41	10/23/18 05:06	EPA 608	E8
beta-BHC	<	0.043	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Chlordane (tech)	<	0.14	0.87	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
delta-BHC	<	0.046	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Dieldrin	<	0.041	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Endosulfan I	<	0.041	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Endosulfan II	<	0.043	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Endosulfan sulfate	<	0.042	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Endrin	<	0.047	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Endrin aldehyde	<	0.042	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
gamma-BHC (Lindane)	<	0.038	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Heptachlor	<	0.039	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Heptachlor epoxide	<	0.045	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Methoxychlor	<	0.046	0.43	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8, T2
Toxaphene	<	0.091	1.1	ug/L	1	B8J1909	10/19/18 13:41	10/19/18 23:44	EPA 608	E8
Surrogate: Decachlorobiphenyl			*94.0 %*	*68.5-111*		*B8J1909*	*10/19/18*	*10/19/18*	*EPA 608*	

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY 2018

WORK ORDER & SAMPLE(S): 1810093-03

PROJECT & LOCATION: Agua Nueva WRF - Thickened Sludge Pump (Quarterly)

PROJECT-LOCATION NUMBER: 26107-0600 (XXXXX-XXXX)

SAMPLE START DATE: 10·11·18 (MM/DD/YY OR MM/DD/YYYY) SAMPLE START TIME: 0600 (Military time) CLIENT: IWC

SAMPLE END DATE: 10·12·18 (MM/DD/YY OR MM/DD/YYYY) SAMPLE END TIME: 0600 (Military time) SAMPLER(S): Silva, Orduna, Martinez, Riccaboni (Print Last Name(s) Only)

Permit Type: ☐ APP ■ AZPDES ☐ IWC ☐ Investigative ☐ Reuse ☐ Air ■ 503 ☐ Process Control ☐ Other

Matrix: ■ Biosolids ☐ Groundwater ☐ Industrial ☐ Soil ☐ Stormwater ☐ Surface Water ☐ Wastewater ☐ Air ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	×		☐	■
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	×		☐	■
TCLP Metals			☐	☐
503 Metals **			☐	■
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total contract	☐	■
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other	☐	☐
Other	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	■
Dioxin GC/SIM/MS Scan	☐	■
Organochlorine Pesticides & PCBs contract	☐	■
Purgeable Organics (GCMS)	☐	■
Semivolatile Organics (GCMS)	☐	■
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other 624+	☐	■
Other	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total	☐	■
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other	☐	☐

OTHER	D	C
Paint Filter	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions:
The lab shall composite the four discrete Purgeable Organics and Acrolein/Acrylonitrile samples.
Pesticides, cyanide and 1 of 2 TVS sent to Legend TS. GOS 10-12-18 [0B19-010982]

Septum Blank Prep Date & Initials: 10·9·18 (EJ + ABR)

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	10-11-18	1500
[signature]	Refrigerator	10-12-18	0130
Refrigerator	[signature]	10·12·18	0600
[signature]	[signature]	10-12-18	0824
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:
# of Bottles Delivered: 9 GOS
Transported on Ice: ☒ YES ☐ NO

Lab Receipt
Temperature: 8 °C
Initials: GOS
Q6 qualifier? ☒ YES ~~☐ NO~~ GOS 10-12-18

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☐	☒	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☒	☐	☐
Received from a refrigerator?	☐	☒	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT
WATER QUALITY
SAMPLE COLLECTION REPORT

SAMPLE LOCATION: Agua Nueva WRF – Thickened Sludge Pump LIMS: 1810093-03
LOCATION ID: 26107 – 0600 SAMPLERS: Silva, Orduna, Riccaboni, Martinez
Last names only, primary sampler first
SAMPLE DATE: 10-12-2018

Sample D or C	Parameter	Frequency	AUTO MAN	Volume Submitted	Bottle/Preservation
C	Semivolatile Organics	Hand Composite	Man	1000 ml	Amber Glass/None/Ice
C	Organochlorine Pest & PCB's		Man	1000 ml	Amber Glass/None/Ice
C	Dioxin		Man	1000 ml	Amber Glass/None/Ice
C	Metals (T) + Molybdenum		Man	1000 ml	Dissolved Metals/None/Ice
C	Cyanide (T)	4 Aliquots for the duration of the discharge	Man	1000 ml	Dissolved Metals/None/Ice
C	Total Solids		Man	1000 ml	General Purpose/None/Ice
C	Total Solids (for outside lab)		Man	1000 ml	General Purpose/None/Ice
To be Composited by the Laboratory					
D	Purgeable Organics	Hand Composite	Man	4 X 40	None/Ice
D	Acrolein/Acrylonitrile	4 Aliquots for the duration of the discharge	Man	4 X 40	None/Ice

	Time
Aliquot #1 10/11/18	0635
Aliquot #2 10/11/18	1210
Aliquot #3 10·10·18	1800
Aliquot #4	

Grab 2L per Aliquot

Comments:	Thickened Sludge Pump samples are not preserved.
	All Composites including Cyanide can be poured off at the end of the sampling event
	Two Total Solids samples are required. One for our lab, one for the contract lab

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ANNUAL BIOSOLIDS REPORT 2018

REGIONAL WATER
RECLAMATION DEPARTMENT

TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

SECTION 6

AVRA VALLEY WRF
AZPDES NO. AZ0024121

2018 PREPARER FORM

AND

SAMPLING AND ANALYSES
PRIORITY POLLUTANTS
TCLP
HAZARDOUSNESS

ANNUAL BIOSOLIDS REPORT 2018

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ANNUAL BIOSOLIDS REPORT 2018

REGIONAL WATER
RECLAMATION DEPARTMENT

TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

ARIZONA
DEPARTMENT OF ENVIRONMENTAL QUALITY
AZPDES Individual Permits Unit
1110 W Washington Street
Phoenix, Arizona 85007
(602) 771-4689 (voicemail) (602) 771-4505 (fax)
Email to: biosolids@azdeq.gov

BIOSOLIDS OR SEWAGE SLUDGE ANNUAL REPORT FORM

1. Program Information: All preparers (Generators) and Land Applicators Must complete the following.

Reporting Start Date:1/1/2018	**Reporting End Date: 12/31/2018**
Date:2/19/2019	**AZPDES Permit # (if applicable):AZ00024121** **Pima County Avra Valley WRF** **10000 W. Snyder Hill Road, Tucson AZ 85735**
Company name (Preparer / Applicator): Preparer, Pima County Regional Water Reclamation Department	
Contact Name: Houssam Eljerdi	**Title: Technical Services Manager**
Address: 7101 N. Casa Grande Highway **Phone:** (520) 724 - 6100	Tucson, AZ 85743 - 8618 **E-mail: Houssam.eljerdi@pima.gov**

Please select one of the following options pertaining to your obligation to submit a Biosolids Annual Report. My facility is a:

☒ POTW with a design flow equal to or greater than 1 MGD Per Day

☐ POTW that serves 10,000 people or more

☐ Class I Sludge Management Facility as defined by 40 CFR 503.9

☐ Biosolids Applicator (Complete Section 5 only)

☒Other AZPDES Permit # 24121; APP Permit # 100642

What is the estimated total of volume of biosolids or sewage sludge generated at your facility (in dry metric tons)?

442 (Four Hundred and Forty Two) metric dry tons

No Storage

Pima County Transports the Avra Valley WRF sludge by tanker truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Agua Nueva WRF

Were all biosolids removed from your facility sent to a landfill for disposal? No

If yes, provide the name and address of the landfill(s). Not Applicable

If all biosolids or sewage sludge was sent to a landfill for disposal, you do not need to complete the remainder of this form, as it is only applicable to facilities preparing Biosolids or sewage sludge for land application.

Certification: I certify, under penalty of law, that the information and descriptions, have been made under my direction and supervision and under a system designed to ensure that qualified personnel properly gather and evaluate the information used to determine whether the applicable biosolids requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

Signature:	Date:
Title: Jeff P. Prevatt; Deputy Director - Treatment	February 19, 2019

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

2. Generator/Preparers - Biosolids Storage and Treatment Processes

2.1 Please check the box next to the following biosolids or sewage sludge storage practices and treatment processes used on the sewage sludge or biosolids generated or produced at your facility during the reporting period.

Storage Practices

☐ Biosolids are stored in lined lagoons or impoundments

☐ Biosolids stored directly on the ground

Physical Treatment Processes

☒ Preliminary Operations (e.g. sludge grinding, degritting, blending

☒ Thickening (e.g. gravity floatation, centrifugation, belt filter press, vacuum filter)

☐ Sludge lagoon

Pathogen Reduction Operations (PSRP)

☐ Aerobic Digestion

☐ Air Drying (or "sludge drying beds")

☐ Anaerobic Digestion

☐ Lower Temperature Composting

☐ Lime Stabilization

Process to Further Reduce Pathogens (PFRP)

☐ Higher Temperature Composting

☐ Heat Drying (e.g. flash dryer, spray dryer, rotary dryer)

☐ Heat Treatment (Liquid sewage sludge is heated to temp of 356 °F (180 °C) or higher for 30 minutes

☐ Thermophilic Aerobic Digestion

☐ Beta Ray Irradiation

☐ Gamma Ray Irradiation

☐ Pasteurization

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

3. Generators/Preparers: Disposition of Biosolids or Sewage Treatment Sludge:

3.1 At the beginning of the year, did you have any biosolids or sewage sludge stored on site or remaining from previous years? Include any amount that is being stored anywhere. No

If yes provide the following information:

	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable
Storage Locations	**No Storage** **Pima County Transports the Sludge from Avra Valley WRF by Tanker Truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Agua Nueva WRF**	Not applicable

3.2 At the end of the year, are any biosolids or sewage sludge stored on site? No

If yes, provide the following information:

	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable
Storage Locations	**No Storage** **Pima County Transports the Sludge from Avra Valley WRF by Tanker Truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Agua Nueva WRF**	Not applicable

3.3 Were biosolids or sewage sludge received from another facility during the year, such as another wastewater treatment plant or another APP permitted facility for further processing? No

If yes provide the following information for each facility. Click the plus sign to create as many tables as needed.

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

Name of Facility	Not Applicable	
Location:	Not Applicable	
	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	Not Applicable	Not applicable
Pathogen Testing	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable
Storage Locations	Not applicable	Not applicable

Enter any content that you want to repeat, including other content controls. You can also insert this control around table rows in order to repeat parts of a table.

3.4. Were biosolids removed from your facility for land application? Include all recipients, including haulers, name, phone number, land applicators, composters, drying facilities, EQB bagging facilities, bulk composting, etc.

Name of Facility	**None** **Pima County Transports the Sludge from Avra Valley WRF by Tanker Truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Agua Nueva WRF**	
Management Practice Type:	Not Applicable	
Handler or Preparer Type:	Not Applicable	
Management Practice Detail:	Not Applicable	
Bag or Bulk Container:	Not Applicable	
	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not Applicable	Not applicable
Pathogen Reduction Method	Not Applicable	Not Applicable
Vector Attraction Reduction Method	Not Applicable	Not Applicable
Storage Locations	Not Applicable	Not Applicable

4. Generators/Preparers : Biosolids or Sewage Sludge Analytical Methods

Arizona regulations specify that representative samples of sewage sludge that is land applied, placed on a surface disposal site, or fired in s sewage sludge incinerator, must be collected and analyzed.

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

These regulations specify the analytical methods that must be used to analyzed samples of sewage sludge.

Parameter	*Method Number or Author*	*Results (if tested)*	*Comments (required if other)*
Pathogens			
Ascaris ova.	Not applicable	Not applicable	Not applicable
Fecal Coliform	Not Applicable	Not Applicable	Not Applicable
Helminth ova.	Not Applicable	Not Applicable	Not Applicable
Salmonella sp. Bacteria	Not Applicable	Not Applicable	Not Applicable
Total Cultural Viruses	Not Applicable	Not Applicable	Not Applicable
Metals			
Arsenic	EPA Method 6010 - Arsenic (ICP-OES)	< 11.98 / < 15.56 / < 7.56	Mean / Maximum / Minimum
Beryllium	EPA Method 6010D	< 2.4 / < 3.11 / < 1.51	Mean / Maximum / Minimum
Cadmium	EPA Method 6010 - Cadmium (ICP-OES)	< 4.8 / < 6.22 / < 3.02	Mean / Maximum / Minimum
Chromium	EPA Method 6010 - Chromium (ICP-OES)	< 11.98 / < 15.56 / < 7.56	Mean / Maximum / Minimum
Copper	EPA Method 6010 - Copper (ICP-OES)	158 / 185 / 115	Mean / Maximum / Minimum
Lead	EPA Method 6010 - Lead (ICP-OES)	< 12.2 / < 15.56 / 8.35	Mean / Maximum / Minimum
Mercury	EPA Method 7471 - Mercury (CVAA)	0.54 / 0.69 / 0.35	Mean / Maximum / Minimum
Molybdenum	EPA Method 6010 - Molybdenum (ICP-OES)	8.8 / 9.6 / 8.1	Mean / Maximum / Minimum
Nickel	EPA Method 6010 - Nickel (ICP-OES)	< 13.3 / < 24 / 12.5	Mean / Maximum / Minimum
Selenium	EPA Method 6010 - Selenium (ICP-OES)	< 23.9 / < 31.11 / < 15.11	Mean / Maximum / Minimum
Zinc	EPA Method 6010 - Zinc (ICP-OES)	507 / 539 / 450	Mean / Maximum / Minimum
Nitrogen Compounds			
Ammonia Nitrogen	Not Applicable	Not Applicable	Not Applicable
Nitrate Nitrogen	Not Applicable	Not Applicable	Not Applicable
Nitrogen	Not Applicable	Not Applicable	Not Applicable
Organic Nitrogen	Not Applicable	Not Applicable	Not Applicable
Total Kjeldahl Nitrogen	Not Applicable	Not Applicable	Not Applicable

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

Other Analytes			
Fixed Solids	Not applicable	Not applicable	Not applicable
Paint Filter Test	Not Applicable	Not applicable	Not applicable
pH	Not Applicable	Not Applicable	Not Applicable
Specific Oxygen Uptake Rate	Not Applicable	Not Applicable	Not Applicable
TCLP	Other TCLP Analytical Method	**Total Amount Does Not Exceed 20X TCLP Screening Value.** **Sample Analysis Results Included in Section 5 of this Report**	Click here to enter text.
Temperature	Not applicable	Not applicable	Not applicable
Total Solids	Standard Method 2540 - Total Solids	Wet Hauled Sludge % Solids Content **1.94 / 3.9 / 0.38**	Mean / Maximum / Minimum
Volatile Solids	Not applicable	Not applicable	Not applicable
No Analytical Methods Used	Not applicable	Not applicable	Not applicable

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 04/13/2018
Laboratory License: AZO159

Sample Analysis Report

Avra Valley WRF

January 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Graft

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

5·30·18
Date

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801188-02	C	bis(2-ethylhexyl)phthalate	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	2.82	7.14	D4	SJM
1801188-02	C	Butylbenzylphthalate	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	1.90	2.38	D4	SJM
1801188-02	C	Carbazole	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	2.67	7.14	D4	SJM
1801188-02	C	Chrysene	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	1.14	2.38	D4	SJM
1801188-02	C	Dibenzo(a,h)anthracene	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	3.07	7.14	D4	SJM
1801188-02	C	Diethyl phthalate	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	2.24	7.14	D4	SJM
1801188-02	C	Dimethyl phthalate	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	0.58	2.38	D4	SJM
1801188-02	C	Di-n-butyl phthalate	01/26/18 6:00	EPA 625	2/13/18 17:19	**3.02**	ug/L	2.50	7.14	D4, J	SJM
1801188-02	C	Di-n-octyl phthalate	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	2.55	7.14	D4	SJM
1801188-02	C	Fluoranthene	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	1.32	2.38	D4	SJM
1801188-02	C	Fluorene	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	1.54	2.38	D4	SJM
1801188-02	C	Hexachlorobenzene	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	0.62	2.38	D4	SJM
1801188-02	C	Hexachlorobutadiene	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	1.01	2.38	D4	SJM
1801188-02	C	Hexachlorocyclopentadiene	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	4.23	7.14	D4	SJM
1801188-02	C	Hexachloroethane	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	1.26	2.38	D4	SJM
1801188-02	C	Indeno(1,2,3-cd)pyrene	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	2.83	7.14	D4	SJM
1801188-02	C	Isophorone	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	1.66	2.38	D4	SJM
1801188-02	C	Naphthalene	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	1.77	2.38	D4	SJM
1801188-02	C	n-Decane	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	1.95	2.38	D4	SJM
1801188-02	C	Nitrobenzene	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	2.10	7.14	D4	SJM
1801188-02	C	N-Nitrosodimethylamine	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	2.09	7.14	D4, PC3	SJM
1801188-02	C	N-Nitrosodi-n-propylamine	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	2.43	7.14	D4	SJM
1801188-02	C	N-Nitrosodiphenylamine	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	6.08	11.90	D4	SJM
1801188-02	C	n-Octadecane	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	2.18	7.14	D4	SJM
1801188-02	C	Pentachlorophenol	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	4.02	7.14	D4	SJM
1801188-02	C	Phenanthrene	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	1.63	2.38	D4	SJM
1801188-02	C	Phenol	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	2.59	7.14	D4	SJM
1801188-02	C	Pyrene	01/26/18 6:00	EPA 625	2/13/18 17:19	**ND**	ug/L	1.38	2.38	D4	SJM
1801188-02	C	1,2-Diphenylhydrazine	01/26/18 6:00	EPA 8270C	2/13/18 17:19	**ND**	ug/L	0.98	2.38	D4	SJM
1801188-02RE1	C	Zinc	01/26/18 6:00	EPA 200.8	2/7/18 18:18	**53.4**	ug/L	0.23	10.00	D1	JB
Final Effluent at the U.V. Channel (25003-1351)											
1801024-02	D	E. Coli	01/03/18 7:50	SM 9223B	1/4/18 14:08	**<1**	MPN/100 mL		1.0		ADP
1801071-01	D	E. Coli	01/10/18 7:46	SM 9223B	1/11/18 13:11	**<1**	MPN/100 mL		1.0		ADP
1801125-01	D	E. Coli	01/17/18 7:40	SM 9223B	1/18/18 12:48	**<1**	MPN/100 mL		1.0		JAH
1801171-01	D	E. Coli	01/24/18 7:23	SM 9223B	1/25/18 13:39	**<1**	MPN/100 mL		1.0		ADP
1801218-01	D	E. Coli	01/31/18 7:50	SM 9223B	2/1/18 12:41	**<1**	MPN/100 mL		1.0		DEB
Wet Haul Sludge (25003-1573)											
1801024-05	D	% Solids	01/03/18 8:37	SM 2540G	1/4/18 14:51	**1.98**	%		0.01		ADP
1801024-05	D	% Solids, Total Volatile	01/03/18 8:37	SM 2540G	1/4/18 17:31	**84.2**	%		0.01		ADP
1801136-01	D	Antimony	01/18/18 10:35	EPA 6010D	1/24/18 09:52	**ND**	mg/kg dry		13.03		MLB
1801136-01	D	Arsenic	01/18/18 10:35	EPA 6010D	1/24/18 09:52	**ND**	mg/kg dry		13.03		MLB
1801136-01	D	Beryllium	01/18/18 10:35	EPA 6010D	1/24/18 09:52	**ND**	mg/kg dry		2.61		MLB
1801136-01	D	Cadmium	01/18/18 10:35	EPA 6010D	1/24/18 09:52	**ND**	mg/kg dry		5.21		MLB
1801136-01	D	Chromium	01/18/18 10:35	EPA 6010D	1/24/18 09:52	**ND**	mg/kg dry		13.03		MLB
1801136-01	D	Copper	01/18/18 10:35	EPA 6010D	1/24/18 09:52	**115**	mg/kg dry		13.03		MLB
1801136-01	D	Lead	01/18/18 10:35	EPA 6010D	1/24/18 11:32	**ND**	mg/kg dry		13.03		MLB
1801136-01	D	Mercury	01/18/18 10:35	EPA 7471B	1/29/18 15:54	**0.38**	mg/kg dry		0.01		DML
1801136-01	D	Molybdenum	01/18/18 10:35	EPA 6010D	1/24/18 09:52	**8.53**	mg/kg dry		5.21		MLB
1801136-01	D	Nickel	01/18/18 10:35	EPA 6010D	1/24/18 09:52	**ND**	mg/kg dry		13.03		MLB
1801136-01	D	Selenium	01/18/18 10:35	EPA 6010D	1/24/18 09:52	**ND**	mg/kg dry		26.06		MLB
1801136-01	D	Silver	01/18/18 10:35	EPA 6010D	1/24/18 12:44	**ND**	mg/kg dry		1.30		MLB
1801136-01	D	Arsenic	01/18/18 10:35	TCLP/EPA 6010D	2/8/18 16:59	**ND**	mg/L		0.03		MLB

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801136-01	D	Barium	01/18/18 10:35	TCLP/EPA 6010D	2/6/18 17:08	**0.259**	mg/L		0.03		MLB
1801136-01	D	Cadmium	01/18/18 10:35	TCLP/EPA 6010D	2/6/18 17:08	**ND**	mg/L		0.01		MLB
1801136-01	D	Chromium	01/18/18 10:35	TCLP/EPA 6010D	2/6/18 17:08	**ND**	mg/L		0.03		MLB
1801136-01	D	Lead	01/18/18 10:35	TCLP/EPA 6010D	2/6/18 17:08	**ND**	mg/L		0.03		MLB
1801136-01	D	Mercury	01/18/18 10:35	TCLP/EPA 7470A	2/26/18 12:31	**ND**	mg/L		0.00		DML
1801136-01	D	Selenium	01/18/18 10:35	TCLP/EPA 6010D	2/6/18 17:08	**ND**	mg/L		0.05		MLB
1801136-01	D	Silver	01/18/18 10:35	TCLP/EPA 6010D	2/6/18 17:08	**ND**	mg/L		0.0026		MLB
1801136-01	D	Thallium	01/18/18 10:35	EPA 6010D	1/24/18 09:52	**ND**	mg/kg dry		13.03		MLB
1801136-01	D	Zinc	01/18/18 10:35	EPA 6010D	1/24/18 09:52	**450**	mg/kg dry		13.03		MLB
1801136-01	D	% Solids	01/18/18 10:35	SM 2540G	1/19/18 12:08	**1.91**	%		0.01		TDA
1801136-01	D	Acrolein	01/18/18 10:35	EPA 624	1/18/18 18:37	**ND**	mg/kg dry	0.00360	0.01	D1, D7	SRM
1801136-01	D	Acrylonitrile	01/18/18 10:35	EPA 624	1/18/18 18:37	**ND**	mg/kg dry	0.00280	0.01	D1, D7, V1	SRM
1801136-01	D	4,4-DDD	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00006	0.00113	D1, D7	KLH
1801136-01	D	4,4-DDE	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00003	0.00113	D1, D7	KLH
1801136-01	D	4,4-DDT	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00006	0.00113	D1, D7	KLH
1801136-01	D	Aldrin	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00006	0.00113	D1, D7	KLH
1801136-01	D	alpha-BHC	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00004	0.00113	D1, D7, L2, N1	KLH
1801136-01	D	beta-BHC	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00009	0.00113	D1, D7, N1	KLH
1801136-01	D	Chlordane	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00025	0.01	D1, D7	KLH
1801136-01	D	delta-BHC	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00007	0.00113	D1, D7	KLH
1801136-01	D	Dieldrin	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00015	0.00226	D1, D7	KLH
1801136-01	D	Endosulfan I	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00004	0.00113	D1, D7	KLH
1801136-01	D	Endosulfan II	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00003	0.00113	D1, D7	KLH
1801136-01	D	Endosulfan sulfate	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00004	0.00113	D1, D7	KLH
1801136-01	D	Endrin	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00010	0.00113	D1, D7	KLH
1801136-01	D	Endrin aldehyde	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00011	0.00113	D1, D7	KLH
1801136-01	D	gamma-BHC (Lindane)	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00007	0.00113	D1, D7	KLH
1801136-01	D	Heptachlor	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00005	0.00113	D1, D7	KLH
1801136-01	D	Heptachlor Epoxide	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00004	0.00113	D1, D7	KLH
1801136-01	D	PCB 1016	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00006	0.00226	D1, D7	KLH
1801136-01	D	PCB 1221	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00017	0.01	D1, D7	KLH
1801136-01	D	PCB 1232	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00007	0.01	D1, D7	KLH
1801136-01	D	PCB 1242	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00013	0.01	D1, D7	KLH
1801136-01	D	PCB 1248	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00010	0.01	D1, D7	KLH
1801136-01	D	PCB 1254	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00019	0.01	D1, D7	KLH
1801136-01	D	PCB 1260	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00007	0.00226	D1, D7	KLH
1801136-01	D	Total PCBs	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00016	0.01	D1, D7	KLH
1801136-01	D	Toxaphene	01/18/18 10:35	EPA 625	1/24/18 14:08	**ND**	mg/kg dry	0.00094	0.02	D1, D7	KLH
1801136-01	D	Methoxychlor	01/18/18 10:35	EPA 8270C	1/24/18 14:08	**ND**	mg/kg dry		0.00113	D1, D7	KLH
1801136-01	D	1,1,1-Trichloroethane	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.0002	0.01		SRM
1801136-01	D	1,1,2,2-Tetrachloroethane	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.00006	0.01		SRM
1801136-01	D	1,1,2-Trichloroethane	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.00009	0.01		SRM
1801136-01	D	1,1-Dichloroethane	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.0002	0.01		SRM
1801136-01	D	1,1-Dichloroethene	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.0001	0.01		SRM
1801136-01	D	1,2-Dichlorobenzene	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.00008	0.01		SRM
1801136-01	D	1,2-Dichloroethane	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.00009	0.01		SRM
1801136-01	D	1,2-Dichloropropane	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.0001	0.01		SRM
1801136-01	D	1,3-Dichlorobenzene	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.00008	0.01		SRM
1801136-01	D	1,4-Dichlorobenzene	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.0002	0.01		SRM
1801136-01	D	2-Chloroethyl vinyl ether	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.0003	0.01		SRM
1801136-01	D	Benzene	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.0001	0.01		SRM
1801136-01	D	Bromodichloromethane	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.0002	0.01		SRM
1801136-01	D	Bromoform	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.0003	0.01		SRM
1801136-01	D	Bromomethane	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.0001	0.01		SRM
1801136-01	D	Carbon Tetrachloride	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.0004	0.01		SRM
1801136-01	D	Chlorobenzene	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.00006	0.01		SRM
1801136-01	D	Chloroethane	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.0002	0.01		SRM
1801136-01	D	Chloroform	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.0001	0.01		SRM
1801136-01	D	Chloromethane	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.0002	0.01		SRM
1801136-01	D	cis-1,3-Dichloropropene	01/18/18 10:35	EPA 624	1/18/18 18:07	**ND**	mg/kg dry	0.00009	0.01		SRM

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Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801136-01	D	Dibromochloromethane	01/18/18 10:35	EPA 624	1/18/18 18:07	ND	mg/kg dry	0.00006	0.01		SRM
1801136-01	D	Ethyl Benzene	01/18/18 10:35	EPA 624	1/18/18 18:07	ND	mg/kg dry	0.00009	0.01		SRM
1801136-01	D	Methylene Chloride	01/18/18 10:35	EPA 624	1/18/18 18:07	ND	mg/kg dry	0.0002	0.01		SRM
1801136-01	D	Tetrachloroethene	01/18/18 10:35	EPA 624	1/18/18 18:07	ND	mg/kg dry	0.0002	0.01		SRM
1801136-01	D	Toluene	01/18/18 10:35	EPA 624	1/18/18 18:07	**35.17**	mg/kg dry	0.0001	0.01		SRM
1801136-01	D	Total Trihalomethanes	01/18/18 10:35	EPA 624	1/18/18 18:07	ND	mg/kg dry	0.0003	0.01		SRM
1801136-01	D	trans-1,2-Dichloroethene	01/18/18 10:35	EPA 624	1/18/18 18:07	ND	mg/kg dry	0.0001	0.01		SRM
1801136-01	D	trans-1,3-Dichloropropene	01/18/18 10:35	EPA 624	1/18/18 18:07	ND	mg/kg dry	0.0001	0.01		SRM
1801136-01	D	Trichloroethene	01/18/18 10:35	EPA 624	1/18/18 18:07	ND	mg/kg dry	0.0001	0.01		SRM
1801136-01	D	Trichlorofluoromethane	01/18/18 10:35	EPA 624	1/18/18 18:07	ND	mg/kg dry	0.0003	0.01		SRM
1801136-01	D	Vinyl chloride	01/18/18 10:35	EPA 624	1/18/18 18:07	ND	mg/kg dry	0.0002	0.01		SRM
1801136-01	D	1,2,4-Trichlorobenzene	01/18/18 10:35	EPA 8260	1/18/18 18:07	ND	mg/kg dry		0.01		SRM
1801136-01	D	1,2-Dibromo-3-chloropropane	01/18/18 10:35	EPA 8260	1/18/18 18:07	ND	mg/kg dry		0.01		SRM
1801136-01	D	1,2-Dibromoethane	01/18/18 10:35	EPA 8260	1/18/18 18:07	ND	mg/kg dry		0.01		SRM
1801136-01	D	cis-1,2-Dichloroethene	01/18/18 10:35	EPA 8260	1/18/18 18:07	ND	mg/kg dry		0.01		SRM
1801136-01	D	m,p-Xylenes	01/18/18 10:35	EPA 8260	1/18/18 18:07	ND	mg/kg dry		0.01		SRM
1801136-01	D	o-Xylene	01/18/18 10:35	EPA 8260	1/18/18 18:07	ND	mg/kg dry		0.01		SRM
1801136-01	D	Styrene	01/18/18 10:35	EPA 8260	1/18/18 18:07	ND	mg/kg dry		0.01		SRM
1801136-01	D	Xylenes, total	01/18/18 10:35	EPA 8260	1/18/18 18:07	ND	mg/kg dry		0.01		SRM
1801136-01	D	2,3,7,8-TCDD - Dioxin Scan	01/18/18 10:35	EPA 625	2/5/18 13:12	ND	ug/kg dry		1.31		SJM
1801136-01	D	1,2,4-Trichlorobenzene	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	2,3-Dichloroaniline	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801136-01	D	2,4,6-Trichlorophenol	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.001	0.00418	D1, D7	SJM
1801136-01	D	2,4-Dichlorophenol	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	2,4-Dimethylphenol	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.004	0.01	D1, D7	SJM
1801136-01	D	2,4-Dinitrophenol	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.009	0.02	D1, D7	SJM
1801136-01	D	2,4-Dinitrotoluene	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801136-01	D	2,6-Dinitrotoluene	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.001	0.00418	D1, D7	SJM
1801136-01	D	2-Chloronaphthalene	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.001	0.00418	D1, D7	SJM
1801136-01	D	2-Chlorophenol	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.001	0.00418	D1, D7	SJM
1801136-01	D	2-Methyl-4,6-dinitrophenol	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.005	0.01	D1, D7	SJM
1801136-01	D	2-Methylphenol	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.001	0.00418	D1, D7	SJM
1801136-01	D	2-Nitrophenol	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1801136-01	D	3,3-Dichlorobenzidine	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801136-01	D	4-Bromophenyl phenyl ether	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.001	0.00418	D1, D7	SJM
1801136-01	D	4-Chloro-3-methylphenol	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801136-01	D	4-Chlorophenyl phenyl ether	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.001	0.00418	D1, D7	SJM
1801136-01	D	4-Methylphenol	01/18/18 10:35	EPA 625	2/6/18 10:56	**445.6**	mg/kg dry	0.002	0.02	D1, D2, D7	SJM
1801136-01	D	4-Nitrophenol	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.005	0.01	D1, D7	SJM
1801136-01	D	Acenaphthene	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	Acenaphthylene	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	Anthracene	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	Benzidine	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.007	0.02	D1, D7	SJM
1801136-01	D	Benzo[a]anthracene	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.001	0.00418	D1, D7	SJM
1801136-01	D	Benzo[a]pyrene	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	Benzo[b]fluoranthene	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	Benzo[ghi]perylene	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1801136-01	D	Benzo[k]fluoranthene	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801136-01	D	bis(2-chloroethoxy)methane	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	bis(2-chloroethyl)ether	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801136-01	D	bis(2-chloroisopropyl)ether	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	bis(2-ethylhexyl)phthalate	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1801136-01	D	Butylbenzylphthalate	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	Carbazole	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1801136-01	D	Chrysene	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.001	0.00418	D1, D7	SJM
1801136-01	D	Dibenzo(a,h)anthracene	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1801136-01	D	Diethyl phthalate	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801136-01	D	Dimethyl phthalate	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.0006	0.00418	D1, D7	SJM
1801136-01	D	Di-n-butyl phthalate	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801136-01	D	Di-n-octyl phthalate	01/18/18 10:35	EPA 625	2/2/18 18:05	ND	mg/kg dry	0.003	0.01	D1, D7	SJM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801136-01	D	Fluoranthene	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.001	0.00418	D1, D7	SJM
1801136-01	D	Fluorene	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	Hexachlorobenzene	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.0006	0.00418	D1, D7	SJM
1801136-01	D	Hexachlorobutadiene	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.001	0.00418	D1, D7	SJM
1801136-01	D	Hexachlorocyclopentadiene	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1801136-01	D	Hexachloroethane	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.001	0.00418	D1, D7	SJM
1801136-01	D	Indeno(1,2,3-cd)pyrene	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1801136-01	D	Isophorone	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	Naphthalene	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	n-Decane	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	Nitrobenzene	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1801136-01	D	N-Nitrosodimethylamine	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.002	0.01	D1, D7, PC3	SJM
1801136-01	D	N-Nitrosodi-n-propylamine	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1801136-01	D	N-Nitrosodiphenylamine	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.006	0.02	D1, D7	SJM
1801136-01	D	n-Octadecane	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1801136-01	D	Pentachlorophenol	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1801136-01	D	Phenanthrene	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	Phenol	01/18/18 10:35	EPA 625	2/2/18 18:05	**9.17**	mg/kg dry	0.003	0.01	D1, D7	SJM
1801136-01	D	Pyrene	01/18/18 10:35	EPA 625	2/2/18 18:05	**ND**	mg/kg dry	0.001	0.00418	D1, D7	SJM
1801136-01	D	1,2-Diphenylhydrazine	01/18/18 10:35	EPA 8270C	2/2/18 18:05	**ND**	mg/kg dry	0.001	0.00418	D1, D7	SJM
1801136-01	D	1,4-Dichlorobenzene	01/18/18 10:35	EPA 8270C	2/2/18 18:05	**ND**	mg/kg dry	0.005	0.01	D1, D7	SJM
1801136-01	D	2,4,5-Trichlorophenol	01/18/18 10:35	EPA 8270C	2/2/18 18:05	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1801136-01	D	3 & 4-Methylphenol	01/18/18 10:35	EPA 8270C	2/2/18 18:05	**458**	mg/kg dry	0.001	0.01	D1, D7	SJM
1801136-01	D	Pyridine	01/18/18 10:35	EPA 8270C	2/2/18 18:05	**ND**	mg/kg dry	0.002	0.00418	D1, D7	SJM
1801136-01	D	Chlordane	01/18/18 10:35	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	1.38	3.00	N7	KLH
1801136-01	D	Endrin	01/18/18 10:35	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	0.200	0.50	N7	KLH
1801136-01	D	gamma-BHC (Lindane)	01/18/18 10:35	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	0.270	0.50	N7	KLH
1801136-01	D	Heptachlor	01/18/18 10:35	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	0.270	0.50	N7	KLH
1801136-01	D	Heptachlor Epoxide	01/18/18 10:35	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	0.290	0.50	N7	KLH
1801136-01	D	Methoxychlor	01/18/18 10:35	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	0.270	0.50	N7	KLH
1801136-01	D	Toxaphene	01/18/18 10:35	TCLP/EPA 8270C	1/25/18 14:44	**NA**	ug/L	3.79	6.00	N7	KLH
1801136-01	D	1,1-Dichloroethene	01/18/18 10:35	TCLP/EPA 8260B	1/18/18 18:07	**NA**	ug/L		5.00	N7	SRM
1801136-01	D	1,2-Dichloroethane	01/18/18 10:35	TCLP/EPA 8260B	1/18/18 18:07	**NA**	ug/L		5.00	N7	SRM
1801136-01	D	1,4-Dichlorobenzene	01/18/18 10:35	TCLP/EPA 8260B	1/18/18 18:07	**NA**	ug/L		5.00	N7	SRM
1801136-01	D	Benzene	01/18/18 10:35	TCLP/EPA 8260B	1/18/18 18:07	**NA**	ug/L		5.00	N7	SRM
1801136-01	D	Carbon Tetrachloride	01/18/18 10:35	TCLP/EPA 8260B	1/18/18 18:07	**NA**	ug/L		5.00	N7	SRM
1801136-01	D	Chlorobenzene	01/18/18 10:35	TCLP/EPA 8260B	1/18/18 18:07	**NA**	ug/L		5.00	N7	SRM
1801136-01	D	Chloroform	01/18/18 10:35	TCLP/EPA 8260B	1/18/18 18:07	**NA**	ug/L		5.00	N7	SRM
1801136-01	D	Hexachlorobutadiene	01/18/18 10:35	TCLP/EPA 8260B	1/18/18 18:07	**NA**	ug/L		5.00	N7	SRM
1801136-01	D	Methyl Ethyl Ketone	01/18/18 10:35	TCLP/EPA 8260B	1/18/18 18:07	**NA**	ug/L		5.00	N7	SRM
1801136-01	D	Tetrachloroethene	01/18/18 10:35	TCLP/EPA 8260B	1/18/18 18:07	**NA**	ug/L		5.00	N7	SRM
1801136-01	D	Trichloroethene	01/18/18 10:35	TCLP/EPA 8260B	1/18/18 18:07	**NA**	ug/L		5.00	N7	SRM
1801136-01	D	Vinyl chloride	01/18/18 10:35	TCLP/EPA 8260B	1/18/18 18:07	**NA**	ug/L		5.00	N7	SRM
1801136-01	D	1,4-Dichlorobenzene	01/18/18 10:35	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	1.37	2.00	N7	SJM
1801136-01	D	2,4,5-Trichlorophenol	01/18/18 10:35	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	2.46	10.00	N7	SJM
1801136-01	D	2,4,6-Trichlorophenol	01/18/18 10:35	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	1.14	5.00	N7	SJM
1801136-01	D	2,4-Dinitrotoluene	01/18/18 10:35	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	1.44	5.00	N7	SJM
1801136-01	D	2-Methylphenol	01/18/18 10:35	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	1.09	2.00	N7	SJM
1801136-01	D	3 & 4-Methylphenol	01/18/18 10:35	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	1.07	4.00	N7	SJM
1801136-01	D	Hexachlorobenzene	01/18/18 10:35	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	0.610	2.00	N7	SJM
1801136-01	D	Hexachlorobutadiene	01/18/18 10:35	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	0.880	2.00	N7	SJM
1801136-01	D	Hexachloroethane	01/18/18 10:35	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	1.09	2.00	N7	SJM
1801136-01	D	Nitrobenzene	01/18/18 10:35	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	1.84	5.00	N7	SJM
1801136-01	D	Pentachlorophenol	01/18/18 10:35	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	6.10	10.00	N7	SJM
1801136-01	D	Pyridine	01/18/18 10:35	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	1.55	2.00	N7	SJM
1801136-02	D	2,4-D	01/18/18 10:35	8151A	1/30/18 09:33	**ND**	ug/L	2.1	40	E8	KDK *
1801136-02	D	Silvex (2,4,5-TP)	01/18/18 10:35	8151A	1/30/18 09:33	**ND**	ug/L	1.7	10	E8	KDK *

* Analysis Performed by:TestAmerica Denver - See attached contract lab report for official results.

1801136-02	D	Cyanide, Total	01/18/18 10:35	9014	1/25/18 14:15	**ND**	mg/Kg dry	4.4	10	E8, L3	NEL *

* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801136-02	D	Percent Solids	01/18/18 10:35	2540G	1/22/18 06:48	**1.9**	%	0.1	0.1		YET *
* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.											
1801136-02	D	Percent Moisture	01/18/18 10:35	2540G	1/22/18 06:48	**98.1**	%	0.1	0.1		YET *
* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.											
Well AV-06 (25003-2500)											
1801135-01	D	Depth to Water	01/18/18 12:50	NA	1/18/18 12:50	**284.3**	Feet				SMPLR
1801135-01	D	Specific Conductance	01/18/18 12:50	SM 2510B	1/18/18 12:50	**718**	uS/cm		1.00		SMPLR
1801135-01	D	pH	01/18/18 12:50	SM4500 H B	1/18/18 12:50	**7.5**	pH Units				SMPLR
1801135-01	D	Temp at time of pH, °C	01/18/18 12:50	SM4500 H B	1/18/18 12:50	**28.5**	°C				SMPLR
1801135-01	D	Antimony	01/18/18 12:50	EPA 200.8	2/7/18 15:17	**ND**	ug/L	0.21	1.00		JB
1801135-01	D	Arsenic	01/18/18 12:50	EPA 200.8	2/7/18 15:17	**1.11**	ug/L	0.07	1.00		JB
1801135-01	D	Beryllium	01/18/18 12:50	EPA 200.8	2/7/18 15:17	**ND**	ug/L	0.33	1.00		JB
1801135-01	D	Cadmium	01/18/18 12:50	EPA 200.8	2/7/18 15:17	**ND**	ug/L	0.07	1.00		JB
1801135-01	D	Calcium	01/18/18 12:50	EPA 200.7	1/25/18 11:18	**57.0**	mg/L	0.02	4.00		MLB
1801135-01	D	Chloride	01/18/18 12:50	SM4500-Cl-E	2/10/18 10:32	**106**	mg/L	0.85	6.00		MGA
1801135-01	D	Chromium	01/18/18 12:50	EPA 200.8	2/7/18 15:17	**0.35**	ug/L	0.03	1.00	J	JB
1801135-01	D	Copper	01/18/18 12:50	EPA 200.8	2/7/18 15:17	**ND**	ug/L	0.36	1.00		JB
1801135-01	D	Cyanide	01/18/18 12:50	SM4500-CN-E	1/24/18 13:01	**ND**	ug/L	1.61	5.00		DCR
1801135-01	D	Cyanide Amenable	01/18/18 12:50	SM 4500-CN-G	1/24/18 13:01	**NA**	ug/L	1.61	5.00	N7	DCR
1801135-01	D	Fluoride	01/18/18 12:50	SM4500-F-C	1/27/18 08:22	**0.16**	mg/L	0.004	0.10		MGA
1801135-01	D	Hardness	01/18/18 12:50	SM 2340B	1/25/18 11:18	**165**	mg/L	0.05	9.99		MLB
1801135-01	D	Iron	01/18/18 12:50	EPA 200.7	1/26/18 12:04	**676**	ug/L	6.45	25.00		MLB
1801135-01	D	Lead	01/18/18 12:50	EPA 200.8	2/7/18 15:17	**0.02**	ug/L	0.01	1.00	J	JB
1801135-01	D	Magnesium	01/18/18 12:50	EPA 200.7	1/25/18 11:18	**5.54**	mg/L	0.004	2.00		MLB
1801135-01	D	Manganese	01/18/18 12:50	EPA 200.8	2/7/18 15:17	**17.7**	ug/L	0.12	1.00		JB
1801135-01	D	Mercury	01/18/18 12:50	EPA 245.1	1/25/18 09:57	**ND**	ug/L	0.19	0.20		DML
1801135-01	D	Nickel	01/18/18 12:50	EPA 200.8	2/7/18 15:17	**0.31**	ug/L	0.24	1.00	J	JB
1801135-01	D	Nitrate	01/18/18 12:50	Calculated	1/20/18 11:44	**2.23**	mg/L	0.02	0.20		MGA
1801135-01	D	Nitrate/Nitrite	01/18/18 12:50	EPA 353.2	1/20/18 11:44	**2.28**	mg/L	0.02	0.20		MGA
1801135-01	D	Nitrite	01/18/18 12:50	SM4500-NO2 B	1/19/18 11:40	**0.05**	mg/L	0.02	0.20	J	MGA
1801135-01	D	Total Kjeldahl Nitrogen	01/18/18 12:50	EPA 351.2	1/26/18 13:40	**0.38**	mg/L	0.36	0.80	J	HAV
1801135-01	D	Nitrogen Total Water	01/18/18 12:50	Calculated	1/26/18 13:40	**2.66**	mg/L	0.36	0.80		HAV
1801135-01	D	Potassium	01/18/18 12:50	EPA 200.7	1/25/18 11:18	**3.87**	mg/L	0.15	2.00		MLB
1801135-01	D	Selenium	01/18/18 12:50	EPA 200.8	2/7/18 15:17	**0.90**	ug/L	0.48	1.00	J	JB
1801135-01	D	Silver	01/18/18 12:50	EPA 200.8	2/7/18 15:17	**ND**	ug/L	0.03	1.00		JB
1801135-01	D	Sodium	01/18/18 12:50	EPA 200.7	1/25/18 11:18	**82.0**	mg/L	1.59	4.00		MLB
1801135-01	D	Sulfate	01/18/18 12:50	SM4500-SO4 F	1/20/18 13:56	**50.0**	mg/L	14.0	50.00		MGA
1801135-01	D	Thallium	01/18/18 12:50	EPA 200.8	2/7/18 15:17	**ND**	ug/L	0.01	1.00		JB
1801135-01	D	Alkalinity Total	01/18/18 12:50	SM 2320B	1/24/18 14:20	**140**	mg/L		20.00		JAH
1801135-01	D	Bicarbonate Alkalinity	01/18/18 12:50	SM 2320B	1/24/18 14:20	**140**	mg/L		20.00		JAH
1801135-01	D	Coliform, Total	01/18/18 12:50	SM 9223B	1/19/18 15:09	**Absence**	CFU/100 ml				JEL
1801135-01	D	E. Coli	01/18/18 12:50	SM 9223B	1/19/18 15:09	**Absence**	CFU/100 ml				JEL
1801135-01	D	Total Dissolved Solids	01/18/18 12:50	SM 2540C	1/23/18 13:59	**421**	mg/L		10.00		SDR
1801135-01	D	1,1,1-Trichloroethane	01/18/18 12:50	EPA 624	1/18/18 16:33	**ND**	ug/L	0.19	0.50		SRM
1801135-01	D	1,1,2,2-Tetrachloroethane	01/18/18 12:50	EPA 624	1/18/18 16:33	**ND**	ug/L	0.06	0.50		SRM
1801135-01	D	1,1,2-Trichloroethane	01/18/18 12:50	EPA 624	1/18/18 16:33	**ND**	ug/L	0.09	0.50		SRM
1801135-01	D	1,1-Dichloroethane	01/18/18 12:50	EPA 624	1/18/18 16:33	**ND**	ug/L	0.17	0.50		SRM
1801135-01	D	1,1-Dichloroethene	01/18/18 12:50	EPA 624	1/18/18 16:33	**ND**	ug/L	0.11	0.50		SRM
1801135-01	D	1,2-Dichlorobenzene	01/18/18 12:50	EPA 624	1/18/18 16:33	**ND**	ug/L	0.08	0.50		SRM
1801135-01	D	1,2-Dichloroethane	01/18/18 12:50	EPA 624	1/18/18 16:33	**ND**	ug/L	0.09	0.50		SRM
1801135-01	D	1,2-Dichloropropane	01/18/18 12:50	EPA 624	1/18/18 16:33	**ND**	ug/L	0.10	0.50		SRM
1801135-01	D	1,3-Dichlorobenzene	01/18/18 12:50	EPA 624	1/18/18 16:33	**ND**	ug/L	0.08	0.50		SRM
1801135-01	D	1,4-Dichlorobenzene	01/18/18 12:50	EPA 624	1/18/18 16:33	**ND**	ug/L	0.17	0.50		SRM
1801135-01	D	2-Chloroethyl vinyl ether	01/18/18 12:50	EPA 624	1/18/18 16:33	**ND**	ug/L	0.26	0.50		SRM
1801135-01	D	Benzene	01/18/18 12:50	EPA 624	1/18/18 16:33	**ND**	ug/L	0.11	0.50		SRM
1801135-01	D	Bromodichloromethane	01/18/18 12:50	EPA 624	1/18/18 16:33	**ND**	ug/L	0.24	0.50		SRM
1801135-01	D	Bromoform	01/18/18 12:50	EPA 624	1/18/18 16:33	**ND**	ug/L	0.30	0.50		SRM
1801135-01	D	Bromomethane	01/18/18 12:50	EPA 624	1/18/18 16:33	**ND**	ug/L	0.13	1.00		SRM

Qualifier Definitions

<	<1
<	<12.5
>	>8
A	Absence
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D4	Minimum Reporting Limit (MRL) adjusted to reflect sample amount received and analyzed.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H6	The filtration was not done within the required 15 minutes of sampling, the sample was filtered in the laboratory.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
K9	Test replicates show more than 30% difference between high and low values.
L2	The associated blank spike recovery was below laboratory acceptance limits.
L3	The associated blank spike recovery was above method acceptance limits.
L5	The associated blank spike recovery was above laboratory/method acceptance limits. This analyte was not detected in the sample.
N1	See case narrative.
N7	Additional analysis was not performed based on the "Total" result which was below the requested analyte's MCL/Action level/Trigger Level.
NA	Not Analyzed
NC	Not Calculable
PC3	Semi-quantitation is included in the case narrative.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate

FB	Field Blank
UC	Under Construction

Case Narrative(s)

1801136-01
EPA Method 625/8270 Pesticides: Target analytes flagged with N1 for this method failed the matrix spike RPD from the same extraction batch but the spike was perofrmed on a different sample. KLH 01/25/18

Semi-Quantitation
Method: 625
1801136-01

Compound Name	Concentration-mg/Kg
Benzeneacetic Acid	126
Palmitic Acid	2685
Oleic Acid	2593
Stearic Acid	910
Butanoic Acid	1494
Butanoic Acid, 3-methyl-	1410
Pentanoic Acid	739
Propanoic Acid	263
Butanoic Acid, 2-methyl-	650
Pentanoic Acid, 2-methyl-	189

SJM 02/20/18

1801157-01,02,03
Ceriodaphina dubia Reproduction. C. dubia showed toxicity for reproduction at a NOEC of <12.5%, a LOEC of 12.5%, TU of 8, an IC25TU of 15.3. The associated reference toxicity test showed a dip in the control charts below the action limit. Test organisms were having dead neonates. This was found true in the cultures as well. A re-sample of this analysis was preformed by Bio-Aquatic Testing on WO#1802086-01,03,05. New inhouse cultures have been started from outside vendor. JVR 3-20-18

1801188-01, 02
EPA Method 625/8270 Pesticides: Target Analytes flagged with N1 for this method failed the matrix spike RPD from the same extraction batch but the spike was performed on a different sample. KLH 02/15/18

Semi-Quantitation
Method: 625
1801188-02

Compound Name	Concentration-ug/L
Phthalic Acid, bis(7-methyloctyl) ester	178

SJM 03/15/18

Semi-Quantitation
Method: 625
1801188-01

Compound Name	Concentration-ug/L
Benzoic Acid	156
Benzeneacetic Acid	110
N,N-Dimethyl-1-dodecanamine	559
Tetradecanoic Acid	112
Palmitic Acid	18317
Oleic Acid	19912
Stearic Acid	10133

SJM 03/15/18

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1801024-05

PROJECT & LOCATION: Avra Valley RWRF Wet Haul Sludge

PROJECT-LOCATION NUMBER: 25003-1573 (XXXXX-XXXX)

SAMPLE START DATE: _____ (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: _____ (Military time)

CLIENT: Sub Regional Facilities

SAMPLE END DATE: 01/03/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0837 (Military time)

SAMPLER(S): CORNELIUS (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ☐ 503 ☐ AZPDES ☐ Reuse ■ Process Control ☐ IWC ☐ Air ☐ Other _____

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other _____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	☐	☐	☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	☐	☐	☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total	☐	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other _____	☐	☐
Other _____	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other _____	☐	☐
Other _____	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other _____	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	■	☐
Solids, Volatile Suspended	☐	☐
Other _____	☐	☐

OTHER	D	C
Paint Filter	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*	_____	µg/L
☐ Specific Conductance *SM 2510 B*	_____	µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*	_____	mg/L
☐ pH @ pH Temp *SM 4500-H B*	_____ @	pH Units @ ° C
☐ Temperature *SM 2550 B*	_____	° C
☐ Total Depth of Well	_____	feet
☐ Depth to Water	_____	feet
☐ Other _____	_____	_____

Comments/Instructions:

Septum Blank Prep Date & Initials:

Chain of Custody Record (Signatures Only)

Relinquished by:	Received by:	Date:	Time: (Military time)
Bond Cornelius	Sample Refrigerator	1-3-18	0846
Sample Refrigerator	[signature]	1/3/18	1130
[signature]	[signature]	01-03-18	1226

Sample Integrity/Preservation:

of Bottles Delivered: 1 GOS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 4 °C

Initials: GOS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☒	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Ba, Cd, Cr, Pb, Hg, Se, Ag, Tl, Zn

COC-Single Revision 2 Revised: 03/12/2015

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1801136-01

PROJECT & LOCATION: Avra Valley Wet Haul Sludge (Annual)

PROJECT-LOCATION NUMBER: 25003-1573 (XXXXX-XXXX)

SAMPLE START DATE: _____ (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: _____ (Military time)

CLIENT: IWC

SAMPLE END DATE: 01-18-2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 1035 (Military time)

SAMPLER(S): Silva, Kaufman (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other _____

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other _____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	×		■	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	×		■	☐
TCLP Metals			■	☐
503 Metals **			■	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total	☐	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other _____	☐	☐
Other _____	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	■	☐
Dioxin GC/SIM/MS Scan	■	☐
Organochlorine Pesticides & PCBs	■	☐
Purgeable Organics (GCMS)	■	☐
Semivolatile Organics (GCMS)	■	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	■	☐
TCLP Semivolatile Organics	■	☐
TCLP Volatile Organics	■	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other _____	☐	☐
Other _____	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other _____	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other _____	☐	☐

OTHER	D	C
Paint Filter	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*	_____	µg/L
☐ Specific Conductance *SM 2510 B*	_____	µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*	_____	mg/L
☐ pH @ pH Temp *SM 4500-H B*	_____ @	pH Units @ °C
☐ Temperature *SM 2550 B*	_____	°C
☐ Total Depth of Well	_____	feet
☐ Depth to Water	_____	feet
☐ Other _____	_____	_____

Comments/Instructions:

Septum Blank Prep Date & Initials: 01-09-18 lej

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	01-18-18	1456
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

# of Bottles Delivered: 11 GOS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 3 °C

Initials: GOS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☒	☐	☐
Received from a refrigerator?	☐	☒	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1801136-02

PROJECT & LOCATION: Avra Valley Wet Haul Sludge (Annual)

PROJECT-LOCATION NUMBER: 25003-1573 (XXXXX-XXXX)

SAMPLE START DATE: ____ (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: ____ (Military time)

CLIENT: IWC

SAMPLE END DATE: 01-18-2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 1035 (Military time)

SAMPLER(S): Silva, Kaufman (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other ____

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other ____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury			☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *			☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total (contract)	■	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other ____	☐	☐
Other ____	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	■	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other ____	☐	☐
Other ____	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other ____	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total (contract)	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other ____	☐	☐

OTHER	D	C
Paint Filter	☐	☐
____	☐	☐
____	☐	☐
____	☐	☐
____	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*	____	µg/L
☐ Specific Conductance *SM 2510 B*	____	µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*	____	mg/L
☐ pH @ pH Temp *SM 4500-H B*	____ @	pH Units @ °C
☐ Temperature *SM 2550 B*	____	°C
☐ Total Depth of Well	____	feet
☐ Depth to Water	____	feet
☐ Other ____	____	____

Comments/Instructions: Sent to Test America GOS 01-18-18 D0418-020068

Septum Blank Prep Date & Initials: ____ ____

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	01-18-18	1456
[signature]	Mike Rose	1224	1/19/18
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

of Bottles Delivered: 3 GOS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 3 °C

Initials: GOS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY WASTEWATER MANAGEMENT
INDUSTRIAL WASTEWATER CONTROL SECTION
SAMPLE COLLECTION FIELD NOTES

1801136-01 + 02

SAMPLE LOCATION: **Avra Valley Wet Haul Sludge**

LOCATION ID: **25003-1573** SAMPLERS: Silva, Kaufman (Last names only, primary sampler first.) SAMPLE DATE: 1-18-18

SAMPLE D or C	PARAMETER	START TIME	END TIME	FREQUENCY	Time Flow	Auto Man.	Volume Submitted	BOTTLE TYPE	PRESERVATION
D	Priority Pollutant Metals			Grab			1000ml	DM Plastic	Ice
D	503 Metals			1-18-18				DM Plastic	Ice
D	Cyanide, Total			1035			1000 ml	DM Plastic	Ice
D	Organochlorine Pesticides						1000 ml	Amber	Ice
D	Semivolatile Organics						1000 ml	Amber	Ice
D	Dioxin Scan						1000 ml	Amber	Ice
D	Solids, Total						1000 ml	Gen Purpose	Ice
D	Solids, Total						1000 ml	Gen Purpose	Ice
D	TCLP Herbicides (Cont Lab)						1000 ml	Amber	Ice
D	TCLP Pesticides						1000 ml	Amber	Ice
D	TCLP Semivolatile Organics						1000 ml	Amber	Ice
D	TCLP Volatile Organics						40 ml	Septum	Ice
D	TCLP Volatile Organics						40 ml	Septum	Ice
D	TCLP Volatile Organics						40 ml	Septum	Ice
D	TCLP Volatile Organics						40 ml	Septum	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice

pH METER CALIBRATION LOG

Time	Model #	Serial #	Auto/Man.	Buffer	Reading	Buffer	Reading	Temp.	Slope	Initials

N/A

FIELD MEASUREMENTS

Sample	Parameter & Method	Result	Time	Initials	Sample	Parameter & Method	Result	Time	Initials

N/A

Notes:

EQUIPMENT USED: ■ Grab Sampler ☐ Automatic Sampler ☐ Electric Pump ☐ Other _____

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Joe Doranski	Site Contact:	Date:	COC No:
Pima County CRAO Lab	Tel/Fax: 520-724-6032	Lab Contact:	Carrier:	___ of ___ COCs
2955 W. Calle Agua Nueva	Analysis Turnaround Time			Sampler: Riccaboni + Silva
Tucson/AZ/85745	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(520) 724-6032 Phone	TAT if different from Below _____			Walk-in Client:
(520) 724-6075 FAX	☑ 2 weeks			Lab Sampling:
Project Name: AV & GV	☐ 1 week			
Site: Green Valley & Avra Valley WRF	☐ 2 days			Job / SDG No.:
P O # 18-020068	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Cyanide total mg/kg dry	Total % solids for mg/kg dry	TCLP herbicides	Sample Specific Notes:
Green Valley WRF wet haul sludge 25000-1962											BS - biosolids
1801126-02	1/17/18	0925	Grab	BS	3	N		1	1	1	mg/kg dry
Avra Valley WRF wet haul sludge 25003-1573											BS - biosolids
1801136-02	1/18/18	1035	Grad	BS	3	N		1	1	1	mg/kg dry

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Greg Spencer for samplers	PC CRAO Lab	01-18-18 1456		PC CRAO	01-18-18 1456
	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PC CRAO	01-19-18 1224	Mike Root 1224	1/19/18	
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

PIMA COUNTY
WASTEWATER RECLAMATION
COMPLIANCE AND REGULATORY AFFAIRS OFFICE LABORATORY
2955 W Calle Agua Nueva, Tucson, AZ 85745
Telephone: (520) 724-6200

LIMS CHECKLIST FOR SUBCONTRACT DATA

LIMS ID	**1801126-02, 1801136-02**	**DO**	**18-020068**
CONTRACT LAB	**TestAmerica PHX, DEN**	**SAMPLE GROUP**	**AV & GV**
ANALYSES	**Cyanide sludge, % TS, TCLP Herbicides,**	**REPORT ID**	**550-96600-1**

TRANSFER & CONVERT FILES:	
Was the contract lab spreadsheet file saved to \\Splimsapp\elementshare\TransferIn ?	Y
Was the above mentioned file converted from a .xls file to a .mdb file for each WO#, and further, for each subcontract location, or separate analysis (as applicable), on the contract lab report? (Element>Project Management>Reports)	Y
Was the converted file attached to the sample in LIMS?	Y
VALIDATING CONTRACT LAB REPORT , CHAIN OF CUSTODY(S), AND DO#:	
Contract Lab Report signed and dated?	Y
Copy of contract lab COC included with contract Lab Report?	Y
Contract lab COC verified with CRAO COC(s) for Sample ID, Sample Date, Analysis Requested?	Y
Sample dates and received dates on the CL report, match the CL COC?	Y
CL report includes all requested analysis?	Y
CL licensed in AZ for the reported methods?	Y
Check that DO matches COC in types and number of tests?	N/A
DO received in Pima Core?	Y
CONTRACT LAB REPORT, EXCEL SPREADSHEET, and QC:	
CL report and CL spreadsheet report the same sample results, sample date, and analysis date?	Y
Was a Case Narrative Included in Contract Lab report?	Y
Data packet includes QC Report from primary lab and any secondary subcontract labs?	Y
Did CL report list applicable AZ Data Qualifiers?	Y
Were there any dilutions made to samples that were reported as ND?	N
If so, were they qualified due to matrix interference?	N/A
Was QC included for every analysis method: typically Blk, LCS, MS, MSD?	Y
Did QC pass stated acceptance limits, or was it qualified?	Y
Were samples analyzed within required holding times?	Y
Check that MDLs are below water quality standards, If not notify Belinda Gamboa-Felix? (Cyanide, Hexachlorobenzene)	N/A
Semivolatiles & Volatiles: Check that all analytes were delivered?	N/A
COMPLIANCE LIMIT REVIEW	
Were results compared to the discharge permit?.	N/A
Was Belinda Gamboa-Felix notified of any exceedences?	N/A
WET TESTING SPECIFIC REQUIREMENTS	
Statement of Pass/Fail reflected in End Points?	N/A
Report states if zeolite treatment was utilized?	N/A
Survival and Reproduction or Growth Data included (P. promelas or Ceriodaphnia only)?	N/A
Chemistry data included?	N/A

Reference Toxicant Test Results and Control Chart within limits?			N/A
PMSD Determination included and within acceptable range? (minimum acceptable= 13)			N/A
End Points include TUc, NOEC, LOEC, and IC25?			N/A
Statistics verify endpoints			N/A
Control Charts Updated to include month of analysis			N/A
Reviewer Initials:	**JD**	**Review Date:**	**03-26-18**

PEER/FINAL REVIEW:			PR	FR
LIMS/Excel data matches printed CL report?			✓	
Analysis dates are correct?			✓	
Correct Data Qualifiers included if necessary.			✓	
CRAO report shows result is from Contract Lab?			✓	
CRAO report shows correct Contract Lab (e.g. Test America, Phoenix)?			✓	
DO received in Pima Core			✓	
Analysis set to Reported?				✓
Peer Reviewer Initials:	JD	**Review Date:**	3-26-18	
Biomonitor Supervisor Initials:	N/A	**Review Date:**		
Final Reviewer Initials:	JEC	**Review Date:**	3·26·18	

CORRECTIVE ACTION REPORT:			
Preliminary Review:		Date:	
QA/QC Review:		Date:	
Data Entry:		Date:	
Peer Review:		Date:	
Lab Supervisor:		Date:	

LIMS #:	**DEVIATION:**	**CORRECTIVE ACTION:**
1801126-02	Missing M1 qualifier for EPA 8151A	Revised report (REV (1))

DEVIATIONS FROM ACCEPTABLE QA/QC:

Missing QC Report/Data
Holding Time for analysis exceeded.
Inappropriate dilution performed.
Missing COC.
Missing Data Qualifiers.
Incorrect Analysis Method.
Incorrect Sample IDs.
Other.

CORRECTIVE ACTION:

Request report correction from Subcontract Lab project manager.
Add missing Data Qualifiers.
Notify data end-user of deviation.
Arrange for resampling.
Other.

Joseph Doranski

From: Eshelman, Linda <Linda.Eshelman@testamericainc.com>
Sent: Monday, March 12, 2018 15:49
To: Joseph Doranski
Cc: Jenelle Chraft
Subject: RE: Job 550-96602-1
Attachments: 550-96600-1.xls; J96600-1 UDS Level 2 Report Rev(1) Final Report.pdf

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

Joseph,

I have attached the revised report with the addition of the M1 flag on sample 550-96600-1, method 8151.

Thank you

Linda

LINDA ESHELMAN
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
Main Tel 602.437.3340 / Direct Line 602.659.7629

www.testamericainc.com

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at : Project Feedback https://www.surveymonkey.com/s/TAProjectFeedback

This e-mail communication, including any attachments, may contain privileged or confidential information for the use of the recipient(s) named above and is protected by law. If you are not the intended recipient(s), you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited and you should delete this message and its attachments from your computer without retaining any copies. If you have received this communication in error, please reply to the sender immediately. We appreciate your cooperation

From: Joseph Doranski [mailto:Joseph.Doranski@pima.gov]
Sent: Friday, March 09, 2018 2:33 PM

To: Eshelman, Linda
Cc: Jenelle Chraft
Subject: FW: Job 550-96602-1

-External Email-

Hello Linda,

Please see below, as I am sure you have had a lot of catching up to do.
Regards,

From: Joseph Doranski
Sent: Wednesday, February 28, 2018 9:59 AM
To: Linda.eshelman@testamericainc.com
Cc: Jenelle Chraft <Jenelle.Chraft@pima.gov>
Subject: Job 550-96602-1

Good morning Linda,

I am currently reviewing the EDD and report for job 550-96602-1, and I believe I have found an omission. On the report section 9, QC Sample Results, the matrix spike has an M1 qualifier, with our sample(1801126-02) being spiked. The M1 qualifier did not show up in section 7, Client Sample Results, nor is it on the EDD. Will you, at your earliest convenience, investigate and send us a revised report and EDD with the M1 qualifier attached to the EDD and the report? Please contact me if you feel that I am mistaken, or if you have any questions or concerns.

Respectfully,

Joseph Doranski
Quality Assurance Unit Chemist Specialist
RWRD CRAO – Laboratory
2955 W Calle Agua Nueva
Tucson AZ 85745
520-724-6032
Joseph.doranski@pima.gov
Plesese consider the environment; print only if necessary

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-96600-1
TestAmerica SDG: Green Valley & Avra Valley WRF
Client Project/Site: AV & GV
Revision: 1

For:
Pima County WWTP
PO BOX 791
Tucson, Arizona 85701

Attn: Joseph Doranski

Authorized for release by:
3/12/2018 3:46:55 PM

Linda Eshelman, Project Manager II
(602)659-7629
linda.eshelman@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Sample Summary 5
Detection Summary 6
Client Sample Results 7
Surrogate Summary 8
QC Sample Results 9
QC Association Summary 11
Lab Chronicle 13
Certification Summary 14
Method Summary 15
Chain of Custody 16
Receipt Checklists 18

Definitions/Glossary

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
R4	MS/MSD RPD exceeded the method control limit. Recovery met acceptance criteria.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.

General Chemistry

Qualifier	Qualifier Description
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
L3	The associated blank spike recovery was above method acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Job ID: 550-96600-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-96600-1

Comments
No additional comments.

Receipt
The samples were received on 1/19/2018 2:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.9° C.

GC Semi VOA
Method(s) 8151A: The matrix spike/matrix spike duplicate (MS/MSD) recoveries for preparation batch 280-402680 and 280-402821 and analytical batch 280-403058 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method:8151
Batch:280-403058

Method(s) 8151A: The samples 1801126-02 (550-96600-1), (550-96600-C-1-C MS) and (550-96600-C-1-D MSD) had numerous non-target peaks and significant baseline rise that could be interfering with the identification and quantitation of target analytes. This inference could cause false positive and/or negative results.

Method:8151
Batch:280-403058

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method(s) 9014: The laboratory control sample duplicate (LCSD) for analytical batch 550-137947 recovered outside control limits for the following analytes: Cyanide, Total by method EPA 9014. This analyte was biased high in the LCSD and was not detected in the associated samples; therefore, these data have been reported with L3 flags.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method(s) 1311: These samples are multiphasic, they were filtered overnight and the filteration was ended at 24 hours. Our SOP is to stop after 24 hours to avoid loss of volities. Sample one had a fair amount of liquid. Sample 2 was pretty much done with only wet solids remaining. For 1311 Herbicides in batch preparation batch 280-402680 .

1801126-02 (550-96600-1) and 1801123-02 (550-96600-2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

The original report was revised to include the missing M1 flag on sample 550-96600-1 (1801126-02), method 8141, 2,4-D.

Sample Summary

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-96600-1	1801126-02	Solid	01/17/18 09:25	01/19/18 14:35
550-96600-2	1801136-02	Solid	01/18/18 10:35	01/19/18 14:35

Detection Summary

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Client Sample ID: 1801126-02 — Lab Sample ID: 550-96600-1

No Detections.

Client Sample ID: 1801136-02 — Lab Sample ID: 550-96600-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Client Sample ID: 1801126-02

Lab Sample ID: 550-96600-1
Matrix: Solid
Date Collected: 01/17/18 09:25
Date Received: 01/19/18 14:35

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND	E8 M1 R4	40	2.1	ug/L		01/25/18 17:22	01/30/18 08:02	1
Silvex (2,4,5-TP)	ND	E8 R4	10	1.7	ug/L		01/25/18 17:22	01/30/18 08:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*66*		*10 - 131*	*01/25/18 17:22*	*01/30/18 08:02*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	96.3		0.1	0.1	%			01/22/18 06:48	1
Percent Solids	3.7		0.1	0.1	%			01/22/18 06:48	1

Client Sample ID: 1801126-02

Lab Sample ID: 550-96600-1
Matrix: Solid
Date Collected: 01/17/18 09:25
Date Received: 01/19/18 14:35
Percent Solids: 3.7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	E8 L3	5.2	2.2	mg/Kg	☼	01/24/18 13:07	01/25/18 14:15	1

Client Sample ID: 1801136-02

Lab Sample ID: 550-96600-2
Matrix: Solid
Date Collected: 01/18/18 10:35
Date Received: 01/19/18 14:35

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND	E8	40	2.1	ug/L		01/25/18 17:22	01/30/18 09:33	1
Silvex (2,4,5-TP)	ND	E8	10	1.7	ug/L		01/25/18 17:22	01/30/18 09:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*69*		*10 - 131*	*01/25/18 17:22*	*01/30/18 09:33*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	98.1		0.1	0.1	%			01/22/18 06:48	1
Percent Solids	1.9		0.1	0.1	%			01/22/18 06:48	1

Client Sample ID: 1801136-02

Lab Sample ID: 550-96600-2
Matrix: Solid
Date Collected: 01/18/18 10:35
Date Received: 01/19/18 14:35
Percent Solids: 1.9

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	E8 L3	10	4.4	mg/Kg	☼	01/24/18 13:07	01/25/18 14:15	1

Surrogate Summary

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: TCLP**

Lab Sample ID	Client Sample ID	DCPAA1 (10-131)
550-96600-1	1801126-02	66
550-96600-1 MS	1801126-02	83
550-96600-1 MSD	1801126-02	30
550-96600-2	1801136-02	69
LB 280-402680/1-C	Method Blank	79
LCS 280-402680/2-C	Lab Control Sample	62

Percent Surrogate Recovery (Acceptance Limits)

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid

Accreditation/Certification Summary

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Laboratory: TestAmerica Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0728	06-09-18

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-19
A2LA	ISO/IEC 17025		2907.01	10-31-19
Alabama	State Program	4	40730	09-30-12 *
Alaska (UST)	State Program	10	UST-30	04-05-18
Arizona	State Program	9	AZ0713	12-20-18
Arkansas DEQ	State Program	6	88-0687	06-01-18
California	State Program	9	2513	01-18-19
Connecticut	State Program	1	PH-0686	09-30-18
Florida	NELAP	4	E87667	06-30-18
Georgia	State Program	4	N/A	01-08-18 *
Illinois	NELAP	5	200017	04-30-18
Iowa	State Program	7	370	12-01-18
Kansas	NELAP	7	E-10166	04-30-18
Louisiana	NELAP	6	02096	06-30-18
Maine	State Program	1	CO0002	03-03-19
Minnesota	NELAP	5	8-999-405	12-31-18
Nevada	State Program	9	CO0026	07-31-18
New Hampshire	NELAP	1	205310	04-28-18
New Jersey	NELAP	2	CO004	06-30-18
New York	NELAP	2	11964	04-01-18
North Carolina (WW/SW)	State Program	4	358	12-31-18
North Dakota	State Program	8	R-034	01-08-19
Oklahoma	State Program	6	8614	08-31-18
Oregon	NELAP	10	4025	01-08-19
Pennsylvania	NELAP	3	68-00664	07-31-18
South Carolina	State Program	4	72002001	01-08-19
Texas	NELAP	6	T104704183-17-14	09-30-18
USDA	Federal		P330-16-00397	12-15-19
Utah	NELAP	8	CO00026	07-31-18
Virginia	NELAP	3	460232	06-14-18
Washington	State Program	10	C583	08-03-18
West Virginia DEP	State Program	3	354	12-31-18
Wisconsin	State Program	5	999615430	08-31-18
Wyoming (UST)	A2LA	8	2907.01	10-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Method	Method Description	Protocol	Laboratory
8151A	Herbicides (GC)	SW846	TAL DEN
2540G	SM 2540G	SM22	TAL PHX
9014	Cyanide	SW846	TAL PHX

Protocol References:

SM22 = SM22

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax

96600

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

3/12/2018 (Rev. 1)

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

Client Contact	Project Manager: Joe Doranski	Site Contact:	Date:	COC No:
Pima County CRAO Lab	Tel/Fax: 520-724-6032	Lab Contact:	Carrier:	___ of ___ COCs
2955 W. Calle Agua Nueva	Analysis Turnaround Time			Sampler: Riccaboni + Silva
Tucson/AZ/85745	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(520) 724-6032 Phone	TAT if different from Below ____			Walk-in Client:
(520) 724-6075 FAX	☑ 2 weeks			Lab Sampling:
Project Name: AV & GV	☐ 1 week			
Site: Green Valley & Avra Valley WRF	☐ 2 days			Job / SDG No.:
P O # 18-020068	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Cyanide total mg/kg dry	Total % solids for mg/kg dry	TCLP herbicides	Sample Specific Notes:
Green Valley WRF wet haul sludge 25000-1962											BS - biosolids
1801126-02 -01	1/17/18	0925	Grab	BS	3	N		1	1	1	mg/kg dry
Avra Valley WRF wet haul sludge 25003-1573											BS - biosolids
1801136-02 -02	1/18/18	1035	Grad	BS	3	N		1	1	1	mg/kg dry

550-96600 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☑Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐Return to Client ☑Disposal by Lab ☐Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ____ Corr'd: 2.9 | Therm ID No.: ____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Greg Spanos for samplers	PC CRAO Lab	01-18-18 1456		PC CRAO	01-18-18 1456
	Company: PC CRAO	Date/Time: 01-19-18 1224	Received by: Mike Root 1224	Company: 1/19/18	Date/Time:
Relinquished by: Mike Root 1435	Company: 1/19/18	Date/Time:	Received in Laboratory by:	Company: TA	Date/Time: 1/19/18 1435

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Page 16 of 19

TestAmerica Phoenix
4625 East Cotton Ctr Blvd Suite 189
Phoenix, AZ 85040
Phone (602) 437-3340 Fax (602) 454-9303

Chain of Custody Record

TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Eshelman, Linda	Carrier Tracking No(s):	COC No: 550-19959.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: linda.eshelman@testamericainc.com	State of Origin: Arizona	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Arizona		Job #: 550-96600-1
Address: 4955 Yarrow Street,	Due Date Requested: 1/26/2018			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: General CRAO Lab	Project #: 55001656			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/1311_T TCLP 8151	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
1801126-02 (550-96600-1)	1/17/18	09:25 Arizona		Solid			X	1	
1801123-02 (550-96600-2)	1/18/18	10:35 Arizona		Solid			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does no currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification Unconfirmed	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[illegible] 1-19-18	15:45	TA Phx Lab	[illegible]	1-20-18 0840	TA-Dev
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks: 2.3 IR #8 +0.1 transfer RP 1-20-18

Ver: 09/20/2016

Login Sample Receipt Checklist

Client: Pima County WWTP

Job Number: 550-96600-1
SDG Number: Green Valley & Avra Valley WRF

Login Number: 96600
List Number: 1
Creator: Gravlin, Andrea

List Source: TestAmerica Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Pima County WWTP

Job Number: 550-96600-1
SDG Number: Green Valley & Avra Valley WRF

Login Number: 96600
List Number: 2
Creator: Pottruff, Reed W

List Source: TestAmerica Denver
List Creation: 01/20/18 12:05 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 07/26/2018
Laboratory License: AZO159

Sample Analysis Report

Avra Valley WRF

April 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Arnoldt

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

8·13·18
Date

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
Final Effluent at the U.V. Channel (25003-1351)											
1804031-04	D	E. Coli	04/04/18 7:19	SM 9223B	4/5/18 13:16	<1	MPN/100 mL		1.0		TDA
1804088-01	D	E. Coli	04/11/18 6:51	SM 9223B	4/12/18 13:00	<1	MPN/100 mL		1.0		DEB
1804135-01	D	E. Coli	04/18/18 7:26	SM 9223B	4/19/18 11:48	<1	MPN/100 mL		1.0		NGF
1804186-01	D	E. Coli	04/25/18 7:35	SM 9223B	4/26/18 13:20	<1	MPN/100 mL		1.0		DEB
Wet Haul Sludge (25003-1573)											
1804041-01	D	% Solids	04/04/18 11:31	SM 2540G	4/6/18 12:20	**1.24**	%		0.01		TDA
1804041-01	D	% Solids, Total Volatile	04/04/18 11:31	SM 2540G	4/6/18 14:23	**71.4**	%		0.01		TDA
1804138-01	D	Antimony	04/18/18 9:00	EPA 6010D	4/20/18 13:52	**ND**	mg/kg dry		15.56		MLB
1804138-01	D	Arsenic	04/18/18 9:00	EPA 6010D	4/20/18 13:52	**ND**	mg/kg dry		15.56		MLB
1804138-01	D	Beryllium	04/18/18 9:00	EPA 6010D	4/20/18 13:52	**ND**	mg/kg dry		3.11		MLB
1804138-01	D	Cadmium	04/18/18 9:00	EPA 6010D	4/20/18 13:52	**ND**	mg/kg dry		6.22		MLB
1804138-01	D	Chromium	04/18/18 9:00	EPA 6010D	4/20/18 13:52	**ND**	mg/kg dry		15.56		MLB
1804138-01	D	Copper	04/18/18 9:00	EPA 6010D	4/20/18 13:52	**146**	mg/kg dry		15.56		MLB
1804138-01	D	Lead	04/18/18 9:00	EPA 6010D	4/20/18 13:52	**ND**	mg/kg dry		15.56		MLB
1804138-01	D	Mercury	04/18/18 9:00	EPA 7471B	4/23/18 14:38	**0.69**	mg/kg dry		0.00321		DML
1804138-01	D	Molybdenum	04/18/18 9:00	EPA 6010D	4/20/18 13:52	**9.59**	mg/kg dry		6.22		MLB
1804138-01	D	Nickel	04/18/18 9:00	EPA 6010D	4/20/18 13:52	**ND**	mg/kg dry		15.56		MLB
1804138-01	D	Selenium	04/18/18 9:00	EPA 6010D	4/20/18 13:52	**ND**	mg/kg dry		31.11		MLB
1804138-01	D	Silver	04/18/18 9:00	EPA 6010D	4/20/18 13:52	**ND**	mg/kg dry		1.56		MLB
1804138-01	D	Thallium	04/18/18 9:00	EPA 6010D	4/20/18 15:16	**ND**	mg/kg dry		15.56		MLB
1804138-01	D	Zinc	04/18/18 9:00	EPA 6010D	4/20/18 13:52	**533**	mg/kg dry		15.56		MLB
1804138-01	D	% Solids	04/18/18 9:00	SM 2540G	4/19/18 13:18	**1.56**	%		0.01		IYC
1804138-01	D	Acrolein	04/18/18 9:00	EPA 624	4/24/18 18:01	**ND**	mg/kg dry	0.00360	0.01		SRM
1804138-01	D	Acrylonitrile	04/18/18 9:00	EPA 624	4/24/18 18:01	**ND**	mg/kg dry	0.00280	0.01		SRM
1804138-01	D	4,4-DDD	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00006	0.00151	D1, D7	MSM
1804138-01	D	4,4-DDE	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00003	0.00151	D1, D7	MSM
1804138-01	D	4,4-DDT	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00006	0.00151	D1, D7	MSM
1804138-01	D	Aldrin	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00006	0.00151	D1, D7	MSM
1804138-01	D	alpha-BHC	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00004	0.00151	D1, D7, L3	MSM
1804138-01	D	beta-BHC	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00009	0.01	D1, D7	MSM
1804138-01	D	Chlordane	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00025	0.01	D1, D7	MSM
1804138-01	D	delta-BHC	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00007	0.00151	D1, D7	MSM
1804138-01	D	Dieldrin	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00015	0.00303	D1, D7	MSM
1804138-01	D	Endosulfan I	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00004	0.00151	D1, D7	MSM
1804138-01	D	Endosulfan II	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00003	0.00151	D1, D7	MSM
1804138-01	D	Endosulfan sulfate	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00004	0.00151	D1, D7, N1	MSM
1804138-01	D	Endrin	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00010	0.00151	D1, D7	MSM
1804138-01	D	Endrin aldehyde	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00011	0.00151	D1, D7	MSM
1804138-01	D	gamma-BHC (Lindane)	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00007	0.00151	D1, D7	MSM
1804138-01	D	Heptachlor	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00005	0.00151	D1, D7	MSM
1804138-01	D	Heptachlor Epoxide	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00004	0.00151	D1, D7	MSM
1804138-01	D	PCB 1016	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00006	0.00363	D1, D7	MSM
1804138-01	D	PCB 1221	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00017	0.01	D1, D7	MSM
1804138-01	D	PCB 1232	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00007	0.01	D1, D7	MSM
1804138-01	D	PCB 1242	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00013	0.01	D1, D7	MSM
1804138-01	D	PCB 1248	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00010	0.01	D1, D7	MSM
1804138-01	D	PCB 1254	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00019	0.01	D1, D7	MSM
1804138-01	D	PCB 1260	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00007	0.00303	D1, D7	MSM
1804138-01	D	Total PCBs	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00016	0.01	D1, D7	MSM
1804138-01	D	Toxaphene	04/18/18 9:00	EPA 625	5/2/18 15:45	**ND**	mg/kg dry	0.00094	0.02	D1, D7	MSM
1804138-01	D	Methoxychlor	04/18/18 9:00	EPA 8270C	5/2/18 15:45	**ND**	mg/kg dry		0.00151	D1, D7	MSM
1804138-01	D	1,1,1-Trichloroethane	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0002	0.00064		SRM
1804138-01	D	1,1,2,2-Tetrachloroethane	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.00006	0.00064		SRM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1804138-01	D	1,1,2-Trichloroethane	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.00009	0.00064		SRM
1804138-01	D	1,1-Dichloroethane	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0002	0.00064		SRM
1804138-01	D	1,1-Dichloroethene	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0001	0.00064		SRM
1804138-01	D	1,2-Dichlorobenzene	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.00008	0.00064		SRM
1804138-01	D	1,2-Dichloroethane	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.00009	0.00064		SRM
1804138-01	D	1,2-Dichloropropane	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0001	0.00064		SRM
1804138-01	D	1,3-Dichlorobenzene	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.00008	0.00064		SRM
1804138-01	D	1,4-Dichlorobenzene	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0002	0.00064		SRM
1804138-01	D	2-Chloroethyl vinyl ether	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0003	0.00064		SRM
1804138-01	D	Benzene	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0001	0.00064		SRM
1804138-01	D	Bromodichloromethane	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0002	0.00064		SRM
1804138-01	D	Bromoform	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0003	0.00064		SRM
1804138-01	D	Bromomethane	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0001	0.00064	R4	SRM
1804138-01	D	Carbon Tetrachloride	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0004	0.00064		SRM
1804138-01	D	Chlorobenzene	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.00006	0.00064		SRM
1804138-01	D	Chloroethane	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0002	0.00064	R4	SRM
1804138-01	D	Chloroform	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0001	0.00064	R4	SRM
1804138-01	D	Chloromethane	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0002	0.00064	R4	SRM
1804138-01	D	cis-1,3-Dichloropropene	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.00009	0.00064		SRM
1804138-01	D	Dibromochloromethane	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.00006	0.00064		SRM
1804138-01	D	Ethyl Benzene	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.00009	0.00064		SRM
1804138-01	D	Methylene Chloride	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0002	0.00064		SRM
1804138-01	D	Tetrachloroethene	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0002	0.00064		SRM
1804138-01	D	Toluene	04/18/18 9:00	EPA 624	4/23/18 11:46	**36.96**	mg/kg dry	0.0001	0.00064		SRM
1804138-01	D	Total Trihalomethanes	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0003	0.00064		SRM
1804138-01	D	trans-1,2-Dichloroethene	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0001	0.00064		SRM
1804138-01	D	trans-1,3-Dichloropropene	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0001	0.00064		SRM
1804138-01	D	Trichloroethene	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0001	0.00064		SRM
1804138-01	D	Trichlorofluoromethane	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0003	0.00064		SRM
1804138-01	D	Vinyl chloride	04/18/18 9:00	EPA 624	4/23/18 11:46	**ND**	mg/kg dry	0.0002	0.00064	R4	SRM
1804138-01	D	1,2,4-Trichlorobenzene	04/18/18 9:00	EPA 8260	4/23/18 11:46	**ND**	mg/kg dry		0.00064		SRM
1804138-01	D	1,2-Dibromo-3-chloropropane	04/18/18 9:00	EPA 8260	4/23/18 11:46	**ND**	mg/kg dry		0.00128	R4	SRM
1804138-01	D	1,2-Dibromoethane	04/18/18 9:00	EPA 8260	4/23/18 11:46	**ND**	mg/kg dry		0.00064		SRM
1804138-01	D	cis-1,2-Dichloroethene	04/18/18 9:00	EPA 8260	4/23/18 11:46	**ND**	mg/kg dry		0.00064		SRM
1804138-01	D	m,p-Xylenes	04/18/18 9:00	EPA 8260	4/23/18 11:46	**ND**	mg/kg dry		0.00128		SRM
1804138-01	D	o-Xylene	04/18/18 9:00	EPA 8260	4/23/18 11:46	**ND**	mg/kg dry		0.00064		SRM
1804138-01	D	Styrene	04/18/18 9:00	EPA 8260	4/23/18 11:46	**ND**	mg/kg dry		0.00064		SRM
1804138-01	D	Xylenes, total	04/18/18 9:00	EPA 8260	4/23/18 11:46	**ND**	mg/kg dry		0.00128		SRM
1804138-01	D	2,3,7,8-TCDD - Dioxin Scan	04/18/18 9:00	EPA 625	5/23/18 16:15	**ND**	ug/kg dry		1.60		SJM
1804138-01	D	1,2,4-Trichlorobenzene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7, S1	SJM
1804138-01	D	2,3-Dichloroaniline	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.01	D1, D7, S1	SJM
1804138-01	D	2,4,6-Trichlorophenol	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.001	0.00200	D1, D7, N1, S1	SJM
1804138-01	D	2,4-Dichlorophenol	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7, N1, S1	SJM
1804138-01	D	2,4-Dimethylphenol	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.004	0.01	D1, D7, S1	SJM
1804138-01	D	2,4-Dinitrophenol	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.009	0.01	D1, D7	SJM
1804138-01	D	2,4-Dinitrotoluene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804138-01	D	2,6-Dinitrotoluene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804138-01	D	2-Chloronaphthalene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804138-01	D	2-Chlorophenol	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.001	0.00200	D1, D7, N1	SJM
1804138-01	D	2-Methyl-4,6-dinitrophenol	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.005	0.01	D1, D7	SJM
1804138-01	D	2-Methylphenol	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804138-01	D	2-Nitrophenol	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.003	0.01	D1, D7, N1, S1	SJM
1804138-01	D	3,3-Dichlorobenzidine	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804138-01	D	4-Bromophenyl phenyl ether	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804138-01	D	4-Chloro-3-methylphenol	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.01	D1, D7, S1	SJM
1804138-01	D	4-Chlorophenyl phenyl ether	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804138-01	D	4-Methylphenol	04/18/18 9:00	EPA 625	5/22/18 16:06	**622.9**	mg/kg dry	0.002	0.00200	D1, D2, D7, L4, N1	SJM
1804138-01	D	4-Nitrophenol	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.005	0.01	D1, D7, N1	SJM
1804138-01	D	Acenaphthene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804138-01	D	Acenaphthylene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1804138-01	D	Anthracene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804138-01	D	Benzidine	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.007	0.01	D1, D7, N1	SJM
1804138-01	D	Benzo[a]anthracene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804138-01	D	Benzo[a]pyrene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804138-01	D	Benzo[b]fluoranthene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804138-01	D	Benzo[ghi]perylene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804138-01	D	Benzo[k]fluoranthene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804138-01	D	bis(2-chloroethoxy)methane	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7, S1	SJM
1804138-01	D	bis(2-chloroethyl)ether	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.01	D1, D7, N1	SJM
1804138-01	D	bis(2-chloroisopropyl)ether	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7, V1	SJM
1804138-01	D	bis(2-ethylhexyl)phthalate	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804138-01	D	Butylbenzylphthalate	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804138-01	D	Carbazole	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804138-01	D	Chrysene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804138-01	D	Dibenzo(a,h)anthracene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804138-01	D	Diethyl phthalate	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804138-01	D	Dimethyl phthalate	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1804138-01	D	Di-n-butyl phthalate	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804138-01	D	Di-n-octyl phthalate	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804138-01	D	Fluoranthene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804138-01	D	Fluorene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804138-01	D	Hexachlorobenzene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1804138-01	D	Hexachlorobutadiene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.001	0.00200	D1, D7, S1	SJM
1804138-01	D	Hexachlorocyclopentadiene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.004	0.01	D1, D7, S1	SJM
1804138-01	D	Hexachloroethane	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.001	0.00200	D1, D7, N1, S1	SJM
1804138-01	D	Indeno(1,2,3-cd)pyrene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804138-01	D	Isophorone	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7, S1	SJM
1804138-01	D	Naphthalene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7, S1	SJM
1804138-01	D	n-Decane	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7, N1	SJM
1804138-01	D	Nitrobenzene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.01	D1, D7, S1	SJM
1804138-01	D	N-Nitrosodimethylamine	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.01	D1, D7, L3, PC3	SJM
1804138-01	D	N-Nitrosodi-n-propylamine	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.01	D1, D7, S1	SJM
1804138-01	D	N-Nitrosodiphenylamine	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.006	0.01	D1, D7	SJM
1804138-01	D	n-Octadecane	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804138-01	D	Pentachlorophenol	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1804138-01	D	Phenanthrene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804138-01	D	Phenol	04/18/18 9:00	EPA 625	5/22/18 17:20	**13.27**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804138-01	D	Pyrene	04/18/18 9:00	EPA 625	5/22/18 17:20	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804138-01	D	1,2-Diphenylhydrazine	04/18/18 9:00	EPA 8270C	5/22/18 17:20	**ND**	mg/kg dry	0.001	0.00200	D1, D7, L3, N1	SJM
1804138-01	D	Pyridine	04/18/18 9:00	EPA 8270C	5/22/18 17:20	**ND**	mg/kg dry	0.002	0.00200	D1, D7, N1	SJM
1804138-02	D	Cyanide, Total	04/18/18 9:00	9014	4/26/18 17:00	**ND**	mg/Kg dry	11	26	E8	NEL *

* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.

1804138-02	D	Percent Solids	04/18/18 9:00	2540G	4/24/18 09:31	**1.5**	%	0.1	0.1		YET *

* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.

Well AV-06 (25003-2500)

1804137-01	D	Depth to Water	04/18/18 10:45	NA	4/18/18 10:45	**289.6**	Feet				SMPLR
1804137-01	D	Antimony	04/18/18 10:45	EPA 200.8	4/24/18 14:30	**ND**	ug/L	0.21	1.00		JB
1804137-01	D	Arsenic	04/18/18 10:45	EPA 200.8	4/24/18 14:30	**1.20**	ug/L	0.07	1.00		JB
1804137-01	D	Beryllium	04/18/18 10:45	EPA 200.8	4/24/18 14:30	**ND**	ug/L	0.33	1.00		JB
1804137-01	D	Cadmium	04/18/18 10:45	EPA 200.8	4/24/18 14:30	**ND**	ug/L	0.07	1.00		JB
1804137-01	D	Chloride	04/18/18 10:45	SM4500-Cl-E	5/5/18 13:10	**96.7**	mg/L	0.85	6.00		MGA
1804137-01	D	Chromium	04/18/18 10:45	EPA 200.8	4/24/18 14:30	**0.31**	ug/L	0.03	1.00	J	JB
1804137-01	D	Copper	04/18/18 10:45	EPA 200.8	4/24/18 14:30	**ND**	ug/L	0.36	1.00		JB
1804137-01	D	Cyanide	04/18/18 10:45	SM4500-CN-E	4/27/18 16:32	**ND**	ug/L	1.61	5.00		MGA
1804137-01	D	Cyanide Amenable	04/18/18 10:45	SM 4500-CN-G	4/27/18 16:32	**NA**	ug/L	1.61	5.00	N7	MGA
1804137-01	D	Fluoride	04/18/18 10:45	SM4500-F-C	4/30/18 14:21	**0.16**	mg/L	0.004	0.10		MGA
1804137-01	D	Lead	04/18/18 10:45	EPA 200.8	4/24/18 14:30	**ND**	ug/L	0.01	1.00		JB
1804137-01	D	Mercury	04/18/18 10:45	EPA 245.1	5/4/18 15:22	**ND**	ug/L	0.19	0.20		DML

Qualifier Definitions

<	<1
A	Absence
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D4	Minimum Reporting Limit (MRL) adjusted to reflect sample amount received and analyzed.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H1	Sample analysis performed past holding time.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
L3	The associated blank spike recovery was above method acceptance limits.
L4	The associated blank spike recovery was below method acceptance limits.
M2	Matrix spike recovery was low; the associated blank spike recovery was acceptable.
N1	See case narrative.
N4	The Minimum Reporting Limit (MRL) verification check did not meet the laboratory acceptance limit.
N7	Additional analysis was not performed based on the "Total" result which was below the requested analyte's MCL/Action level/Trigger Level.
NA	Not Analyzed
PC3	Semi-quantitation is included in the case narrative.
R4	MS/MSD RPD exceeded the method acceptance limit. Recovery met acceptance criteria.
S1	Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction

Case Narrative(s)

1804031-03
SM5310C TOC: Target analytes flagged with N1 instrument unable to be optimized before end of holding time. CAB 5/29/2018

1804138-01
EPA Method 625/8270 Pesticides: Target analyte Endosulfan Sulfate is flagged with N1and failed the Matrix Spike from the same analytical batch but the spike was performed on a different sample. MSM 051618

1804138-01
EPA Method 625/8270 Semi-volatiles: Target analytes flagged with N1 failed the Matrix Spike from the same extraction batch but the spike was performed on a different sample. SJM 06/14/18

Semi-Quantitation
Method: 625
1804138-01

Compound Name	Concentration-mg/Kg
Benzeneacetic Acid	339
Palmitic Acid	7022
Oleic Acid	6077
Stearic Acid	2025
Butanoic Acid	1096
Butanoic Acid, 3-methyl-	1518
Pentanoic Acid	605
Propanoic Acid	200
Butanoic Acid, 2-methyl-	736

SJM 06/14/18

1804200-01
EPA Method 625/8270 Semi-volatiles: Target analytes flagged with N1 failed the Matrix Spike from the same extraction batch but the spike was performed on a different sample. SJM 06/18/18

1804200-02
EPA Method 625/8270 Semi-Volatiles: Matrix spike and blank spike both fail recovery for 4-Methylphenol and 1,2-Diphenylhydrazine. CCV passes QC criteria for these analytes. SJM 06/18/18

Semi-Quantitation
Method: 625
1804200-01

Compound Name	Concentration-ug/L
Benzoic Acid	155
Benzeneacetic Acid	108
Dodecanoic Acid	129
Tetradecanoic Acid	194
Palmitic Acid	26540
Oleic Acid	25720
Stearic Acid	12204

SJM 06/18/18

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1804041-01

PROJECT & LOCATION: Avra Valley RWRF Wet Haul Sludge

PROJECT-LOCATION NUMBER: 25003-1573 (XXXXX-XXXX)

SAMPLE START DATE: _____ (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: _____ (Military time)

CLIENT: Sub Regional Facilities

SAMPLE END DATE: 04/04/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 1131 (Military time)

SAMPLER(S): CORNELIUS (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ☐ 503 ☐ AZPDES ☐ Reuse ■ Process Control ☐ IWC ☐ Air ☐ Other _____

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other _____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	☐	☐	☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	☐	☐	☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total	☐	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other _____	☐	☐
Other _____	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other _____	☐	☐
Other _____	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other _____	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	■	☐
Solids, Volatile Suspended	☐	☐
Other _____	☐	☐

OTHER	D	C
Paint Filter	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*	_____	µg/L
☐ Specific Conductance *SM 2510 B*	_____	µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*	_____	mg/L
☐ pH @ pH Temp *SM 4500-H B*	@ _____	pH Units @ ° C
☐ Temperature *SM 2550 B*	_____	° C
☐ Total Depth of Well	_____	feet
☐ Depth to Water	_____	feet
☐ Other _____	_____	_____

Comments/Instructions:

_____

Septum Blank Prep Date & Initials: _____ _____

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
Sample Refrigerator	Sample Refrigerator	4-4-18	1137
Sample Refrigerator	[signature]	4/5/18	1007
[signature]	[signature]	04-05-18	1117

Sample Integrity/Preservation:

of Bottles Delivered: 1 GOS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 1 °C

Initials: GOS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*

** *As, Ba, Be, Cd, Cr, Cu, Pb, Mo, Ni, Se, Ag, Tl, Zn*

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1804138-01

PROJECT & LOCATION: Avra Valley Wet Haul Sludge (Quarterly)

PROJECT-LOCATION NUMBER: 25003-1573 (XXXXX-XXXX)

SAMPLE START DATE: ____ (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: ____ (Military time)

CLIENT: IWC

SAMPLE END DATE: 04/18/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0900 (Military time)

SAMPLER(S): Kaufman, Silva (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other ____

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other ____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	×		■	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	×		■	☐
TCLP Metals			☐	☐
503 Metals **			■	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total	☐	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other ____	☐	☐
Other ____	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	■	☐
Dioxin GC/SIM/MS Scan	■	☐
Organochlorine Pesticides & PCBs	■	☐
Purgeable Organics (GCMS)	■	☐
Semivolatile Organics (GCMS)	■	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other ____	☐	☐
Other ____	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other ____	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other ____	☐	☐

OTHER	D	C
Paint Filter	☐	☐
____	☐	☐
____	☐	☐
____	☐	☐
____	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*	____	µg/L
☐ Specific Conductance *SM 2510 B*	____	µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*	____	mg/L
☐ pH @ pH Temp *SM 4500-H B*	____ @	pH Units @ ° C
☐ Temperature *SM 2550 B*	____	° C
☐ Total Depth of Well	____	feet
☐ Depth to Water	____	feet
☐ Other ____	____	____

Comments/Instructions:

Septum Blank Prep Date & Initials: 04-02-2018 lej + mk

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	04-18-18	1254
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

# of Bottles Delivered: 7 GOS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 6 °C

Initials: GOS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

COJ 05-04-18

WORK ORDER & SAMPLE(S): ~~1804138-02~~ 1804138-02

PROJECT & LOCATION: Avra Valley Wet Haul Sludge (Quarterly)

PROJECT-LOCATION NUMBER: 25003-1573 (XXXXX-XXXX)

SAMPLE START DATE: _____ (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: _____ (Military time)

CLIENT: IWC

SAMPLE END DATE: 04/18/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0900 (Military time)

SAMPLER(S): Kaufman, Silva (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other _____

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other _____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury			☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *			☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total (contract)	■	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other _____	☐	☐
Other _____	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other _____	☐	☐
Other _____	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other _____	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total (contract)	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other _____	☐	☐

OTHER	D	C
Paint Filter	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*	_____	µg/L
☐ Specific Conductance *SM 2510 B*	_____	µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*	_____	mg/L
☐ pH @ pH Temp *SM 4500-H B*	_____ @	pH Units @ °C
☐ Temperature *SM 2550 B*	_____	°C
☐ Total Depth of Well	_____	feet
☐ Depth to Water	_____	feet
☐ Other _____	_____	_____

Comments/Instructions: Sent to Test America COJ 04-18-18 PO# 18-029344

Septum Blank Prep Date & Initials: ~~04-02-2018~~ Tej + MK

Q 4-18-18

Chain of Custody Record (Signatures Only)

Relinquished by:	Received by:	Date	Time: (Military time)
[signature]	[signature]	04-18-18	1254
[signature]	[signature]	04/20/18	1036

Sample Integrity/Preservation:

of Bottles Delivered: 2 COJ

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 6 °C

Initials: COJ

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY WASTEWATER MANAGEMENT
INDUSTRIAL WASTEWATER CONTROL SECTION
SAMPLE COLLECTION FIELD NOTES

1804138-01+02

SAMPLE LOCATION: **Avra Valley Wet Haul Sludge**

LOCATION ID: **25003-1573** SAMPLERS: Silva Kaufman (Last names only, primary sampler first.) SAMPLE DATE: 04/18/2018

SAMPLE D or C	PARAMETER	START TIME	END TIME	FREQUENCY	Time Flow	Auto Man.	Volume Submitted	BOTTLE TYPE	PRESERVATION
D	Priority Pollutant Metals		0900	Grab	T	Man.	1000ml		
D	503 Metals							DM Plastic	Ice
D	Cyanide, Total						1000 ml	DM Plastic	Ice
D	Organochlorine Pesticides						1000 ml	Amber	Ice
D	Semivolatile Organics						1000 ml	Amber	Ice
D	Dioxin Scan						1000 ml	Amber	Ice
D	Solids, Total						1000 ml	Gen Purpose	Ice
D	Solids, Total						1000 ml	Gen Purpose	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice

pH METER CALIBRATION LOG

Time	Model #	Serial #	Auto/Man.	Buffer	Reading	Buffer	Reading	Temp.	Slope	Initials
N/A										

FIELD MEASUREMENTS

Sample	Parameter & Method	Result	Time	Initials	Sample	Parameter & Method	Result	Time	Initials
N/A									

Notes: All Samples are unpreserved

EQUIPMENT USED: ☐ Grab Sampler ☐ Composite Sampler ☐ Electric Pump ☐ Other

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Joe Doranski	Site Contact:	Date:	COC No:
Pima County CRAO Lab	Tel/Fax: 520-724-6032	Lab Contact:	Carrier:	1 of 1 COCs
2955 W. Calle Agua Nueva	Analysis Turnaround Time			Sampler: Various
Tucson/AZ/85745	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(520) 724-6032 Phone	TAT if different from Below _____			Walk-in Client:
(520) 724-6075 FAX	☑ 2 weeks			Lab Sampling:
Project Name: April	☐ 1 week			
Site: Various	☐ 2 days			Job / SDG No.:
P O # 18-029344	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Titanium 200.7	Cyanide, total mg/kg dry	Total % solids for mg/kg dry	Sample Specific Notes:
Busy D Pumping PL #2 12738-0200											WW - wastewater
1804134-02	4/18/18	0600	Comp	WW	1	N		1			
Avra Valley WRF wet haul sludge 25003-1573											BS -biosolids
1804138-02	4/18/18	0900	Grab	BS	2	N			1	1	
Green Valley WRF wet haul sludge 25000-1962											
1804148-02	4/19/18	0900	Grab	BS	2	N			1	1	

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Greg Spence for samplers	PC CRAO Lab	04-20-18/1036	1036	4/20/18	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

PIMA COUNTY

WASTEWATER RECLAMATION

COMPLIANCE AND REGULATORY AFFAIRS OFFICE LABORATORY
2955 W Calle Agua Nueva, Tucson, AZ 85745
Telephone: (520) 724-6200

LIMS CHECKLIST FOR SUBCONTRACT DATA

LIMS ID	**1804134-02, 1804138-02, 1804148-02**	**DO**	**18-029344**
CONTRACT LAB	**TestAmerica PHX**	**SAMPLE GROUP**	**GV & AV Sludge, Busy D Pumping**
ANALYSES	**Total cyanide sludge, % total solids, Ti**	**REPORT ID**	**550-101636-1**

TRANSFER & CONVERT FILES:	
Was the contract lab spreadsheet file saved to \\Splimsapp\elementshare\TransferIn ?	Y
Was the above mentioned file converted from a .xls file to a .mdb file for each WO#, and further, for each subcontract location, or separate analysis (as applicable), on the contract lab report? (Element>Project Management>Reports)	Y
Was the converted file attached to the sample in LIMS?	Y
VALIDATING CONTRACT LAB REPORT , CHAIN OF CUSTODY(S), AND DO#:	
Contract Lab Report signed and dated?	Y
Copy of contract lab COC included with contract Lab Report?	Y
Contract lab COC verified with CRAO COC(s) for Sample ID, Sample Date, Analysis Requested?	Y
Sample dates and received dates on the CL report, match the CL COC?	Y
CL report includes all requested analysis?	Y
CL licensed in AZ for the reported methods?	Y
Check that DO matches COC in types and number of tests?	N/A
DO received in Pima Core?	N/A
CONTRACT LAB REPORT, EXCEL SPREADSHEET, and QC:	
CL report and CL spreadsheet report the same sample results, sample date, and analysis date?	Y
Was a Case Narrative Included in Contract Lab report?	Y
Data packet includes QC Report from primary lab and any secondary subcontract labs?	Y
Did CL report list applicable AZ Data Qualifiers?	Y
Were there any dilutions made to samples that were reported as ND?	N
If so, were they qualified due to matrix interference?	N/A
Was QC included for every analysis method: typically Blk, LCS, MS, MSD?	Y
Did QC pass stated acceptance limits, or was it qualified?	Y
Were samples analyzed within required holding times?	Y
Check that MDLs are below water quality standards, If not notify Belinda Gamboa-Felix? (Cyanide, Hexachlorobenzene)	N/A
Semivolatiles & Volatiles: Check that all analytes were delivered?	N/A
COMPLIANCE LIMIT REVIEW	
Were results compared to the discharge permit?.	N/A
Was Belinda Gamboa-Felix notified of any exceedences?	N/A
WET TESTING SPECIFIC REQUIREMENTS	
Statement of Pass/Fail reflected in End Points?	N/A
Report states if zeolite treatment was utilized?	N/A
Survival and Reproduction or Growth Data included (P. promelas or Ceriodaphnia only)?	N/A
Chemistry data included?	N/A

Reference Toxicant Test Results and Control Chart within limits?			N/A
PMSD Determination included and within acceptable range? (minimum acceptable= 13)			N/A
End Points include TUc, NOEC, LOEC, and IC25?			N/A
Statistics verify endpoints			N/A
Control Charts Updated to include month of analysis			N/A
Reviewer Initials:	**AP**	**Review Date:**	**5-9-18**

PEER/FINAL REVIEW:	PR	FR
LIMS/Excel data matches printed CL report?	✓	
Analysis dates are correct?	✓	
Correct Data Qualifiers included if necessary.	✓	
CRAO report shows result is from Contract Lab?	✓	
CRAO report shows correct Contract Lab (e.g. Test America, Phoenix)?	✓	
DO received in Pima Core	✓	
Analysis set to Reported?		✓

Peer Reviewer Initials:	JD	**Review Date:**	5-10-18
Biomonitor Supervisor Initials:	N/A	**Review Date:**	
Final Reviewer Initials:	JEC	**Review Date:**	5·24·18

CORRECTIVE ACTION REPORT:			
Preliminary Review:		Date:	
QA/QC Review:		Date:	
Data Entry:		Date:	
Peer Review:		Date:	
Lab Supervisor:		Date:	

LIMS #:	**DEVIATION:**	**CORRECTIVE ACTION:**

DEVIATIONS FROM ACCEPTABLE QA/QC:

Missing QC Report/Data
Holding Time for analysis exceeded.
Inappropriate dilution performed.
Missing COC.
Missing Data Qualifiers.
Incorrect Analysis Method.
Incorrect Sample IDs.
Other.

CORRECTIVE ACTION:

Request report correction from Subcontract Lab project manager.
Add missing Data Qualifiers.
Notify data end-user of deviation.
Arrange for resampling.
Other.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-101636-1
TestAmerica Sample Delivery Group: Various
Client Project/Site: April

For:
Pima County WWTP
PO BOX 791
Tucson, Arizona 85701

Attn: Joseph Doranski

Authorized for release by:
4/29/2018 7:43:47 AM

Linda Eshelman, Project Manager II
(602)659-7629
linda.eshelman@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Sample Summary 5
Detection Summary 6
Client Sample Results 7
QC Sample Results 8
QC Association Summary 10
Lab Chronicle 12
Certification Summary 13
Method Summary 14
Chain of Custody 15
Receipt Checklists 16

Definitions/Glossary

Client: Pima County WWTP
Project/Site: April

TestAmerica Job ID: 550-101636-1
SDG: Various

Qualifiers

Metals

Qualifier	Qualifier Description
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

General Chemistry

Qualifier	Qualifier Description
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pima County WWTP
Project/Site: April

TestAmerica Job ID: 550-101636-1
SDG: Various

Job ID: 550-101636-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-101636-1

Comments
No additional comments.

Receipt
The samples were received on 4/20/2018 2:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3° C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Pima County WWTP
Project/Site: April

TestAmerica Job ID: 550-101636-1
SDG: Various

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-101636-1	1804134-02	Water	04/18/18 06:00	04/20/18 14:10
550-101636-2	1804138-02	Waste	04/18/18 09:00	04/20/18 14:10
550-101636-3	1804148-02	Waste	04/19/18 09:00	04/20/18 14:10

Detection Summary

Client: Pima County WWTP
Project/Site: April

TestAmerica Job ID: 550-101636-1
SDG: Various

Client Sample ID: 1804134-02 — Lab Sample ID: 550-101636-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Titanium	11	E4	100	1.5	ug/L	1		200.7 Rev 4.4	Total/NA

Client Sample ID: 1804138-02 — Lab Sample ID: 550-101636-2

No Detections.

Client Sample ID: 1804148-02 — Lab Sample ID: 550-101636-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Pima County WWTP
Project/Site: April

TestAmerica Job ID: 550-101636-1
SDG: Various

Client Sample ID: 1804134-02 — **Lab Sample ID: 550-101636-1**
Date Collected: 04/18/18 06:00 — **Matrix: Water**
Date Received: 04/20/18 14:10

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Titanium	11	E4	100	1.5	ug/L		04/23/18 21:06	04/26/18 20:58	1

Client Sample ID: 1804138-02 — **Lab Sample ID: 550-101636-2**
Date Collected: 04/18/18 09:00 — **Matrix: Waste**
Date Received: 04/20/18 14:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	1.5		0.1	0.1	%			04/24/18 09:31	1

Client Sample ID: 1804138-02 — **Lab Sample ID: 550-101636-2**
Date Collected: 04/18/18 09:00 — **Matrix: Waste**
Date Received: 04/20/18 14:10 — **Percent Solids: 1.5**

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	E8	26	11	mg/Kg	☼	04/25/18 11:30	04/26/18 17:00	1

Client Sample ID: 1804148-02 — **Lab Sample ID: 550-101636-3**
Date Collected: 04/19/18 09:00 — **Matrix: Waste**
Date Received: 04/20/18 14:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	3.3		0.1	0.1	%			04/24/18 09:31	1

Client Sample ID: 1804148-02 — **Lab Sample ID: 550-101636-3**
Date Collected: 04/19/18 09:00 — **Matrix: Waste**
Date Received: 04/20/18 14:10 — **Percent Solids: 3.3**

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	E8	12	5.0	mg/Kg	☼	04/25/18 11:30	04/26/18 17:00	1

Accreditation/Certification Summary

Client: Pima County WWTP
Project/Site: April

TestAmerica Job ID: 550-101636-1
SDG: Various

Laboratory: TestAmerica Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ072E	06-09-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
200.7 Rev 4.4	200.7	Water	Titanium

Method Summary

Client: Pima County WWTP
Project/Site: April

TestAmerica Job ID: 550-101636-1
SDG: Various

Method	Method Description	Protocol	Laboratory
200.7 Rev 4.4	Metals (ICP)	EPA	TAL PHX
2540G	SM 2540G	SM22	TAL PHX
9014	Cyanide	SW846	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL PHX
9010C	Cyanide, Distillation	SW846	TAL PHX
9013A	Cyanide Extraction (Solids and Oils)	SW846	TAL PHX

Protocol References:

EPA = US Environmental Protection Agency

SM22 = Standard Methods For The Examination Of Water And Wastewater, 22nd Edition

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

4/29/2018

10636

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Joe Doranski	Site Contact:	Date:	COC No:
Pima County CRAO Lab	Tel/Fax: 520-724-6032	Lab Contact:	Carrier:	1 of 1 COCs
2955 W. Calle Agua Nueva	Analysis Turnaround Time			Sampler: Various
Tucson/AZ/85745	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(520) 724-6032 Phone	TAT if different from Below _____			Walk-in Client:
(520) 724-6075 FAX	☑ 2 weeks			Lab Sampling:
Project Name: April	☐ 1 week			
Site: Various	☐ 2 days			Job / SDG No.:
P O # 18-029344	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Titanium 200.7	Cyanide, total mg/kg dry	Total % solids for mg/kg dry	Sample Specific Notes:
Busy D Pumping PL #2 12738-0200											WW - wastewater
-01 1804134-02	4/18/18	0600	Comp	WW	1	N		1			
Avra Valley WRF wet haul sludge 25003-1573											BS -biosolids
-02 1804138-02	4/18/18	0900	Grab	BS	2	N			1	1	
Green Valley WRF wet haul sludge 25000-1962											
-03 1804148-02	4/19/18	0900	Grab	BS	2	N			1	1	

550-101636 Chain of Custody

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☑Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐Return to Client ☑Disposal by Lab ☐Archive for_____ Months

Special Instructions/QC Requirements & Comments:

TA-PHX 23 TA-PHX

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ | Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Greg Spence for samplers	PC CRAO Lab	04-20-18/1036	1036	4/20/18	
1410 4/20/18					
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
				TA	4/20/18 14:10

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Page 15 of 16

Login Sample Receipt Checklist

Client: Pima County WWTP

Job Number: 550-101636-1
SDG Number: Various

Login Number: 101636
List Number: 1
Creator: Gravlin, Andrea

List Source: TestAmerica Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 11/19/2018
Laboratory License: AZO159

Sample Analysis Report

Avra Valley WRF

July 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Arnott

1.9.19
Date

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1807128-01	D	Hexachloroethane	07/18/18 9:35	EPA 625	8/2/18 09:39	**NA**	ug/L	1.26	2.00	N1	SJM
1807128-01	D	Indeno(1,2,3-cd)pyrene	07/18/18 9:35	EPA 625	8/2/18 09:39	**NA**	ug/L	2.83	6.00	N1	SJM
1807128-01	D	Isophorone	07/18/18 9:35	EPA 625	8/2/18 09:39	**NA**	ug/L	1.66	2.00	N1	SJM
1807128-01	D	Naphthalene	07/18/18 9:35	EPA 625	8/2/18 09:39	**NA**	ug/L	1.77	2.00	N1	SJM
1807128-01	D	n-Decane	07/18/18 9:35	EPA 625	8/2/18 09:39	**NA**	ug/L	1.95	2.00	N1	SJM
1807128-01	D	Nitrobenzene	07/18/18 9:35	EPA 625	8/2/18 09:39	**NA**	ug/L	2.10	6.00	N1	SJM
1807128-01	D	N-Nitrosodimethylamine	07/18/18 9:35	EPA 625	8/2/18 09:39	**NA**	ug/L	2.09	6.00	N1	SJM
1807128-01	D	N-Nitrosodi-n-propylamine	07/18/18 9:35	EPA 625	8/2/18 09:39	**NA**	ug/L	2.43	6.00	N1	SJM
1807128-01	D	N-Nitrosodiphenylamine	07/18/18 9:35	EPA 625	8/2/18 09:39	**NA**	ug/L	6.08	10.00	N1	SJM
1807128-01	D	n-Octadecane	07/18/18 9:35	EPA 625	8/2/18 09:39	**NA**	ug/L	2.18	6.00	N1	SJM
1807128-01	D	Pentachlorophenol	07/18/18 9:35	EPA 625	8/2/18 09:39	**NA**	ug/L	4.02	6.00	N1	SJM
1807128-01	D	Phenanthrene	07/18/18 9:35	EPA 625	8/2/18 09:39	**NA**	ug/L	1.63	2.00	N1	SJM
1807128-01	D	Phenol	07/18/18 9:35	EPA 625	8/2/18 09:39	**NA**	ug/L	2.59	6.00	N1	SJM
1807128-01	D	Pyrene	07/18/18 9:35	EPA 625	8/2/18 09:39	**NA**	ug/L	1.38	2.00	N1	SJM
1807128-01	D	1,2-Diphenylhydrazine	07/18/18 9:35	EPA 8270C	8/2/18 09:39	**NA**	ug/L	1.16	2.00	N1	SJM
1807128-01RE1	D	Zinc	07/18/18 9:35	EPA 200.8	7/26/18 18:43	**44.7**	ug/L	0.23	5.00	D1	JB
1807128-02	FB	Mercury	07/18/18 9:35	EPA 245.7	7/24/18 11:55	**ND**	ng/L	0.741	5.00		KMT
1807128-03	D	Chromium (Dissolved)	07/18/18 9:35	EPA 200.8	7/26/18 17:48	**0.58**	ug/L	0.03	1.00	J	JB
Final Effluent at the U.V. Channel (25003-1351)											
1807033-01	D	E. Coli	07/05/18 6:54	SM 9223B	7/6/18 12:53	**<1**	MPN/100 mL		1.0		SDR
1807077-01	D	E. Coli	07/11/18 7:19	SM 9223B	7/12/18 13:50	**1.0**	MPN/100 mL		1.0		NGF
1807130-01	D	E. Coli	07/18/18 7:14	SM 9223B	7/19/18 12:16	**1.0**	MPN/100 mL		1.0		SDR
1807177-01	D	E. Coli	07/25/18 7:14	SM 9223B	7/26/18 13:47	**2.0**	MPN/100 mL		1.0		NGF
Wet Haul Sludge (25003-1573)											
1807077-04	D	% Solids	07/11/18 9:21	SM 2540G	7/12/18 14:12	**1.50**	%		0.01		AV
1807077-04	D	% Solids, Total Volatile	07/11/18 9:21	SM 2540G	7/12/18 16:15	**80.4**	%		0.01		AV
1807126-01	D	Antimony	07/18/18 9:00	EPA 6010D	7/25/18 10:52	**ND**	mg/kg dry		11.76		MLB
1807126-01	D	Arsenic	07/18/18 9:00	EPA 6010D	7/25/18 10:52	**ND**	mg/kg dry		11.76		MLB
1807126-01	D	Beryllium	07/18/18 9:00	EPA 6010D	7/25/18 10:52	**ND**	mg/kg dry		2.35		MLB
1807126-01	D	Cadmium	07/18/18 9:00	EPA 6010D	7/25/18 10:52	**ND**	mg/kg dry		4.70		MLB
1807126-01	D	Chromium	07/18/18 9:00	EPA 6010D	7/25/18 10:52	**17.1**	mg/kg dry		11.76		MLB
1807126-01	D	Copper	07/18/18 9:00	EPA 6010D	7/25/18 10:52	**185**	mg/kg dry		11.76		MLB
1807126-01	D	Lead	07/18/18 9:00	EPA 6010D	7/25/18 13:04	**ND**	mg/kg dry		11.76		MLB
1807126-01	D	Mercury	07/18/18 9:00	EPA 7471B	7/26/18 09:39	**0.35**	mg/kg dry		0.00269		DML
1807126-01	D	Molybdenum	07/18/18 9:00	EPA 6010D	7/25/18 10:52	**8.13**	mg/kg dry		4.70		MLB
1807126-01	D	Nickel	07/18/18 9:00	EPA 6010D	7/25/18 10:52	**24.0**	mg/kg dry		11.76		MLB
1807126-01	D	Selenium	07/18/18 9:00	EPA 6010D	7/25/18 10:52	**ND**	mg/kg dry		23.52		MLB
1807126-01	D	Silver	07/18/18 9:00	EPA 6010D	7/25/18 13:04	**1.26**	mg/kg dry		1.18		MLB
1807126-01	D	Thallium	07/18/18 9:00	EPA 6010D	7/25/18 13:04	**ND**	mg/kg dry		11.76		MLB
1807126-01	D	Zinc	07/18/18 9:00	EPA 6010D	7/25/18 10:52	**504**	mg/kg dry		11.76		MLB
1807126-01	D	1,1,1,2-Tetrachloroethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	2.81	23.3	E8, D1	LSD *
1807126-01	D	1,1,1-Trichloroethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.97	23.3	E8, D1	LSD *
1807126-01	D	1,1,2,2-Tetrachloroethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	3.72	23.3	E8, D1	LSD *
1807126-01	D	1,1,2-Trichloroethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	1.35	23.3	E8, D1	LSD *
1807126-01	D	1,1-Dichloroethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	5.05	23.3	E8, D1	LSD *
1807126-01	D	1,1-Dichloroethene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	6.27	23.3	E8, D1	LSD *
1807126-01	D	1,1-Dichloropropene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	5.58	23.3	E8, D1	LSD *
1807126-01	D	1,2,3-Trichlorobenzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	3.01	23.3	E8, D1	LSD *
1807126-01	D	1,2,3-Trichloropropane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.35	23.3	E8, D1	LSD *
1807126-01	D	1,2,4-Trichlorobenzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	3.47	23.3	E8, D1	LSD *
1807126-01	D	1,2,4-Trimethylbenzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.28	23.3	E8, D1	LSD *

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1807126-01	D	1,2-Dibromo-3-chloropropane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	5.7	58.3	E8, D1	LSD *
1807126-01	D	1,2-Dibromoethane (EDB)	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.16	23.3	E8, D1	LSD *
1807126-01	D	1,2-Dichlorobenzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	2.99	23.3	E8, D1	LSD *
1807126-01	D	1,2-Dichloroethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	6.2	23.3	E8, D1	LSD *
1807126-01	D	1,2-Dichloropropane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.76	23.3	E8, D1	LSD *
1807126-01	D	1,3,5-Trimethylbenzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.64	23.3	E8, D1	LSD *
1807126-01	D	1,3-Dichlorobenzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.6	23.3	E8, D1	LSD *
1807126-01	D	1,3-Dichloropropane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	2.72	23.3	E8, D1	LSD *
1807126-01	D	1,4-Dichlorobenzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.12	23.3	E8, D1	LSD *
1807126-01	D	2,2-Dichloropropane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	6.2	23.3	E8, D1	LSD *
1807126-01	D	2-Butanone	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	41	117	E8, D1	LSD *
1807126-01	D	2-Chloroethylvinyl ether	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	2.35	23.3	E8, D1	LSD *
1807126-01	D	2-Chlorotoluene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.63	23.3	E8, D1	LSD *
1807126-01	D	2-Hexanone	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	30.8	117	E8, D1	LSD *
1807126-01	D	4-Chlorotoluene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.39	23.3	E8, D1	LSD *
1807126-01	D	4-Methyl-2-pentanone	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	38.5	117	E8, D1	LSD *
1807126-01	D	Acetone	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	71.1	233	E8, D1	LSD *
1807126-01	D	Acrolein	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	55.4	233	E8, D1, M2	LSD *
1807126-01	D	Acrylonitrile	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	33.7	117	E8, D1	LSD *
1807126-01	D	Benzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.5	23.3	E8, D1	LSD *
1807126-01	D	Bromobenzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.48	23.3	E8, D1	LSD *
1807126-01	D	Bromochloromethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	6.49	23.3	E8, D1	LSD *
1807126-01	D	Bromodichloromethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.97	23.3	E8, D1	LSD *
1807126-01	D	Bromoform	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	3.81	23.3	E8, D1	LSD *
1807126-01	D	Bromomethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	7.95	23.3	E8, D1	LSD *
1807126-01	D	Carbon disulfide	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	9.31	117	E8, D1	LSD *
1807126-01	D	Carbon Tetrachloride	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	6.2	23.3	E8, D1	LSD *
1807126-01	D	Chlorobenzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	3.54	23.3	E8, D1	LSD *
1807126-01	D	Chloroethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	7.21	58.3	E8, D1	LSD *
1807126-01	D	Chloroform	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.92	23.3	E8, D1	LSD *
1807126-01	D	Chloromethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	5.76	23.3	E8, D1	LSD *
1807126-01	D	cis-1,2-Dichloroethylene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	6.25	23.3	E8, D1	LSD *
1807126-01	D	cis-1,3-Dichloropropene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	5.08	23.3	E8, D1	LSD *
1807126-01	D	Dibromochloromethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	2.62	23.3	E8, D1	LSD *
1807126-01	D	Dibromomethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	3.99	23.3	E8, D1	LSD *
1807126-01	D	Dichlorodifluoromethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	13.2	23.3	E8, D1	LSD *
1807126-01	D	Dichloromethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	5.56	23.3	E8, D1	LSD *
1807126-01	D	Ethylbenzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.68	23.3	E8, D1	LSD *
1807126-01	D	Hexachlorobutadiene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.98	23.3	E8, D1	LSD *
1807126-01	D	Iodomethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	64.4	117	E8, D1	LSD *
1807126-01	D	Isopropylbenzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.46	23.3	E8, D1	LSD *
1807126-01	D	m,p-Xylene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.1	46.7	E8, D1	LSD *
1807126-01	D	Methyl methacrylate	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	50.1	117	E8, D1	LSD *
1807126-01	D	Methyl-tert-butyl ether	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	17.9	23.3	E8, D1	LSD *
1807126-01	D	Naphthalene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	2.57	23.3	E8, D1	LSD *
1807126-01	D	n-Butylbenzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.41	23.3	E8, D1	LSD *
1807126-01	D	n-Propylbenzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	5.95	23.3	E8, D1	LSD *
1807126-01	D	o-Xylene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	3.24	23.3	E8, D1	LSD *
1807126-01	D	p-Isopropyltoluene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.87	23.3	E8, D1	LSD *
1807126-01	D	sec-Butylbenzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	5.32	23.3	E8, D1	LSD *
1807126-01	D	Styrene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	3.54	23.3	E8, D1	LSD *
1807126-01	D	tert-Butylbenzene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.8	23.3	E8, D1	LSD *
1807126-01	D	Tetrachloroethene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	5.53	23.3	E8, D1	LSD *
1807126-01	D	Toluene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**12.8**	mg/kg dry	4.93	23.3	E4, D1	LSD *
1807126-01	D	Total THMs	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry		23.3	E8, D1	LSD *
1807126-01	D	trans-1,2-Dichloroethene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.97	23.3	E8, D1	LSD *
1807126-01	D	trans-1,3-Dichloropropene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	3.4	23.3	E8, D1	LSD *
1807126-01	D	trans-1,4-Dichloro-2-butene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	69.7	117	M2, E8, D1	LSD *
1807126-01	D	Trichloroethene	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	4.86	23.3	E8, D1	LSD *
1807126-01	D	Trichlorofluoromethane	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	7.68	23.3	E8, D1	LSD *

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1807126-01	D	Vinyl chloride	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry	2.45	5.83	E8, D1	LSD *
1807126-01	D	Xylenes (total)	07/18/18 9:00	EPA 8260B	7/25/18 18:58	**ND**	mg/kg dry		70	E8, D1	LSD *
* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.											
1807126-01	D	Cyanide, Total	07/18/18 9:00	EPA 9014	7/25/18 14:56	**ND**	mg/kg dry	1.5	5.85	E8	AM *
* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.											
1807126-01	D	% Solids	07/18/18 9:00	SM 2540 G	7/25/18 17:20	**2**	%		1		SLL *
* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.											
1807126-01	D	% Solids	07/18/18 9:00	SM 2540G	7/19/18 13:12	**1.86**	%		0.01		NGF
1807126-01	D	4,4-DDD	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00006	0.00140	D1, D7	MSM
1807126-01	D	4,4-DDE	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00003	0.00140	D1, D7	MSM
1807126-01	D	4,4-DDT	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00006	0.00140	D1, D7	MSM
1807126-01	D	Aldrin	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00006	0.00140	D1, D7, N1	MSM
1807126-01	D	alpha-BHC	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00004	0.00140	D1, D7, N1	MSM
1807126-01	D	beta-BHC	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00009	0.01	D1, D7	MSM
1807126-01	D	Chlordane	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00025	0.01	D1, D7	MSM
1807126-01	D	delta-BHC	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00007	0.00140	D1, D7	MSM
1807126-01	D	Dieldrin	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00015	0.00280	D1, D7	MSM
1807126-01	D	Endosulfan I	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00004	0.00140	D1, D7	MSM
1807126-01	D	Endosulfan II	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00003	0.00140	D1, D7	MSM
1807126-01	D	Endosulfan sulfate	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00004	0.00140	D1, D7	MSM
1807126-01	D	Endrin	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00010	0.00140	D1, D7	MSM
1807126-01	D	Endrin aldehyde	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00011	0.00140	D1, D7	MSM
1807126-01	D	gamma-BHC (Lindane)	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00007	0.00140	D1, D7, N1	MSM
1807126-01	D	Heptachlor	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00005	0.00140	D1, D7, N1	MSM
1807126-01	D	Heptachlor Epoxide	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00004	0.00140	D1, D7	MSM
1807126-01	D	PCB 1016	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00006	0.00336	D1, D7	MSM
1807126-01	D	PCB 1221	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00017	0.01	D1, D7	MSM
1807126-01	D	PCB 1232	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00007	0.01	D1, D7	MSM
1807126-01	D	PCB 1242	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00013	0.01	D1, D7	MSM
1807126-01	D	PCB 1248	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00010	0.01	D1, D7	MSM
1807126-01	D	PCB 1254	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00019	0.01	D1, D7	MSM
1807126-01	D	PCB 1260	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00007	0.00280	D1, D7	MSM
1807126-01	D	Total PCBs	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00016	0.01	D1, D7	MSM
1807126-01	D	Toxaphene	07/18/18 9:00	EPA 625	8/22/18 17:33	**ND**	mg/kg dry	0.00094	0.02	D1, D7	MSM
1807126-01	D	Methoxychlor	07/18/18 9:00	EPA 8270C	8/22/18 17:33	**ND**	mg/kg dry	0.00004	0.00140	D1, D7	MSM
1807126-01	D	2,3,7,8-TCDD - Dioxin Scan	07/18/18 9:00	EPA 625	8/7/18 14:03	**ND**	ug/kg dry		1.35		SJM
1807126-01	D	1,2,4-Trichlorobenzene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807126-01	D	2,3-Dichloroaniline	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807126-01	D	2,4,6-Trichlorophenol	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807126-01	D	2,4-Dichlorophenol	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807126-01	D	2,4-Dimethylphenol	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1807126-01	D	2,4-Dinitrophenol	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.009	0.02	D1, D7	SJM
1807126-01	D	2,4-Dinitrotoluene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807126-01	D	2,6-Dinitrotoluene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807126-01	D	2-Chloronaphthalene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807126-01	D	2-Chlorophenol	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807126-01	D	2-Methyl-4,6-dinitrophenol	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.005	0.01	D1, D7	SJM
1807126-01	D	2-Methylphenol	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807126-01	D	2-Nitrophenol	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807126-01	D	3,3-Dichlorobenzidine	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807126-01	D	4-Bromophenyl phenyl ether	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807126-01	D	4-Chloro-3-methylphenol	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807126-01	D	4-Chlorophenyl phenyl ether	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807126-01	D	4-Methylphenol	07/18/18 9:00	EPA 625	7/31/18 19:11	**625.7**	mg/kg dry	0.002	0.01	D1, D2, D7	SJM
1807126-01	D	4-Nitrophenol	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.005	0.01	D1, D7	SJM
1807126-01	D	Acenaphthene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807126-01	D	Acenaphthylene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807126-01	D	Anthracene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807126-01	D	Benzidine	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.007	0.01	D1, D7	SJM
1807126-01	D	Benzo[a]anthracene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1807126-01	D	Benzo[a]pyrene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807126-01	D	Benzo[b]fluoranthene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807126-01	D	Benzo[ghi]perylene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807126-01	D	Benzo[k]fluoranthene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807126-01	D	bis(2-chloroethoxy)methane	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807126-01	D	bis(2-chloroethyl)ether	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807126-01	D	bis(2-chloroisopropyl)ether	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807126-01	D	bis(2-ethylhexyl)phthalate	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807126-01	D	Butylbenzylphthalate	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807126-01	D	Carbazole	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807126-01	D	Chrysene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807126-01	D	Dibenzo(a,h)anthracene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807126-01	D	Diethyl phthalate	07/18/18 9:00	EPA 625	7/31/18 19:48	**4.91**	mg/kg dry	0.002	0.01	B1, D1, D7	SJM
1807126-01	D	Dimethyl phthalate	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1807126-01	D	Di-n-butyl phthalate	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807126-01	D	Di-n-octyl phthalate	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807126-01	D	Fluoranthene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807126-01	D	Fluorene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807126-01	D	Hexachlorobenzene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1807126-01	D	Hexachlorobutadiene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807126-01	D	Hexachlorocyclopentadiene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1807126-01	D	Hexachloroethane	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807126-01	D	Indeno(1,2,3-cd)pyrene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807126-01	D	Isophorone	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807126-01	D	Naphthalene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807126-01	D	n-Decane	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807126-01	D	Nitrobenzene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807126-01	D	N-Nitrosodimethylamine	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.01	D1, D7, PC3	SJM
1807126-01	D	N-Nitrosodi-n-propylamine	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807126-01	D	N-Nitrosodiphenylamine	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.006	0.01	D1, D7	SJM
1807126-01	D	n-Octadecane	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1807126-01	D	Pentachlorophenol	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1807126-01	D	Phenanthrene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807126-01	D	Phenol	07/18/18 9:00	EPA 625	7/31/18 19:48	**15.66**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807126-01	D	Pyrene	07/18/18 9:00	EPA 625	7/31/18 19:48	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807126-01	D	1,2-Diphenylhydrazine	07/18/18 9:00	EPA 8270C	7/31/18 19:48	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
Well AV-06		**(25003-2500)**									
1807167-01	D	Depth to Water	07/24/18 9:35	NA	7/24/18 09:35	**289.3**	Feet				SMPLR
1807167-01	D	Antimony	07/24/18 9:35	EPA 200.8	8/6/18 14:53	**ND**	ug/L	0.21	1.00		JB
1807167-01	D	Arsenic	07/24/18 9:35	EPA 200.8	8/6/18 14:53	**1.17**	ug/L	0.07	1.00		JB
1807167-01	D	Beryllium	07/24/18 9:35	EPA 200.8	8/6/18 14:53	**ND**	ug/L	0.33	1.00		JB
1807167-01	D	Cadmium	07/24/18 9:35	EPA 200.8	8/6/18 14:53	**ND**	ug/L	0.07	1.00		JB
1807167-01	D	Chloride	07/24/18 9:35	SM4500-Cl-E	8/5/18 12:15	**90.0**	mg/L	0.85	6.00		MGA
1807167-01	D	Chromium	07/24/18 9:35	EPA 200.8	8/6/18 14:53	**0.17**	ug/L	0.03	1.00	J	JB
1807167-01	D	Copper	07/24/18 9:35	EPA 200.8	8/6/18 14:53	**ND**	ug/L	0.36	1.00		JB
1807167-01	D	Cyanide	07/24/18 9:35	SM4500-CN-E	7/29/18 15:22	**ND**	ug/L	1.67	5.00		MGA
1807167-01	D	Cyanide Amenable	07/24/18 9:35	SM 4500-CN-G	7/29/18 15:22	**NA**	ug/L	1.67	5.00	N7	MGA
1807167-01	D	Fluoride	07/24/18 9:35	SM4500-F-C	8/2/18 11:38	**0.18**	mg/L	0.02	0.10		KMT
1807167-01	D	Lead	07/24/18 9:35	EPA 200.8	8/6/18 14:53	**0.02**	ug/L	0.01	1.00	J	JB
1807167-01	D	Mercury	07/24/18 9:35	EPA 245.1	8/14/18 11:33	**ND**	ug/L	0.19	0.20		DML
1807167-01	D	Nickel	07/24/18 9:35	EPA 200.8	8/6/18 14:53	**ND**	ug/L	0.24	1.00		JB
1807167-01	D	Nitrate	07/24/18 9:35	Calculated	7/27/18 13:09	**2.12**	mg/L	0.03	0.20		JGB
1807167-01	D	Nitrate/Nitrite	07/24/18 9:35	EPA 353.2	7/27/18 13:09	**2.17**	mg/L	0.03	0.20		KMT
1807167-01	D	Nitrite	07/24/18 9:35	SM4500-NO2 B	7/24/18 15:49	**0.05**	mg/L	0.02	0.20	J	JGB
1807167-01	D	Total Kjeldahl Nitrogen	07/24/18 9:35	EPA 351.2	7/26/18 09:45	**ND**	mg/L	0.30	0.80		HAV
1807167-01	D	Nitrogen Total Water	07/24/18 9:35	Calculated	7/27/18 13:09	**2.17**	mg/L	0.30	0.80		HAV
1807167-01	D	Selenium	07/24/18 9:35	EPA 200.8	8/6/18 14:53	**0.73**	ug/L	0.48	1.00	J	JB
1807167-01	D	Silver	07/24/18 9:35	EPA 200.8	8/6/18 14:53	**ND**	ug/L	0.03	1.00		JB
1807167-01	D	Thallium	07/24/18 9:35	EPA 200.8	8/6/18 14:53	**ND**	ug/L	0.01	1.00		JB

Qualifier Definitions

<	<1
A	Absence
B1	Target analyte detected in method blank at or above the method reporting limit.
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D4	Minimum Reporting Limit (MRL) adjusted to reflect sample amount received and analyzed.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL), but above the MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
M2	Matrix spike recovery was low; the associated blank spike recovery was acceptable.
N1	See case narrative.
N7	Additional analysis was not performed based on the "Total" result which was below the requested analyte's MCL/Action level/Trigger Level.
NA	Not Analyzed
PC3	Semi-quantitation is included in the case narrative.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction
EB	Equipment Blank

Case Narrative(s)

1807077-03, -05
Biochemical Oxygen Demand, SM 5210B: The temperature of the BOD incubator in use was not recorded on 7/12/18. The temperature for this incubator was recorded and in compliance for the remaining incubation time. ESW 7/26/18

Semi-Quantitation
Method: 625
1807126-01

Compound Name	Concentration-mg/Kg
Benzeneacetic Acid	359
Palmitic Acid	11627
Oleic Acid	5404
Stearic Acid	2559

SJM 08/10/18

1807126-01
EPA Method 625/8270 Pesticides: Target analytes flagged with N1 for this method failed the Matrix Spike RPD from the same extraction batch but the spike was performed on a different sample.
MSM 082918

1807128-01
Semi-Volatiles by EPA 625 - The base concentrate for this sample was dropped and spilled. Sample results would be invalid. Sample will be recollected for analysis. 8-2-18 JEC

Semi-Quantitation
Method: 625
1807167-01

Compound Name	Concentration-ug/L
Palmitic Acid	270
Stearic Acid	190

SJM 08/10/18

CHAIN OF CUSTODY RECORD

LEGEND Technical Services, Inc.
www.legend-group.com
☐ 17631 N. 25th Avenue • Phoenix, AZ 85023 • (602) 324-6100 • Fax (602) 324-6101
☐ 4585 S. Palo Verde Rd, Ste 423 • Tucson, AZ 85714 • (520) 327-1234 • Fax (520) 327-0518

Page ___ of ___

Please Print Clearly

CLIENT INFORMATION

Client Name	Address	City	State	Zip	Phone	Fax Number or Email Address
Pima County CRAO Lab	2955 W Calle Agua Nueva	Tucson	AZ	85745	520-724-6016	joseph.doranski@pima.c

Project Name	Project Number	Contact	P.O. No.	
Volatiles #16		Joe Doranski	19-001901	Fax Results ☐ QC Report ☐ EDD ☒ Email Results ☒ Special Detection Limits ☐

SAMPLE TYPE CODES: DW=Drinking Water, WW=Wastewater, SW=Surface Water, G=Groundwater, O=Other, S=Soil/Solid, T=Travel Blank, F=Food, G=Sludge/Biosolids

TURN AROUND TIME: Laboratory Authorization Required for Rush ☒ Standard 10 - 15 Day ☐ Other

Client's	Date	Time	Sample Location	Composite	Grab	Sample Type	Compliance	No. of Containers	pH (Lab Use Only)	EPA 8260	EPA 8260 blank	Ac/Ac & 2-CEVE	Ac/Ac & 2-CEVE	Cyanide, total mg/	Total % solids for
1807128-01	07/18/18	935	Avra valley WRF - final effluent		X	WW	X	7		X		X			
1807128-01			Travel blank			T		2			X		X		
25003-1350															
1807126-01	07/18/18	900	Avra Valley WRF - wet haul sludge		X	G	X	3		X		X		X	X
1807126-01															
25003-1573															

TO ENSURE COMPLETION OF ANALYSIS, SAMPLES MUST BE RECEIVED AT LEAST 24 HOURS PRIOR TO THE HOLD TIME EXPIRATION

Comments / Special Instructions: For the sludge, please report results in mg/kg dry, using the total % solids.

SAMPLE CONDITION UPON RECEIPT (LAB USE)

No. of Containers		
Temperature		
Custody Seals	Y	N
Seals Intact	Y	N
Preserved	Y	N

RELINQUISHED BY / SAMPLES RECEIVED BY

	Sampler Signature / Signature	Date	Signature	Date
①	Sampler Printed Name: Greg Spence	Time 1233	Printed Name: Alyssa Mazza	Time 1233
②	Signature / Printed Name	Date / Time	Signature / Printed Name	Date / Time
③	Signature / Printed Name	Date / Time	Signature / Printed Name	Date / Time

WHITE-LAB YELLOW-CLIENT

FORM GEN-170 (05/06)

PIMA COUNTY

WASTEWATER RECLAMATION

COMPLIANCE AND REGULATORY AFFAIRS OFFICE LABORATORY
2955 W Calle Agua Nueva, Tucson, AZ 85745
Telephone: (520) 724-6200

LIMS CHECKLIST FOR SUBCONTRACT DATA

LIMS ID	**1807126-01, 1807128-01**	**DO**	**19-001901**
CONTRACT LAB	**Legend Technical Services of Arizona, Inc., Phoenix**	**SAMPLE GROUP**	**Volatiles #16**
ANALYSES	**Acrolein & Acrylonitrile; Purgeable 8260, Cyanide (biosolids), % TS**	**REPORT ID**	**18G2155**

TRANSFER & CONVERT FILES:	
Was the contract lab spreadsheet file saved to \\Splimsapp\elementshare\TransferIn ?	Y
Was the above mentioned file converted from a .xls file to a .mdb file for each WO#, and further, for each subcontract location, or separate analysis (as applicable), on the contract lab report? (Element>Project Management>Reports)	Y
Was the converted file attached to the sample in LIMS?	Y
VALIDATING CONTRACT LAB REPORT , CHAIN OF CUSTODY(S), AND DO#:	
Contract Lab Report signed and dated?	Y
Copy of contract lab COC included with contract Lab Report?	Y
Contract lab COC verified with CRAO COC(s) for Sample ID, Sample Date, Analysis Requested?	Y
Sample dates and received dates on the CL report match the CL COC?	Y
CL report includes all requested analysis?	Y
CL licensed in AZ for the reported methods?	Y
Check that DO matches COC in types and number of tests?	N/A
DO received in Pima Core?	N/A
CONTRACT LAB REPORT, EXCEL SPREADSHEET, and QC:	
CL report and CL spreadsheet report the same sample results, sample date, and analysis date?	Y
Was a Case Narrative Included in Contract Lab report?	Y
Data packet includes QC Report from primary lab and any secondary subcontract labs?	Y
Did CL report list applicable AZ Data Qualifiers?	Y
Were there any dilutions made to samples that were reported as ND?	Y
If so, were they qualified due to matrix interference?	Y
Was QC included for every analysis method: typically Blk, LCS, MS, MSD?	Y
Did QC pass stated acceptance limits, or was it qualified?	Y
Were samples analyzed within required holding times?	Y
Check that MDLs are below water quality standards, If not notify Belinda Gamboa-Felix? (Cyanide, Hexachlorobenzene)	Y
Semivolatiles & Volatiles: Check that all analytes were delivered?	Y
COMPLIANCE LIMIT REVIEW	
Were results compared to the discharge permit?.	N/A
Was Belinda Gamboa-Felix notified of any exceedences?	N/A
WET TESTING SPECIFIC REQUIREMENTS	
Statement of Pass/Fail reflected in End Points?	N/A
Report states if zeolite treatment was utilized?	N/A
Survival and Reproduction or Growth Data included (P. promelas or Ceriodaphnia only)?	N/A

Chemistry data included?	N/A
Reference Toxicant Test Results and Control Chart within limits?	N/A
PMSD Determination included and within acceptable range? (minimum acceptable= 13)	N/A
End Points include TUc, NOEC, LOEC, and IC25?	N/A
Statistics verify endpoints	N/A
Control Charts Updated to include month of analysis	N/A

Reviewer Initials:	**ABR**	**Review Date:**	**11-16-18**

PEER/FINAL REVIEW:	PR	FR
LIMS/Excel data matches printed CL report?	✓	
Analysis dates are correct?	✓	
Correct Data Qualifiers included if necessary.	✓	
CRAO report shows result is from Contract Lab?	✓	
CRAO report shows correct Contract Lab (e.g. Legend Technical Services of Arizona, Phoenix)?	✓	
DO received in Pima Core	✓	
Analysis set to Reported?		✓

Peer Reviewer Initials:	JLQ	**Review Date:**	11-16-18
Biomonitor Supervisor Initials:	N/A	**Review Date:**	
Final Reviewer Initials:	JEC	**Review Date:**	11·19·18

CORRECTIVE ACTION REPORT:			
Preliminary Review:		Date:	
QA/QC Review:		Date:	
Data Entry:		Date:	
Peer Review:		Date:	
Lab Supervisor:		Date:	

LIMS #:	**DEVIATION:**	**CORRECTIVE ACTION:**

DEVIATIONS FROM ACCEPTABLE QA/QC:

Missing QC Report/Data
Holding Time for analysis exceeded.
Inappropriate dilution performed.
Missing COC.
Missing Data Qualifiers.
Incorrect Analysis Method.
Incorrect Sample IDs.
Other.

CORRECTIVE ACTION:

Request report correction from Subcontract Lab project manager.
Add missing Data Qualifiers.
Notify data end-user of deviation.
Arrange for resampling.
Other.

Bea Ronan

From: Kaitlyn Martel <kmartel@legend-group.com>
Sent: Wednesday, October 24, 2018 15:07
To: Bea Ronan
Cc: Joseph Doranski
Subject: RE: 18G2155, Volatiles #16
Attachments: 18G2155 FINAL EXCEL 24 Oct 18 1501.xls; 18G2155 Sample2MDL_lowestCOC Rev TUCSON FINAL 10 24 18 1501.pdf

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

Requested report is attached

Thank you,

Kaitlyn Martel
Tucson Lab Manager
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.
4585 S. Palo Verde Road, Ste. 423
Tucson, AZ 85714
(520) 327-1234
Fax: (520) 327-0518
kmartel@legend-group.com

Ask me about how to connect to our on-line data access portal, ClientConnect. https://az.legend-group.com/

Help the environment & save time with paperless reporting, monthly summary invoicing and

From: Bea Ronan [mailto:Bea.Ronan@pima.gov]
Sent: Tuesday, October 23, 2018 11:45 AM
To: Kaitlyn Martel <kmartel@legend-group.com>
Cc: Joseph Doranski <Joseph.Doranski@pima.gov>
Subject: RE: 18G2155, Volatiles #16

Kaitlyn,

I see that on the revised report the cyanide MDL for 18G2155-03 is now visible, but the MDLs for 2-chloroethylvinyl ether, acrolein, and acrylonitrile seem to have disappeared. Could you send us a revised report and EDD with all analytes reported to the MDL, with an MDL visible in both the report and EDD?

Thanks,
Bea Ronan

From: Kaitlyn Martel [mailto:kmartel@legend-group.com]
Sent: Tuesday, October 23, 2018 9:18 AM
To: Bea Ronan <Bea.Ronan@pima.gov>
Cc: Joseph Doranski <Joseph.Doranski@pima.gov>
Subject: RE: 18G2155, Volatiles #16

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

Requested report is attached

Thank you,

Kaitlyn Martel
Tucson Lab Manager
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.
4585 S. Palo Verde Road, Ste. 423
Tucson, AZ 85714
(520) 327-1234
Fax: (520) 327-0518
kmartel@legend-group.com

Ask me about how to connect to our on-line data access portal, ClientConnect. https://az.legend-group.com/

Help the environment & save time with paperless reporting, monthly summary invoicing and

From: Bea Ronan [mailto:Bea.Ronan@pima.gov]
Sent: Monday, October 22, 2018 10:07 AM
To: Kaitlyn Martel <kmartel@legend-group.com>
Cc: Joseph Doranski <Joseph.Doranski@pima.gov>
Subject: 18G2155, Volatiles #16

Kaitlyn,

While reviewing the data from project #18G2155, I noticed that an MDL was not included with the cyanide result for sample 18G2155-03 (1807126-01). However, the EDD does have an entry in the "DL" column for that analyte, though the "Report to MDL" column has "FALSE" entered for that analyte. Would you please send us a revised report with the MDL included for all requested analytes?

Thanks,
Bea Ronan
Chemist, Quality Assurance Unit
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory
(520) 724-6183

Bea Ronan

From: Kaitlyn Martel <kmartel@legend-group.com>
Sent: Tuesday, November 13, 2018 9:38
To: Bea Ronan
Subject: RE: 18G1593 and 18G2155
Attachments: 18G1593 Sample2MDL_lowestCOC Rev TUCSON FINAL 11 13 18 0928.pdf; 18G2155 FINAL EXCEL 13 Nov 18 0934.xls; 18G1593 FINAL EXCEL 13 Nov 18 0928.xls; 18G2155 Sample2MDL_lowestCOC Rev TUCSON FINAL 11 13 18 0934.pdf

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

Requested reports attached

Thank you,

Kaitlyn Martel
Tucson Lab Manager
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.
4585 S. Palo Verde Road, Ste. 423
Tucson, AZ 85714
(520) 327-1234
Fax: (520) 327-0518
kmartel@legend-group.com

Ask me about how to connect to our on-line data access portal, ClientConnect. https://az.legend-group.com/

Help the environment & save time with paperless reporting, monthly summary invoicing and

From: Bea Ronan [mailto:Bea.Ronan@pima.gov]
Sent: Tuesday, November 13, 2018 8:17 AM
To: Kaitlyn Martel <kmartel@legend-group.com>
Subject: FW: 18G1593 and 18G2155

Kaitlyn,

Have you been able to look into the issue we identified with 18G1593 regarding the error with the sample name in the report, and both 18G1593 and 18G2155 regarding the issue with biosolids results not being reported in mg/kg? I've forwarded my previous message for your reference.

Thanks,
Bea Ronan

From: Bea Ronan
Sent: Monday, November 5, 2018 1:48 PM
To: 'Kaitlyn Martel' <kmartel@legend-group.com>
Cc: Joseph Doranski <Joseph.Doranski@pima.gov>
Subject: 18G1593 and 18G2155

Kaitlyn,

For project 18G1593 (Volatiles #13), the report lists a partially incorrect Sample ID for one of the samples. The Legend COC lists the sample location for 18G1593-03 as "Tres Rios WRF – final effluent #3" and the Client's ID as "1807096-02," but the Analytical Report for Samples section of the report (page 2 of 76) lists the Sample ID as "1807096-02 (Tres Rios WRF Raw Influent #3)," and the same error is repeated in the sample results section on page 7 of 76 - the header preceding the list of results for 18G1593-03 refers to it as "Raw Influent #3" where it should say "Final Effluent #3."

Additionally, our AZPDES permits require results for biosolids samples to be reported in milligrams per kilogram. The biosolids sample results in both 18G1593 (-05 and -06) and 18G2155 (-03) are reported in micrograms per kilogram.

Would you please send us revised reports and EDDs for both 18G1593 and 18G2155 with biosolids results delivered in micrograms per kilogram, and with the naming error in 18G1593 corrected so that sample 18G1593-03 is correctly identified as Tres Rios WRF Final Effluent #3? We would also request that all future biosolids results be delivered in milligrams per kilogram.

Thank you,

Bea Ronan
Chemist, Quality Assurance Unit
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory
(520) 724-6183

LEGEND Technical Services, Inc.
4585 S. Palo Verde Rd., Ste. 423 • Tucson, AZ 85714
P (520) 327-1234 • F (520) 327-0518
www.legend-group.com

13 November 2018

Joe Doranski
Pima County RWRD CRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745
Fax: (520) 579-6002

RE: Volatiles

Laboratory Work Order No.: 18G2155

Legend Technical Services of Arizona, Inc. is pleased to provide the enclosed analytical results for the aforementioned project. These results relate only to the items tested. This cover letter and the accompanying pages represent the full report for these analyses and should only be reproduced in full. Samples for this project were received by the laboratory on 07/19/18 13:01.

The samples were processed in accordance with the Chain of Custody document and the results presented relate only to the samples tested. The Chain of Custody is considered part of this report.

All samples will be retained by LEGEND for 30 days from the date of this report and then discarded unless other arrangements are made. Due to hold-time and method sample volume requirements, microbiological samples are not retained unless other arrangements are made.

This entire report was reviewed and approved for release by the undersigned. If you have any questions concerning this report, please feel free to contact me.

Sincerely,
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.

Kaitlyn Martel

Kaitlyn M. Martel For P. Brian Merritt
Client Services Representative
(602) 324-6100

This laboratory report is confidential and is intended for the sole use of LEGEND and it's client.

Pima County RWRD CRAO Lab	Project: Volatiles	
2955 W Calle Agua Nueva	Project Number: Volatiles #16	**Reported:**
Tucson, AZ 85745	Project Manager: Joe Doranski	11/13/18 09:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
1807128-01	18G2155-01	Wastewater	Grab	07/18/18 09:35	07/19/18 13:01
1807128-01	18G2155-02	Wastewater	Grab	07/18/18 09:35	07/19/18 13:01
1807126-01	18G2155-03	Solid (Dry Weight)	Grab	07/18/18 09:00	07/19/18 13:01

Sample Condition Upon Receipt:

Temperature: 5.20 C

All samples were received in acceptable condition unless noted otherwise in the case narrative.

Case Narrative:

Holding Times: All holding times were met unless otherwise qualified.

QA/QC Criteria: All analyses met method requirements unless otherwise qualified.

Certifications: AZ(PHX)0004, AZ(TUC)OOO4, AIHA#102982, CDC ELITE Member.

Accreditation is applicable only to the test methods specified on the scope of accreditation held by LEGEND.

Comments: All reporting limits utilized in this report are from the approved method with the lowest possible levels of detection. All samples were analyzed on a "wet" basis unless designated as "dry weight".

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Volatiles Project Number: Volatiles #16 Project Manager: Joe Doranski	**Reported:** 11/13/18 09:34

1807128-01 (18G2155-02) Wastewater (Grab) Sampled: 07/18/18 09:35 Received: 07/19/18 13:01

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Legend Technical Services of Arizona, Inc.							
Volatile Organic Compounds										
Surrogate: 1,2-Dichloroethane-d4			*92 %*		*80-125*	*B8G1694*	*07/23/18*	*07/23/18*	*EPA 8260B*	
Surrogate: 4-Bromofluorobenzene			*92 %*		*74-120*	*B8G1694*	*07/23/18*	*07/23/18*	*EPA 8260B*	
Surrogate: Pentafluorobenzene			*100 %*		*80-120*	*B8G1694*	*07/23/18*	*07/23/18*	*EPA 8260B*	

1807126-01 (18G2155-03) Solid (Dry Weight) (Grab) Sampled: 07/18/18 09:00 Received: 07/19/18 13:01

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Legend Technical Services of Arizona, Inc.							
Inorganic Chemistry										
Cyanide, Total	<	1.50	5.85	mg/kg dry	1	B8G1784	[illegible]	[illegible]	[illegible]	E8
% Solids	**2**		1	%	1	B8G1790	07/25/18 17:20	07/25/18 17:20	SM 2540 G	
Volatile Organic Compounds										**D1**
2-Chloroethylvinyl ether	<	2.35	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Acrolein	<	55.4	233	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8, M2
Acrylonitrile	<	33.7	117	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Surrogate: 1,2-Dichlorobenzene-d4			*62 %*		*44-130*	*B8G1598*	*07/20/18*	*07/25/18*	*EPA 8260B*	
Surrogate: 1,2-Dichloroethane-d4			*59 %*		*48-123*	*B8G1598*	*07/20/18*	*07/25/18*	*EPA 8260B*	
Surrogate: 4-Bromofluorobenzene			*54 %*		*32-122*	*B8G1598*	*07/20/18*	*07/25/18*	*EPA 8260B*	
Surrogate: Pentafluorobenzene			*55 %*		*39-128*	*B8G1598*	*07/20/18*	*07/25/18*	*EPA 8260B*	
1,1,1,2-Tetrachloroethane	<	2.81	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,1,1-Trichloroethane	<	4.97	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,1,2,2-Tetrachloroethane	<	3.72	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,1,2-Trichloroethane	<	1.35	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,1-Dichloroethane	<	5.05	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,1-Dichloroethene	<	6.27	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,1-Dichloropropene	<	5.58	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,2,3-Trichlorobenzene	<	3.01	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,2,3-Trichloropropane	<	4.35	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,2,4-Trichlorobenzene	<	3.47	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,2,4-Trimethylbenzene	<	4.28	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,2-Dibromo-3-chloropropane	<	5.70	58.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,2-Dibromoethane (EDB)	<	4.16	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,2-Dichlorobenzene	<	2.99	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,2-Dichloroethane	<	6.20	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,2-Dichloropropane	<	4.76	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,3,5-Trimethylbenzene	<	4.64	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,3-Dichlorobenzene	<	4.60	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,3-Dichloropropane	<	2.72	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
1,4-Dichlorobenzene	<	4.12	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
2,2-Dichloropropane	<	6.20	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
2-Butanone	<	41.0	117	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8

Pima County RWRD CRAO Lab	Project: Volatiles	
2955 W Calle Agua Nueva	Project Number: Volatiles #16	**Reported:**
Tucson, AZ 85745	Project Manager: Joe Doranski	11/13/18 09:34

1807126-01 (18G2155-03) Solid (Dry Weight) (Grab) Sampled: 07/18/18 09:00 Received: 07/19/18 13:01

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds										**D1**
2-Chlorotoluene	<	4.63	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
2-Hexanone	<	30.8	117	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
4-Chlorotoluene	<	4.39	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
4-Methyl-2-pentanone	<	38.5	117	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Acetone	<	71.1	233	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Benzene	<	4.50	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Bromobenzene	<	4.48	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Bromochloromethane	<	6.49	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Bromodichloromethane	<	4.97	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Bromoform	<	3.81	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Bromomethane	<	7.95	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Carbon disulfide	<	9.31	117	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Carbon Tetrachloride	<	6.20	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Chlorobenzene	<	3.54	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Chloroethane	<	7.21	58.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Chloroform	<	4.92	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Chloromethane	<	5.76	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
cis-1,2-Dichloroethylene	<	6.25	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
cis-1,3-Dichloropropene	<	5.08	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Dibromochloromethane	<	2.62	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Dibromomethane	<	3.99	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Dichlorodifluoromethane	<	13.2	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Dichloromethane	<	5.56	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Ethylbenzene	<	4.68	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Hexachlorobutadiene	<	4.98	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Iodomethane	<	64.4	117	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Isopropylbenzene	<	4.46	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
m,p-Xylene	<	4.10	46.7	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Methyl methacrylate	<	50.1	117	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Methyl-tert-butyl ether	<	17.9	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Naphthalene	<	2.57	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
n-Butylbenzene	<	4.41	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
n-Propylbenzene	<	5.95	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
o-Xylene	<	3.24	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
p-Isopropyltoluene	<	4.87	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
sec-Butylbenzene	<	5.32	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Styrene	<	3.54	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
tert-Butylbenzene	<	4.80	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Tetrachloroethene	<	5.53	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8

Pima County RWRD CRAO Lab	Project: Volatiles	
2955 W Calle Agua Nueva	Project Number: Volatiles #16	**Reported:**
Tucson, AZ 85745	Project Manager: Joe Doranski	11/13/18 09:34

1807126-01 (18G2155-03) Solid (Dry Weight) (Grab) Sampled: 07/18/18 09:00 Received: 07/19/18 13:01

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds										**D1**
Toluene	**12.8**	**4.93**	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E4
Total THMs	<		23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
trans-1,2-Dichloroethene	<	4.97	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
trans-1,3-Dichloropropene	<	3.40	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
trans-1,4-Dichloro-2-butene	<	69.7	117	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	M2, E8
Trichloroethene	<	4.86	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Trichlorofluoromethane	<	7.68	23.3	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Vinyl chloride	<	2.45	5.83	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Xylenes (total)	<		70.0	mg/kg dry	2	B8G1598	07/20/18 08:30	07/25/18 18:58	EPA 8260B	E8
Surrogate: 1,2-Dichlorobenzene-d4			*66 %*		*44-130*	*B8G1598*	*07/20/18*	*07/25/18*	*EPA 8260B*	
Surrogate: 1,2-Dichloroethane-d4			*63 %*		*48-123*	*B8G1598*	*07/20/18*	*07/25/18*	*EPA 8260B*	
Surrogate: 4-Bromofluorobenzene			*57 %*		*32-122*	*B8G1598*	*07/20/18*	*07/25/18*	*EPA 8260B*	
Surrogate: Pentafluorobenzene			*59 %*		*39-128*	*B8G1598*	*07/20/18*	*07/25/18*	*EPA 8260B*	

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1807077-04

PROJECT & LOCATION: Avra Valley RWRF Wet Haul Sludge

PROJECT-LOCATION NUMBER: 25003-1573 (XXXXX-XXXX)

SAMPLE START DATE: _____ (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: _____ (Military time)

CLIENT: Sub Regional Facilities

SAMPLE END DATE: 07/11/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0921 (Military time)

SAMPLER(S): CORNELIUS (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ☐ 503 ☐ AZPDES ☐ Reuse ■ Process Control ☐ IWC ☐ Air ☐ Other _____

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other _____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	☐	☐	☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	☐	☐	☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total	☐	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other _____	☐	☐
Other _____	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other _____	☐	☐
Other _____	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other _____	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	■	☐
Solids, Volatile Suspended	☐	☐
Other _____	☐	☐

OTHER	D	C
Paint Filter	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*	_____	µg/L
☐ Specific Conductance *SM 2510 B*	_____	µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*	_____	mg/L
☐ pH @ pH Temp *SM 4500-H B*	_____ @	pH Units @ ° C
☐ Temperature *SM 2550 B*	_____	° C
☐ Total Depth of Well	_____	feet
☐ Depth to Water	_____	feet
☐ Other _____	_____	_____

Comments/Instructions:

Septum Blank Prep Date & Initials: _____ _____

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
Sample Refrigerator	Sample Refrigerator	7-11-18	0930
Sample Refrigerator	[signature]	7/11/18	1050
[signature]	Michelle German	7-11-2018	1208

Sample Integrity/Preservation:

of Bottles Delivered: 1

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 4.0 °C

Initials: _____

Q6 qualifier? ☐ YES ☑ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☑	☐	☐
Sample labels match Chain of Custody?	☑	☐	☐
Correct number of sample bottles were delivered?	☑	☐	☐
Custody seals intact?	☐	☐	☑
Within holding time?	☑	☐	☐
Sufficient sample volume for analysis?	☑	☐	☐
Samples are in properly preserved containers?	☑	☐	☐
Sample containers damaged/leaking/frozen?	☐	☑	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☑
Received from a refrigerator?	☐	☑	☐

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*
** *As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn*

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1807126-01

PROJECT & LOCATION: Avra Valley Wet Haul Sludge (Quarterly)

PROJECT-LOCATION NUMBER: 25003-1573 (XXXXX-XXXX)

SAMPLE START DATE: _____ (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: _____ (Military time)

CLIENT: IWC

SAMPLE END DATE: 07-18-2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0900 (Military time)

SAMPLER(S): Silva, Riccaboni (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other _____

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other _____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Hardness				
Iron				
Lead				
Magnesium				
Manganese				
Mercury	X		■	
Mercury LL				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Thallium				
Tin				

METALS	Tot	Diss	D	C
Titanium				
Vanadium				
Zinc				
PPMs *	X		■	
TCLP Metals				
503 Metals **			■	
Dissolved Cr+6				

WET METHODS	D	C
Ammonia as N		
Chloride		
Cyanide, Total contract	■	
Cyanide, Amenable		
Fluoride		
Ignitability		
Nitrate as N		
Nitrite as N		
Nitrate/Nitrite as N		
Nitrogen, Total Kjeldahl		
Nitrogen, Total as N		
Orthophosphate as P		
Phosphorus, Total as P		
Sulfate		
Sulfide		
Other _____		
Other _____		

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile contract	■	
Dioxin GC/SIM/MS Scan	■	
Organochlorine Pesticides & PCBs	■	
Purgeable Organics (GCMS) contract	■	
Semivolatile Organics (GCMS)	■	
Bis(2-ethylhexyl) phthalate		
Digester Gas		
Oil and Grease		
Organic Carbon, Total		
Organic Carbon, Dissolved		
TCLP Herbicides (Contract Lab)		
TCLP Pesticides		
TCLP Semivolatile Organics		
TCLP Volatile Organics		
TTHM		
Total Petroleum Hydrocarbons		
Volatile Acids		
Other _____		
Other _____		

EFFLUENT TOXICITY TESTING

	D	C
Chronic *P. promelas*		
Chronic *C. dubia*		
Chronic *Selenastrum capricornutum*		
Other _____		

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity		
BOD		
COD		
Coliform, Fecal		
Coliform, Total		
Specific Conductance		
E. coli		
Oxygen, Dissolved		
pH		
Solids, Total 1 of 2 contract	■	
Solids, Total Dissolved		
Solids, Total Suspended		
Solids, Total Volatile		
Solids, Volatile Suspended		
Other _____		

OTHER

	D	C
Paint Filter		
_____		
_____		
_____		
_____		

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other _____		

Comments/Instructions: Volatiles sent Legend TS. Cyanide and 1 of 2 TSS too. GDS 07-18-18 DO#19-001901

Septum Blank Prep Date & Initials: _____ _____

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	07-18-18	1119
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

# of Bottles Delivered: 8 GDS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 4 °C

Initials: GDS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒		
Sample labels match Chain of Custody?	☒		
Correct number of sample bottles were delivered?	☒		
Custody seals intact?			☒
Within holding time?	☒		
Sufficient sample volume for analysis?	☒		
Samples are in properly preserved containers?	☒		
Sample containers damaged/leaking/frozen?		☒	
40 ml vials headspace, > pea-sized air bubble?	☒		
Received from a refrigerator?		☒	

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)

** As, Be, Cd, Cr, Cu, Pb, Hg, Mo, Ni, Se, Ag, Tl, Zn

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY WASTEWATER MANAGEMENT
INDUSTRIAL WASTEWATER CONTROL SECTION
SAMPLE COLLECTION FIELD NOTES

1807126-01

SAMPLE LOCATION: **Avra Valley Wet Haul Sludge**

LOCATION ID: **25003-1573** SAMPLERS: Silva, Riccaboni SAMPLE DATE: 07-18-18

Last names only, primary sampler first.

SAMPLE D or C	PARAMETER	START TIME	END TIME	FREQUENCY	Time Flow	Auto Man.	Volume Submitted	BOTTLE TYPE	PRESERVATION
D	Priority Pollutant Metals		0900	Grab			1000ml		
D	503 Metals		7-18-18					DM Plastic	Ice
D	Cyanide, Total						1000 ml	DM Plastic	Ice
D	Organochlorine Pesticides						1000 ml	Amber	Ice
D	Semivolatile Organics						1000 ml	Amber	Ice
D	Dioxin Scan						1000 ml	Amber	Ice
D	Solids, Total						1000 ml	Gen Purpose	Ice
D	Solids, Total						1000 ml	Gen Purpose	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice

pH METER CALIBRATION LOG

Time	Model #	Serial #	Auto/Man.	Buffer	Reading	Buffer	Reading	Temp.	Slope	Initials
			N/A							

FIELD MEASUREMENTS

Sample	Parameter & Method	Result	Time	Initials	Sample	Parameter & Method	Result	Time	Initials
		N/A							

Notes: All Samples are unpreserved

Ac/Ac and EPA 8260 sent to outside lab. ~~Used~~ Used 1 soil Jar for Ac/Ac + EPA 8260 sample

EQUIPMENT USED: ☐ **Grab Sampler** ☐ Automatic Sampler ☐ Electric Pump ☐ Other

CHAIN OF CUSTODY RECORD

☐ 17631 N. 25th Avenue • Phoenix, AZ 85023 • (602) 324-6100 • Fax (602) 324-6101
☐ 4585 S. Palo Verde Rd, Ste 423 • Tucson, AZ 85714 • (520) 327-1234 • Fax (520) 327-0518

LEGEND Technical Services, Inc.
www.legend-group.com

Page 1 of 1

Please Print Clearly

CLIENT INFORMATION

Client Name	Address	City	State	Zip	Phone	Fax Number or Email Address
Pima County CRAO Lab	2955 W Calle Agua Nueva	Tucson	AZ	85745	520-724-6016	joseph.doranski@pima.c

Project Name	Project Number	Contact	P.O. No.	
Volatiles #16		Joe Doranski	19-001901	Fax Results ☐ Email Results ☑ QC Report ☐ EDD ☑ Special Detection Limits ☐

SAMPLE TYPE CODES: DW=Drinking Water; WW=Wastewater; SW=Surface Water; G=Groundwater; O=Other; S=Soil/Solid; T=Travel Blank; F=Food; G=Sludge/Biosolids

TURN AROUND TIME: Laboratory Authorization Required for Rush; ☑ Standard 10 - 15 Day; ☐ Other _____

REQUESTED ANALYSES

Client's	Date	Time	Sample Location	Composite	Grab	Sample Type	Compliance	No. of Containers	Lab # (Lab Use Only)	EPA 8260	EPA 8260 blank	Ac/Ac & 2-CEVE	Ac/Ac & 2-CEVE	Cyanide, total mg/	Total % solids for
1807128-01	07/18/18	935	Avra valley WRF - final effluent		X	WW	X	7		X		X			
1807128-01			Travel blank			T		2			X		X		
25003-1350															
1807126-01	07/18/18	900	Avra Valley WRF - wet haul sludge		X	G	X	3		X		X		X	X
1807126-01															
25003-1573															

TO ENSURE COMPLETION OF ANALYSIS, SAMPLES MUST BE RECEIVED AT LEAST 3 HOURS PRIOR TO THE HOLD TIME EXPIRATION

Comments / Special Instructions: For the sludge, please report results in mg/kg dry, using the total % solids.

SAMPLE CONDITION UPON RECEIPT (Lab Use)

No. of Containers		
Temperature		
Custody Seals	Y	N
Seals Intact	Y	N
Preserved	Y	N

RELINQUISHED BY / SAMPLES RECEIVED BY

	Relinquished by: Signature / Printed Name	Date / Time	Received by: Signature / Printed Name	Date / Time
①	Sampler Signature: [signature]; Sampler Printed Name: Greg Spence	Date 7/19/18; Time 1233	Signature: Alyssa Mazza; Printed Name: Alyssa Mazza	Date 7/19/18; Time 1233
②	Signature; Printed Name	Date; Time	Signature; Printed Name	Date; Time
③	Signature; Printed Name	Date; Time	Signature; Printed Name	Date; Time

WHITE-LAB YELLOW-CLIENT

FORM GEN-170 (05/06)

PIMA COUNTY
WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson, Arizona 85745-9750, Phone (520) 724-6200

Report Date: 02/12/2019
Laboratory License: AZO159

Sample Analysis Report

Client:	Industrial Wastewater Control	Work Order ID:	1810077
Project:	Avra Valley WRF	Lab Received Date:	10/10/18 12:21
Permit Type:	AZPDES	Project Number:	25003

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Bio-solids sample 1810077-01 analyzed by CRAO Lab for EPA Methods 624, 625, 8260, 8270C: MRLs corrected and recalculated in this printed Report version. Sample results not changed. JEC 2/8/19 -edited JEC 2/12/19

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory Licensure Rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Graff 2·12·19

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

Date

Sample ID: **1810077-01** **Sample Start Date/Time** 10/10/2018 9:35:00

Site Location: Wet Haul Sludge **Sample End Date/Time** 10/10/2018 9:35:00

Site Number: 25003-1573 **Sampled By:** Courtney Kaufman

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
Antimony	D	EPA 6010D	10/18/18 11:31	**ND**	mg/kg dry		7.56		MLB	
Arsenic	D	EPA 6010D	10/18/18 13:32	**ND**	mg/kg dry		7.56		MLB	
Beryllium	D	EPA 6010D	10/18/18 11:31	**ND**	mg/kg dry		1.51		MLB	
Cadmium	D	EPA 6010D	10/18/18 11:31	**ND**	mg/kg dry		3.02		MLB	
Chromium	D	EPA 6010D	10/18/18 11:31	**17.7**	mg/kg dry		7.56		MLB	
Copper	D	EPA 6010D	10/18/18 11:31	**185**	mg/kg dry		7.56		MLB	
Lead	D	EPA 6010D	10/18/18 13:32	**8.35**	mg/kg dry		7.56		MLB	
Molybdenum	D	EPA 6010D	10/18/18 11:31	**9.32**	mg/kg dry		3.02		MLB	
Nickel	D	EPA 6010D	10/18/18 11:31	**12.5**	mg/kg dry		7.56		MLB	
Selenium	D	EPA 6010D	10/18/18 13:32	**ND**	mg/kg dry		15.11		MLB	
Silver	D	EPA 6010D	10/18/18 17:13	**ND**	mg/kg dry		0.76		MLB	
Thallium	D	EPA 6010D	10/18/18 11:31	**ND**	mg/kg dry		7.56		MLB	
Zinc	D	EPA 6010D	10/18/18 11:31	**539**	mg/kg dry		7.56		MLB	
Mercury	D	EPA 7471B	10/30/18 14:08	**0.74**	mg/kg dry		0.01		MJC	
% Solids	D	% calculation	10/30/18 18:03	**2.0**	%				BDP	*
* Analysis Performed by:Legend Technical Services, Inc., St. Paul - See attached contract lab report for official results.										
PCB (Total Calculation)	D	[CALC]	10/22/18 21:10	**ND**	mg/kg		2.3	E8	MRH	*
* Analysis Performed by:Legend Technical Services, Inc., St. Paul - See attached contract lab report for official results.										
delta-BHC	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.61	3.3	E8	MRH	*
beta-BHC	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.59	3.3	E8	MRH	*
alpha-Chlordane	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.62	3.3	E8	MRH	*
alpha-BHC	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.57	3.3	E8	MRH	*
Aldrin	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.58	3.3	E8	MRH	*
4,4'-DDT	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.62	3.3	E8	MRH	*
Endosulfan I	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.60	3.3	E8	MRH	*
4,4'-DDD	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.62	3.3	E8	MRH	*
Endosulfan II	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.62	3.3	E8	MRH	*
4,4'-DDE	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.62	3.3	E8	MRH	*
Methoxychlor	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.61	3.3	E8	MRH	*
Dieldrin	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.62	3.3	E8	MRH	*
Toxaphene	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	1.2	6.7	E8	MRH	*
Heptachlor epoxide	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.61	3.3	E8	MRH	*
Heptachlor	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.58	3.3	E8	MRH	*
gamma-Chlordane	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.61	3.3	E8	MRH	*
gamma-BHC (Lindane)	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.58	3.3	E8	MRH	*
Endrin ketone	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.59	3.3	E8	MRH	*
Endrin aldehyde	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.56	3.3	E8	MRH	*
Endrin	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.59	3.3	E8	MRH	*
Endosulfan sulfate	D	EPA 8081B	10/22/18 21:10	**ND**	mg/kg dry	0.63	3.3	E8	MRH	*
* Analysis Performed by:Legend Technical Services, Inc., St. Paul - See attached contract lab report for official results.										
Aroclor 1260	D	EPA 8082A	10/22/18 21:10	**ND**	mg/kg dry	1.9	17	E8	MRH	*
Aroclor 1254	D	EPA 8082A	10/22/18 21:10	**ND**	mg/kg dry	2.1	17	E8	MRH	*
Aroclor 1248	D	EPA 8082A	10/22/18 21:10	**ND**	mg/kg dry	1.7	17	E8	MRH	*
Aroclor 1242	D	EPA 8082A	10/22/18 21:10	**ND**	mg/kg dry	1.4	17	E8	MRH	*
Aroclor 1232	D	EPA 8082A	10/22/18 21:10	**ND**	mg/kg dry	4.4	17	E8	MRH	*
Aroclor 1221	D	EPA 8082A	10/22/18 21:10	**ND**	mg/kg dry	4.4	17	E8	MRH	*
Aroclor 1016	D	EPA 8082A	10/22/18 21:10	**ND**	mg/kg dry	2.4	17	E8	MRH	*
* Analysis Performed by:Legend Technical Services, Inc., St. Paul - See attached contract lab report for official results.										
Cyanide, Total	D	EPA 9014	10/19/18 16:15	**ND**	mg/kg dry	1.34	5.24	N1	AM	*
* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.										

Sample ID: **1810077-01** **Sample Start Date/Time** 10/10/2018 9:35:00

Site Location: Wet Haul Sludge **Sample End Date/Time** 10/10/2018 9:35:00

Site Number: 25003-1573 **Sampled By:** Courtney Kaufman

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
% Solids	D	SM 2540 G	10/15/18 16:25	2	%		1		SLL	*

* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.

% Solids	D	SM 2540G	10/11/18 14:27	2.05	%		0.01		ANM	
Acrolein	D	EPA 624	10/18/18 18:17	ND	mg/kg dry	0.0202	0.10	S7, V1	JEL	
Acrylonitrile	D	EPA 624	10/18/18 18:17	ND	mg/kg dry	0.0350	0.10	S7, V1	JEL	
trans-1,2-Dichloroethene	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.003	0.01		ADP	
Vinyl chloride	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.004	0.01		ADP	
Trichlorofluoromethane	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.005	0.01		ADP	
Trichloroethene	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.003	0.01		ADP	
Total Trihalomethanes	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.006	0.01		ADP	
1,2-Dichlorobenzene	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.002	0.01		ADP	
1,1-Dichloroethene	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.002	0.01		ADP	
1,1-Dichloroethane	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.003	0.01		ADP	
1,1,2-Trichloroethane	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.002	0.01		ADP	
1,1,2,2-Tetrachloroethane	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.001	0.01		ADP	
1,1,1-Trichloroethane	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.004	0.01		ADP	
trans-1,3-Dichloropropene	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.002	0.01		ADP	
1,3-Dichlorobenzene	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.002	0.01		ADP	
Chlorobenzene	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.001	0.01		ADP	
Tetrachloroethene	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.004	0.01		ADP	
Methylene Chloride	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.004	0.01		ADP	
Ethyl Benzene	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.002	0.01		ADP	
Dibromochloromethane	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.001	0.01		ADP	
cis-1,3-Dichloropropene	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.002	0.01		ADP	
Chloromethane	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.004	0.01		ADP	
1,2-Dichloroethane	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.002	0.01		ADP	
Chloroethane	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.004	0.01		ADP	
1,2-Dichloropropane	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.002	0.01		ADP	
Carbon Tetrachloride	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.007	0.01		ADP	
Bromomethane	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.003	0.01		ADP	
Bromoform	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.006	0.01		ADP	
Bromodichloromethane	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.005	0.01		ADP	
Benzene	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.002	0.01		ADP	
2-Chloroethyl vinyl ether	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.005	0.01		ADP	
1,4-Dichlorobenzene	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.003	0.01		ADP	
Chloroform	D	EPA 624	10/16/18 17:36	ND	mg/kg dry	0.003	0.01		ADP	
2,3,7,8-TCDD - Dioxin Scan	D	EPA 625	11/7/18 15:13	ND	ug/kg dry		1.22		SJM	
2,4,6-Trichlorophenol	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
2,3-Dichloroaniline	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.09	0.24	D1, D7	SJM	
1,2,4-Trichlorobenzene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
2,4-Dinitrophenol	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.34	0.40	D1, D7	SJM	
2-Nitrophenol	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.11	0.24	D1, D7	SJM	
Benzidine	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.26	0.40	D1, D7	SJM	
Anthracene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.08	0.08	D1, D7	SJM	
Acenaphthylene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
Acenaphthene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
4-Nitrophenol	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.19	0.24	D1, D7	SJM	
4-Methylphenol	D	EPA 625	11/26/18 16:39	485.7	mg/kg dry	0.07	0.40	D1, D2, D7	SJM	
4-Chlorophenyl phenyl ether	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
4-Chloro-3-methylphenol	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.09	0.24	D1, D7	SJM	

Sample ID: **1810077-01** **Sample Start Date/Time** 10/10/2018 9:35:00

Site Location: Wet Haul Sludge **Sample End Date/Time** 10/10/2018 9:35:00

Site Number: 25003-1573 **Sampled By:** Courtney Kaufman

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
2,4-Dichlorophenol	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.07	0.08	D1, D7	SJM	
3,3-Dichlorobenzidine	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.09	0.20	D1, D7	SJM	
2,4-Dimethylphenol	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.14	0.24	D1, D7	SJM	
2-Methylphenol	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
2-Methyl-4,6-dinitrophenol	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.21	0.24	D1, D7	SJM	
2-Chlorophenol	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
2-Chloronaphthalene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
2,6-Dinitrotoluene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
2,4-Dinitrotoluene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.09	0.24	D1, D7	SJM	
4-Bromophenyl phenyl ether	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
Benzo[b]fluoranthene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
Benzo[a]anthracene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
Benzo[a]pyrene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.08	0.08	D1, D7	SJM	
Chrysene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
Hexachloroethane	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
Hexachlorocyclopentadiene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.17	0.24	D1, D7	SJM	
Hexachlorobutadiene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.04	0.08	D1, D7	SJM	
Hexachlorobenzene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.02	0.08	D1, D7	SJM	
Fluorene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
Fluoranthene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
Dimethyl phthalate	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.02	0.08	D1, D7	SJM	
Diethyl phthalate	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.09	0.24	D1, D7	SJM	
Dibenzo(a,h)anthracene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.12	0.24	D1, D7	SJM	
Di-n-butyl phthalate	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.10	0.24	D1, D7	SJM	
n-Decane	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.08	0.08	D1, D7	SJM	
Carbazole	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.11	0.24	D1, D7	SJM	
Butylbenzylphthalate	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.08	0.08	D1, D7	SJM	
bis(2-ethylhexyl)phthalate	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.11	0.24	D1, D7	SJM	
bis(2-chloroisopropyl)ether	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.07	0.08	D1, D7	SJM	
bis(2-chloroethyl)ether	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.08	0.24	D1, D7	SJM	
bis(2-chloroethoxy)methane	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.08	0.08	D1, D7	SJM	
Benzo[k]fluoranthene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.09	0.24	D1, D7	SJM	
Benzo[ghi]perylene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.12	0.24	D1, D7	SJM	
Di-n-octyl phthalate	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.10	0.24	D1, D7	SJM	
Phenanthrene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.07	0.08	D1, D7	SJM	
Phenol	D	EPA 625	11/1/18 18:40	7.04	mg/kg dry	0.10	0.24	D1, D7	SJM	
Indeno(1,2,3-cd)pyrene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.11	0.24	D1, D7	SJM	
Isophorone	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.07	0.08	D1, D7	SJM	
Pentachlorophenol	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.16	0.24	D1, D7	SJM	
Nitrobenzene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.08	0.24	D1, D7	SJM	
Naphthalene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.07	0.08	D1, D7	SJM	
n-Octadecane	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.09	0.24	D1, D7	SJM	
N-Nitrosodiphenylamine	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.24	0.40	D1, D7	SJM	
N-Nitrosodimethylamine	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.08	0.24	D1, D7, PC3	SJM	
N-Nitrosodi-n-propylamine	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.10	0.24	D1, D7	SJM	
Pyrene	D	EPA 625	11/1/18 18:40	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
cis-1,2-Dichloroethene	D	EPA 8260	10/16/18 17:36	ND	mg/kg dry	0.004	0.01		ADP	
Xylenes, total	D	EPA 8260	10/16/18 17:36	ND	mg/kg dry	0.003	0.02		ADP	
Styrene	D	EPA 8260	10/16/18 17:36	1.37	mg/kg dry	0.002	0.01	N1	ADP	
o-Xylene	D	EPA 8260	10/16/18 17:36	ND	mg/kg dry	0.002	0.01		ADP	
1,2-Dibromoethane	D	EPA 8260	10/16/18 17:36	ND	mg/kg dry	0.002	0.01		ADP	
1,2-Dibromo-3-chloropropane	D	EPA 8260	10/16/18 17:36	ND	mg/kg dry	0.002	0.02		ADP	
1,2,4-Trichlorobenzene	D	EPA 8260	10/16/18 17:36	ND	mg/kg dry	0.002	0.01		ADP	
m,p-Xylenes	D	EPA 8260	10/16/18 17:36	ND	mg/kg dry	0.003	0.02		ADP	
2,4,5-Trichlorophenol	D	EPA 8270C	11/1/18 18:40	ND	mg/kg dry	0.10	0.24		SJM	

Sample ID: **1810077-01** **Sample Start Date/Time** 10/10/2018 9:35:00

Site Location: Wet Haul Sludge **Sample End Date/Time** 10/10/2018 9:35:00

Site Number: 25003-1573 **Sampled By:** Courtney Kaufman

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
Pyridine	D	EPA 8270C	11/1/18 18:40	ND	mg/kg dry	0.06	0.08		SJM	
1,2-Diphenylhydrazine	D	EPA 8270C	11/1/18 18:40	ND	mg/kg dry	0.04	0.08	D1, D7	SJM	
1,4-Dichlorobenzene	D	EPA 8270C	11/1/18 18:40	ND	mg/kg dry	0.05	0.08		SJM	

Sample ID: **1810077-01RE1** **Sample Start Date/Time** 10/10/2018 9:35:00

Site Location: Wet Haul Sludge **Sample End Date/Time** 10/10/2018 9:35:00

Site Number: 25003-1573 **Sampled By:** Courtney Kaufman

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
Toluene	D	EPA 624	10/17/18 17:31	**95.38**	mg/kg dry	0.003	0.05	D2	ADP	

Qualifier Definitions

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
E8	Analyte reported to the MDL per project specification. Target analyte was not detected in the sample.
N1	See case narrative.
PC3	Semi-quantitation is included in the case narrative.
S7	Surrogate recovery was below laboratory and method acceptance limits. Unable to confirm matrix effect.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis.
RPD	Relative Percent Difference.
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction
EB	Equipment Blank

Case Narrative(s)

1810077-01
EPA 9014 The matrix spike for this batch failed, but the spike was performed on another client's sample. See contract lab report for additional case narrative. JD 12-20-18

1810077-01
EPA Method 624/8260 Purgeables: Due to linear calibration model, results for analytes flagged with N1 are biassed high. MCD 12/26/2018

Semi-Quantitation
Method: 625
1810077-01

Compound Name	Concentration-mg/Kg
Benzeneacetic Acid	202
Palmitic Acid	4058
Oleic Acid	2537
Stearic Acid	854

SJM 12/18/18

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1810077-01

PROJECT & LOCATION: Avra Valley Wet Haul Sludge (Quarterly)

PROJECT-LOCATION NUMBER: 25003-1573 (XXXXX-XXXX)

SAMPLE START DATE: (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: (Military time)

CLIENT: IWC

SAMPLE END DATE: 10-10-2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0935 (Military time)

SAMPLER(S): Silva, Kaufman (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	×		■	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	×		■	☐
TCLP Metals			☐	☐
503 Metals **			■	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total contract	■	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other	☐	☐
Other	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	■	☐
Dioxin GC/SIM/MS Scan	■	☐
Organochlorine Pesticides & PCBs contract	■	☐
Purgeable Organics (GCMS)	■	☐
Semivolatile Organics (GCMS)	■	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other	☐	☐
Other	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other	☐	☐

OTHER	D	C
Paint Filter	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions: Duplicate Total Solids Cyanide and 624+ Pesticides sent to Legend TS. 624+ GCS 10-10-18 PO# 19-010886 1 of 2 TSS

624+ GCS 10-10-18

Septum Blank Prep Date & Initials: 09-18-2018 lej + mf

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
		10-10-18	1221
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

of Bottles Delivered: 9 GCS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 2 °C

Initials: GCS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☒	☐
Received from a refrigerator?	☐	☒	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY WASTEWATER MANAGEMENT
INDUSTRIAL WASTEWATER CONTROL SECTION
SAMPLE COLLECTION FIELD NOTES

1810077-01

SAMPLE LOCATION: **Avra Valley Wet Haul Sludge**

LOCATION ID: **25003-1573** SAMPLERS: Silva Kaufman (Last names only, primary sampler first.) SAMPLE DATE: 10/10/18

SAMPLE D or C	PARAMETER	START TIME	END TIME	FREQUENCY	Time Flow	Auto Man.	Volume Submitted	BOTTLE TYPE	PRESERVATION
D	Priority Pollutant Metals		0935	Grab	T	man	1000ml		
D	503 Metals							DM Plastic	Ice
D	Cyanide, Total						1000 ml	DM Plastic	Ice
D	Organochlorine Pesticides						1000 ml	Amber	Ice
D	Semivolatile Organics						1000 ml	Amber	Ice
D	Dioxin Scan						1000 ml	Amber	Ice
D	Solids, Total						1000 ml	Gen Purpose	Ice
D	Solids, Total						1000 ml	Gen Purpose	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Purgeable Organics						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice
D	Acrolein and Acrylonitrile						40 ml	Septum	Ice

pH METER CALIBRATION LOG

Time	Model #	Serial #	Auto/Man.	Buffer	Reading	Buffer	Reading	Temp.	Slope	Initials
				N/A						

FIELD MEASUREMENTS

Sample	Parameter & Method	Result	Time	Initials	Sample	Parameter & Method	Result	Time	Initials
	N/A					N/A			

Notes: All Samples are unpreserved

EQUIPMENT USED: ☐ Grab Sampler ☐ Automatic Sampler ☐ Electric Pump ☐ Other _____

CHAIN OF CUSTODY RECORD

LEGEND Technical Services, Inc.
☐ 17831 N. 25th Avenue • Phoenix, AZ 85023 • (602) 324-6100 • Fax (602) 324-6101
☐ 4585 S. Palo Verde Rd, Ste 423 • Tucson, AZ 85714 • (520) 327-1234 • Fax (520) 327-0518

Page 1 of 1

Please Print Clearly

Client Name	Address	City	State	Zip	Phone	Fax Number or Email Address
Pima County CRAO Lab	2955 W Calle Agua Nueva	Tucson	AZ	85745	520-724-6016	joseph.doranski@pima.gov

Project Name	Project Number	Contact	P.O. No.	
Pesticides #12		Joe Doranski	19-010886	Fax Results ☐ Email Results ☒ QC Report ☐ EDD ☒ Special Detection Limits ☐

DW=Drinking Water, WW=Wastewater, SW=Surface Water, GW=Groundwater, O=Other, S=Soil/Solid, T=Travel Blank, F=Food, G=Sludge/Biosolids

Laboratory Authorization Required for Rush
☒ Standard 10 - 15 Day
☐ Other _____

Client's Sample Identification	Date	Time	Sample Location	Composite	Grab	Sample Type	Compliance	No. of Containers	EPA 608 extended	EPA 608 extended mg/kg	Total cyanide mg/kg	Total % solids dry weight	
1810077-01	10/10/18	935	Avra Valley WRF wet haul sludge		X	G	X	3		X	X	X	-01
1810078-02	10/10/18	1020	SAVAHCS PL#1	X		WW		1	X				-02
1810078-04	10/10/18	950	SAVAHCS PL#2	X		WW		1	X				-03
1810081-02	10/10/18	1405	EDG Fuels Inc. PL#2	X		WW		1	X				-04

Comments / Special Instructions: Analyte list emailed. Samples are unpreserved. EPA 608, total PCBs and Methoxychlor. Please report results from the sludge sample in mg/kg dry weight.

	°C	
	Y	N
	Y	N
	Y	N

①	Sampler Signature		Date 10/11/18	Signature	Date 10/11/18
	Sampler Printed Name Greg Spence		Time 1037	Printed Name Alyssa Mazza	Time 1037
②	Signature		Date	Signature	Date
	Printed Name		Time	Printed Name	Time
③	Signature		Date	Signature	Date
	Printed Name		Time	Printed Name	Time

WHITE-LAB YELLOW-CLIENT

FORM CS-016.2 (07/18)

PIMA COUNTY

WASTEWATER RECLAMATION

COMPLIANCE AND REGULATORY AFFAIRS OFFICE LABORATORY
2955 W Calle Agua Nueva, Tucson, AZ 85745
Telephone: (520) 724-6200

LIMS CHECKLIST FOR SUBCONTRACT DATA

LIMS ID	**1810077-01; 1810078-02,-04; 1810081-02**	**DO**	**19-010886**
CONTRACT LAB	**Legend Technical Services, St. Paul; Phoenix**	**SAMPLE GROUP**	**Pesticides #12**
ANALYSES	**Pesticides, CN and %TS (Biosolids)**	**REPORT ID**	**18J1367**

TRANSFER & CONVERT FILES:	
Was the contract lab spreadsheet file saved to \\Splimsapp\elementshare\TransferIn ?	Y
Was the above mentioned file converted from a .xls file to a .mdb file for each WO#, and further, for each subcontract location, or separate analysis (as applicable), on the contract lab report? (Element>Project Management>Reports)	Y
Was the converted file attached to the sample in LIMS?	Y
VALIDATING CONTRACT LAB REPORT , CHAIN OF CUSTODY(S), AND DO#:	
Contract Lab Report signed and dated?	Y
Copy of contract lab COC included with contract Lab Report?	Y
Contract lab COC verified with CRAO COC(s) for Sample ID, Sample Date, Analysis Requested?	Y
Sample dates and received dates on the CL report match the CL COC?	Y
CL report includes all requested analysis?	Y
CL licensed in AZ for the reported methods?	Y
Check that DO matches COC in types and number of tests?	N/A
DO received in Pima Core?	N/A
CONTRACT LAB REPORT, EXCEL SPREADSHEET, and QC:	
CL report and CL spreadsheet report the same sample results, sample date, and analysis date?	Y
Was a Case Narrative Included in Contract Lab report?	Y
Data packet includes QC Report from primary lab and any secondary subcontract labs?	Y
Did CL report list applicable AZ Data Qualifiers?	Y
Were there any dilutions made to samples that were reported as ND?	N
If so, were they qualified due to matrix interference?	NA
Was QC included for every analysis method: typically Blk, LCS, MS, MSD?	Y
Did QC pass stated acceptance limits, or was it qualified?	Y
Were samples analyzed within required holding times?	Y
Check that MDLs are below water quality standards, If not notify Belinda Gamboa-Felix? (Cyanide, Hexachlorobenzene)	Y
Semivolatiles & Volatiles: Check that all analytes were delivered?	N/A
COMPLIANCE LIMIT REVIEW	
Were results compared to the discharge permit?.	N/A
Was Belinda Gamboa-Felix notified of any exceedences?	N/A
WET TESTING SPECIFIC REQUIREMENTS	
Statement of Pass/Fail reflected in End Points?	N/A
Report states if zeolite treatment was utilized?	N/A
Survival and Reproduction or Growth Data included (P. promelas or Ceriodaphnia only)?	N/A
Chemistry data included?	N/A

Reference Toxicant Test Results and Control Chart within limits?			N/A
PMSD Determination included and within acceptable range? (minimum acceptable= 13)			N/A
End Points include TUc, NOEC, LOEC, and IC25?			N/A
Statistics verify endpoints			N/A
Control Charts Updated to include month of analysis			N/A
Reviewer Initials:	**ABR**	**Review Date:**	**12-17-18**

PEER/FINAL REVIEW:			PR	FR
LIMS/Excel data matches printed CL report?			✓	
Analysis dates are correct?			✓	
Correct Data Qualifiers included if necessary.			✓	
CRAO report shows result is from Contract Lab?			✓	
CRAO report shows correct Contract Lab (e.g. Legend Technical Services of Arizona, Phoenix)?			✓	
DO received in Pima Core			✓	
Analysis set to Reported?				✓
Peer Reviewer Initials:	JLR	**Review Date:**	12-20-18	
Biomonitor Supervisor Initials:	N/A	**Review Date:**		
Final Reviewer Initials:	JEC	**Review Date:**	12·28·18	

CORRECTIVE ACTION REPORT:			
Preliminary Review:		Date:	
QA/QC Review:		Date:	
Data Entry:		Date:	
Peer Review:		Date:	
Lab Supervisor:		Date:	

LIMS #:	**DEVIATION:**	**CORRECTIVE ACTION:**

DEVIATIONS FROM ACCEPTABLE QA/QC:

Missing QC Report/Data
Holding Time for analysis exceeded.
Inappropriate dilution performed.
Missing COC.
Missing Data Qualifiers.
Incorrect Analysis Method.
Incorrect Sample IDs.
Other.

CORRECTIVE ACTION:

Request report correction from Subcontract Lab project manager.
Add missing Data Qualifiers.
Notify data end-user of deviation.
Arrange for resampling.
Other.

QA-18 SubcontractDataCheclist-Reports Rev 16
Effective 7-25-16

Page 2 of 2

Bea Ronan

From: Kaitlyn Martel <kmartel@legend-group.com>
Sent: Wednesday, December 19, 2018 9:35
To: Bea Ronan
Cc: Joseph Doranski; Brian Merritt
Subject: RE: Report Pesticides #12 10-11-18

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

That work order is not your sample, it would have been another processed within the batch that was used for QC purposes. The subcontract labs assign their own work order numbers to each sample which is where that number comes from. Beyond the QC portion, they do not appear elsewhere on reports.

Thank you,

Kaitlyn Martel
Tucson Lab Manager
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.
4585 S. Palo Verde Road, Ste. 423
Tucson, AZ 85714
(520) 327-1234
Fax: (520) 327-0518
kmartel@legend-group.com

Ask me about how to connect to our on-line data access portal, ClientConnect. https://az.legend-group.com/

Help the environment & save time with paperless reporting, monthly summary invoicing and

From: Bea Ronan <Bea.Ronan@pima.gov>
Sent: Tuesday, December 18, 2018 1:51 PM
To: Kaitlyn Martel <kmartel@legend-group.com>
Cc: Joseph Doranski <Joseph.Doranski@pima.gov>
Subject: RE: Report Pesticides #12 10-11-18

Kaitlyn,

While reviewing the report for Pesticides #12 (18J1367), we noticed that the sample listed as the Source for the matrix spike and spike duplicate is "1804324-01." We are wondering if this is our sample, and if there is a way for us to be able to distinguish this for ourselves in the future.

Thanks,
Bea Ronan

From: Kaitlyn Martel [mailto:kmartel@legend-group.com]
Sent: Friday, December 14, 2018 2:05 PM
To: Bea Ronan <Bea.Ronan@pima.gov>; Joseph Doranski <Joseph.Doranski@pima.gov>
Cc: Jenelle Chraft <Jenelle.Chraft@pima.gov>; Brian Merritt <bmerritt@legend-group.com>
Subject: RE: Report Pesticides #12 10-11-18

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

Revised report attached

Thank you,

Kaitlyn Martel
Tucson Lab Manager
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.
4585 S. Palo Verde Road, Ste. 423
Tucson, AZ 85714
(520) 327-1234
Fax: (520) 327-0518
kmartel@legend-group.com

Ask me about how to connect to our on-line data access portal, ClientConnect. https://az.legend-group.com/

Help the environment & save time with paperless reporting, monthly summary invoicing and

From: Bea Ronan <Bea.Ronan@pima.gov>
Sent: Monday, December 10, 2018 1:42 PM
To: Kaitlyn Martel <kmartel@legend-group.com>; Joseph Doranski <Joseph.Doranski@pima.gov>
Cc: Jenelle Chraft <Jenelle.Chraft@pima.gov>; Brian Merritt <bmerritt@legend-group.com>
Subject: RE: Report Pesticides #12 10-11-18

Kaitlyn,

The report and EDD for 18J1367 ("Pesticides #12") list the date-of-analysis for the Aroclor Total result of sample 18J1367-01 as 10-18-18, but states that the individual Aroclor analytes for this sample were analyzed on 10-22-18. Would you provide us with a revised report and EDD which list the correct date-of-analysis for all Aroclor analytes, including the Aroclor Total calculation?

Thanks,
Bea Ronan

From: Kaitlyn Martel [mailto:kmartel@legend-group.com]
Sent: Tuesday, November 6, 2018 3:12 PM
To: Joseph Doranski <Joseph.Doranski@pima.gov>; Bea Ronan <Bea.Ronan@pima.gov>
Subject: Report Pesticides #12 10-11-18

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

Report attached

Kaitlyn Martel
Tucson Lab Manager
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.
4585 S. Palo Verde Road, Ste. 423
Tucson, AZ 85714
(520) 327-1234
Fax: (520) 327-0518
kmartel@legend-group.com

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Technical Services, Inc.

4585 S. Palo Verde Rd., Ste. 423 • Tucson, AZ 85714
P (520) 327-1234 • F (520) 327-0518
www.legend-group.com

14 December 2018

Joe Doranski
Pima County RWRD CRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745
Fax: (520) 579-6002

RE: Pesticides

Laboratory Work Order No.: 18J1367

Legend Technical Services of Arizona, Inc. is pleased to provide the enclosed analytical results for the aforementioned project. These results relate only to the items tested. This cover letter and the accompanying pages represent the full report for these analyses and should only be reproduced in full. Samples for this project were received by the laboratory on 10/11/18 12:55.

The samples were processed in accordance with the Chain of Custody document and the results presented relate only to the samples tested. The Chain of Custody is considered part of this report.

All samples will be retained by LEGEND for 30 days from the date of this report and then discarded unless other arrangements are made. Due to hold-time and method sample volume requirements, microbiological samples are not retained unless other arrangements are made.

This entire report was reviewed and approved for release by the undersigned. If you have any questions concerning this report, please feel free to contact me.

Sincerely,
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.

Kaitlyn Martel

Kaitlyn M. Martel For P. Brian Merritt
Client Services Representative
(602) 324-6100

This laboratory report is confidential and is intended for the sole use of LEGEND and it's client.

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #12 10/11/18 Project Manager: Joe Doranski	Reported: 12/14/18 14:01

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
1810077-01	18J1367-01	Solid (Dry Weight)	Grab	10/10/18 09:35	10/11/18 12:55
1810078-02	18J1367-02	Wastewater	Composite	10/10/18 10:20	10/11/18 12:55
1810078-04	18J1367-03	Wastewater	Composite	10/10/18 09:50	10/11/18 12:55
1810081-02	18J1367-04	Wastewater	Composite	10/10/18 14:05	10/11/18 12:55

Sample Condition Upon Receipt:

Temperature: 2.40 C

All samples were received in acceptable condition unless noted otherwise in the case narrative.

Case Narrative:

Holding Times: All holding times were met unless otherwise qualified.

QA/QC Criteria: All analyses met method requirements unless otherwise qualified.

Certifications: AZ(PHX)0004, AZ(TUC)OOO4, AIHA#102982, CDC ELITE Member.

Accreditation is applicable only to the test methods specified on the scope of accreditation held by LEGEND.

Comments: All reporting limits utilized in this report are from the approved method with the lowest possible levels of detection. All samples were analyzed on a "wet" basis unless designated as "dry weight".

N1- The sample's matrix is solid (dry weight), however, the sample is in a liquid state. The sample was not treated as a solid per the method's SOP. The sample was filtered through a 0.45um filter and was run unpreserved.

This report contains data that were produced by a subcontracted laboratory certified for the fields of testing performed.

Legend Technical Services, St. Paul AZ0557

Bach Pham

651.221.4062

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #12 10/11/18 Project Manager: Joe Doranski	Reported: 12/14/18 14:01

1810077-01 (18J1367-01) Solid (Dry Weight) (Grab) Sampled: 10/10/18 09:35 Received: 10/11/18 12:55

Legend Technical Services, Inc. #AZ0557

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PCB 8082A										
Aroclor 1016	<	2.4	17	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8082A	E8
Aroclor 1221	<	4.4	17	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8082A	E8
Aroclor 1232	<	4.4	17	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8082A	E8
Aroclor 1242	<	1.4	17	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8082A	E8
Aroclor 1248	<	1.7	17	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8082A	E8
Aroclor 1254	<	2.1	17	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8082A	E8
Aroclor 1260	<	1.9	17	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8082A	E8
Surrogate: Decachlorobiphenyl			*71.5 %*	*57.5-120*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8082A*	
Surrogate: Tetrachloro-meta-xylene			*69.0 %*	*57.1-114*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8082A*	
PCB (Total Calculation)	<		2.3	mg/kg	1	[CALC]	10/22/18 08:26	10/22/18 21:10	EPA 8082A	
PERCENT SOLIDS										
% Solids	2.0			%	1	B7J1118	06/22/18 00:00	10/30/18 18:03	% calculation	
PESTICIDES 8081B										
4,4'-DDD	<	0.62	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
4,4'-DDE	<	0.62	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
4,4'-DDT	<	0.62	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
Aldrin	<	0.58	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
alpha-BHC	<	0.57	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
alpha-Chlordane	<	0.62	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
beta-BHC	<	0.59	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
delta-BHC	<	0.61	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
Dieldrin	<	0.62	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
Endosulfan I	<	0.60	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
Endosulfan II	<	0.62	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
Endosulfan sulfate	<	0.63	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
Endrin	<	0.59	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
Endrin aldehyde	<	0.56	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
Endrin ketone	<	0.59	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
gamma-BHC (Lindane)	<	0.58	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
gamma-Chlordane	<	0.61	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
Heptachlor	<	0.58	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
Heptachlor epoxide	<	0.61	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
Methoxychlor	<	0.61	3.3	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
Toxaphene	<	1.2	6.7	mg/kg dry	1	B8J2201	10/22/18 08:26	10/22/18 21:10	EPA 8081B	E8
Surrogate: Decachlorobiphenyl			*72.0 %*	*52.5-134*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8081B*	
Surrogate: Tetrachloro-meta-xylene			*68.0 %*	*59.6-120*		*B8J2201*	*10/22/18*	*10/22/18*	*EPA 8081B*	

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #12 10/11/18 Project Manager: Joe Doranski	Reported: 12/14/18 14:01

1810077-01 (18J1367-01) Solid (Dry Weight) (Grab) Sampled: 10/10/18 09:35 Received: 10/11/18 12:55

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services of Arizona, Inc.										
Inorganic Chemistry										
Cyanide, Total	<	1.34	5.24	mg/kg dry	1	B8J1641	10/19/18 09:13	10/19/18 16:15	EPA 9014	N1
% Solids	2		1	%	1	B8J1507	10/15/18 16:25	10/15/18 16:25	SM 2540 G	

1810078-02 (18J1367-02) Wastewater (Composite) Sampled: 10/10/18 10:20 Received: 10/11/18 12:55

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services, Inc. #AZ0557										
PESTICIDES/PCBS 608										
Aroclor Total (PCBs)	<		2.0	ug/L	1	[CALC]	10/17/18 07:57	10/18/18 02:09	[CALC]	
4,4'-DDD	<	0.043	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
4,4'-DDE	<	0.034	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
4,4'-DDT	<	0.040	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Aldrin	<	0.038	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
alpha-BHC	<	0.034	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Aroclor 1016	<	0.12	2.0	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Aroclor 1221	<	0.41	2.0	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Aroclor 1232	<	0.21	2.0	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Aroclor 1242	<	0.13	2.0	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Aroclor 1248	<	0.24	2.0	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Aroclor 1254	<	0.13	2.0	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Aroclor 1260	<	0.10	2.0	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
beta-BHC	<	0.040	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Chlordane (tech)	<	0.13	0.80	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
delta-BHC	<	0.042	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Dieldrin	<	0.038	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Endosulfan I	<	0.038	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Endosulfan II	<	0.040	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Endosulfan sulfate	<	0.039	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Endrin	<	0.043	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Endrin aldehyde	<	0.039	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
gamma-BHC (Lindane)	<	0.035	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Heptachlor	<	0.036	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Heptachlor epoxide	<	0.041	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Methoxychlor	<	0.042	0.40	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8, T2
Toxaphene	<	0.084	1.0	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 02:09	EPA 608	E8
Surrogate: Decachlorobiphenyl			*89.5 %*		*66.5-111*	*B8J1702*	*10/17/18*	*10/18/18*	*EPA 608*	
Surrogate: Tetrachloro-meta-xylene			*70.0 %*		*61.1-119*	*B8J1702*	*10/17/18*	*10/18/18*	*EPA 608*	

1810078-04 (18J1367-03) Wastewater (Composite) Sampled: 10/10/18 09:50 Received: 10/11/18 12:55

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services, Inc. #AZ0557										

Legend Technical Services of Arizona, Inc.

Laboratory Work Order No.: 18J1367

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #12 10/11/18 Project Manager: Joe Doranski	Reported: 12/14/18 14:01

1810078-04 (18J1367-03) Wastewater (Composite) Sampled: 10/10/18 09:50 Received: 10/11/18 12:55

Legend Technical Services, Inc. #AZ0557

PESTICIDES/PCBS 608

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor Total (PCBs)	<		2.1	ug/L	1	[CALC]	10/17/18 07:57	10/18/18 03:00	[CALC]	
4,4'-DDD	<	0.046	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
4,4'-DDE	<	0.036	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
4,4'-DDT	<	0.043	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Aldrin	<	0.040	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
alpha-BHC	<	0.036	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Aroclor 1016	<	0.13	2.1	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Aroclor 1221	<	0.44	2.1	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Aroclor 1232	<	0.22	2.1	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Aroclor 1242	<	0.14	2.1	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Aroclor 1248	<	0.26	2.1	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Aroclor 1254	<	0.14	2.1	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Aroclor 1260	<	0.11	2.1	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
beta-BHC	<	0.043	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Chlordane (tech)	<	0.14	0.85	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
delta-BHC	<	0.045	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Dieldrin	<	0.040	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Endosulfan I	<	0.040	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Endosulfan II	<	0.043	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Endosulfan sulfate	<	0.041	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Endrin	<	0.046	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Endrin aldehyde	<	0.041	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
gamma-BHC (Lindane)	<	0.037	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Heptachlor	<	0.038	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Heptachlor epoxide	<	0.044	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Methoxychlor	<	0.045	0.43	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8, T2
Toxaphene	<	0.089	1.1	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 03:00	EPA 608	E8
Surrogate: Decachlorobiphenyl			*88.0 %*		*68.5-111*	*B8J1702*	*10/17/18*	*10/18/18*	*EPA 608*	
Surrogate: Tetrachloro-meta-xylene			*78.0 %*		*61.1-119*	*B8J1702*	*10/17/18*	*10/18/18*	*EPA 608*	

1810081-02 (18J1367-04) Wastewater (Composite) Sampled: 10/10/18 14:05 Received: 10/11/18 12:55

Legend Technical Services, Inc. #AZ0557

PESTICIDES/PCBS 608

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor Total (PCBs)	<		2.2	ug/L	1	[CALC]	10/17/18 07:57	10/18/18 00:28	[CALC]	
4,4'-DDD	<	0.047	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
4,4'-DDE	<	0.037	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
4,4'-DDT	<	0.044	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Aldrin	<	0.042	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #12 10/11/18 Project Manager: Joe Doranski	Reported: 12/14/18 14:01

1810081-02 (18J1367-04) Wastewater (Composite) Sampled: 10/10/18 14:05 Received: 10/11/18 12:55

Legend Technical Services, Inc. #AZ0557

PESTICIDES/PCBS 608

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	<	0.037	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Aroclor 1016	<	0.13	2.2	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Aroclor 1221	<	0.45	2.2	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Aroclor 1232	<	0.23	2.2	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Aroclor 1242	<	0.14	2.2	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Aroclor 1248	<	0.26	2.2	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Aroclor 1254	<	0.14	2.2	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Aroclor 1260	<	0.11	2.2	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
beta-BHC	<	0.044	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Chlordane (tech)	<	0.14	0.88	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
delta-BHC	<	0.046	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Dieldrin	<	0.042	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Endosulfan I	<	0.042	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Endosulfan II	<	0.044	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Endosulfan sulfate	<	0.043	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Endrin	<	0.047	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Endrin aldehyde	<	0.043	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
gamma-BHC (Lindane)	<	0.038	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Heptachlor	<	0.040	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Heptachlor epoxide	<	0.045	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Methoxychlor	<	0.046	0.44	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8, T2
Toxaphene	<	0.092	1.1	ug/L	1	B8J1702	10/17/18 07:57	10/18/18 00:28	EPA 608	E8
Surrogate: Decachlorobiphenyl			*87.5 %*		*68.5-111*	*B8J1702*	*10/17/18*	*10/18/18*	*EPA 608*	
Surrogate: Tetrachloro-meta-xylene			*76.5 %*		*61.1-119*	*B8J1702*	*10/17/18*	*10/18/18*	*EPA 608*	

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #12 10/11/18 Project Manager: Joe Doranski	**Reported:** 12/14/18 14:01

Inorganic Chemistry - Quality Control

Legend Technical Services of Arizona, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8J1507 - NO PREP										
Blank (B8J1507-BLK1)				*Prepared & Analyzed: 10/15/18*						
% Solids	<1	1	%							
Duplicate (B8J1507-DUP1)		**Source: 18J1632-02**		*Prepared & Analyzed: 10/15/18*						
% Solids	13	1	%		13			0	5	
Batch B8J1641 - NO PREP										
Blank (B8J1641-BLK1)				*Prepared & Analyzed: 10/19/18*						
Cyanide, Total	<0.010	0.010	mg/kg wet							
LCS (B8J1641-BS1)				*Prepared & Analyzed: 10/19/18*						
Cyanide, Total	0.048	0.010	mg/kg wet	0.0500		96	80-120			
LCS Dup (B8J1641-BSD1)				*Prepared & Analyzed: 10/19/18*						
Cyanide, Total	0.048	0.010	mg/kg wet	0.0500		96	80-120	0	20	
Matrix Spike (B8J1641-MS1)		**Source: 18J0862-01**		*Prepared & Analyzed: 10/19/18*						
Cyanide, Total	2.22	0.633	mg/kg dry	3.16	0.253	62	80-120			M2a
Matrix Spike Dup (B8J1641-MSD1)		**Source: 18J0862-01**		*Prepared & Analyzed: 10/19/18*						
Cyanide, Total	2.22	0.633	mg/kg dry	3.16	0.253	62	80-120	0	20	M2a

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #12 10/11/18 Project Manager: Joe Doranski	Reported: 12/14/18 14:01

PCB 8082A - Quality Control

Legend Technical Services, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8J2201 - EPA 3545A ASE Extraction										
Blank (B8J2201-BLK1)				*Prepared & Analyzed: 10/22/18*						
Aroclor 1016	<0.20	0.20	mg/kg wet							
Aroclor 1221	<0.20	0.20	mg/kg wet							
Aroclor 1232	<0.20	0.20	mg/kg wet							
Aroclor 1242	<0.20	0.20	mg/kg wet							
Aroclor 1248	<0.20	0.20	mg/kg wet							
Aroclor 1254	<0.20	0.20	mg/kg wet							
Aroclor 1260	<0.20	0.20	mg/kg wet							
LCS (B8J2201-BS2)				*Prepared & Analyzed: 10/22/18*						
Aroclor 1016	0.296	0.20	mg/kg wet	0.333		88.8	70-130			
Aroclor 1260	0.302	0.20	mg/kg wet	0.333		90.7	70-130			
Matrix Spike (B8J2201-MS2)		**Source: 1804325-01**		*Prepared: 10/22/18 Analyzed: 10/23/18*						
Aroclor 1016	0.579	0.31	mg/kg wet	0.518	<0.31	112	70-130			
Aroclor 1260	0.517	0.31	mg/kg wet	0.518	<0.31	99.9	70-130			
Matrix Spike Dup (B8J2201-MSD2)		**Source: 1804325-01**		*Prepared: 10/22/18 Analyzed: 10/23/18*						
Aroclor 1016	0.571	0.31	mg/kg wet	0.516	<0.31	111	70-130	1.39	27	
Aroclor 1260	0.486	0.31	mg/kg wet	0.516	<0.31	94.2	70-130	6.18	37.3	

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #12 10/11/18 Project Manager: Joe Doranski	Reported: 12/14/18 14:01

PESTICIDES 8081B - Quality Control

Legend Technical Services, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8J2201 - EPA 3545A ASE Extraction										
Blank (B8J2201-BLK1)				*Prepared & Analyzed: 10/22/18*						
4,4'-DDD	<0.040	0.040	mg/kg wet							
4,4'-DDE	<0.040	0.040	mg/kg wet							
4,4'-DDT	<0.040	0.040	mg/kg wet							
Aldrin	<0.040	0.040	mg/kg wet							
alpha-BHC	<0.040	0.040	mg/kg wet							
alpha-Chlordane	<0.040	0.040	mg/kg wet							
beta-BHC	<0.040	0.040	mg/kg wet							
delta-BHC	<0.040	0.040	mg/kg wet							
Dieldrin	<0.040	0.040	mg/kg wet							
Endosulfan I	<0.040	0.040	mg/kg wet							
Endosulfan II	<0.040	0.040	mg/kg wet							
Endosulfan sulfate	<0.040	0.040	mg/kg wet							
Endrin	<0.040	0.040	mg/kg wet							
Endrin aldehyde	<0.040	0.040	mg/kg wet							
Endrin ketone	<0.040	0.040	mg/kg wet							
gamma-BHC (Lindane)	<0.040	0.040	mg/kg wet							
gamma-Chlordane	<0.040	0.040	mg/kg wet							
Heptachlor	<0.040	0.040	mg/kg wet							
Heptachlor epoxide	<0.040	0.040	mg/kg wet							
Methoxychlor	<0.040	0.040	mg/kg wet							
Toxaphene	<0.080	0.080	mg/kg wet							
LCS (B8J2201-BS1)				*Prepared & Analyzed: 10/22/18*						
4,4'-DDD	0.0753	0.040	mg/kg wet	0.0833		90.4	70-130			
4,4'-DDE	0.0767	0.040	mg/kg wet	0.0833		92.0	70-130			
4,4'-DDT	0.0753	0.040	mg/kg wet	0.0833		90.4	70-130			
Aldrin	0.0777	0.040	mg/kg wet	0.0833		93.2	70-130			
alpha-BHC	0.0790	0.040	mg/kg wet	0.0833		94.8	70-130			
alpha-Chlordane	0.0793	0.040	mg/kg wet	0.0833		95.2	70-130			
beta-BHC	0.0767	0.040	mg/kg wet	0.0833		92.0	70-130			
delta-BHC	0.0757	0.040	mg/kg wet	0.0833		90.8	70-130			
Dieldrin	0.0803	0.040	mg/kg wet	0.0833		96.4	70-130			
Endosulfan I	0.0787	0.040	mg/kg wet	0.0833		94.4	70-130			
Endosulfan II	0.0770	0.040	mg/kg wet	0.0833		92.4	70-130			
Endosulfan sulfate	0.0727	0.040	mg/kg wet	0.0833		87.2	70-130			
Endrin	0.0767	0.040	mg/kg wet	0.0833		92.0	70-130			
Endrin aldehyde	0.0720	0.040	mg/kg wet	0.0833		86.4	70-130			
Endrin ketone	0.0730	0.040	mg/kg wet	0.0833		87.6	70-130			
gamma-BHC (Lindane)	0.0793	0.040	mg/kg wet	0.0833		95.2	70-130			
gamma-Chlordane	0.0793	0.040	mg/kg wet	0.0833		95.2	70-130			
Heptachlor	0.0790	0.040	mg/kg wet	0.0833		94.8	70-130			
Heptachlor epoxide	0.0793	0.040	mg/kg wet	0.0833		95.2	70-130			
Methoxychlor	0.0743	0.040	mg/kg wet	0.0833		89.2	70-130			

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #12 10/11/18 Project Manager: Joe Doranski	**Reported:** 12/14/18 14:01

PESTICIDES 8081B - Quality Control

Legend Technical Services, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8J2201 - EPA 3545A ASE Extraction										
Matrix Spike (B8J2201-MS1)		**Source: 1804324-01**		*Prepared & Analyzed: 10/22/18*						
4,4'-DDD	0.139	0.065	mg/kg wet	0.136	<0.065	102	70-130			
4,4'-DDE	0.150	0.065	mg/kg wet	0.136	<0.065	110	70-130			
4,4'-DDT	0.131	0.065	mg/kg wet	0.136	<0.065	96.4	70-130			
Aldrin	0.117	0.065	mg/kg wet	0.136	<0.065	86.0	70-130			
alpha-BHC	0.182	0.065	mg/kg wet	0.136	<0.065	134	70-130			M1
alpha-Chlordane	0.124	0.065	mg/kg wet	0.136	<0.065	91.2	70-130			
beta-BHC	0.170	0.065	mg/kg wet	0.136	<0.065	125	70-130			
delta-BHC	0.157	0.065	mg/kg wet	0.136	<0.065	115	70-130			
Dieldrin	0.160	0.065	mg/kg wet	0.136	<0.065	118	70-130			
Endosulfan I	0.117	0.065	mg/kg wet	0.136	<0.065	86.4	70-130			
Endosulfan II	0.133	0.065	mg/kg wet	0.136	<0.065	97.6	70-130			
Endosulfan sulfate	0.148	0.065	mg/kg wet	0.136	<0.065	109	70-130			
Endrin	0.131	0.065	mg/kg wet	0.136	<0.065	96.4	70-130			
Endrin aldehyde	0.0587	0.065	mg/kg wet	0.136	<0.065	43.2	70-130			M2
Endrin ketone	0.127	0.065	mg/kg wet	0.136	<0.065	93.6	70-130			
gamma-BHC (Lindane)	0.117	0.065	mg/kg wet	0.136	<0.065	86.4	70-130			
gamma-Chlordane	0.145	0.065	mg/kg wet	0.136	<0.065	106	70-130			
Heptachlor	0.168	0.065	mg/kg wet	0.136	<0.065	124	70-130			
Heptachlor epoxide	0.128	0.065	mg/kg wet	0.136	<0.065	94.0	70-130			
Methoxychlor	0.133	0.065	mg/kg wet	0.136	<0.065	97.6	70-130			
Matrix Spike Dup (B8J2201-MSD1)		**Source: 1804324-01**		*Prepared & Analyzed: 10/22/18*						
4,4'-DDD	0.138	0.065	mg/kg wet	0.136	<0.065	102	70-130	0.217	21.9	
4,4'-DDE	0.155	0.065	mg/kg wet	0.136	<0.065	114	70-130	3.34	20.4	
4,4'-DDT	0.133	0.065	mg/kg wet	0.136	<0.065	98.4	70-130	1.64	18.7	
Aldrin	0.127	0.065	mg/kg wet	0.136	<0.065	93.6	70-130	8.25	22.6	
alpha-BHC	0.182	0.065	mg/kg wet	0.136	<0.065	134	70-130	0.217	23.7	M1
alpha-Chlordane	0.127	0.065	mg/kg wet	0.136	<0.065	94.0	70-130	2.61	22.3	
beta-BHC	0.152	0.065	mg/kg wet	0.136	<0.065	112	70-130	10.7	27.7	
delta-BHC	0.145	0.065	mg/kg wet	0.136	<0.065	107	70-130	7.41	24.2	
Dieldrin	0.159	0.065	mg/kg wet	0.136	<0.065	118	70-130	0.217	21.6	
Endosulfan I	0.119	0.065	mg/kg wet	0.136	<0.065	87.6	70-130	1.16	22	
Endosulfan II	0.129	0.065	mg/kg wet	0.136	<0.065	94.8	70-130	3.13	20.6	
Endosulfan sulfate	0.136	0.065	mg/kg wet	0.136	<0.065	100	70-130	6.25	20.4	
Endrin	0.130	0.065	mg/kg wet	0.136	<0.065	96.0	70-130	0.633	22.4	
Endrin aldehyde	0.0813	0.065	mg/kg wet	0.136	<0.065	60.0	70-130	32.3	35.9	M2
Endrin ketone	0.121	0.065	mg/kg wet	0.136	<0.065	89.6	70-130	4.58	21.3	
gamma-BHC (Lindane)	0.119	0.065	mg/kg wet	0.136	<0.065	88.0	70-130	1.62	23.6	
gamma-Chlordane	0.144	0.065	mg/kg wet	0.136	<0.065	106	70-130	0.594	22.3	
Heptachlor	0.167	0.065	mg/kg wet	0.136	<0.065	123	70-130	0.864	26.1	
Heptachlor epoxide	0.127	0.065	mg/kg wet	0.136	<0.065	93.6	70-130	0.644	21.3	
Methoxychlor	0.126	0.065	mg/kg wet	0.136	<0.065	93.2	70-130	4.83	19.4	

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #12 10/11/18 Project Manager: Joe Doranski	Reported: 12/14/18 14:01

PESTICIDES/PCBS 608 - Quality Control

Legend Technical Services, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8J1702 - EPA 3510C (Sep Funnel)										
Blank (B8J1702-BLK1)				*Prepared & Analyzed: 10/17/18*						
4,4'-DDD	<0.40	0.40	ug/L							
4,4'-DDE	<0.40	0.40	ug/L							
4,4'-DDT	<0.40	0.40	ug/L							
Aldrin	<0.40	0.40	ug/L							
alpha-BHC	<0.40	0.40	ug/L							
Aroclor 1016	<2.0	2.0	ug/L							
Aroclor 1221	<2.0	2.0	ug/L							
Aroclor 1232	<2.0	2.0	ug/L							
Aroclor 1242	<2.0	2.0	ug/L							
Aroclor 1248	<2.0	2.0	ug/L							
Aroclor 1254	<2.0	2.0	ug/L							
Aroclor 1260	<2.0	2.0	ug/L							
beta-BHC	<0.40	0.40	ug/L							
Chlordane (tech)	<0.80	0.80	ug/L							
delta-BHC	<0.40	0.40	ug/L							
Dieldrin	<0.40	0.40	ug/L							
Endosulfan I	<0.40	0.40	ug/L							
Endosulfan II	<0.40	0.40	ug/L							
Endosulfan sulfate	<0.40	0.40	ug/L							
Endrin	<0.40	0.40	ug/L							
Endrin aldehyde	<0.40	0.40	ug/L							
gamma-BHC (Lindane)	<0.40	0.40	ug/L							
Heptachlor	<0.40	0.40	ug/L							
Heptachlor epoxide	<0.40	0.40	ug/L							
Methoxychlor	<0.40	0.40	ug/L							
Toxaphene	<1.0	1.0	ug/L							

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #12 10/11/18 Project Manager: Joe Doranski	**Reported:** 12/14/18 14:01

PESTICIDES/PCBS 608 - Quality Control

Legend Technical Services, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8J1702 - EPA 3510C (Sep Funnel)										
LCS (B8J1702-BS1)				*Prepared & Analyzed: 10/17/18*						
4,4'-DDD	1.21	0.40	ug/L	1.25		96.8	31-141			
4,4'-DDE	1.24	0.40	ug/L	1.25		98.8	30-145			
4,4'-DDT	1.22	0.40	ug/L	1.25		97.6	25-160			
Aldrin	1.21	0.40	ug/L	1.25		96.8	42-122			
alpha-BHC	1.22	0.40	ug/L	1.25		97.2	37-134			
beta-BHC	1.22	0.40	ug/L	1.25		97.2	17-147			
delta-BHC	1.28	0.40	ug/L	1.25		102	19-140			
Dieldrin	1.23	0.40	ug/L	1.25		98.4	36-146			
Endosulfan I	1.22	0.40	ug/L	1.25		97.6	45-153			
Endosulfan II	1.20	0.40	ug/L	1.25		96.0	2-202			
Endosulfan sulfate	1.22	0.40	ug/L	1.25		98.0	26-144			
Endrin	1.16	0.40	ug/L	1.25		93.2	30-147			
Endrin aldehyde	1.22	0.40	ug/L	1.25		97.2	74.3-121			
gamma-BHC (Lindane)	1.22	0.40	ug/L	1.25		97.6	32-127			
Heptachlor	1.24	0.40	ug/L	1.25		99.2	34-111			
Heptachlor epoxide	1.23	0.40	ug/L	1.25		98.4	37-142			
LCS (B8J1702-BS2)				*Prepared & Analyzed: 10/17/18*						
Aroclor 1260	4.68	2.0	ug/L	5.00		93.5	8-127			
Matrix Spike (B8J1702-MS1)		**Source: 1804321-01**		*Prepared & Analyzed: 10/17/18*						
4,4'-DDD	1.06	0.40	ug/L	1.25	<0.40	84.4	31-141			
4,4'-DDE	1.04	0.40	ug/L	1.25	<0.40	83.6	30-145			
4,4'-DDT	1.00	0.40	ug/L	1.25	<0.40	80.4	25-160			
Aldrin	1.03	0.40	ug/L	1.25	<0.40	82.4	42-122			
alpha-BHC	1.02	0.40	ug/L	1.25	<0.40	82.0	37-134			
beta-BHC	1.13	0.40	ug/L	1.25	<0.40	90.4	17-147			
delta-BHC	1.10	0.40	ug/L	1.25	<0.40	88.0	19-140			
Dieldrin	1.02	0.40	ug/L	1.25	<0.40	81.2	36-146			
Endosulfan I	1.04	0.40	ug/L	1.25	<0.40	82.8	45-153			
Endosulfan II	1.00	0.40	ug/L	1.25	<0.40	80.4	2-202			
Endosulfan sulfate	1.07	0.40	ug/L	1.25	<0.40	85.6	26-144			
Endrin	0.960	0.40	ug/L	1.25	<0.40	76.8	30-147			
Endrin aldehyde	1.17	0.40	ug/L	1.25	<0.40	93.6	37.2-148			
gamma-BHC (Lindane)	1.00	0.40	ug/L	1.25	<0.40	80.0	32-127			
Heptachlor	1.08	0.40	ug/L	1.25	<0.40	86.0	34-111			
Heptachlor epoxide	1.04	0.40	ug/L	1.25	<0.40	82.8	37-142			

Pima County RWRD CRAO Lab	Project: Pesticides	
2955 W Calle Agua Nueva	Project Number: Pesticides #12 10/11/18	Reported:
Tucson, AZ 85745	Project Manager: Joe Doranski	12/14/18 14:01

Notes and Definitions

T2	Cited ADHS licensed method does not contain this analyte as part of method compound list.
N1	See case narrative.
M2a	Matrix spike recovery was low; the associated blank spike recovery was acceptable.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
E8	Analyte reported to the MDL per project specification. Target analyte was not detected in the sample.
BLK	Method Blank
LCS/Dup	Laboratory Control Sample/Laboratory Fortified Blank/Duplicate
MS/Dup	Matrix Spike/Duplicate
Dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #12 10/11/18 Project Manager: Joe Doranski	Reported: 12/14/18 14:01

18J:367

CHAIN OF CUSTODY RECORD

LEGEND Technical Services, Inc.

☐ 17631 N. 25th Avenue • Phoenix, AZ 85023 • (602) 324-6100 • Fax (602) 324 6101
☐ 4585 S. Palo Verde Rd, Ste 423 • Tucson, AZ 85714 • (520) 327-1234 • Fax (520) 327-0518

Page 1 of 1

Please Print Clearly

Client Name	Address	City	State	Zip	Phone	Fax Number or Email Address
Pima County CRAO Lab	2955 W Calle Agua Nueva	Tucson	AZ	85745	520-724-6016	joseph.doranski@pima.gov

Project Name	Project Number	Contact	P.O. No	Fax Results ☐	QC Report ☐ EDD ☒
Pesticides #12		Joe Doranski	19-010886	Email Results ☒	Special Detection Limits ☐

GW-Drinking Water, WW-Wastewater, SW-Surface Water, GW-Groundwater, O-Other, S-Soil/Solid, T-Travel Blank, F-Food, D-Sludge/Biosolids

Laboratory Authorization Required for Rush: ☒ Standard 10 - 15 Day ☐ Other _____

Client's Sample Identification	Date	Time	Sample Location	Composite	Grab	Sample Type	Compliance	No. of Containers	EPA 608 extended	EPA 608 extended mg/kg	Total cyanide mg/kg	Total % solids dry weight										
1810077-01	10/10/18	935	Avra Valley WRF wet haul sludge		X	G	X	3		X	X	X										-01
1810078-02	10/10/18	1020	SAVAHCS PL#1	X		WW		1	X													~~-02~~ -0302
1810079-04	10/10/18	950	SAVAHCS PL#2	X		WW		1	X													~~-03~~ -0403
1810081-02	10/10/18	1405	EDG Fuels Inc PL#2	X		WW		1	X													~~-04~~ -0501

Comments / Special Instructions: Analyte list attached. Samples are unpreserved. EPA 608, total PCBs and Methoxychlor. Please report results from the sludge sample in mg/kg dry weight

*Equivalent for solids 8081/8082 AP 10/11/18

Temp	2.4 °C
Y	N
Y	N
Y	N

	Signature	Date	Time	Signature	Date	Time
①	Sampler Signature / Sampler Print Name: Greg Spence	10/11/18	1037	Print Name: Alyssa Mazza	10/11/18	1037
②	Signature / Print Name	Date	Time	Signature: @lab	10/11/18	1255
③	Signature / Print Name: Amanda Frazzo	10/11/18	1600	Signature: Courier	10/11/18	1600

WHITE-LAB YELLOW-CLIENT

Courier 10/12/18 730 Michaling 10/12/18 730

FORM CS 016 2 (07/18)

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #12 10/11/18 Project Manager: Joe Doranski	Reported: 12/14/18 14:01

Legend Technical Services of Arizona, Inc.

LEGEND Technical Services, Inc

PO Number:

SUBCONTRACT ORDER

18J1367

SENDING LABORATORY:

Legend Technical Services of Arizona, Inc.
17631 North 25th Avenue
Phoenix, AZ 85023
Phone: 602-324-6100
Fax: 602-324-6101
Project Manager: P. Brian Merritt
Project: Pesticides

RECEIVING LABORATORY:

Legend Technical Services, St. Paul AZ0557
88 Empire Drive
Saint Paul, MN 55103
Phone :(800) 826-8553
Fax: (651) 642-1239

Client: Pima County RWRD CRAO Lab% Tucson

Analysis	Due	Expires	Leach Date & Time	Sample Comments
Sample ID: 18J1367-01 Solid (Dry We		**Sampled: 10/10/18 09:35**		
8081- Subcontract	10/22/18 15:00	10/17/18 09:35		
8082-Subcontract	10/22/18 15:00	10/24/18 09:35		
Solids, Total- Subcontract	10/22/18 15:00	10/17/18 09:35		

Containers Supplied:
02_1000mL Amber Glass Cool to 4° C (A)

For method 608: _____ pH check _____ Cl2 check
Special Instructions/Comments:

Sample ID: 18J1367-02 Wastewater **Sampled: 10/10/18 10:20**

608 Modified/Expanded- Sub	10/22/18 15:00	10/17/18 10:20		Report to MDL include PCB Total

Containers Supplied:
02_1000mL Amber Glass Cool to 4° C (A)

For method 608: _____ pH check _____ Cl2 check
Special Instructions/Comments:

* The sample matrix for leachates supplied to the MN laboratory reflects the matrix of the original sample received by LEGEND AZ.
**For matrices other than Drinking Water requiring drinking water methods (such as EPA 505, etc.), a 10x dilution is acceptable. Appropriate data qualifiers are to be used.

Released By (Print & Sign)	Date	Time	Received By (Print & Sign)	Date	Time
Amanda Picazzo X	10/11/18	1600	Fed Ex X	10/11/18	1600
X					

Page 1 of 2

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #12 10/11/18 Project Manager: Joe Doranski	Reported: 12/14/18 14:01

Legend Technical Services of Arizona, Inc.

LEGEND Technical Services, Inc.

SUBCONTRACT ORDER

18J1367

PO Number:

Analysis	Due	Expires	Leach Date & Time	Sample Comments
Sample ID: 18J1367-03 Wastewater	**Sampled: 10/10/18 09:50**			
608 Modified/Expanded- SUB	10/22/18 15:00	10/17/18 09:50		Report to MDL include PCB Total

Containers Supplied:
02_1000mL Amber Glass Cool to 4° C (A)

For method 608: ___ pH check _____ Cl2 check
Special Instructions/Comments:

Sample ID: 18J1367-04 Wastewater	**Sampled: 10/10/18 14:05**			
608 Modified/Expanded- SUB	10/22/18 15:00	10/17/18 14:05		Report to MDL include PCB Total

Containers Supplied:
02_1000mL Amber Glass Cool to 4° C (A)

For method 608: _____ pH check _____ Cl2 check
Special Instructions/Comments:

* The sample matrix for leachates supplied to the MN laboratory reflects the matrix of the original sample received by LEGEND AZ.
**For matrices other than Drinking Water requiring drinking water methods (such as EPA 605, etc.), a 10x dilution is acceptable. Appropriate data qualifiers are to be used.

Released By (Print & Sign)	Date	Time	Received By (Print & Sign)	Date	Time
Amanda Picazzo x	10/11/18	1400	FedEx x	10/11/18	1600
x					

Page 2 of 2

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Pesticides #12 10/11/18 Project Manager: Joe Doranski	Reported: 12/14/18 14:01

Legend Technical Services of Arizona, Inc.

LEGEND Technical Services, Inc.

PO Number: 18J1367

SUBCONTRACT ORDER

18J1367

SENDING LABORATORY:

Legend Technical Services of Arizona, Inc.
17631 North 25th Avenue
Phoenix, AZ 85023
Phone: 602-324-6100
Fax: 602-324-6101
Project Manager: P. Brian Merritt
Project: Pesticides

RECEIVING LABORATORY:

Legend Technical Services, St. Paul AZ0557
68 Empire Drive
Saint Paul, MN 55103
Phone :(800) 826-8553
Fax: (651) 642-1239

Client: Pima County RWRD CRAO Lab%Tucson

Analysis	Due	Expires	Leach Date & Time	Sample Comments
Sample ID: 18J1367-01 Solid (Dry Wt		**Sampled:10/10/18 09:35**		
8081- Subcontract	10/22/18 15:00	10/17/18 09:35		
8082-Subcontract	10/22/18 15:00	10/24/18 09:35		

Containers Supplied:
~~01_1000mL Amber Glass Cool to 4° C (A)~~ MW 10/17/18
03_1000mL Plastic Cool to 4° C (B)

For method 608: _____pH check _____Cl2 check
Special Instructions/Comments:

Sample ID: 18J1367-02 Wastewater		**Sampled:10/10/18 10:20**		
608 Modified/Expended- Sub	10/22/18 15:00	10/17/18 10:20		Report to MDL Include PCB Total

Containers Supplied:
02_1000mL Amber Glass Cool to 4° C (A)

For method 608: _____pH check _____Cl2 check
Special Instructions/Comments:

MW 10/17/18

* The sample matrix for leachates supplied to the MN laboratory reflects the matrix of the original sample received by LEGEND AZ.
**For matrices other than Drinking Water requiring drinking water methods (such as EPA 505, etc.), a 10x dilution is acceptable. Appropriate data qualifiers are to be used.

Released By (Print & Sign)	Date	Time	Received By (Print & Sign)	Date	Time
	10/17/18	1630	x FedEx	10/17/18	1630
x					

Page 1 of 2

SECTION 7

GREEN VALLEY BNROD
AZPDES NO. AZ0024937

2018 PREPARER FORM

AND

SAMPLE ANALYSIS RESULTS
PRIORITY POLLUTANTS
TCLP
HAZARDOUSNESS

ANNUAL BIOSOLIDS REPORT 2018

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ANNUAL BIOSOLIDS REPORT 2018

REGIONAL WATER
RECLAMATION DEPARTMENT

TREATMENT DIVISION

PIMA COUNTY
TUCSON, ARIZONA

PIMA COUNTY
WASTEWATER RECLAMATION

ARIZONA
DEPARTMENT OF ENVIRONMENTAL QUALITY
AZPDES Individual Permits Unit
1110 W Washington Street
Phoenix, Arizona 85007
(602) 771-4689 (voicemail) (602) 771-4505 (fax)
Email to: biosolids@azdeq.gov

BIOSOLIDS OR SEWAGE SLUDGE ANNUAL REPORT FORM

1. Program Information: All preparers (Generators) and Land Applicators Must complete the following.

Reporting Start Date:1/1/2018	**Reporting End Date: 12/31/2018**
Date:2/19/2019	**AZPDES Permit # (if applicable):AZ00024937** **Pima County Green Valley WRF** **19600 S. Old Nogales Hwy., Tucson AZ 85614**
Company name (Preparer / Applicator): Preparer, Pima County Regional Water Reclamation Department	
Contact Name: Houssam Eljerdi	**Title: Technical Services Manager**
Address: 7101 N. Casa Grande Highway **Phone:** (520) 724 - 6100	Tucson, AZ 85743 - 8618 **E-mail: Houssam.eljerdi@pima.gov**

Please select one of the following options pertaining to your obligation to submit a Biosolids Annual Report. My facility is a:

☒ POTW with a design flow equal to or greater than 1 MGD Per Day

☐ POTW that serves 10,000 people or more

☐ Class I Sludge Management Facility as defined by 40 CFR 503.9

☐ Biosolids Applicator (Complete Section 5 only)

☒Other AZPDES Permit # 24937; APP Permit # 100629

What is the estimated total of volume of biosolids or sewage sludge generated at your facility (in dry metric tons)?

473 (Four Hundred and Seventy Three) metric dry tons

No Storage

Pima County Transports the Green Valley WRF sludge by tanker truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Agua Nueva WRF

Were all biosolids removed from your facility sent to a landfill for disposal? No

If yes, provide the name and address of the landfill(s). Not Applicable

If all biosolids or sewage sludge was sent to a landfill for disposal, you do not need to complete the remainder of this form, as it is only applicable to facilities preparing Biosolids or sewage sludge for land application.

Certification: I certify, under penalty of law, that the information and descriptions, have been made under my direction and supervision and under a system designed to ensure that qualified personnel properly gather and evaluate the information used to determine whether the applicable biosolids requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

Signature:	Date:
Title: Jeff F. Prevatt; Deputy Director - Treatment	February 19, 2019

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

2. Generator/Preparers - Biosolids Storage and Treatment Processes

2.1 Please check the box next to the following biosolids or sewage sludge storage practices and treatment processes used on the sewage sludge or biosolids generated or produced at your facility during the reporting period.

Storage Practices

☐ Biosolids are stored in lined lagoons or impoundments

☐ Biosolids stored directly on the ground

Physical Treatment Processes

☒ Preliminary Operations (e.g. sludge grinding, degritting, blending

☒ Thickening (e.g. gravity floatation, centrifugation, belt filter press, vacuum filter)

☐ Sludge lagoon

Pathogen Reduction Operations (PSRP)

☐ Aerobic Digestion

☐ Air Drying (or "sludge drying beds")

☐ Anaerobic Digestion

☐ Lower Temperature Composting

☐ Lime Stabilization

Process to Further Reduce Pathogens (PFRP)

☐ Higher Temperature Composting

☐ Heat Drying (e.g. flash dryer, spray dryer, rotary dryer)

☐ Heat Treatment (Liquid sewage sludge is heated to temp of 356 °F (180 °C) or higher for 30 minutes

☐ Thermophilic Aerobic Digestion

☐ Beta Ray Irradiation

☐ Gamma Ray Irradiation

☐ Pasteurization

3. Generators/Preparers: Disposition of Biosolids or Sewage Treatment Sludge:

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

3.1 At the beginning of the year, did you have any biosolids or sewage sludge stored on site or remaining from previous years? Include any amount that is being stored anywhere. No

If yes provide the following information:

	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable
Storage Locations	**No Storage** **Pima County Transports the Sludge from Green Valley WRF by Tanker Truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Tres Rios WRF**	Not applicable

3.2 At the end of the year, are any biosolids or sewage sludge stored on site? No

If yes, provide the following information:

	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable
Storage Locations	**No Storage** **Pima County Transports the Sludge from Green Valley WRF by Tanker Truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Tres Rios WRF**	Not applicable

3.3 Were biosolids or sewage sludge received from another facility during the year, such as another wastewater treatment plant or another APP permitted facility for further processing? No

If yes provide the following information for each facility. Click the plus sign to create as many tables as needed.

Name of Facility	Not Applicable	
Location:	Not Applicable	
	CLASS A Biosolids	Class B Biosolids

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

Name of Facility	Not Applicable	
Location:	Not Applicable	
Dry Ton Weight	Not Applicable	Not applicable
Pathogen Testing	Not applicable	Not applicable
Pathogen Reduction Method	Not applicable	Not applicable
Vector Attraction Reduction Method	Not applicable	Not applicable
Storage Locations	Not applicable	Not applicable

Enter any content that you want to repeat, including other content controls. You can also insert this control around table rows in order to repeat parts of a table.

3.4. Were biosolids removed from your facility for land application? Include all recipients, including haulers, name, phone number, land applicators, composters, drying facilities, EQB bagging facilities, bulk composting, etc.

Name of Facility	**None; Biosolids are not prepared at Green Valley WRF. Pima County Transports the Sludge from Green Valley WRF by Tanker Truck to Pima County Wastewater Collection System where it becomes part of the Influent to Pima County Tres Rios WRF**	
Management Practice Type:	Not Applicable	
Handler or Preparer Type:	Not Applicable	
Management Practice Detail:	Not Applicable	
Bag or Bulk Container:	Not Applicable	
	CLASS A Biosolids	Class B Biosolids
Dry Ton Weight	None	None
Pathogen Testing	Not Applicable	Not applicable
Pathogen Reduction Method	Not Applicable	Not Applicable
Vector Attraction Reduction Method	Not Applicable	Not Applicable
Storage Locations	Not Applicable	Not Applicable

4. Generators/Preparers : Biosolids or Sewage Sludge Analytical Methods

Arizona regulations specify that representative samples of sewage sludge that is land applied, placed on a surface disposal site, or fired in s sewage sludge incinerator, must be collected and analyzed. These regulations specify the analytical methods that must be used to analyzed samples of sewage sludge.

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

Parameter	*Method Number or Author*	*Results (if tested)*	*Comments (required if other)*
Pathogens			
Ascaris ova.	Not applicable	Not applicable	Not applicable
Fecal Coliform	Not Applicable	Not Applicable	Not Applicable
Helminth ova.	Not Applicable	Not Applicable	Not Applicable
Salmonella sp. Bacteria	Not Applicable	Not Applicable	Not Applicable
Total Cultural Viruses	Not Applicable	Not Applicable	Not Applicable
Metals			
Arsenic	EPA Method 6010 - Arsenic (ICP-OES)	< 14.29 / < 17.96 / < 7.29	Mean / Maximum / Minimum
Beryllium	Choose an item.	< 2.82 / < 3.59 / < 1.28	Mean / Maximum / Minimum
Cadmium	EPA Method 6010 - Cadmium (ICP-OES)	< 5.63 / < 7.19 / < 2.56	Mean / Maximum / Minimum
Chromium	EPA Method 6010 - Chromium (ICP-OES)	< 14.1 / < 17.96 / < 6.39	Mean / Maximum / Minimum
Copper	EPA Method 6010 - Copper (ICP-OES)	220.25 / 244 / 180	Mean / Maximum / Minimum
Lead	EPA Method 6010 - Lead (ICP-OES)	< 14.1 / < 17.96 / < 6.39	Mean / Maximum / Minimum
Mercury	EPA Method 7471 - Mercury (CVAA)	0.55 / 0.68 / 0.47	Mean / Maximum / Minimum
Molybdenum	EPA Method 6010 - Molybdenum (ICP-OES)	< 7.1 / < 7.19 / < 6.39	Mean / Maximum / Minimum
Nickel	EPA Method 6010 - Nickel (ICP-OES)	< 14.81 / < 17.96 / < 9.38	Mean / Maximum / Minimum
Selenium	EPA Method 6010 - Selenium (ICP-OES)	< 28.2 / < 35.93 / < 12.78	Mean / Maximum / Minimum
Zinc	EPA Method 6010 - Zinc (ICP-OES)	446 / 485 / 388	Mean / Maximum / Minimum
Nitrogen Compounds			
Ammonia Nitrogen	Not Applicable	Not Applicable	Not Applicable
Nitrate Nitrogen	Not Applicable	Not Applicable	Not Applicable
Nitrogen	Not Applicable	Not Applicable	Not Applicable
Organic Nitrogen	Not Applicable	Not Applicable	Not Applicable
Total Kjeldahl Nitrogen	Not Applicable	Not Applicable	Not Applicable
Other Analytes			
Fixed Solids	Not applicable	Not applicable	Not applicable

BIOSOLIDS SEWAGE SLUDGE ANNUAL REPORT

Parameter	*Method Number or Author*	*Results (if tested)*	*Comments (required if other)*
Paint Filter Test	Not Applicable	Not applicable	Not applicable
pH	Not Applicable	Not applicable	Not applicable
Specific Oxygen Uptake Rate	Not Applicable	Not applicable	Not applicable
TCLP	Other TCLP Analytical Method	**Total Amount Does Not Exceed 20X TCLP Screening Value.** **Sample Analysis Results Included in Section 5 of this Report**	Click here to enter text.
Temperature	Not applicable	Not applicable	Not applicable
Total Solids	Standard Method 2540 - Total Solids	Green Valley WRF Sludge Trucked to Pima County Wastewater Collection System, % Solids Content **3.2 / 4.7 / 2.1**	Mean / Maximum / Minimum
Volatile Solids	Not applicable	Not applicable	Not applicable
No Analytical Methods Used	Not applicable	Not applicable	Not applicable

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 04/12/2018
Laboratory License: AZO159

Sample Analysis Report

Green Valley WRF

January 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Chraft

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

5·30·18
Date

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
Wet Haul Sludge (25000-1962)											
1801126-01	D	Antimony	01/17/18 9:25	EPA 6010D	1/24/18 09:49	**ND**	mg/kg dry		14.15		MLB
1801126-01	D	Arsenic	01/17/18 9:25	EPA 6010D	1/24/18 09:49	**ND**	mg/kg dry		14.15		MLB
1801126-01	D	Beryllium	01/17/18 9:25	EPA 6010D	1/24/18 09:49	**ND**	mg/kg dry		2.83		MLB
1801126-01	D	Cadmium	01/17/18 9:25	EPA 6010D	1/24/18 09:49	**ND**	mg/kg dry		5.66		MLB
1801126-01	D	Chromium	01/17/18 9:25	EPA 6010D	1/24/18 09:49	**ND**	mg/kg dry		14.15		MLB
1801126-01	D	Copper	01/17/18 9:25	EPA 6010D	1/24/18 09:49	**180**	mg/kg dry		14.15		MLB
1801126-01	D	Lead	01/17/18 9:25	EPA 6010D	1/24/18 11:29	**ND**	mg/kg dry		14.15		MLB
1801126-01	D	Mercury	01/17/18 9:25	EPA 7471B	1/29/18 15:52	**0.51**	mg/kg dry		0.00252		DML
1801126-01	D	Molybdenum	01/17/18 9:25	EPA 6010D	1/24/18 09:49	**6.39**	mg/kg dry		5.66		MLB
1801126-01	D	Nickel	01/17/18 9:25	EPA 6010D	1/24/18 09:49	**ND**	mg/kg dry		14.15		MLB
1801126-01	D	Selenium	01/17/18 9:25	EPA 6010D	1/24/18 09:49	**ND**	mg/kg dry		28.30		MLB
1801126-01	D	Silver	01/17/18 9:25	EPA 6010D	1/24/18 12:41	**2.99**	mg/kg dry		1.41		MLB
1801126-01	D	Arsenic	01/17/18 9:25	TCLP/EPA 6010D	2/8/18 16:56	**ND**	mg/L		0.03		MLB
1801126-01	D	Barium	01/17/18 9:25	TCLP/EPA 6010D	2/6/18 17:05	**0.115**	mg/L		0.03		MLB
1801126-01	D	Cadmium	01/17/18 9:25	TCLP/EPA 6010D	2/6/18 17:05	**ND**	mg/L		0.01		MLB
1801126-01	D	Chromium	01/17/18 9:25	TCLP/EPA 6010D	2/6/18 17:05	**ND**	mg/L		0.03		MLB
1801126-01	D	Lead	01/17/18 9:25	TCLP/EPA 6010D	2/6/18 17:05	**ND**	mg/L		0.03		MLB
1801126-01	D	Mercury	01/17/18 9:25	TCLP/EPA 7470A	2/26/18 12:29	**ND**	mg/L		0.00		DML
1801126-01	D	Selenium	01/17/18 9:25	TCLP/EPA 6010D	2/6/18 17:05	**ND**	mg/L		0.05		MLB
1801126-01	D	Silver	01/17/18 9:25	TCLP/EPA 6010D	2/6/18 17:05	**ND**	mg/L		0.0026		MLB
1801126-01	D	Thallium	01/17/18 9:25	EPA 6010D	1/24/18 09:49	**ND**	mg/kg dry		14.15		MLB
1801126-01	D	Zinc	01/17/18 9:25	EPA 6010D	1/24/18 09:49	**388**	mg/kg dry		14.15		MLB
1801126-01	D	% Solids	01/17/18 9:25	SM 2540G	1/18/18 13:39	**3.96**	%		0.01		SDR
1801126-01	D	Acrolein	01/17/18 9:25	EPA 624	1/18/18 14:21	**ND**	mg/kg dry	0.00360	0.00252		SRM
1801126-01	D	Acrylonitrile	01/17/18 9:25	EPA 624	1/18/18 14:21	**ND**	mg/kg dry	0.00280	0.00252	V1	SRM
1801126-01	D	4,4-DDD	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00006	0.00062	D1, D7	KLH
1801126-01	D	4,4-DDE	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00003	0.00062	D1, D7	KLH
1801126-01	D	4,4-DDT	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00006	0.00062	D1, D7	KLH
1801126-01	D	Aldrin	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00006	0.00062	D1, D7	KLH
1801126-01	D	alpha-BHC	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00004	0.00062	D1, D7, L2, N1	KLH
1801126-01	D	beta-BHC	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00009	0.00062	D1, D7, N1	KLH
1801126-01	D	Chlordane	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00025	0.00499	D1, D7	KLH
1801126-01	D	delta-BHC	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00007	0.00062	D1, D7	KLH
1801126-01	D	Dieldrin	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00015	0.00125	D1, D7	KLH
1801126-01	D	Endosulfan I	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00004	0.00062	D1, D7	KLH
1801126-01	D	Endosulfan II	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00003	0.00062	D1, D7	KLH
1801126-01	D	Endosulfan sulfate	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00004	0.00062	D1, D7	KLH
1801126-01	D	Endrin	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00010	0.00062	D1, D7	KLH
1801126-01	D	Endrin aldehyde	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00011	0.00062	D1, D7	KLH
1801126-01	D	gamma-BHC (Lindane)	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00007	0.00062	D1, D7	KLH
1801126-01	D	Heptachlor	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00005	0.00062	D1, D7	KLH
1801126-01	D	Heptachlor Epoxide	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00004	0.00062	D1, D7	KLH
1801126-01	D	PCB 1016	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00006	0.00125	D1, D7	KLH
1801126-01	D	PCB 1221	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00017	0.00374	D1, D7	KLH
1801126-01	D	PCB 1232	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00007	0.00374	D1, D7	KLH
1801126-01	D	PCB 1242	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00013	0.00374	D1, D7	KLH
1801126-01	D	PCB 1248	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00010	0.00374	D1, D7	KLH
1801126-01	D	PCB 1254	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00019	0.00374	D1, D7	KLH
1801126-01	D	PCB 1260	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00007	0.00125	D1, D7	KLH
1801126-01	D	Total PCBs	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00016	0.00374	D1, D7	KLH
1801126-01	D	Toxaphene	01/17/18 9:25	EPA 625	1/24/18 12:57	**ND**	mg/kg dry	0.00094	0.01	D1, D7	KLH
1801126-01	D	Methoxychlor	01/17/18 9:25	EPA 8270C	1/24/18 12:57	**ND**	mg/kg dry		0.00062	D1, D7	KLH
1801126-01	D	1,1,1-Trichloroethane	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0002	0.00025		SRM
1801126-01	D	1,1,2,2-Tetrachloroethane	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.00006	0.00025		SRM
1801126-01	D	1,1,2-Trichloroethane	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.00009	0.00025		SRM
1801126-01	D	1,1-Dichloroethane	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0002	0.00025		SRM
1801126-01	D	1,1-Dichloroethene	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0001	0.00025		SRM
1801126-01	D	1,2-Dichlorobenzene	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.00008	0.00025		SRM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801126-01	D	1,2-Dichloroethane	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.00009	0.00025		SRM
1801126-01	D	1,2-Dichloropropane	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0001	0.00025		SRM
1801126-01	D	1,3-Dichlorobenzene	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.00008	0.00025		SRM
1801126-01	D	1,4-Dichlorobenzene	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0002	0.00025		SRM
1801126-01	D	2-Chloroethyl vinyl ether	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0003	0.00050		SRM
1801126-01	D	Benzene	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0001	0.00025		SRM
1801126-01	D	Bromodichloromethane	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0002	0.00025		SRM
1801126-01	D	Bromoform	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0003	0.00025		SRM
1801126-01	D	Bromomethane	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0001	0.00025		SRM
1801126-01	D	Carbon Tetrachloride	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0004	0.00025		SRM
1801126-01	D	Chlorobenzene	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.00006	0.00025		SRM
1801126-01	D	Chloroethane	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0002	0.00025		SRM
1801126-01	D	Chloroform	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0001	0.00025		SRM
1801126-01	D	Chloromethane	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0002	0.00025		SRM
1801126-01	D	cis-1,3-Dichloropropene	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.00009	0.00025		SRM
1801126-01	D	Dibromochloromethane	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.00006	0.00025		SRM
1801126-01	D	Ethyl Benzene	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.00009	0.00025		SRM
1801126-01	D	Methylene Chloride	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0002	0.00025		SRM
1801126-01	D	Tetrachloroethene	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0002	0.00025		SRM
1801126-01	D	Toluene	01/17/18 9:25	EPA 624	1/22/18 18:06	**140.84**	mg/kg dry	0.0001	0.00126		SRM
1801126-01	D	Total Trihalomethanes	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0003	0.00025		SRM
1801126-01	D	trans-1,2-Dichloroethene	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0001	0.00025		SRM
1801126-01	D	trans-1,3-Dichloropropene	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0001	0.00025		SRM
1801126-01	D	Trichloroethene	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0001	0.00025		SRM
1801126-01	D	Trichlorofluoromethane	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0003	0.00025		SRM
1801126-01	D	Vinyl chloride	01/17/18 9:25	EPA 624	1/18/18 17:03	**ND**	mg/kg dry	0.0002	0.00025		SRM
1801126-01	D	1,2,4-Trichlorobenzene	01/17/18 9:25	EPA 8260	1/18/18 17:03	**ND**	mg/kg dry		0.00025		SRM
1801126-01	D	1,2-Dibromo-3-chloropropane	01/17/18 9:25	EPA 8260	1/18/18 17:03	**ND**	mg/kg dry		0.00050		SRM
1801126-01	D	1,2-Dibromoethane	01/17/18 9:25	EPA 8260	1/18/18 17:03	**ND**	mg/kg dry		0.00025		SRM
1801126-01	D	cis-1,2-Dichloroethene	01/17/18 9:25	EPA 8260	1/18/18 17:03	**ND**	mg/kg dry		0.00025		SRM
1801126-01	D	m,p-Xylenes	01/17/18 9:25	EPA 8260	1/18/18 17:03	**ND**	mg/kg dry		0.00050		SRM
1801126-01	D	o-Xylene	01/17/18 9:25	EPA 8260	1/18/18 17:03	**ND**	mg/kg dry		0.00025		SRM
1801126-01	D	Styrene	01/17/18 9:25	EPA 8260	1/18/18 17:03	**ND**	mg/kg dry		0.00025		SRM
1801126-01	D	Xylenes, total	01/17/18 9:25	EPA 8260	1/18/18 17:03	**ND**	mg/kg dry		0.00050		SRM
1801126-01	D	2,3,7,8-TCDD - Dioxin Scan	01/17/18 9:25	EPA 625	2/5/18 13:32	**ND**	ug/kg dry		0.63		SJM
1801126-01	D	1,2,4-Trichlorobenzene	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.002	0.00202	D1, D7	SJM
1801126-01	D	2,3-Dichloroaniline	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1801126-01	D	2,4,6-Trichlorophenol	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.001	0.00202	D1, D7	SJM
1801126-01	D	2,4-Dichlorophenol	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.002	0.00202	D1, D7	SJM
1801126-01	D	2,4-Dimethylphenol	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1801126-01	D	2,4-Dinitrophenol	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.009	0.01	D1, D7	SJM
1801126-01	D	2,4-Dinitrotoluene	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1801126-01	D	2,6-Dinitrotoluene	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.001	0.00202	D1, D7	SJM
1801126-01	D	2-Chloronaphthalene	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.001	0.00202	D1, D7	SJM
1801126-01	D	2-Chlorophenol	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.001	0.00202	D1, D7	SJM
1801126-01	D	2-Methyl-4,6-dinitrophenol	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.005	0.01	D1, D7	SJM
1801126-01	D	2-Methylphenol	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.001	0.00202	D1, D7	SJM
1801126-01	D	2-Nitrophenol	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1801126-01	D	3,3-Dichlorobenzidine	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1801126-01	D	4-Bromophenyl phenyl ether	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.001	0.00202	D1, D7	SJM
1801126-01	D	4-Chloro-3-methylphenol	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1801126-01	D	4-Chlorophenyl phenyl ether	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.001	0.00202	D1, D7	SJM
1801126-01	D	4-Methylphenol	01/17/18 9:25	EPA 625	2/2/18 20:35	**356.1**	mg/kg dry	0.002	0.02	D1, D7	SJM
1801126-01	D	4-Nitrophenol	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.005	0.01	D1, D7	SJM
1801126-01	D	Acenaphthene	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.002	0.00202	D1, D7	SJM
1801126-01	D	Acenaphthylene	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.002	0.00202	D1, D7	SJM
1801126-01	D	Anthracene	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.002	0.00202	D1, D7	SJM
1801126-01	D	Benzidine	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.007	0.01	D1, D7	SJM
1801126-01	D	Benzo[a]anthracene	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.001	0.00202	D1, D7	SJM
1801126-01	D	Benzo[a]pyrene	01/17/18 9:25	EPA 625	2/2/18 18:43	**ND**	mg/kg dry	0.002	0.00202	D1, D7	SJM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801126-01	D	Benzo[b]fluoranthene	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.00202	D1, D7	SJM
1801126-01	D	Benzo[ghi]perylene	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1801126-01	D	Benzo[k]fluoranthene	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801126-01	D	bis(2-chloroethoxy)methane	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.00202	D1, D7	SJM
1801126-01	D	bis(2-chloroethyl)ether	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801126-01	D	bis(2-chloroisopropyl)ether	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.00202	D1, D7	SJM
1801126-01	D	bis(2-ethylhexyl)phthalate	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1801126-01	D	Butylbenzylphthalate	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.00202	D1, D7	SJM
1801126-01	D	Carbazole	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1801126-01	D	Chrysene	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.001	0.00202	D1, D7	SJM
1801126-01	D	Dibenzo(a,h)anthracene	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1801126-01	D	Diethyl phthalate	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801126-01	D	Dimethyl phthalate	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.0006	0.00202	D1, D7	SJM
1801126-01	D	Di-n-butyl phthalate	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801126-01	D	Di-n-octyl phthalate	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1801126-01	D	Fluoranthene	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.001	0.00202	D1, D7	SJM
1801126-01	D	Fluorene	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.00202	D1, D7	SJM
1801126-01	D	Hexachlorobenzene	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.0006	0.00202	D1, D7	SJM
1801126-01	D	Hexachlorobutadiene	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.001	0.00202	D1, D7	SJM
1801126-01	D	Hexachlorocyclopentadiene	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.004	0.01	D1, D7	SJM
1801126-01	D	Hexachloroethane	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.001	0.00202	D1, D7	SJM
1801126-01	D	Indeno(1,2,3-cd)pyrene	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1801126-01	D	Isophorone	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.00202	D1, D7	SJM
1801126-01	D	Naphthalene	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.00202	D1, D7	SJM
1801126-01	D	n-Decane	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.00202	D1, D7	SJM
1801126-01	D	Nitrobenzene	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801126-01	D	N-Nitrosodimethylamine	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.01	D1, D7, PC3	SJM
1801126-01	D	N-Nitrosodi-n-propylamine	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801126-01	D	N-Nitrosodiphenylamine	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.006	0.01	D1, D7	SJM
1801126-01	D	n-Octadecane	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1801126-01	D	Pentachlorophenol	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.004	0.01	D1, D7	SJM
1801126-01	D	Phenanthrene	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.002	0.00202	D1, D7	SJM
1801126-01	D	Phenol	01/17/18 9:25	EPA 625	2/2/18 18:43	6.35	mg/kg dry	0.003	0.01	D1, D7	SJM
1801126-01	D	Pyrene	01/17/18 9:25	EPA 625	2/2/18 18:43	ND	mg/kg dry	0.001	0.00202	D1, D7	SJM
1801126-01	D	1,2-Diphenylhydrazine	01/17/18 9:25	EPA 8270C	2/2/18 18:43	ND	mg/kg dry	0.001	0.00202	D1, D7	SJM
1801126-01	D	1,4-Dichlorobenzene	01/17/18 9:25	EPA 8270C	2/2/18 18:43	ND	mg/kg dry	0.005	0.01	D1, D7	SJM
1801126-01	D	2,4,5-Trichlorophenol	01/17/18 9:25	EPA 8270C	2/2/18 18:43	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1801126-01	D	3 & 4-Methylphenol	01/17/18 9:25	EPA 8270C	2/2/18 20:35	458	mg/kg dry	0.001	0.06	D1, D2, D7	SJM
1801126-01	D	Pyridine	01/17/18 9:25	EPA 8270C	2/2/18 18:43	ND	mg/kg dry	0.002	0.00202	D1, D7	SJM
1801126-01	D	Chlordane	01/17/18 9:25	TCLP/EPA 8270C	1/25/18 14:44	NA	ug/L	1.38	3.00	N7	KLH
1801126-01	D	Endrin	01/17/18 9:25	TCLP/EPA 8270C	1/25/18 14:44	NA	ug/L	0.200	0.50	N7	KLH
1801126-01	D	gamma-BHC (Lindane)	01/17/18 9:25	TCLP/EPA 8270C	1/25/18 14:44	NA	ug/L	0.270	0.50	N7	KLH
1801126-01	D	Heptachlor	01/17/18 9:25	TCLP/EPA 8270C	1/25/18 14:44	NA	ug/L	0.270	0.50	N7	KLH
1801126-01	D	Heptachlor Epoxide	01/17/18 9:25	TCLP/EPA 8270C	1/25/18 14:44	NA	ug/L	0.290	0.50	N7	KLH
1801126-01	D	Methoxychlor	01/17/18 9:25	TCLP/EPA 8270C	1/25/18 14:44	NA	ug/L	0.270	0.50	N7	KLH
1801126-01	D	Toxaphene	01/17/18 9:25	TCLP/EPA 8270C	1/25/18 14:44	NA	ug/L	3.79	6.00	N7	KLH
1801126-01	D	1,1-Dichloroethene	01/17/18 9:25	TCLP/EPA 8260B	1/18/18 14:21	NA	ug/L		0.50	N7	SRM
1801126-01	D	1,2-Dichloroethane	01/17/18 9:25	TCLP/EPA 8260B	1/18/18 14:21	NA	ug/L		0.50	N7	SRM
1801126-01	D	1,4-Dichlorobenzene	01/17/18 9:25	TCLP/EPA 8260B	1/18/18 14:21	NA	ug/L		0.50	N7	SRM
1801126-01	D	Benzene	01/17/18 9:25	TCLP/EPA 8260B	1/18/18 14:21	NA	ug/L		0.50	N7	SRM
1801126-01	D	Carbon Tetrachloride	01/17/18 9:25	TCLP/EPA 8260B	1/18/18 14:21	NA	ug/L		0.50	N7	SRM
1801126-01	D	Chlorobenzene	01/17/18 9:25	TCLP/EPA 8260B	1/18/18 14:21	NA	ug/L		0.50	N7	SRM
1801126-01	D	Chloroform	01/17/18 9:25	TCLP/EPA 8260B	1/18/18 14:21	NA	ug/L		0.50	N7	SRM
1801126-01	D	Hexachlorobutadiene	01/17/18 9:25	TCLP/EPA 8260B	1/18/18 14:21	NA	ug/L		0.50	N7	SRM
1801126-01	D	Methyl Ethyl Ketone	01/17/18 9:25	TCLP/EPA 8260B	1/18/18 14:21	NA	ug/L		0.50	N7	SRM
1801126-01	D	Tetrachloroethene	01/17/18 9:25	TCLP/EPA 8260B	1/18/18 14:21	NA	ug/L		0.50	N7	SRM
1801126-01	D	Trichloroethene	01/17/18 9:25	TCLP/EPA 8260B	1/18/18 14:21	NA	ug/L		0.50	N7	SRM
1801126-01	D	Vinyl chloride	01/17/18 9:25	TCLP/EPA 8260B	1/18/18 14:21	NA	ug/L		0.50	N7	SRM
1801126-01	D	1,4-Dichlorobenzene	01/17/18 9:25	TCLP/EPA 8270C	2/20/18 13:21	NA	ug/L dry	1.37	2.00	N7	SJM
1801126-01	D	2,4,5-Trichlorophenol	01/17/18 9:25	TCLP/EPA 8270C	2/20/18 13:21	NA	ug/L dry	2.46	10.00	N7	SJM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1801126-01	D	2,4,6-Trichlorophenol	01/17/18 9:25	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	1.14	5.00	N7	SJM
1801126-01	D	2,4-Dinitrotoluene	01/17/18 9:25	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	1.44	5.00	N7	SJM
1801126-01	D	2-Methylphenol	01/17/18 9:25	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	1.09	2.00	N7	SJM
1801126-01	D	3 & 4-Methylphenol	01/17/18 9:25	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	1.07	4.00	N7	SJM
1801126-01	D	Hexachlorobenzene	01/17/18 9:25	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	0.610	2.00	N7	SJM
1801126-01	D	Hexachlorobutadiene	01/17/18 9:25	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	0.880	2.00	N7	SJM
1801126-01	D	Hexachloroethane	01/17/18 9:25	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	1.09	2.00	N7	SJM
1801126-01	D	Nitrobenzene	01/17/18 9:25	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	1.84	5.00	N7	SJM
1801126-01	D	Pentachlorophenol	01/17/18 9:25	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	6.10	10.00	N7	SJM
1801126-01	D	Pyridine	01/17/18 9:25	TCLP/EPA 8270C	2/20/18 13:21	**NA**	ug/L dry	1.55	2.00	N7	SJM
1801126-02	D	2,4-D	01/17/18 9:25	8151A	1/30/18 08:02	**ND**	ug/L	2.1	40	E8, R4, M1	KDK*
1801126-02	D	Silvex (2,4,5-TP)	01/17/18 9:25	8151A	1/30/18 08:02	**ND**	ug/L	1.7	10	E8, R4	KDK*
* Analysis Performed by:TestAmerica Denver - See attached contract lab report for official results.											
1801126-02	D	Cyanide, Total	01/17/18 9:25	9014	1/25/18 14:15	**ND**	mg/Kg dry	2.2	5.2	E8, L3	NEL*
* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.											
1801126-02	D	Percent Solids	01/17/18 9:25	2540G	1/22/18 06:48	**3.7**	%	0.1	0.1		YET*
* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.											
1801126-02	D	Percent Moisture	01/17/18 9:25	2540G	1/22/18 06:48	**96.3**	%	0.1	0.1		YET*
* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.											

Qualifier Definitions

<	<1
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D4	Minimum Reporting Limit (MRL) adjusted to reflect sample amount received and analyzed.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
K1	The sample dilutions set-up for the BOD/CBOD analysis did not meet the oxygen depletion criteria of at least 2 mg/L. Any reported result is an estimated value.
K2	The sample dilutions set up for the BOD/CBOD analysis did not meet the criteria of a residual dissolved oxygen of at least 1 mg/L. Any reported result is an estimated value.
L2	The associated blank spike recovery was below laboratory acceptance limits.
L3	The associated blank spike recovery was above method acceptance limits.
L4	The associated blank spike recovery was below method acceptance limits.
L5	The associated blank spike recovery was above laboratory/method acceptance limits. This analyte was not detected in the sample.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
N1	See case narrative.
N7	Additional analysis was not performed based on the "Total" result which was below the requested analyte's MCL/Action level/Trigger Level.
NA	Not Analyzed
PC3	Semi-quantitation is included in the case narrative.
R4	MS/MSD RPD exceeded the method control limit. Recovery met acceptance criteria.
T6	The reported result cannot be used for compliance purposes.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.

RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction

Case Narrative(s)

1801023-03
EPA Method 624 and 8260 Volatiles. Target analytes flagged with N1 failed the Matrix Spike RPD from the same analytical batch but the spike was performed on a different sample. SRM 01/22/18

1801023-03
EPA Method 625 Semi-volatiles: matrix spike and blank spike both fail recovery for 4-Methylphenol. The CCV passes QC criteria for this analyte. SJM 02/07/18

1801070-02
EPA Method 624 and 8260 Volatiles. Target analytes flagged with N1 failed the Matrix Spike RPD from the same analytical batch but the spike was performed on a different sample. SRM 01/22/18

Semi-Quantitation
Method: 625
1801070-02

Compound Name	Concentration-ug/L
Oleic Acid	483
Stearic Acid	184

SJM 02/15/18

1801126-01
EPA Method 625/8270 Pesticides: Target analytes flagged with N1 for this method failed the matrix spike RPD from the same extraction batch but the spike was perofrmed on a different sample. KLH 01/25/18

Semi-Quantitation
Method: 625
1801126-01

Compound Name	Concentration-mg/Kg
Benzeneacetic Acid	151
Palmitic Acid	6273
Oleic Acid	11319
Stearic Acid	2050
Butanoic Acid	2410
Butanoic Acid, 3-methyl-	1122
Pentanoic Acid	1539
Propanoic Acid	320
Butanoic Acid, 2-methyl-	600
Pentanoic Acid, 2-methyl-	270

SJM 02/20/18

1801189-01, -02
EPA Method 625/8270 Pesticides: Target Analytes flagged with N1 for this method failed the matrix spike RPD from the same extraction batch but the spike was performed on a different sample. KLH 02/15/18

Semi-Quantitation
Method: 625
1801189-01

Compound Name	Concentration-ug/L
Benzoic Acid	167
N,N-Dimethyl-1-dodecanamine	593
Palmitic Acid	20925
Oleic Acid	37411
Stearic Acid	12507
Squalene	92

SJM 03/15/18

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1801023-01

PROJECT & LOCATION: GREEN VALLEY WRF-BNROD SOUTH AEROBIC DIGESTED SLUDGE

PROJECT-LOCATION NUMBER: 25000-1960 (XXXXX-XXXX)

SAMPLE START DATE: _____ (MM/DD/YY OR MM/DD/YYYY) SAMPLE START TIME: _____ (Military time)

CLIENT: Sub-Regional Facilities

SAMPLE END DATE: 01-03-18 (MM/DD/YY OR MM/DD/YYYY) GOS 01-03-18 Date copied from bottle label. SAMPLE END TIME: 0800 (Military time)

SAMPLER(S): CARRILLO (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ AZPDES ☐ IWC ☐ Investigative ☐ Reuse ☐ Air ☐ 503 ■ Process Control ☐ Other _____

Matrix: ☐ Biosolids ☐ Groundwater ☐ Industrial ☐ Soil ☐ Stormwater ☐ Surface Water ■ Wastewater ☐ Air ☐ Other _____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	☐	☐	☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	☐	☐	☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total	☐	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other _____	☐	☐
Other _____	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other _____	☐	☐
Other _____	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other _____	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	■	☐
Solids, Volatile Suspended	☐	☐
Other _____	☐	☐

OTHER	D	C
Paint Filter	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*	_____	µg/L
☐ Specific Conductance *SM 2510 B*	_____	µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*	_____	mg/L
☐ pH @ pH Temp *SM 4500-H B*	_____ @	pH Units @ °C
☐ Temperature *SM 2550 B*	_____	°C
☐ Total Depth of Well	_____	feet
☐ Depth to Water	_____	feet
☐ Other _____	_____	_____

Comments/Instructions:

Septum Blank Prep Date & Initials: _____ _____

Chain of Custody Record (Signatures Only)

Relinquished by:	Received by:	Date:	Time: (Military time)
Refrigerator	Refrigerator	01/03/18	0805
Refrigerator		01/03/18	1026
		01-03-18	1226

Sample Integrity/Preservation:

# of Bottles Delivered: 1 GOS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 6 °C

Initials: GOS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately? GOS 01-27-18	☒	☒	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1801126-01

PROJECT & LOCATION: Green Valley WRF - Wet Haul Sludge (Annual)

PROJECT-LOCATION NUMBER: 25000-1962 (XXXXX-XXXX)

SAMPLE START DATE: _____ (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: _____ (Military time)

CLIENT: IWC

SAMPLE END DATE: 1.17.18 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0925 (Military time)

SAMPLER(S): Silva, Riccaboni (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other _____

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other _____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Hardness				
Iron				
Lead				
Magnesium				
Manganese				
Mercury	×		■	
Mercury LL				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Thallium				
Tin				

METALS	Tot	Diss	D	C
Titanium				
Vanadium				
Zinc				
PPMs *	×		* ■	
TCLP Metals			■	
503 Metals **			■	
Dissolved Cr+6				

WET METHODS	D	C
Ammonia as N		
Chloride		
Cyanide, Total		
Cyanide, Amenable		
Fluoride		
Ignitability		
Nitrate as N		
Nitrite as N		
Nitrate/Nitrite as N		
Nitrogen, Total Kjeldahl		
Nitrogen, Total as N		
Orthophosphate as P		
Phosphorus, Total as P		
Sulfate		
Sulfide		
Other _____		
Other _____		

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	■	
Dioxin GC/SIM/MS Scan	■	
Organochlorine Pesticides & PCBs	■	
Purgeable Organics (GCMS)	■	
Semivolatile Organics (GCMS)	■	
Bis(2-ethylhexyl) phthalate		
Digester Gas		
Oil and Grease		
Organic Carbon, Total		
Organic Carbon, Dissolved		
TCLP Herbicides (Contract Lab)		
TCLP Pesticides	■	
TCLP Semivolatile Organics	■	
TCLP Volatile Organics	■	
TTHM		
Total Petroleum Hydrocarbons		
Volatile Acids		
Other _____		
Other _____		

EFFLUENT TOXICITY TESTING

	D	C
Chronic *P. promelas*		
Chronic *C. dubia*		
Chronic *Selenastrum capricornutum*		
Other _____		

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity		
BOD		
COD		
Coliform, Fecal		
Coliform, Total		
Specific Conductance		
E. coli		
Oxygen, Dissolved		
pH		
Solids, Total	■	
Solids, Total Dissolved		
Solids, Total Suspended		
Solids, Total Volatile		
Solids, Volatile Suspended		
Other _____		

OTHER

	D	C
Paint Filter		
_____		
_____		
_____		
_____		

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other _____		

Comments/Instructions:

Trip Blanks (3) have air bubbles >6 mm. JLO 1.17.18

Septum Blank Prep Date & Initials: 11.28.17 IE

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
R. Riccaboni	M. Mahlberg	1/17/18	1226
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

# of Bottles Delivered: 11 JLO

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 1.0 °C

Initials: JLO

Q6 qualifier? ☐ YES ☑ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☒	☐	☐
Received from a refrigerator?	☐	☒	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)

** As, Ba, Be, Cd, Cr, Cu, Pb, Mo, Ni, Se, Ag, Tl, Zn

COC-Single Revision 2 Revised: 03/12/2015

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1801126-02

PROJECT & LOCATION: Green Valley WRF - Wet Haul Sludge (Annual)

PROJECT-LOCATION NUMBER: 25000-1962 (XXXXX-XXXX)

SAMPLE START DATE: _____ (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: _____ (Military time)

CLIENT: IWC

SAMPLE END DATE: 1.17.18 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0925 (Military time)

SAMPLER(S): Silva, Riccaboni (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other _____

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other _____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury			☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *			☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total (contract)	■	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other _____	☐	☐
Other _____	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	■	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other _____	☐	☐
Other _____	☐	☐

EFFLUENT TOXICITY TESTING

	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other _____	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total (contract)	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other _____	☐	☐

OTHER

	D	C
Paint Filter	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*	_____	µg/L
☐ Specific Conductance *SM 2510 B*	_____	µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*	_____	mg/L
☐ pH @ pH Temp *SM 4500-H B*	_____ @	pH Units @ °C
☐ Temperature *SM 2550 B*	_____	°C
☐ Total Depth of Well	_____	feet
☐ Depth to Water	_____	feet
☐ Other _____	_____	_____

Comments/Instructions: Samples Sent to TestAmerica 1/17-18 DO#18-020068

Septum Blank Prep Date & Initials: 11.28.17 lej

Chain of Custody Record (Signatures Only)

Relinquished by:	Received by:	Date:	Time: (Military time)
Riccaboni / Michelle Serna	Michelle Serna	1/17/18	1226
Michelle Serna	Mike Root	1224	1/19/18
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

of Bottles Delivered: 3

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 1.0 °C

Initials: ML

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT

INDUSTRIAL WASTEWATER CONTROL SECTION
SAMPLE COLLECTION FIELD NOTES

SAMPLE LOCATION: Green Valley WRF - Wet Haul LIMS #1801126-01,-02

LOCATION ID: ~~25003-1962~~ 25000-1962 SAMPLERS: Silva, Riccaboni SAMPLE DATE: 01-17-18

Last names only, primary sampler first.

5-3-18

SAMPLE D or C	PARAMETER	START TIME	END TIME	FREQUENCY	Time Flow	Auto Man.	Volume Submitted	PRESERVATION
D	Priority Pollutant Metals			Grab	✓	N/A	1000 ml	Dissolve Metals / Ice
D	503 Metals			1-17-18				
D	TCLP Metals			0925			1000 ml	Dissolve Metals / Ice
D	Cyanide, Total						1000 ml	Dissolve Metals / Ice
D	Dioxin Scan						1000 ml	Amber Glass / Ice
D	Org. Pesticides						1000 ml	Amber Glass / Ice
D	Semivolatile Organics						1000 ml	Amber Glass / Ice
D	TCLP Herbicides (Contract Lab)						1000 ml	Amber Glass / Ice
D	TCLP Pesticides						1000 ml	Amber Glass / Ice
D	TCLP Semivolatile Org.						1000 ml	Amber Glass / Ice
D	Solids, Total						1000 ml	General Purpose / Ice
D	Solids, Total						1000 ml	General Purpose / Ice
D	Acrolein and Acrylonitrile						40 ml	Septum vial / Ice
D	Acrolein and Acrylonitrile						40 ml	Septum vial / Ice
D	Acrolein and Acrylonitrile						40 ml	Septum vial / Ice
D	Acrolein and Acrylonitrile						40 ml	Septum vial / Ice
D	Purgeable Organics						40 ml	Septum vial / Ice
D	Purgeable Organics						40 ml	Septum vial / Ice
D	Purgeable Organics						40 ml	Septum vial / Ice
D	Purgeable Organics						40 ml	Septum vial / Ice
D	TCLP Volatile Organics						40 ml	Septum vial / Ice
D	TCLP Volatile Organics						40 ml	Septum vial / Ice
D	TCLP Volatile Organics						40 ml	Septum vial / Ice
D	TCLP Volatile Organics						40 ml	Septum vial / Ice

pH METER CALIBRATION LOG

Time	Model #	Serial #	Auto/Man.	Buffer	Reading	Buffer	Reading	Temp.	Slope	Initials
			N/A							

FIELD MEASUREMENTS

Sample	Parameter & Method	Result	Time	Initials	Sample	Parameter & Method	Result	Time	Initials
	N/A								

Notes: All samples are unpreserved

EQUIPMENT USED: ■ Grab Sampler ☐ Automatic Sampler ☐ Electric Pump ☐ Other

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Joe Doranski	Site Contact:	Date:	COC No:
Pima County CRAO Lab	Tel/Fax: 520-724-6032	Lab Contact:	Carrier:	1 of 1 COCs
2955 W. Calle Agua Nueva	Analysis Turnaround Time			Sampler: Riccaboni + Silva
Tucson/AZ/85745	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(520) 724-6032 Phone	TAT if different from Below _____			Walk-in Client:
(520) 724-6075 FAX	☑ 2 weeks			Lab Sampling:
Project Name: AV & GV	☐ 1 week			
Site: Green Valley & Avra Valley WRF	☐ 2 days			Job / SDG No.:
P O # 18-020068	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Cyanide total mg/kg dry	Total % solids for mg/kg dry	TCLP herbicides	Sample Specific Notes:
Green Valley WRF wet haul sludge 25000-1962											BS - biosolids
1801126-02	1/17/18	0925	Grab	BS	3	N		1	1	1	mg/kg dry
Avra Valley WRF wet haul sludge 25003-1573											BS - biosolids
1801136-02	1/18/18	1035	Grad	BS	3	N		1	1	1	mg/kg dry

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☑Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐Return to Client ☑Disposal by Lab ☐Archive for_____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Greg Spanos for samplers	PC CRAO Lab	01-18-18 1456		PC CRAO	01-18-18 1456
	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PC CRAO	01-19-18 1224	Mike Root 1224	1/19/18	
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

PIMA COUNTY
WASTEWATER RECLAMATION
COMPLIANCE AND REGULATORY AFFAIRS OFFICE LABORATORY
2955 W Calle Agua Nueva, Tucson, AZ 85745
Telephone: (520) 724-6200

LIMS CHECKLIST FOR SUBCONTRACT DATA

LIMS ID	**1801126-02, 1801136-02**	**DO**	**18-020068**
CONTRACT LAB	**TestAmerica PHX, DEN**	**SAMPLE GROUP**	**AV & GV**
ANALYSES	**Cyanide sludge, % TS, TCLP Herbicides,**	**REPORT ID**	**550-96600-1**

TRANSFER & CONVERT FILES:	
Was the contract lab spreadsheet file saved to \\Splimsapp\elementshare\TransferIn ?	Y
Was the above mentioned file converted from a .xls file to a .mdb file for each WO#, and further, for each subcontract location, or separate analysis (as applicable), on the contract lab report? (Element>Project Management>Reports)	Y
Was the converted file attached to the sample in LIMS?	Y
VALIDATING CONTRACT LAB REPORT , CHAIN OF CUSTODY(S), AND DO#:	
Contract Lab Report signed and dated?	Y
Copy of contract lab COC included with contract Lab Report?	Y
Contract lab COC verified with CRAO COC(s) for Sample ID, Sample Date, Analysis Requested?	Y
Sample dates and received dates on the CL report, match the CL COC?	Y
CL report includes all requested analysis?	Y
CL licensed in AZ for the reported methods?	Y
Check that DO matches COC in types and number of tests?	N/A
DO received in Pima Core?	Y
CONTRACT LAB REPORT, EXCEL SPREADSHEET, and QC:	
CL report and CL spreadsheet report the same sample results, sample date, and analysis date?	Y
Was a Case Narrative Included in Contract Lab report?	Y
Data packet includes QC Report from primary lab and any secondary subcontract labs?	Y
Did CL report list applicable AZ Data Qualifiers?	Y
Were there any dilutions made to samples that were reported as ND?	N
If so, were they qualified due to matrix interference?	N/A
Was QC included for every analysis method: typically Blk, LCS, MS, MSD?	Y
Did QC pass stated acceptance limits, or was it qualified?	Y
Were samples analyzed within required holding times?	Y
Check that MDLs are below water quality standards, If not notify Belinda Gamboa-Felix? (Cyanide, Hexachlorobenzene)	N/A
Semivolatiles & Volatiles: Check that all analytes were delivered?	N/A
COMPLIANCE LIMIT REVIEW	
Were results compared to the discharge permit?.	N/A
Was Belinda Gamboa-Felix notified of any exceedences?	N/A
WET TESTING SPECIFIC REQUIREMENTS	
Statement of Pass/Fail reflected in End Points?	N/A
Report states if zeolite treatment was utilized?	N/A
Survival and Reproduction or Growth Data included (P. promelas or Ceriodaphnia only)?	N/A
Chemistry data included?	N/A

Reference Toxicant Test Results and Control Chart within limits?				N/A
PMSD Determination included and within acceptable range? (minimum acceptable= 13)				N/A
End Points include TUc, NOEC, LOEC, and IC25?				N/A
Statistics verify endpoints				N/A
Control Charts Updated to include month of analysis				N/A
Reviewer Initials:	**JD**	**Review Date:**	**03-26-18**	

PEER/FINAL REVIEW:				PR	FR
LIMS/Excel data matches printed CL report?				✓	
Analysis dates are correct?				✓	
Correct Data Qualifiers included if necessary.				✓	
CRAO report shows result is from Contract Lab?				✓	
CRAO report shows correct Contract Lab (e.g. Test America, Phoenix)?				✓	
DO received in Pima Core				✓	
Analysis set to Reported?					✓
Peer Reviewer Initials:	JD	**Review Date:**	3-26-18		
Biomonitor Supervisor Initials:	N/A	**Review Date:**			
Final Reviewer Initials:	JEC	**Review Date:**	3·26·18		

CORRECTIVE ACTION REPORT:			
Preliminary Review:		Date:	
QA/QC Review:		Date:	
Data Entry:		Date:	
Peer Review:		Date:	
Lab Supervisor:		Date:	

LIMS #:	**DEVIATION:**	**CORRECTIVE ACTION:**
1801126-02	Missing M1 qualifier for EPA 8151A	Revised report (REV (1))

DEVIATIONS FROM ACCEPTABLE QA/QC:

Missing QC Report/Data
Holding Time for analysis exceeded.
Inappropriate dilution performed.
Missing COC.
Missing Data Qualifiers.
Incorrect Analysis Method.
Incorrect Sample IDs.
Other.

CORRECTIVE ACTION:

Request report correction from Subcontract Lab project manager.
Add missing Data Qualifiers.
Notify data end-user of deviation.
Arrange for resampling.
Other.

Joseph Doranski

From: Eshelman, Linda <Linda.Eshelman@testamericainc.com>
Sent: Monday, March 12, 2018 15:49
To: Joseph Doranski
Cc: Jenelle Chraft
Subject: RE: Job 550-96602-1
Attachments: 550-96600-1.xls; J96600-1 UDS Level 2 Report Rev(1) Final Report.pdf

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

Joseph,

I have attached the revised report with the addition of the M1 flag on sample 550-96600-1, method 8151.

Thank you

Linda

LINDA ESHELMAN
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
Main Tel 602.437.3340 / Direct Line 602.659.7629

www.testamericainc.com

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at : Project Feedback https://www.surveymonkey.com/s/TAProjectFeedback

This e-mail communication, including any attachments, may contain privileged or confidential information for the use of the recipient(s) named above and is protected by law. If you are not the intended recipient(s), you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited and you should delete this message and its attachments from your computer without retaining any copies. If you have received this communication in error, please reply to the sender immediately. We appreciate your cooperation

From: Joseph Doranski [mailto:Joseph.Doranski@pima.gov]
Sent: Friday, March 09, 2018 2:33 PM

To: Eshelman, Linda
Cc: Jenelle Chraft
Subject: FW: Job 550-96602-1

-External Email-

Hello Linda,

Please see below, as I am sure you have had a lot of catching up to do.
Regards,

From: Joseph Doranski
Sent: Wednesday, February 28, 2018 9:59 AM
To: Linda.eshelman@testamericainc.com
Cc: Jenelle Chraft <Jenelle.Chraft@pima.gov>
Subject: Job 550-96602-1

Good morning Linda,

I am currently reviewing the EDD and report for job 550-96602-1, and I believe I have found an omission. On the report section 9, QC Sample Results, the matrix spike has an M1 qualifier, with our sample(1801126-02) being spiked. The M1 qualifier did not show up in section 7, Client Sample Results, nor is it on the EDD. Will you, at your earliest convenience, investigate and send us a revised report and EDD with the M1 qualifier attached to the EDD and the report? Please contact me if you feel that I am mistaken, or if you have any questions or concerns.

Respectfully,

Joseph Doranski
Quality Assurance Unit Chemist Specialist
RWRD CRAO – Laboratory
2955 W Calle Agua Nueva
Tucson AZ 85745
520-724-6032
Joseph.doranski@pima.gov
Plesese consider the environment; print only if necessary

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-96600-1
TestAmerica SDG: Green Valley & Avra Valley WRF
Client Project/Site: AV & GV
Revision: 1

For:
Pima County WWTP
PO BOX 791
Tucson, Arizona 85701

Attn: Joseph Doranski

Authorized for release by:
3/12/2018 3:46:55 PM

Linda Eshelman, Project Manager II
(602)659-7629
linda.eshelman@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Sample Summary 5
Detection Summary 6
Client Sample Results 7
Surrogate Summary 8
QC Sample Results 9
QC Association Summary 11
Lab Chronicle 13
Certification Summary 14
Method Summary 15
Chain of Custody 16
Receipt Checklists 18

Definitions/Glossary

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
R4	MS/MSD RPD exceeded the method control limit. Recovery met acceptance criteria.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.

General Chemistry

Qualifier	Qualifier Description
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
L3	The associated blank spike recovery was above method acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Job ID: 550-96600-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-96600-1

Comments
No additional comments.

Receipt
The samples were received on 1/19/2018 2:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.9° C.

GC Semi VOA
Method(s) 8151A: The matrix spike/matrix spike duplicate (MS/MSD) recoveries for preparation batch 280-402680 and 280-402821 and analytical batch 280-403058 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method:8151
Batch:280-403058

Method(s) 8151A: The samples 1801126-02 (550-96600-1), (550-96600-C-1-C MS) and (550-96600-C-1-D MSD) had numerous non-target peaks and significant baseline rise that could be interfering with the identification and quantitation of target analytes. This inference could cause false positive and/or negative results.

Method:8151
Batch:280-403058

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method(s) 9014: The laboratory control sample duplicate (LCSD) for analytical batch 550-137947 recovered outside control limits for the following analytes: Cyanide, Total by method EPA 9014. This analyte was biased high in the LCSD and was not detected in the associated samples; therefore, these data have been reported with L3 flags.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method(s) 1311: These samples are multiphasic, they were filtered overnight and the filteration was ended at 24 hours. Our SOP is to stop after 24 hours to avoid loss of volities. Sample one had a fair amount of liquid. Sample 2 was pretty much done with only wet solids remaining. For 1311 Herbicides in batch preparation batch 280-402680 .

1801126-02 (550-96600-1) and 1801123-02 (550-96600-2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

The original report was revised to include the missing M1 flag on sample 550-96600-1 (1801126-02), method 8141, 2,4-D.

Sample Summary

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-96600-1	1801126-02	Solid	01/17/18 09:25	01/19/18 14:35
550-96600-2	1801136-02	Solid	01/18/18 10:35	01/19/18 14:35

Detection Summary

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Client Sample ID: 1801126-02 — Lab Sample ID: 550-96600-1

No Detections.

Client Sample ID: 1801136-02 — Lab Sample ID: 550-96600-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Client Sample ID: 1801126-02

Lab Sample ID: 550-96600-1
Date Collected: 01/17/18 09:25
Matrix: Solid
Date Received: 01/19/18 14:35

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND	E8 M1 R4	40	2.1	ug/L		01/25/18 17:22	01/30/18 08:02	1
Silvex (2,4,5-TP)	ND	E8 R4	10	1.7	ug/L		01/25/18 17:22	01/30/18 08:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*66*		*10 - 131*	*01/25/18 17:22*	*01/30/18 08:02*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**96.3**		0.1	0.1	%			01/22/18 06:48	1
Percent Solids	**3.7**		0.1	0.1	%			01/22/18 06:48	1

Client Sample ID: 1801126-02

Lab Sample ID: 550-96600-1
Date Collected: 01/17/18 09:25
Matrix: Solid
Date Received: 01/19/18 14:35
Percent Solids: 3.7

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	E8 L3	5.2	2.2	mg/Kg	☼	01/24/18 13:07	01/25/18 14:15	1

Client Sample ID: 1801136-02

Lab Sample ID: 550-96600-2
Date Collected: 01/18/18 10:35
Matrix: Solid
Date Received: 01/19/18 14:35

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND	E8	40	2.1	ug/L		01/25/18 17:22	01/30/18 09:33	1
Silvex (2,4,5-TP)	ND	E8	10	1.7	ug/L		01/25/18 17:22	01/30/18 09:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*69*		*10 - 131*	*01/25/18 17:22*	*01/30/18 09:33*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**98.1**		0.1	0.1	%			01/22/18 06:48	1
Percent Solids	**1.9**		0.1	0.1	%			01/22/18 06:48	1

Client Sample ID: 1801136-02

Lab Sample ID: 550-96600-2
Date Collected: 01/18/18 10:35
Matrix: Solid
Date Received: 01/19/18 14:35
Percent Solids: 1.9

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	E8 L3	10	4.4	mg/Kg	☼	01/24/18 13:07	01/25/18 14:15	1

Surrogate Summary

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**DCPAA1 (10-131)**
550-96600-1	1801126-02	66
550-96600-1 MS	1801126-02	83
550-96600-1 MSD	1801126-02	30
550-96600-2	1801136-02	69
LB 280-402680/1-C	Method Blank	79
LCS 280-402680/2-C	Lab Control Sample	62

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid

Lab Chronicle

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Client Sample ID: 1801126-02 — Lab Sample ID: 550-96600-1

Date Collected: 01/17/18 09:25
Date Received: 01/19/18 14:35
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			402680	01/24/18 19:06	DFB1	TAL DEN
TCLP	Prep	8151A			402821	01/25/18 17:22	RPC	TAL DEN
TCLP	Analysis	8151A		1	403058	01/30/18 08:02	KDK	TAL DEN
Total/NA	Analysis	2540G		1	137550		YET	TAL PHX
					(Start)	01/22/18 06:48		
					(End)	01/23/18 08:05		

Client Sample ID: 1801126-02 — Lab Sample ID: 550-96600-1

Date Collected: 01/17/18 09:25
Date Received: 01/19/18 14:35
Matrix: Solid
Percent Solids: 3.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9013A			137813	01/24/18 13:07	NEL	TAL PHX
Total/NA	Prep	9010C			137945	01/24/18 14:00	NEL	TAL PHX
Total/NA	Analysis	9014		1	137947	01/25/18 14:15	NEL	TAL PHX

Client Sample ID: 1801136-02 — Lab Sample ID: 550-96600-2

Date Collected: 01/18/18 10:35
Date Received: 01/19/18 14:35
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			402680	01/24/18 19:06	DFB1	TAL DEN
TCLP	Prep	8151A			402821	01/25/18 17:22	RPC	TAL DEN
TCLP	Analysis	8151A		1	403058	01/30/18 09:33	KDK	TAL DEN
Total/NA	Analysis	2540G		1	137550		YET	TAL PHX
					(Start)	01/22/18 06:48		
					(End)	01/23/18 08:05		

Client Sample ID: 1801136-02 — Lab Sample ID: 550-96600-2

Date Collected: 01/18/18 10:35
Date Received: 01/19/18 14:35
Matrix: Solid
Percent Solids: 1.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9013A			137813	01/24/18 13:07	NEL	TAL PHX
Total/NA	Prep	9010C			137945	01/24/18 14:00	NEL	TAL PHX
Total/NA	Analysis	9014		1	137947	01/25/18 14:15	NEL	TAL PHX

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Laboratory: TestAmerica Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0728	06-09-18

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-19
A2LA	ISO/IEC 17025		2907.01	10-31-19
Alabama	State Program	4	40730	09-30-12 *
Alaska (UST)	State Program	10	UST-30	04-05-18
Arizona	State Program	9	AZ0713	12-20-18
Arkansas DEQ	State Program	6	88-0687	06-01-18
California	State Program	9	2513	01-18-19
Connecticut	State Program	1	PH-0686	09-30-18
Florida	NELAP	4	E87667	06-30-18
Georgia	State Program	4	N/A	01-08-18 *
Illinois	NELAP	5	200017	04-30-18
Iowa	State Program	7	370	12-01-18
Kansas	NELAP	7	E-10166	04-30-18
Louisiana	NELAP	6	02096	06-30-18
Maine	State Program	1	CO0002	03-03-19
Minnesota	NELAP	5	8-999-405	12-31-18
Nevada	State Program	9	CO0026	07-31-18
New Hampshire	NELAP	1	205310	04-28-18
New Jersey	NELAP	2	CO004	06-30-18
New York	NELAP	2	11964	04-01-18
North Carolina (WW/SW)	State Program	4	358	12-31-18
North Dakota	State Program	8	R-034	01-08-19
Oklahoma	State Program	6	8614	08-31-18
Oregon	NELAP	10	4025	01-08-19
Pennsylvania	NELAP	3	68-00664	07-31-18
South Carolina	State Program	4	72002001	01-08-19
Texas	NELAP	6	T104704183-17-14	09-30-18
USDA	Federal		P330-16-00397	12-15-19
Utah	NELAP	8	CO00026	07-31-18
Virginia	NELAP	3	460232	06-14-18
Washington	State Program	10	C583	08-03-18
West Virginia DEP	State Program	3	354	12-31-18
Wisconsin	State Program	5	999615430	08-31-18
Wyoming (UST)	A2LA	8	2907.01	10-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Pima County WWTP
Project/Site: AV & GV

TestAmerica Job ID: 550-96600-1
SDG: Green Valley & Avra Valley WRF

Method	Method Description	Protocol	Laboratory
8151A	Herbicides (GC)	SW846	TAL DEN
2540G	SM 2540G	SM22	TAL PHX
9014	Cyanide	SW846	TAL PHX

Protocol References:

SM22 = SM22

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax

96600

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

3/12/2018 (Rev. 1)

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

Client Contact	Project Manager: Joe Doranski	Site Contact:	Date:	COC No:
Pima County CRAO Lab	Tel/Fax: 520-724-6032	Lab Contact:	Carrier:	1 of 1 COCs
2955 W. Calle Agua Nueva	Analysis Turnaround Time			Sampler: Riccaboni + Silva
Tucson/AZ/85745	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(520) 724-6032 Phone	TAT if different from Below _____			Walk-in Client:
(520) 724-6075 FAX	☑ 2 weeks			Lab Sampling:
Project Name: AV & GV	☐ 1 week			
Site: Green Valley & Avra Valley WRF	☐ 2 days			Job / SDG No.:
P O # 18-020068	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Cyanide total mg/kg dry	Total % solids for mg/kg dry	TCLP herbicides	Sample Specific Notes:
Green Valley WRF wet haul sludge 25000-1962											BS - biosolids
1801126-02 -01	1/17/18	0925	Grab	BS	3	N		1	1	1	mg/kg dry
Avra Valley WRF wet haul sludge 25003-1573											BS - biosolids
1801136-02 -02	1/18/18	1035	Grad	BS	3	N		1	1	1	mg/kg dry

550-96600 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☑Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐Return to Client ☑Disposal by Lab ☐Archive for_____ Months

Special Instructions/QC Requirements & Comments:

29°

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd: 29 | Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Greg Spanbo for samplers	PC CRAO Lab	01-18-18 1456		PC CRAO	01-18-18 1456
	PC CRAO	01-19-18 1224	Mike Root 1224	1/19/18	
Mike Root 1435	1/19/18			TA	1/19/18 1435

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

TestAmerica Phoenix
4625 East Cotton Ctr Blvd Suite 189
Phoenix, AZ 85040
Phone (602) 437-3340 Fax (602) 454-9303

Chain of Custody Record

TestAmerica

Client Information (Sub Contract Lab)	Sampler	Lab PM: Eshelman, Linda	Carrier Tracking No(s):	COC No: 550-19959.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: linda.eshelman@testamericainc.com	State of Origin: Arizona	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note): State Program - Arizona		Job #: 550-96600-1
Address: 4955 Yarrow Street,	Due Date Requested: 1/26/2018			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #			
Email:	WO #			
Project Name: General CRAO Lab	Project #: 55001656			
Site:	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A/1311_T TCLP 8151	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
1801126-02 (550-96600-1)	1/17/18	09:25 Arizona		Solid			X	1	
1801123-02 (550-96600-2)	1/18/18	10.35 Arizona		Solid			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by: [illegible] 1-19-18	Date/Time: 1:45 TA Phx Lab	Company	Received by: [illegible]	Date/Time: 1-20-18 0840	Company: TH-Per	
Relinquished by:	Date/Time	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks: 2.3 IR #8 +0.1 Transfer RP 1-20-18

Ver: 09/20/2016

Login Sample Receipt Checklist

Client: Pima County WWTP

Job Number: 550-96600-1
SDG Number: Green Valley & Avra Valley WRF

Login Number: 96600
List Number: 1
Creator: Gravlin, Andrea

List Source: TestAmerica Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Pima County WWTP

Job Number: 550-96600-1
SDG Number: Green Valley & Avra Valley WRF

Login Number: 96600
List Number: 2
Creator: Pottruff, Reed W

List Source: TestAmerica Denver
List Creation: 01/20/18 12:05 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

PIMA COUNTY
WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 08/02/2018
Laboratory License: AZO159

Sample Analysis Report

Green Valley WRF

April 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By: Jenelle Chaffee 8·27·18

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

Date

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1804201-02	C	Butylbenzylphthalate	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	1.90	2.13	D4	SJM
1804201-02	C	Carbazole	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	2.67	6.39	D4	SJM
1804201-02	C	Chrysene	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	1.14	2.13	D4	SJM
1804201-02	C	Dibenzo(a,h)anthracene	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	3.07	6.39	D4	SJM
1804201-02	C	Diethyl phthalate	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	2.24	6.39	D4, N1, S1	SJM
1804201-02	C	Dimethyl phthalate	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	0.58	2.13	D4, S1	SJM
1804201-02	C	Di-n-butyl phthalate	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	2.50	6.39	D4	SJM
1804201-02	C	Di-n-octyl phthalate	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	2.55	6.39	D4	SJM
1804201-02	C	Fluoranthene	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	1.32	2.13	D4	SJM
1804201-02	C	Fluorene	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	1.54	2.13	D4, S1	SJM
1804201-02	C	Hexachlorobenzene	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	0.62	2.13	D4	SJM
1804201-02	C	Hexachlorobutadiene	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	1.01	2.13	D4, S1	SJM
1804201-02	C	Hexachlorocyclopentadiene	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	4.23	6.39	D4, S1	SJM
1804201-02	C	Hexachloroethane	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	1.26	2.13	D4	SJM
1804201-02	C	Indeno(1,2,3-cd)pyrene	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	2.83	6.39	D4	SJM
1804201-02	C	Isophorone	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	1.66	2.13	D4, S1	SJM
1804201-02	C	Naphthalene	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	1.77	2.13	D4, S1	SJM
1804201-02	C	n-Decane	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	1.95	2.13	D4, V1	SJM
1804201-02	C	Nitrobenzene	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	2.10	6.39	D4, S1	SJM
1804201-02	C	N-Nitrosodimethylamine	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	2.09	6.39	D4, L3, PC3	SJM
1804201-02	C	N-Nitrosodi-n-propylamine	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	2.43	6.39	D4	SJM
1804201-02	C	N-Nitrosodiphenylamine	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	6.08	10.65	D4, S1, V1	SJM
1804201-02	C	n-Octadecane	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	2.18	6.39	D4	SJM
1804201-02	C	Pentachlorophenol	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	4.02	6.39	D4	SJM
1804201-02	C	Phenanthrene	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	1.63	2.13	D4	SJM
1804201-02	C	Phenol	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	2.59	6.39	D4	SJM
1804201-02	C	Pyrene	04/27/18 6:00	EPA 625	5/24/18 15:55	**ND**	ug/L	1.38	2.13	D4	SJM
1804201-02	C	1,2-Diphenylhydrazine	04/27/18 6:00	EPA 8270C	5/24/18 15:55	**ND**	ug/L	0.98	2.13	D4, L3, N1, S1	SJM
1804201-02RE1	C	Zinc	04/27/18 6:00	EPA 200.8	6/4/18 16:57	**58.1**	ug/L	0.23	5.00	D1	JB
BNROD-Final Effluent-Process Control (25000-1925)											
1804136-05	C	Ammonia	04/18/18 8:00	EPA 350.1	4/23/18 11:58	**3.55**	mg/L	0.05	0.50		JGB
1804136-05	C	Nitrate/Nitrite	04/18/18 8:00	EPA 353.2	4/20/18 14:54	**0.30**	mg/L	0.02	0.20		HAV
1804136-05	C	Total Kjeldahl Nitrogen	04/18/18 8:00	EPA 351.2	5/2/18 13:07	**5.18**	mg/L	0.29	0.80		HAV
1804136-05	C	Nitrogen Total Water	04/18/18 8:00	Calculated	5/2/18 13:07	**5.48**	mg/L	0.29	0.80		HAV
1804136-05	C	Alkalinity Total	04/18/18 8:00	SM 2320B	4/25/18 15:55	**192**	mg/L		20.00		ESW
1804136-05	C	Bicarbonate Alkalinity	04/18/18 8:00	SM 2320B	4/25/18 15:55	**192**	mg/L		20.00		ESW
1804136-05	C	Biochemical Oxygen Demand	04/18/18 8:00	SM 5210B	4/24/18 07:01	**4.5**	mg/L		2.00		DEB
1804136-05	C	Total Suspended Solids	04/18/18 8:00	SM 2540D	4/19/18 13:07	**ND**	mg/L		2.50		SDR
BNROD MLSS (25000-1940)											
1804136-03	D	Total Suspended Solids	04/18/18 8:00	SM 2540D	4/19/18 13:07	**2040**	mg/L		2.50		SDR
1804136-03	D	Total Volatile Suspended Solids	04/18/18 8:00	EPA 160.4	4/19/18 15:20	**1760**	mg/L		2.50		SDR
BNROD-South Aerobic Digester Sludge (25000-1960)											
1804136-02	D	% Solids	04/18/18 9:00	SM 2540G	4/19/18 13:18	**3.68**	%		0.01		IYC
1804136-02	D	% Solids, Total Volatile	04/18/18 9:00	SM 2540G	4/19/18 16:00	**81.1**	%		0.01		IYC
Wet Haul Sludge (25000-1962)											
1804148-01	D	Antimony	04/19/18 9:00	EPA 6010D	5/1/18 16:55	**ND**	mg/kg dry		17.96		MLB
1804148-01	D	Arsenic	04/19/18 9:00	EPA 6010D	5/1/18 12:28	**ND**	mg/kg dry		17.96		MLB
1804148-01	D	Beryllium	04/19/18 9:00	EPA 6010D	5/1/18 12:28	**ND**	mg/kg dry		3.59		MLB
1804148-01	D	Cadmium	04/19/18 9:00	EPA 6010D	5/1/18 12:28	**ND**	mg/kg dry		7.19		MLB
1804148-01	D	Chromium	04/19/18 9:00	EPA 6010D	5/1/18 12:28	**ND**	mg/kg dry		17.96		MLB
1804148-01	D	Copper	04/19/18 9:00	EPA 6010D	5/1/18 12:28	**216**	mg/kg dry		17.96		MLB
1804148-01	D	Lead	04/19/18 9:00	EPA 6010D	5/1/18 16:55	**ND**	mg/kg dry		17.96		MLB
1804148-01	D	Mercury	04/19/18 9:00	EPA 7471B	4/23/18 14:40	**0.68**	mg/kg dry		0.00288		DML
1804148-01	D	Molybdenum	04/19/18 9:00	EPA 6010D	5/1/18 12:28	**ND**	mg/kg dry		7.19		MLB

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1804148-01	D	Nickel	04/19/18 9:00	EPA 6010D	5/1/18 12:28	**ND**	mg/kg dry		17.96		MLB
1804148-01	D	Selenium	04/19/18 9:00	EPA 6010D	5/1/18 16:55	**ND**	mg/kg dry		35.93		MLB
1804148-01	D	Silver	04/19/18 9:00	EPA 6010D	5/1/18 12:28	**3.18**	mg/kg dry		1.80		MLB
1804148-01	D	Thallium	04/19/18 9:00	EPA 6010D	5/1/18 16:55	**ND**	mg/kg dry		17.96		MLB
1804148-01	D	Zinc	04/19/18 9:00	EPA 6010D	5/1/18 12:28	**480**	mg/kg dry		17.96		MLB
1804148-01	D	% Solids	04/19/18 9:00	SM 2540G	4/21/18 14:03	**3.47**	%		0.01		DEB
1804148-01	D	Acrolein	04/19/18 9:00	EPA 624	4/24/18 18:32	**ND**	mg/kg dry	0.00360	0.00288		SRM
1804148-01	D	Acrylonitrile	04/19/18 9:00	EPA 624	4/24/18 18:32	**ND**	mg/kg dry	0.00280	0.00288		SRM
1804148-01	D	4,4-DDD	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00006	0.00068	D1, D7	MSM
1804148-01	D	4,4-DDE	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00003	0.00068	D1, D7	MSM
1804148-01	D	4,4-DDT	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00006	0.00068	D1, D7	MSM
1804148-01	D	Aldrin	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00006	0.00068	D1, D7	MSM
1804148-01	D	alpha-BHC	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00004	0.00068	D1, D7, L3	MSM
1804148-01	D	beta-BHC	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00009	0.00270	D1, D7	MSM
1804148-01	D	Chlordane	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00025	0.01	D1, D7	MSM
1804148-01	D	delta-BHC	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00007	0.00068	D1, D7	MSM
1804148-01	D	Dieldrin	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00015	0.00135	D1, D7	MSM
1804148-01	D	Endosulfan I	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00004	0.00068	D1, D7	MSM
1804148-01	D	Endosulfan II	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00003	0.00068	D1, D7	MSM
1804148-01	D	Endosulfan sulfate	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00004	0.00068	D1, D7, N1	MSM
1804148-01	D	Endrin	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00010	0.00068	D1, D7	MSM
1804148-01	D	Endrin aldehyde	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00011	0.00068	D1, D7	MSM
1804148-01	D	gamma-BHC (Lindane)	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00007	0.00068	D1, D7	MSM
1804148-01	D	Heptachlor	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00005	0.00068	D1, D7	MSM
1804148-01	D	Heptachlor Epoxide	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00004	0.00068	D1, D7	MSM
1804148-01	D	PCB 1016	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00006	0.00162	D1, D7	MSM
1804148-01	D	PCB 1221	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00017	0.00405	D1, D7	MSM
1804148-01	D	PCB 1232	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00007	0.00405	D1, D7	MSM
1804148-01	D	PCB 1242	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00013	0.00405	D1, D7	MSM
1804148-01	D	PCB 1248	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00010	0.00405	D1, D7	MSM
1804148-01	D	PCB 1254	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00019	0.00405	D1, D7	MSM
1804148-01	D	PCB 1260	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00007	0.00135	D1, D7	MSM
1804148-01	D	Total PCBs	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00016	0.00405	D1, D7	MSM
1804148-01	D	Toxaphene	04/19/18 9:00	EPA 625	5/2/18 15:21	**ND**	mg/kg dry	0.00094	0.01	D1, D7	MSM
1804148-01	D	Methoxychlor	04/19/18 9:00	EPA 8270C	5/2/18 15:21	**ND**	mg/kg dry		0.00068	D1, D7	MSM
1804148-01	D	1,1,1-Trichloroethane	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0002	0.00029		SRM
1804148-01	D	1,1,2,2-Tetrachloroethane	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.00006	0.00029		SRM
1804148-01	D	1,1,2-Trichloroethane	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.00009	0.00029		SRM
1804148-01	D	1,1-Dichloroethane	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0002	0.00029		SRM
1804148-01	D	1,1-Dichloroethene	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0001	0.00029		SRM
1804148-01	D	1,2-Dichlorobenzene	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.00008	0.00029		SRM
1804148-01	D	1,2-Dichloroethane	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.00009	0.00029		SRM
1804148-01	D	1,2-Dichloropropane	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0001	0.00029		SRM
1804148-01	D	1,3-Dichlorobenzene	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.00008	0.00029		SRM
1804148-01	D	1,4-Dichlorobenzene	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0002	0.00029		SRM
1804148-01	D	2-Chloroethyl vinyl ether	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0003	0.00029		SRM
1804148-01	D	Benzene	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0001	0.00029		SRM
1804148-01	D	Bromodichloromethane	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0002	0.00029		SRM
1804148-01	D	Bromoform	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0003	0.00029		SRM
1804148-01	D	Bromomethane	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0001	0.00029	N1	SRM
1804148-01	D	Carbon Tetrachloride	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0004	0.00029		SRM
1804148-01	D	Chlorobenzene	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.00006	0.00029		SRM
1804148-01	D	Chloroethane	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0002	0.00029	N1	SRM
1804148-01	D	Chloroform	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0001	0.00029	N1	SRM
1804148-01	D	Chloromethane	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0002	0.00029	N1	SRM
1804148-01	D	cis-1,3-Dichloropropene	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.00009	0.00029		SRM
1804148-01	D	Dibromochloromethane	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.00006	0.00029		SRM
1804148-01	D	Ethyl Benzene	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.00009	0.00029		SRM
1804148-01	D	Methylene Chloride	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0002	0.00029		SRM
1804148-01	D	Tetrachloroethene	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0002	0.00029		SRM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1804148-01	D	Toluene	04/19/18 9:00	EPA 624	4/23/18 12:20	**156.74**	mg/kg dry	0.0001	0.00029		SRM
1804148-01	D	Total Trihalomethanes	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0003	0.00029		SRM
1804148-01	D	trans-1,2-Dichloroethene	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0001	0.00029		SRM
1804148-01	D	trans-1,3-Dichloropropene	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0001	0.00029		SRM
1804148-01	D	Trichloroethene	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0001	0.00029		SRM
1804148-01	D	Trichlorofluoromethane	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0003	0.00029		SRM
1804148-01	D	Vinyl chloride	04/19/18 9:00	EPA 624	4/23/18 12:20	**ND**	mg/kg dry	0.0002	0.00029	N1	SRM
1804148-01	D	1,2,4-Trichlorobenzene	04/19/18 9:00	EPA 8260	4/23/18 12:20	**ND**	mg/kg dry		0.00029		SRM
1804148-01	D	1,2-Dibromo-3-chloropropane	04/19/18 9:00	EPA 8260	4/23/18 12:20	**ND**	mg/kg dry		0.00058	N1	SRM
1804148-01	D	1,2-Dibromoethane	04/19/18 9:00	EPA 8260	4/23/18 12:20	**ND**	mg/kg dry		0.00029		SRM
1804148-01	D	cis-1,2-Dichloroethene	04/19/18 9:00	EPA 8260	4/23/18 12:20	**ND**	mg/kg dry		0.00029		SRM
1804148-01	D	m,p-Xylenes	04/19/18 9:00	EPA 8260	4/23/18 12:20	**ND**	mg/kg dry		0.00058		SRM
1804148-01	D	o-Xylene	04/19/18 9:00	EPA 8260	4/23/18 12:20	**ND**	mg/kg dry		0.00029		SRM
1804148-01	D	Styrene	04/19/18 9:00	EPA 8260	4/23/18 12:20	**ND**	mg/kg dry		0.00029		SRM
1804148-01	D	Xylenes, total	04/19/18 9:00	EPA 8260	4/23/18 12:20	**ND**	mg/kg dry		0.00058		SRM
1804148-01	D	2,3,7,8-TCDD - Dioxin Scan	04/19/18 9:00	EPA 625	5/23/18 16:34	**ND**	ug/kg dry		0.72		SJM
1804148-01	D	1,2,4-Trichlorobenzene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804148-01	D	2,3-Dichloroaniline	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804148-01	D	2,4,6-Trichlorophenol	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.001	0.00200	D1, D7, N1	SJM
1804148-01	D	2,4-Dichlorophenol	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7, N1	SJM
1804148-01	D	2,4-Dimethylphenol	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1804148-01	D	2,4-Dinitrophenol	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.009	0.01	D1, D7	SJM
1804148-01	D	2,4-Dinitrotoluene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804148-01	D	2,6-Dinitrotoluene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804148-01	D	2-Chloronaphthalene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804148-01	D	2-Chlorophenol	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.001	0.00200	D1, D7, N1	SJM
1804148-01	D	2-Methyl-4,6-dinitrophenol	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.005	0.01	D1, D7	SJM
1804148-01	D	2-Methylphenol	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804148-01	D	2-Nitrophenol	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.003	0.01	D1, D7, N1	SJM
1804148-01	D	3,3-Dichlorobenzidine	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804148-01	D	4-Bromophenyl phenyl ether	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804148-01	D	4-Chloro-3-methylphenol	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804148-01	D	4-Chlorophenyl phenyl ether	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804148-01	D	4-Methylphenol	04/19/18 9:00	EPA 625	5/22/18 16:43	**656.1**	mg/kg dry	0.002	0.00200	D1, D2, D7, L4, N1	SJM
1804148-01	D	4-Nitrophenol	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.005	0.01	D1, D7, N1	SJM
1804148-01	D	Acenaphthene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804148-01	D	Acenaphthylene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804148-01	D	Anthracene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804148-01	D	Benzidine	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.007	0.01	D1, D7, N1	SJM
1804148-01	D	Benzo[a]anthracene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804148-01	D	Benzo[a]pyrene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804148-01	D	Benzo[b]fluoranthene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804148-01	D	Benzo[ghi]perylene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804148-01	D	Benzo[k]fluoranthene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804148-01	D	bis(2-chloroethoxy)methane	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804148-01	D	bis(2-chloroethyl)ether	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.01	D1, D7, N1	SJM
1804148-01	D	bis(2-chloroisopropyl)ether	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7, V1	SJM
1804148-01	D	bis(2-ethylhexyl)phthalate	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804148-01	D	Butylbenzylphthalate	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804148-01	D	Carbazole	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804148-01	D	Chrysene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804148-01	D	Dibenzo(a,h)anthracene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804148-01	D	Diethyl phthalate	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804148-01	D	Dimethyl phthalate	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1804148-01	D	Di-n-butyl phthalate	04/19/18 9:00	EPA 625	5/22/18 17:57	**6.26**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804148-01	D	Di-n-octyl phthalate	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804148-01	D	Fluoranthene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804148-01	D	Fluorene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804148-01	D	Hexachlorobenzene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1804148-01	D	Hexachlorobutadiene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1804148-01	D	Hexachlorocyclopentadiene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1804148-01	D	Hexachloroethane	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.001	0.00200	D1, D7, N1	SJM
1804148-01	D	Indeno(1,2,3-cd)pyrene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804148-01	D	Isophorone	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804148-01	D	Naphthalene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804148-01	D	n-Decane	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7, N1	SJM
1804148-01	D	Nitrobenzene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804148-01	D	N-Nitrosodimethylamine	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.01	D1, D7, L3, PC3	SJM
1804148-01	D	N-Nitrosodi-n-propylamine	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804148-01	D	N-Nitrosodiphenylamine	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.006	0.01	D1, D7	SJM
1804148-01	D	n-Octadecane	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.01	D1, D7	SJM
1804148-01	D	Pentachlorophenol	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.004	0.01	D1, D7	SJM
1804148-01	D	Phenanthrene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1804148-01	D	Phenol	04/19/18 9:00	EPA 625	5/22/18 17:57	**20.81**	mg/kg dry	0.003	0.01	D1, D7	SJM
1804148-01	D	Pyrene	04/19/18 9:00	EPA 625	5/22/18 17:57	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1804148-01	D	1,2-Diphenylhydrazine	04/19/18 9:00	EPA 8270C	5/22/18 17:57	**ND**	mg/kg dry	0.001	0.00200	D1, D7, L3, N1	SJM
1804148-01	D	Pyridine	04/19/18 9:00	EPA 8270C	5/22/18 17:57	**ND**	mg/kg dry	0.002	0.00200	D1, D7, N1	SJM
1804148-02	D	Cyanide, Total	04/19/18 9:00	9014	4/26/18 17:00	**ND**	mg/Kg dry	5.0	12	E8	NEL *

* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.

1804148-02	D	Percent Solids	04/19/18 9:00	2540G	4/24/18 09:31	**3.3**	%	0.1	0.1		YET *

* Analysis Performed by:TestAmerica Phoenix - See attached contract lab report for official results.

Qualifier Definitions

<	<1
A	Absence
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D4	Minimum Reporting Limit (MRL) adjusted to reflect sample amount received and analyzed.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
L3	The associated blank spike recovery was above method acceptance limits.
L4	The associated blank spike recovery was below method acceptance limits.
N1	See case narrative.
N7	Additional analysis was not performed based on the "Total" result which was below the requested analyte's MCL/Action level/Trigger Level.
NA	Not Analyzed
PC3	Semi-quantitation is included in the case narrative.
S1	Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction

Case Narrative(s)

1804148-01
EPA Method 625/8270 Pesticides: Target analyte Endosulfan Sulfate is flagged with N1and failed the Matrix Spike from the same analytical batch but the spike was performed on a different sample. MSM 051618

1804148-01
EPA Method 624/8260 Volatiles. Target analytes flagged with N1 failed the Matrix Spike/Spike Dup RPD from the same analytical batch but the spike was performed on a different sample. SRM 05/17/18

1804148-01
EPA Method 625/8270 Semi-volatiles: Target analytes flagged with N1 failed the Matrix Spike from the same extraction batch but the spike was performed on a different sample. SJM 06/14/18

Semi-Quantitation
Method: 625/8270
1804148-01

Compound Name	Concentration-mg/Kg
Palmitic Acid	8274
Oleic Acid	9747
Stearic Acid	3004
Butanoic Acid	2131
Butanoic Acid, 3-methyl-	1706
Pentanoic Acid	1956
Hexanoic Acid	168
Propanoic Acid	521
Butanoic Acid, 2-methyl-	911
Pentanoic Acid, 2-methyl-	249

SJM 06/14/18

1804201-01, 02
EPA Method 625/8270 Semi-volatiles: Target analytes flagged with N1 failed the Matrix Spike from the same extraction batch but the spike was performed on a different sample. SJM 06/18/18

Semi-Quantitation
Method: 625/8270
1804201-02

Compound Name	Concentration-ug/L
Palmitic Acid	111

SJM 06/18/18

Semi-Quantitation
Method: 625/8270
1804201-01

Compound Name	Concentration-ug/L
Benzoic Acid	125
Benzeneacetic Acid	103
N,N-Dimethyl-1 dodecanamine	647
Palmitic Acid	19666
Oleic Acid	32456
Stearic Acid	10692

SJM 06/18/18

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1804136-02

PROJECT & LOCATION: GREEN VALLEY WRF-BNROD SOUTH AEROBIC DIGESTED SLUDGE

PROJECT-LOCATION NUMBER: 25000-1960 (XXXXX-XXXX)

SAMPLE START DATE: _____ (MM/DD/YY OR MM/DD/YYYY) SAMPLE START TIME: _____ (Military time)

CLIENT: Sub-Regional Facilities

SAMPLE END DATE: 04/18/2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE END TIME: 0900 (Military time)

SAMPLER(S): Bonin (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ☐ 503 ☐ AZPDES ☐ Reuse ■ Process Control ☐ IWC ☐ Air ☐ Other _____

Matrix: ☐ Biosolids ☐ Soil ■ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other _____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	☐	☐	☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	[illegible]	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	☐	☐	☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total	☐	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other _____	☐	☐
Other _____	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other _____	☐	☐
Other _____	☐	☐

Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other _____	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	■	☐
Solids, Volatile Suspended	☐	☐
Other _____	☐	☐

OTHER	D	C
Paint Filter	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*	_____	µg/L
☐ Specific Conductance *SM 2510 B*	_____	µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*	_____	mg/L
☐ pH @ pH Temp *SM 4500-H B*	@ _____	pH Units @ °C
☐ Temperature *SM 2550 B*	_____	°C
☐ Total Depth of Well	_____	feet
☐ Depth to Water	_____	feet
☐ Other _____	_____	_____

Comments/Instructions:

Septum Blank Prep Date & Initials: _____ _____

Chain of Custody Record (Signatures Only)

Relinquished by	Received by	Date	Time (Military time)
Kevin Bonin (Sampler)	Refrigerator	4/18/18	0915
Refrigerator	[signature]	4/18/18	0932
[signature]	[signature]	04-18-18	1129

Sample Integrity/Preservation:

of Bottles Delivered: 1 GOS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 1 °C

Initials: GOS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

Sb, As, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Mo, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
*** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn*

COC-Single Revision 2 Revised: 03/12/2015

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1804148-01

PROJECT & LOCATION: Green Valley WRF - Wet Haul Sludge (Quarterly)

PROJECT-LOCATION NUMBER: 25000-1962 (XXXXX-XXXX)

SAMPLE START DATE: _____ (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: _____ (Military time)

CLIENT: IWC

SAMPLE END DATE: 04-19-2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0900 (Military time)

SAMPLER(S): Silva, Kaufman (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other _____

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other _____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	×		■	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	×		■	☐
TCLP Metals			☐	☐
503 Metals **			■	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total	☐	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other _____	☐	☐
Other _____	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	■	☐
Dioxin GC/SIM/MS Scan	■	☐
Organochlorine Pesticides & PCBs	■	☐
Purgeable Organics (GCMS)	■	☐
Semivolatile Organics (GCMS)	■	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other _____	☐	☐
Other _____	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other _____	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other _____	☐	☐

OTHER	D	C
Paint Filter	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*	_____	µg/L
☐ Specific Conductance *SM 2510 B*	_____	µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*	_____	mg/L
☐ pH @ pH Temp *SM 4500-H B*	_____ @ _____	pH Units @ °C
☐ Temperature *SM 2550 B*	_____	°C
☐ Total Depth of Well	_____	feet
☐ Depth to Water	_____	feet
☐ Other _____	_____	_____

Comments/Instructions:

Septum Blank Prep Date & Initials: 04-02-2018 lej + mk

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	04-19-18	1235
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

# of Bottles Delivered: 7 GOS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 3 °C

Initials: GOS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☒	☒ GOS 04-19-18
Received from a refrigerator?	☐	☒	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT
INDUSTRIAL WASTEWATER CONTROL SECTION
SAMPLE COLLECTION FIELD NOTES 1804148-01&02

SAMPLE LOCATION: Green Valley WRF - Wet Haul Sludge

LOCATION ID: **25000-1962** SAMPLERS: Kaufman, Silva SAMPLE DATE: 4-19-18
Last names only, primary sampler first.

SAMPLE D or C	PARAMETER	START TIME	END TIME	FREQUENCY	Time Flow	Auto Man.	Volume Submitted	Bottle Type & Preservation
D	Priority Pollutant Metals	N/A	0900	Grab	N/A	N/A	1000 ml	
D	503 Metals							Dissolve Metals / Ice
D	Cyanide, Total						1000 ml	Dissolved Metals / Ice
D	Dioxin Scan						1000 ml	Amber / Ice
D	Org. Pesticides						1000 ml	Amber / Ice
D	Semivolatile Organics						1000 ml	Amber / Ice
D	Solids, Total						1000 ml	General Purpose / Ice
D	Solids, Total						1000 ml	General Purpose / Ice
D	Acrolein and Acrylonitrile						40 ml	Septum vial / Ice
D	Acrolein and Acrylonitrile						40 ml	Septum vial / Ice
D	Acrolein and Acrylonitrile						40 ml	Septum vial / Ice
D	Acrolein and Acrylonitrile						40 ml	Septum vial / Ice
D	Purgeable Organics						40 ml	Septum vial / Ice
D	Purgeable Organics						40 ml	Septum vial / Ice
D	Purgeable Organics						40 ml	Septum vial / Ice
D	Purgeable Organics						40 ml	Septum vial / Ice

pH METER CALIBRATION LOG

Time	Model #	Serial #	Auto/Man.	Buffer	Reading	Buffer	Reading	Temp.	Slope	Initials
				N/A						

FIELD MEASUREMENTS

Sample	Parameter & Method	Result	Time	Initials	Sample	Parameter & Method	Result	Time	Initials
					N/A				

Notes: All Samples are Unpreserved
Construction sewer line work upstream of plant. Plant still may have residue wastewater from sewer line project

EQUIPMENT USED: ☐ **Grab Sampler** ☐ Automatic Sampler ☐ Electric Pump ☐ Other _____

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1804148-02

PROJECT & LOCATION: Green Valley WRF - Wet Haul Sludge (Quarterly)

PROJECT-LOCATION NUMBER: 25000-1962 (XXXXX-XXXX)

SAMPLE START DATE: _____ (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: _____ (Military time)

CLIENT: IWC

SAMPLE END DATE: 04-19-2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0900 (Military time)

SAMPLER(S): Silva, Kaufman (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other _____

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other _____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury			☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *			☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total (contract)	■	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other _____	☐	☐
Other _____	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other _____	☐	☐
Other _____	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other _____	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total (contract)	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other _____	☐	☐

OTHER	D	C
Paint Filter	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*	_____	µg/L
☐ Specific Conductance *SM 2510 B*	_____	µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*	_____	mg/L
☐ pH @ pH Temp *SM 4500-H B*	_____ @	pH Units @ °C
☐ Temperature *SM 2550 B*	_____	°C
☐ Total Depth of Well	_____	feet
☐ Depth to Water	_____	feet
☐ Other _____	_____	_____

Comments/Instructions:
Sent to Test America GOS 04-19-18
DO# 18-~~027344~~ 029344
GOS 05-08-18

Septum Blank Prep Date & Initials: _____ _____

Chain of Custody Record (Signatures Only)

Relinquished by:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	04-19-18	1235
[signature]	[signature]	04/20/18	1036

Sample Integrity/Preservation:

# of Bottles Delivered: 2 GOS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 3 °C

Initials: GOS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)
** As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn

COC-Single Revision 2 Revised: 03/12/2015

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Joe Doranski	Site Contact:	Date:	COC No:
Pima County CRAO Lab	Tel/Fax: 520-724-6032	Lab Contact:	Carrier:	1 of 1 COCs
2955 W. Calle Agua Nueva	Analysis Turnaround Time			Sampler: Various
Tucson/AZ/85745	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(520) 724-6032 Phone	TAT if different from Below _____			Walk-in Client:
(520) 724-6075 FAX	☑ 2 weeks			Lab Sampling:
Project Name: April	☐ 1 week			
Site: Various	☐ 2 days			Job / SDG No.:
P O # 18-029344	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Titanium 200.7	Cyanide, total mg/kg dry	Total % solids for mg/kg dry	Sample Specific Notes:
Busy D Pumping PL #2 12738-0200											WW - wastewater
1804134-02	4/18/18	0600	Comp	WW	1	N		1			
Avra Valley WRF wet haul sludge 25003-1573											BS -biosolids
1804138-02	4/18/18	0900	Grab	BS	2	N			1	1	
Green Valley WRF wet haul sludge 25000-1962											
1804148-02	4/19/18	0900	Grab	BS	2	N			1	1	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Greg Spence for samplers	PC CRAO Lab	04-20-18/1036	[illegible] 1036	4/20/18	
			Received in Laboratory by:		

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

PIMA COUNTY

WASTEWATER RECLAMATION

COMPLIANCE AND REGULATORY AFFAIRS OFFICE LABORATORY
2955 W Calle Agua Nueva, Tucson, AZ 85745
Telephone: (520) 724-6200

LIMS CHECKLIST FOR SUBCONTRACT DATA

LIMS ID	**1804134-02, 1804138-02, 1804148-02**	**DO**	**18-029344**
CONTRACT LAB	**TestAmerica PHX**	**SAMPLE GROUP**	**GV & AV Sludge, Busy D Pumping**
ANALYSES	**Total cyanide sludge, % total solids, Ti**	**REPORT ID**	**550-101636-1**

TRANSFER & CONVERT FILES:	
Was the contract lab spreadsheet file saved to \\Splimsapp\elementshare\TransferIn ?	Y
Was the above mentioned file converted from a .xls file to a .mdb file for each WO#, and further, for each subcontract location, or separate analysis (as applicable), on the contract lab report? (Element>Project Management>Reports)	Y
Was the converted file attached to the sample in LIMS?	Y
VALIDATING CONTRACT LAB REPORT , CHAIN OF CUSTODY(S), AND DO#:	
Contract Lab Report signed and dated?	Y
Copy of contract lab COC included with contract Lab Report?	Y
Contract lab COC verified with CRAO COC(s) for Sample ID, Sample Date, Analysis Requested?	Y
Sample dates and received dates on the CL report, match the CL COC?	Y
CL report includes all requested analysis?	Y
CL licensed in AZ for the reported methods?	Y
Check that DO matches COC in types and number of tests?	N/A
DO received in Pima Core?	N/A
CONTRACT LAB REPORT, EXCEL SPREADSHEET, and QC:	
CL report and CL spreadsheet report the same sample results, sample date, and analysis date?	Y
Was a Case Narrative Included in Contract Lab report?	Y
Data packet includes QC Report from primary lab and any secondary subcontract labs?	Y
Did CL report list applicable AZ Data Qualifiers?	Y
Were there any dilutions made to samples that were reported as ND?	N
If so, were they qualified due to matrix interference?	N/A
Was QC included for every analysis method: typically Blk, LCS, MS, MSD?	Y
Did QC pass stated acceptance limits, or was it qualified?	Y
Were samples analyzed within required holding times?	Y
Check that MDLs are below water quality standards, If not notify Belinda Gamboa-Felix? (Cyanide, Hexachlorobenzene)	N/A
Semivolatiles & Volatiles: Check that all analytes were delivered?	N/A
COMPLIANCE LIMIT REVIEW	
Were results compared to the discharge permit?	N/A
Was Belinda Gamboa-Felix notified of any exceedences?	N/A
WET TESTING SPECIFIC REQUIREMENTS	
Statement of Pass/Fail reflected in End Points?	N/A
Report states if zeolite treatment was utilized?	N/A
Survival and Reproduction or Growth Data included (P. promelas or Ceriodaphnia only)?	N/A
Chemistry data included?	N/A

Reference Toxicant Test Results and Control Chart within limits?			N/A
PMSD Determination included and within acceptable range? (minimum acceptable= 13)			N/A
End Points include TUc, NOEC, LOEC, and IC25?			N/A
Statistics verify endpoints			N/A
Control Charts Updated to include month of analysis			N/A
Reviewer Initials:	**AP**	**Review Date:**	**5-9-18**

PEER/FINAL REVIEW:	PR	FR
LIMS/Excel data matches printed CL report?	✓	
Analysis dates are correct?	✓	
Correct Data Qualifiers included if necessary.	✓	
CRAO report shows result is from Contract Lab?	✓	
CRAO report shows correct Contract Lab (e.g. Test America, Phoenix)?	✓	
DO received in Pima Core	✓	
Analysis set to Reported?		✓

Peer Reviewer Initials:	JD	**Review Date:**	5-10-18
Biomonitor Supervisor Initials:	N/A	**Review Date:**	
Final Reviewer Initials:	JEC	**Review Date:**	5·24·18

CORRECTIVE ACTION REPORT:			
Preliminary Review:		Date:	
QA/QC Review:		Date:	
Data Entry:		Date:	
Peer Review:		Date:	
Lab Supervisor:		Date:	

LIMS #:	**DEVIATION:**	**CORRECTIVE ACTION:**

DEVIATIONS FROM ACCEPTABLE QA/QC:

Missing QC Report/Data
Holding Time for analysis exceeded.
Inappropriate dilution performed.
Missing COC.
Missing Data Qualifiers.
Incorrect Analysis Method.
Incorrect Sample IDs.
Other.

CORRECTIVE ACTION:

Request report correction from Subcontract Lab project manager.
Add missing Data Qualifiers.
Notify data end-user of deviation.
Arrange for resampling.
Other.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-101636-1
TestAmerica Sample Delivery Group: Various
Client Project/Site: April

For:
Pima County WWTP
PO BOX 791
Tucson, Arizona 85701

Attn: Joseph Doranski

Authorized for release by:
4/29/2018 7:43:47 AM

Linda Eshelman, Project Manager II
(602)659-7629
linda.eshelman@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Sample Summary 5
Detection Summary 6
Client Sample Results 7
QC Sample Results 8
QC Association Summary 10
Lab Chronicle 12
Certification Summary 13
Method Summary 14
Chain of Custody 15
Receipt Checklists 16

Definitions/Glossary

Client: Pima County WWTP
Project/Site: April

TestAmerica Job ID: 550-101636-1
SDG: Various

Qualifiers

Metals

Qualifier	Qualifier Description
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

General Chemistry

Qualifier	Qualifier Description
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "Q" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pima County WWTP
Project/Site: April

TestAmerica Job ID: 550-101636-1
SDG: Various

Job ID: 550-101636-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-101636-1

Comments
No additional comments.

Receipt
The samples were received on 4/20/2018 2:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3° C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Pima County WWTP
Project/Site: April

TestAmerica Job ID: 550-101636-1
SDG: Various

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-101636-1	1804134-02	Water	04/18/18 06:00	04/20/18 14:10
550-101636-2	1804138-02	Waste	04/18/18 09:00	04/20/18 14:10
550-101636-3	1804148-02	Waste	04/19/18 09:00	04/20/18 14:10

Detection Summary

Client: Pima County WWTP
Project/Site: April

TestAmerica Job ID: 550-101636-1
SDG: Various

Client Sample ID: 1804134-02 — Lab Sample ID: 550-101636-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Titanium	11	E4	100	1.5	ug/L	1		200.7 Rev 4.4	Total/NA

Client Sample ID: 1804138-02 — Lab Sample ID: 550-101636-2

No Detections.

Client Sample ID: 1804148-02 — Lab Sample ID: 550-101636-3

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Phoenix

Client Sample Results

Client: Pima County WWTP
Project/Site: April

TestAmerica Job ID: 550-101636-1
SDG: Various

Client Sample ID: 1804134-02 — **Lab Sample ID: 550-101636-1**
Date Collected: 04/18/18 06:00 — **Matrix: Water**
Date Received: 04/20/18 14:10

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Titanium	11	E4	100	1.5	ug/L		04/23/18 21:06	04/26/18 20:58	1

Client Sample ID: 1804138-02 — **Lab Sample ID: 550-101636-2**
Date Collected: 04/18/18 09:00 — **Matrix: Waste**
Date Received: 04/20/18 14:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	1.5		0.1	0.1	%			04/24/18 09:31	1

Client Sample ID: 1804138-02 — **Lab Sample ID: 550-101636-2**
Date Collected: 04/18/18 09:00 — **Matrix: Waste**
Date Received: 04/20/18 14:10 — **Percent Solids: 1.5**

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	E8	26	11	mg/Kg	☼	04/25/18 11:30	04/26/18 17:00	1

Client Sample ID: 1804148-02 — **Lab Sample ID: 550-101636-3**
Date Collected: 04/19/18 09:00 — **Matrix: Waste**
Date Received: 04/20/18 14:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	3.3		0.1	0.1	%			04/24/18 09:31	1

Client Sample ID: 1804148-02 — **Lab Sample ID: 550-101636-3**
Date Collected: 04/19/18 09:00 — **Matrix: Waste**
Date Received: 04/20/18 14:10 — **Percent Solids: 3.3**

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	E8	12	5.0	mg/Kg	☼	04/25/18 11:30	04/26/18 17:00	1

Lab Chronicle

Client: Pima County WWTP
Project/Site: April

TestAmerica Job ID: 550-101636-1
SDG: Various

Client Sample ID: 1804134-02 — Lab Sample ID: 550-101636-1

Date Collected: 04/18/18 06:00 — **Matrix: Water**
Date Received: 04/20/18 14:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			145278	04/23/18 21:06	EXZ	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	145723	04/26/18 20:58	ARE	TAL PHX

Client Sample ID: 1804138-02 — Lab Sample ID: 550-101636-2

Date Collected: 04/18/18 09:00 — **Matrix: Waste**
Date Received: 04/20/18 14:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1	145313		YET	TAL PHX
					(Start)	04/24/18 09:31		
					(End)	04/25/18 09:10		

Client Sample ID: 1804138-02 — Lab Sample ID: 550-101636-2

Date Collected: 04/18/18 09:00 — **Matrix: Waste**
Date Received: 04/20/18 14:10 — **Percent Solids: 1.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9013A			145650	04/25/18 11:30	NEL	TAL PHX
Total/NA	Prep	9010C			145742	04/25/18 16:30	NEL	TAL PHX
Total/NA	Analysis	9014		1	145747	04/26/18 17:00	NEL	TAL PHX

Client Sample ID: 1804148-02 — Lab Sample ID: 550-101636-3

Date Collected: 04/19/18 09:00 — **Matrix: Waste**
Date Received: 04/20/18 14:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1	145313		YET	TAL PHX
					(Start)	04/24/18 09:31		
					(End)	04/25/18 09:10		

Client Sample ID: 1804148-02 — Lab Sample ID: 550-101636-3

Date Collected: 04/19/18 09:00 — **Matrix: Waste**
Date Received: 04/20/18 14:10 — **Percent Solids: 3.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9013A			145650	04/25/18 11:30	NEL	TAL PHX
Total/NA	Prep	9010C			145742	04/25/18 16:30	NEL	TAL PHX
Total/NA	Analysis	9014		1	145747	04/26/18 17:00	NEL	TAL PHX

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Pima County WWTP
Project/Site: April

TestAmerica Job ID: 550-101636-1
SDG: Various

Laboratory: TestAmerica Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0728	06-09-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
200.7 Rev 4.4	200.7	Water	Titanium

Method Summary

Client: Pima County WWTP
Project/Site: April

TestAmerica Job ID: 550-101636-1
SDG: Various

Method	Method Description	Protocol	Laboratory
200.7 Rev 4.4	Metals (ICP)	EPA	TAL PHX
2540G	SM 2540G	SM22	TAL PHX
9014	Cyanide	SW846	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL PHX
9010C	Cyanide, Distillation	SW846	TAL PHX
9013A	Cyanide Extraction (Solids and Oils)	SW846	TAL PHX

Protocol References:

EPA = US Environmental Protection Agency

SM22 = Standard Methods For The Examination Of Water And Wastewater, 22nd Edition

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix
4625 E. Cotton Center Blvd.
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

4/29/2018

10636

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Joe Doranski	Site Contact:	Date:	COC No:
Pima County CRAO Lab	Tel/Fax: 520-724-6032	Lab Contact:	Carrier:	1 of 1 COCs
2955 W. Calle Agua Nueva	Analysis Turnaround Time			Sampler: Various
Tucson/AZ/85745	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(520) 724-6032 Phone	TAT if different from Below _____			Walk-in Client:
(520) 724-6075 FAX	☑ 2 weeks			Lab Sampling:
Project Name: April	☐ 1 week			
Site: Various	☐ 2 days			Job / SDG No.:
P O # 18-029344	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Titanium 200.7	Cyanide, total mg/kg dry	Total % solids for mg/kg dry	Sample Specific Notes:
Busy D Pumping PL #2 12738-0200											WW - wastewater
-01 1804134-02	4/18/18	0600	Comp	WW	1	N		1			
Avra Valley WRF wet haul sludge 25003-1573											BS -biosolids
-02 1804138-02	4/18/18	0900	Grab	BS	2	N			1	1	
Green Valley WRF wet haul sludge 25000-1962											
-03 1804148-02	4/19/18	0900	Grab	BS	2	N			1	1	

550-101636 Chain of Custody

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=NaOH, 5=HNO3, 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☑Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐Return to Client ☑Disposal by Lab ☐Archive for_____ Months

Special Instructions/QC Requirements & Comments:

TA-PHX 23 TA-PHX

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ | Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Greg Spence for samplers	PC CRAO Lab	04-20-18/1036	1036	4/20/18	
Relinquished by: 1410 4/20/18	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: TA	Date/Time: 4/20/18 14:10

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Page 15 of 16

Login Sample Receipt Checklist

Client: Pima County WWTP

Job Number: 550-101636-1
SDG Number: Various

Login Number: 101636
List Number: 1
Creator: Gravlin, Andrea

List Source: TestAmerica Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

PIMA COUNTY WASTEWATER RECLAMATION
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson Arizona 85745-9750, Phone (520) 724-6200

Report Date: 11/19/2018
Laboratory License: AZO159

Sample Analysis Report

Green Valley WRF

July 2018

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier below. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS:

Notes and Definitions:

See attached

Case Narratives:

See attached

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory licensure rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Chraft 11·30·18

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

Date

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1807212-01	D	Temp at time of pH, °C	07/30/18 6:40	SM4500 H B	7/30/18 06:40	**29.1**	°C				SMPLR
1807212-01	D	E. Coli	07/30/18 6:40	SM 9223B	7/31/18 14:14	**<1**	MPN/100 mL		1.0		NGF
1807221-01	D	Chlorine	07/31/18 6:40	HACH 8167	7/31/18 06:40	**5.83**	mg/L		0.23		SMPLR
1807221-01	D	Temperature	07/31/18 6:40	SM2550B	7/31/18 06:40	**26.7**	°C		0.10		SMPLR
1807221-01	D	pH	07/31/18 6:40	SM4500 H B	7/31/18 06:40	**7.4**	pH Units				SMPLR
1807221-01	D	Temp at time of pH, °C	07/31/18 6:40	SM4500 H B	7/31/18 06:40	**29.2**	°C				SMPLR
1807221-01	D	E. Coli	07/31/18 6:40	SM 9223B	8/1/18 12:29	**<1**	MPN/100 mL		1.0		NGF
BNROD-Final Effluent-AZPDES (25000-1923)											
1807190-01	D	Chlorine	07/26/18 10:15	HACH 10014	7/26/18 10:15	**ND**	ug/L	3	18.00		SMPLR
1807190-01	D	Dissolved Oxygen	07/26/18 10:15	SM4500 O G	7/26/18 10:15	**5.3**	mg/L		0.01		SMPLR
1807190-01	D	Temperature	07/26/18 10:15	SM2550B	7/26/18 10:15	**29.8**	°C		0.10		SMPLR
1807190-01	D	pH	07/26/18 10:15	SM4500 H B	7/26/18 10:15	**7.4**	pH Units				SMPLR
1807190-01	D	Temp at time of pH, °C	07/26/18 10:15	SM4500 H B	7/26/18 10:15	**29.6**	°C				SMPLR
1807190-01	D	Ammonia	07/26/18 10:15	SM4500-NH3-D	8/1/18 12:33	**0.42**	mg/L	0.07	0.50	J	KMT
1807190-01	D	Antimony	07/26/18 10:15	EPA 200.8	8/6/18 15:33	**0.41**	ug/L	0.21	1.00	J	JB
1807190-01	D	Arsenic	07/26/18 10:15	EPA 200.8	8/6/18 15:33	**3.42**	ug/L	0.07	1.00		JB
1807190-01	D	Barium	07/26/18 10:15	EPA 200.8	8/6/18 15:33	**11.5**	ug/L	0.19	1.00		JB
1807190-01	D	Beryllium	07/26/18 10:15	EPA 200.8	8/6/18 15:33	**ND**	ug/L	0.33	1.00		JB
1807190-01	D	Cadmium	07/26/18 10:15	EPA 200.8	8/6/18 15:33	**ND**	ug/L	0.07	1.00		JB
1807190-01	D	Chromium	07/26/18 10:15	EPA 200.8	8/6/18 15:33	**0.41**	ug/L	0.03	1.00	J	JB
1807190-01	D	Copper	07/26/18 10:15	EPA 200.8	8/6/18 15:33	**1.03**	ug/L	0.36	1.00		JB
1807190-01	D	Cyanide	07/26/18 10:15	SM4500-CN-E	8/6/18 16:14	**ND**	ug/L	1.67	5.00		MJC
1807190-01	D	Cyanide Amenable	07/26/18 10:15	SM 4500-CN-G	8/6/18 16:14	**NA**	ug/L	1.67	5.00	N7	MJC
1807190-01	D	Fluoride	07/26/18 10:15	SM4500-F-C	8/2/18 11:50	**0.97**	mg/L	0.02	0.10		KMT
1807190-01	D	Lead	07/26/18 10:15	EPA 200.8	8/6/18 15:33	**0.22**	ug/L	0.01	1.00	J	JB
1807190-01	D	Mercury	07/26/18 10:15	EPA 245.1	8/14/18 11:07	**ND**	ug/L	0.19	0.20		DML
1807190-01	D	Mercury	07/26/18 10:15	EPA 245.7	8/22/18 13:20	**ND**	ng/L	1.41	5.00		KMT
1807190-01	D	Nickel	07/26/18 10:15	EPA 200.8	8/6/18 15:33	**0.66**	ug/L	0.24	1.00	J	JB
1807190-01	D	Selenium	07/26/18 10:15	EPA 200.8	8/6/18 15:33	**0.49**	ug/L	0.48	1.00	J	JB
1807190-01	D	Silver	07/26/18 10:15	EPA 200.8	8/6/18 15:33	**0.07**	ug/L	0.03	1.00	J	JB
1807190-01	D	Thallium	07/26/18 10:15	EPA 200.8	8/6/18 15:33	**ND**	ug/L	0.01	1.00		JB
1807190-01	D	Oil & Grease	07/26/18 10:15	EPA 1664B	8/13/18 12:30	**2.28**	mg/L	1.25	4.00	J	JEL
1807190-01RE1	D	Zinc	07/26/18 10:15	EPA 200.8	8/6/18 16:03	**49.6**	ug/L	0.23	5.00	D1	JB
1807190-02	FB	Mercury	07/26/18 10:15	EPA 245.7	8/22/18 13:17	**ND**	ng/L	1.41	5.00		KMT
1807198-01	D	Chromium, Hexavalent	07/27/18 9:30	EPA 200.8	7/27/18 09:30	**NA**	ug/L	0.400	1.00	N7	
1807198-02	D	Chromium (Dissolved)	07/27/18 9:30	EPA 200.8	8/6/18 15:39	**0.41**	ug/L	0.03	1.00	H6, J	JB
BNROD-Final Effluent-Process Control (25000-1925)											
1807078-07	C	Ammonia	07/11/18 8:00	EPA 350.1	7/19/18 10:03	**0.58**	mg/L	0.13	0.50		JGB
1807078-07	C	Nitrate/Nitrite	07/11/18 8:00	EPA 353.2	7/12/18 12:49	**0.24**	mg/L	0.03	0.20		JGB
1807078-07	C	Total Kjeldahl Nitrogen	07/11/18 8:00	EPA 351.2	7/19/18 14:01	**1.53**	mg/L	0.29	0.80		HAV
1807078-07	C	Nitrogen Total Water	07/11/18 8:00	Calculated	7/19/18 14:01	**1.76**	mg/L	0.29	0.80		HAV
1807078-07	C	Alkalinity Total	07/11/18 8:00	SM 2320B	7/18/18 14:46	**176**	mg/L		20.00		NGF
1807078-07	C	Bicarbonate Alkalinity	07/11/18 8:00	SM 2320B	7/18/18 14:46	**176**	mg/L		20.00		NGF
1807078-07	C	Biochemical Oxygen Demand	07/11/18 8:00	SM 5210B	7/17/18 07:25	**2.0**	mg/L		2.00	N1	ESW
1807078-07	C	Total Suspended Solids	07/11/18 8:00	SM 2540D	7/12/18 12:23	**ND**	mg/L		2.50		DEB
BNROD MLSS (25000-1940)											
1807078-06	D	Total Suspended Solids	07/11/18 7:30	SM 2540D	7/12/18 12:23	**1760**	mg/L		2.50		DEB
1807078-06	D	Total Volatile Suspended Solids	07/11/18 7:30	EPA 160.4	7/12/18 13:53	**1560**	mg/L		2.50		DEB
BNROD-South Aerobic Digester Sludge (25000-1960)											
1807087-02	D	% Solids	07/12/18 6:40	SM 2540G	7/13/18 13:56	**3.11**	%		0.01		IYC

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1807087-02	D	% Solids, Total Volatile	07/12/18 6:40	SM 2540G	7/13/18 15:52	**85.5**	%		0.01		IYC
Wet Haul Sludge (25000-1962)											
1807189-01	D	Antimony	07/26/18 9:00	EPA 6010D	8/2/18 16:37	**ND**	mg/kg dry		17.74		MLB
1807189-01	D	Arsenic	07/26/18 9:00	EPA 6010D	8/2/18 14:12	**ND**	mg/kg dry		17.74		MLB
1807189-01	D	Beryllium	07/26/18 9:00	EPA 6010D	8/2/18 14:12	**ND**	mg/kg dry		3.55		MLB
1807189-01	D	Cadmium	07/26/18 9:00	EPA 6010D	8/2/18 14:12	**ND**	mg/kg dry		7.10		MLB
1807189-01	D	Chromium	07/26/18 9:00	EPA 6010D	8/2/18 14:12	**ND**	mg/kg dry		17.74		MLB
1807189-01	D	Copper	07/26/18 9:00	EPA 6010D	8/2/18 14:12	**241**	mg/kg dry		17.74		MLB
1807189-01	D	Lead	07/26/18 9:00	EPA 6010D	8/2/18 15:29	**ND**	mg/kg dry		17.74		MLB
1807189-01	D	Mercury	07/26/18 9:00	EPA 7471B	8/21/18 14:31	**0.47**	mg/kg dry		0.00152		DML
1807189-01	D	Molybdenum	07/26/18 9:00	EPA 6010D	8/2/18 14:12	**ND**	mg/kg dry		7.10		MLB
1807189-01	D	Nickel	07/26/18 9:00	EPA 6010D	8/2/18 14:12	**ND**	mg/kg dry		17.74		MLB
1807189-01	D	Selenium	07/26/18 9:00	EPA 6010D	8/2/18 14:12	**ND**	mg/kg dry		35.48		MLB
1807189-01	D	Silver	07/26/18 9:00	EPA 6010D	8/2/18 14:12	**2.56**	mg/kg dry		1.77		MLB
1807189-01	D	Thallium	07/26/18 9:00	EPA 6010D	8/2/18 14:12	**ND**	mg/kg dry		17.74		MLB
1807189-01	D	Zinc	07/26/18 9:00	EPA 6010D	8/2/18 14:12	**485**	mg/kg dry		17.74		MLB
1807189-01	D	1,1,1,2-Tetrachloroethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	1600	13300	E8, D1	LSD *
1807189-01	D	1,1,1-Trichloroethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2830	13300	E8, D1	LSD *
1807189-01	D	1,1,2,2-Tetrachloroethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2120	13300	E8, D1	LSD *
1807189-01	D	1,1,2-Trichloroethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	771	13300	E8, D1	LSD *
1807189-01	D	1,1-Dichloroethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2870	13300	E8, D1	LSD *
1807189-01	D	1,1-Dichloroethene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	3570	13300	E8, D1	LSD *
1807189-01	D	1,1-Dichloropropene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	3180	13300	E8, D1	LSD *
1807189-01	D	1,2,3-Trichlorobenzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	1710	13300	E8, D1	LSD *
1807189-01	D	1,2,3-Trichloropropane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2480	13300	E8, D1	LSD *
1807189-01	D	1,2,4-Trichlorobenzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	1970	13300	E8, D1	LSD *
1807189-01	D	1,2,4-Trimethylbenzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2430	13300	E8, D1	LSD *
1807189-01	D	1,2-Dibromo-3-chloropropane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	3240	33200	E8, D1	LSD *
1807189-01	D	1,2-Dibromoethane (EDB)	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2370	13300	E8, D1	LSD *
1807189-01	D	1,2-Dichlorobenzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	1700	13300	E8, D1	LSD *
1807189-01	D	1,2-Dichloroethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	3530	13300	E8, D1	LSD *
1807189-01	D	1,2-Dichloropropane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2710	13300	E8, D1	LSD *
1807189-01	D	1,3,5-Trimethylbenzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2640	13300	E8, D1	LSD *
1807189-01	D	1,3-Dichlorobenzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2620	13300	E8, D1	LSD *
1807189-01	D	1,3-Dichloropropane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	1550	13300	E8, D1	LSD *
1807189-01	D	1,4-Dichlorobenzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2340	13300	E8, D1	LSD *
1807189-01	D	2,2-Dichloropropane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	3530	13300	E8, D1	LSD *
1807189-01	D	2-Butanone	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	23300	66400	E8, D1	LSD *
1807189-01	D	2-Chloroethylvinyl ether	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	1340	13300	E8, D1	LSD *
1807189-01	D	2-Chlorotoluene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2640	13300	E8, D1	LSD *
1807189-01	D	2-Hexanone	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	17500	66400	E8, D1	LSD *
1807189-01	D	4-Chlorotoluene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2500	13300	E8, D1	LSD *
1807189-01	D	4-Methyl-2-pentanone	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	21900	66400	E8, D1	LSD *
1807189-01	D	Acetone	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	40500	133000	E8, D1	LSD *
1807189-01	D	Acrolein	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	31600	133000	E8, D1, M2	LSD *
1807189-01	D	Acrylonitrile	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	19200	66400	E8, D1	LSD *
1807189-01	D	Benzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2560	13300	E8, D1	LSD *
1807189-01	D	Bromobenzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2550	13300	E8, D1	LSD *
1807189-01	D	Bromochloromethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	3700	13300	E8, D1	LSD *
1807189-01	D	Bromodichloromethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2830	13300	E8, D1	LSD *
1807189-01	D	Bromoform	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2170	13300	E8, D1, V1	LSD *
1807189-01	D	Bromomethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	4520	13300	E8, D1	LSD *
1807189-01	D	Carbon disulfide	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	5300	66400	E8, D1	LSD *
1807189-01	D	Carbon Tetrachloride	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	3530	13300	E8, D1	LSD *
1807189-01	D	Chlorobenzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2020	13300	E8, D1	LSD *
1807189-01	D	Chloroethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	4100	33200	E8, D1	LSD *
1807189-01	D	Chloroform	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2800	13300	E8, D1	LSD *
1807189-01	D	Chloromethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	3280	13300	E8, D1	LSD *
1807189-01	D	cis-1,2-Dichloroethylene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	3560	13300	E8, D1	LSD *

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1807189-01	D	cis-1,3-Dichloropropene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2890	13300	E8, D1	LSD *
1807189-01	D	Dibromochloromethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	1490	13300	E8, D1	LSD *
1807189-01	D	Dibromomethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2270	13300	E8, D1	LSD *
1807189-01	D	Dichlorodifluoromethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	7490	13300	E8, D1	LSD *
1807189-01	D	Dichloromethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	3160	13300	E8, D1	LSD *
1807189-01	D	Ethylbenzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2660	13300	E8, D1	LSD *
1807189-01	D	Hexachlorobutadiene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2840	13300	E8, D1	LSD *
1807189-01	D	Iodomethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	36700	66400	E8, D1	LSD *
1807189-01	D	Isopropylbenzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2540	13300	E8, D1	LSD *
1807189-01	D	m,p-Xylene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2330	26600	E8, D1	LSD *
1807189-01	D	Methyl methacrylate	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	28500	66400	E8, D1	LSD *
1807189-01	D	Methyl-tert-butyl ether	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	10200	13300	E8, D1	LSD *
1807189-01	D	Naphthalene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	1460	13300	E8, D1	LSD *
1807189-01	D	n-Butylbenzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2510	13300	E8, D1	LSD *
1807189-01	D	n-Propylbenzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	3390	13300	E8, D1	LSD *
1807189-01	D	o-Xylene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	1840	13300	E8, D1	LSD *
1807189-01	D	p-Isopropyltoluene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2770	13300	E8, D1	LSD *
1807189-01	D	sec-Butylbenzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	3030	13300	E8, D1	LSD *
1807189-01	D	Styrene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2010	13300	E8, D1	LSD *
1807189-01	D	tert-Butylbenzene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2730	13300	E8, D1	LSD *
1807189-01	D	Tetrachloroethene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	3150	13300	E8, D1	LSD *
1807189-01	D	Toluene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**173000**	ug/kg dry	2810	13300	M3, D1	LSD *
1807189-01	D	Total THMs	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry		13300	E8, D1	LSD *
1807189-01	D	trans-1,2-Dichloroethene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2830	13300	E8, D1	LSD *
1807189-01	D	trans-1,3-Dichloropropene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	1930	13300	E8, D1	LSD *
1807189-01	D	trans-1,4-Dichloro-2-butene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	39700	66400	E8, D1, M2	LSD *
1807189-01	D	Trichloroethene	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	2770	13300	E8, D1	LSD *
1807189-01	D	Trichlorofluoromethane	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	4370	13300	E8, D1	LSD *
1807189-01	D	Vinyl chloride	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry	1400	3320	E8, D1	LSD *
1807189-01	D	Xylenes (total)	07/26/18 9:00	EPA 8260B	7/30/18 18:44	**ND**	ug/kg dry		39900	E8, D1	LSD *
* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.											
1807189-01	D	Cyanide, Total	07/26/18 9:00	EPA 9014	8/3/18 15:06	**ND**	mg/kg dry	0.855	3.33	E8	AM *
* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.											
1807189-01	D	% Solids	07/26/18 9:00	SM 2540 G	7/31/18 15:45	**3**	%		1		SLL *
* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.											
1807189-01	D	% Solids	07/26/18 9:00	SM 2540G	7/27/18 14:45	**3.29**	%		0.01		TDA
1807189-01	D	4,4-DDD	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00006	0.00074	D1, D7	MSM
1807189-01	D	4,4-DDE	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00003	0.00074	D1, D7	MSM
1807189-01	D	4,4-DDT	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00006	0.00074	D1, D7	MSM
1807189-01	D	Aldrin	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00006	0.00074	D1, D7	MSM
1807189-01	D	alpha-BHC	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00004	0.00075	D1, D7	MSM
1807189-01	D	beta-BHC	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00009	0.00299	D1, D7	MSM
1807189-01	D	Chlordane	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00025	0.01	D1, D7	MSM
1807189-01	D	delta-BHC	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00007	0.00074	D1, D7	MSM
1807189-01	D	Dieldrin	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00015	0.00148	D1, D7	MSM
1807189-01	D	Endosulfan I	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00004	0.00074	D1, D7	MSM
1807189-01	D	Endosulfan II	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00003	0.00074	D1, D7	MSM
1807189-01	D	Endosulfan sulfate	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00004	0.00074	D1, D7	MSM
1807189-01	D	Endrin	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00010	0.00074	D1, D7	MSM
1807189-01	D	Endrin aldehyde	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00011	0.00074	D1, D7	MSM
1807189-01	D	gamma-BHC (Lindane)	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00007	0.00075	D1, D7	MSM
1807189-01	D	Heptachlor	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00005	0.00074	D1, D7	MSM
1807189-01	D	Heptachlor Epoxide	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00004	0.00074	D1, D7	MSM
1807189-01	D	PCB 1016	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00006	0.00179	D1, D7	MSM
1807189-01	D	PCB 1221	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00017	0.00448	D1, D7	MSM
1807189-01	D	PCB 1232	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00007	0.00448	D1, D7	MSM
1807189-01	D	PCB 1242	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00013	0.00443	D1, D7	MSM
1807189-01	D	PCB 1248	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00010	0.00448	D1, D7	MSM
1807189-01	D	PCB 1254	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00019	0.00443	D1, D7	MSM
1807189-01	D	PCB 1260	07/26/18 9:00	EPA 625	8/28/18 14:14	**ND**	mg/kg dry	0.00007	0.00149	DI, D7	MSM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1807189-01	D	Total PCBs	07/26/18 9:00	EPA 625	8/28/18 14:14	ND	mg/kg dry	0.00016	0.00448	D1, D7	MSM
1807189-01	D	Toxaphene	07/26/18 9:00	EPA 625	8/28/18 14:14	ND	mg/kg dry	0.00094	0.01	D1, D7	MSM
1807189-01	D	Methoxychlor	07/26/18 9:00	EPA 8270C	8/28/18 14:14	ND	mg/kg dry	0.00004	0.00075	D1, D7	MSM
1807189-01	D	2,3,7,8-TCDD - Dioxin Scan	07/26/18 9:00	EPA 625	8/7/18 14:42	ND	ug/kg dry		0.76		SJM
1807189-01	D	1,2,4-Trichlorobenzene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807189-01	D	2,3-Dichloroaniline	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1807189-01	D	2,4,6-Trichlorophenol	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807189-01	D	2,4-Dichlorophenol	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807189-01	D	2,4-Dimethylphenol	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.004	0.01	D1, D7	SJM
1807189-01	D	2,4-Dinitrophenol	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.009	0.02	D1, D7	SJM
1807189-01	D	2,4-Dinitrotoluene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1807189-01	D	2,6-Dinitrotoluene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807189-01	D	2-Chloronaphthalene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807189-01	D	2-Chlorophenol	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807189-01	D	2-Methyl-4,6-dinitrophenol	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.005	0.01	D1, D7	SJM
1807189-01	D	2-Methylphenol	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807189-01	D	2-Nitrophenol	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1807189-01	D	3,3-Dichlorobenzidine	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1807189-01	D	4-Bromophenyl phenyl ether	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807189-01	D	4-Chloro-3-methylphenol	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1807189-01	D	4-Chlorophenyl phenyl ether	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807189-01	D	4-Methylphenol	07/26/18 9:00	EPA 625	8/2/18 19:07	724.3	mg/kg dry	0.002	0.02	D1, D2, D7	SJM
1807189-01	D	4-Nitrophenol	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.005	0.01	D1, D7	SJM
1807189-01	D	Acenaphthene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807189-01	D	Acenaphthylene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807189-01	D	Anthracene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807189-01	D	Benzidine	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.007	0.01	D1, D7	SJM
1807189-01	D	Benzo[a]anthracene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807189-01	D	Benzo[a]pyrene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807189-01	D	Benzo[b]fluoranthene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807189-01	D	Benzo[ghi]perylene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1807189-01	D	Benzo[k]fluoranthene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1807189-01	D	bis(2-chloroethoxy)methane	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807189-01	D	bis(2-chloroethyl)ether	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1807189-01	D	bis(2-chloroisopropyl)ether	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807189-01	D	bis(2-ethylhexyl)phthalate	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1807189-01	D	Butylbenzylphthalate	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807189-01	D	Carbazole	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1807189-01	D	Chrysene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807189-01	D	Dibenzo(a,h)anthracene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1807189-01	D	Diethyl phthalate	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1807189-01	D	Dimethyl phthalate	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1807189-01	D	Di-n-butyl phthalate	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1807189-01	D	Di-n-octyl phthalate	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1807189-01	D	Fluoranthene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807189-01	D	Fluorene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807189-01	D	Hexachlorobenzene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.0006	0.00200	D1, D7	SJM
1807189-01	D	Hexachlorobutadiene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807189-01	D	Hexachlorocyclopentadiene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.004	0.01	D1, D7	SJM
1807189-01	D	Hexachloroethane	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807189-01	D	Indeno(1,2,3-cd)pyrene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.003	0.01	D1, D7	SJM
1807189-01	D	Isophorone	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807189-01	D	Naphthalene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807189-01	D	n-Decane	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807189-01	D	Nitrobenzene	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1807189-01	D	N-Nitrosodimethylamine	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.01	D1, D7, PC3	SJM
1807189-01	D	N-Nitrosodi-n-propylamine	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1807189-01	D	N-Nitrosodiphenylamine	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.006	0.01	D1, D7	SJM
1807189-01	D	n-Octadecane	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.002	0.01	D1, D7	SJM
1807189-01	D	Pentachlorophenol	07/26/18 9:00	EPA 625	8/2/18 19:44	ND	mg/kg dry	0.004	0.01	D1, D7	SJM

Laboratory License # AZO159

Lab ID:	Sample Type	Parameter	Sample Date/Time	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Sample/Data Qualifiers	Analyst
1807189-01	D	Phenanthrene	07/26/18 9:00	EPA 625	8/2/18 19:44	**ND**	mg/kg dry	0.002	0.00200	D1, D7	SJM
1807189-01	D	Phenol	07/26/18 9:00	EPA 625	8/2/18 19:44	**40.24**	mg/kg dry	0.003	0.01	D1, D7	SJM
1807189-01	D	Pyrene	07/26/18 9:00	EPA 625	8/2/18 19:44	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM
1807189-01	D	1,2-Diphenylhydrazine	07/26/18 9:00	EPA 8270C	8/2/18 19:44	**ND**	mg/kg dry	0.001	0.00200	D1, D7	SJM

Qualifier Definitions

<	<1
A	Absence
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H6	The filtration was not done within the required 15 minutes of sampling, the sample was filtered in the laboratory.
J	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
M2	Matrix spike recovery was low; the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike recovery was acceptable.
N1	See case narrative.
N7	Additional analysis was not performed based on the "Total" result which was below the requested analyte's MCL/Action level/Trigger Level.
NA	Not Analyzed
PC3	Semi-quantitation is included in the case narrative.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results performed by "SMPLR" (Sampler), are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-Analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction
EB	Equipment Blank

Case Narrative(s)

1807078-01, -07, -08, -09, -10
Biochemical Oxygen Demand, SM 5210B: The temperature of the BOD incubator in use was not recorded on 7/12/18. The temperature for this incubator was recorded and in compliance for the remaining incubation time. ESW 7/26/18

Semi-Quantitation
Method: 625
1807189-01

Compound Name	Concentration-mg/Kg
Palmitic Acid	13670
Oleic Acid	10694
Stearic Acid	3332
Toluene	412
Propanoic Acid, 2-methyl-	1057
Propanoic Acid	307
Butanoic Acid, 2-methyl-	939
Pentanoic Acid, 2-methyl-	457
Butanoic Acid	948
Pentanoic Acid	503

SJM 08/16/18

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1807087-02

PROJECT & LOCATION: GREEN VALLEY WRF-BNROD SOUTH AEROBIC DIGESTED SLUDGE

PROJECT-LOCATION NUMBER: 25000-1960 (XXXXX-XXXX)

SAMPLE START DATE: _____ (MM/DD/YY OR MM/DD/YYYY)

SAMPLE START TIME: _____ (Military time)

CLIENT: Sub-Regional Facilities

SAMPLE END DATE: 07/12/2018 (MM/DD/YY OR MM/DD/YYYY)

SAMPLE END TIME: 0640 (Military time)

SAMPLER(S): GARRISON (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ AZPDES ☐ IWC ☐ Investigative ☐ Reuse ☐ Air ☐ 503 ■ Process Control ☐ Other _____

Matrix: ☐ Biosolids ☐ Groundwater ☐ Industrial ☐ Soil ☐ Stormwater ☐ Surface Water ■ Wastewater ☐ Air ☐ Other _____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	☐	☐	☐	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	☐	☐	☐	☐
TCLP Metals			☐	☐
503 Metals **			☐	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total	☐	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other _____	☐	☐
Other _____	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	☐	☐
Dioxin GC/SIM/MS Scan	☐	☐
Organochlorine Pesticides & PCBs	☐	☐
Purgeable Organics (GCMS)	☐	☐
Semivolatile Organics (GCMS)	☐	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other _____	☐	☐
Other _____	☐	☐

EFFLUENT TOXICITY TESTING	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other _____	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	■	☐
Solids, Volatile Suspended	☐	☐
Other _____	☐	☐

OTHER	D	C
Paint Filter	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*	_____	µg/L
☐ Specific Conductance *SM 2510 B*	_____	µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*	_____	mg/L
☐ pH @ pH Temp *SM 4500-H B*	_____ @	pH Units @ ° C
☐ Temperature *SM 2550 B*	_____	° C
☐ Total Depth of Well	_____	feet
☐ Depth to Water	_____	feet
☐ Other _____	_____	_____

Comments/Instructions:

Septum Blank Prep Date & Initials: _____ _____

Chain of Custody Record (Signatures Only)

Relinquished by:	Received by:	Date:	Time: (Military time)
Refrigerator	Refrigerator	7/12/18	0648
Refrigerator	[signature]	7/12/18	0930
[signature]	[signature]	07-12-18	1132

Sample Integrity/Preservation:

# of Bottles Delivered: 1 (603)

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 5 °C

Initials: GOS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*

As, Ba, Cr, Co, Pb, Mercury, Mo, Ni, Se, Tl, Zn

COC-Single Revision 2

Revised: 03/12/2015

PIMA COUNTY WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1807189-01

PROJECT & LOCATION: Green Valley WRF - Wet Haul Sludge (Quarterly)

PROJECT-LOCATION NUMBER: 25000-1962 (XXXXX-XXXX)

SAMPLE START DATE: _____ MM/DD/YY OR MM/DD/YYYY

SAMPLE START TIME: _____ (Military time)

CLIENT: IWC

SAMPLE END DATE: 07-26-2018 MM/DD/YY OR MM/DD/YYYY

SAMPLE END TIME: 0900 (Military time)

SAMPLER(S): Silva, Riccaboni (Print Last Name(s) Only)

Permit Type: ☐ APP ☐ Investigative ■ 503 ■ AZPDES ☐ Reuse ☐ Process Control ☐ IWC ☐ Air ☐ Other _____

Matrix: ■ Biosolids ☐ Soil ☐ Wastewater ☐ Groundwater ☐ Stormwater ☐ Air ☐ Industrial ☐ Surface Water ☐ Other _____

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	×		■	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	×		■	☐
TCLP Metals			☐	☐
503 Metals **			■	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total contract	■	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other _____	☐	☐
Other _____	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile contract	■	☐
Dioxin GC/SIM/MS Scan	■	☐
Organochlorine Pesticides & PCBs	■	☐
Purgeable Organics (GCMS) contract	■	☐
Semivolatile Organics (GCMS)	■	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other _____	☐	☐
Other _____	☐	☐

EFFLUENT TOXICITY TESTING

	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other _____	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total 1 of 2 contract	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other _____	☐	☐

OTHER

	D	C
Paint Filter	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*	_____	µg/L
☐ Specific Conductance *SM 2510 B*	_____	µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*	_____	mg/L
☐ pH @ pH Temp *SM 4500-H B*	_____ @	pH Units @ °C
☐ Temperature *SM 2550 B*	_____	°C
☐ Total Depth of Well	_____	feet
☐ Depth to Water	_____	feet
☐ Other _____	_____	_____

Comments/Instructions: Volatiles sent to Legend TS. GOS 07-26-18 DO#19-002668

Septum Blank Prep Date & Initials: _____ _____

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
Riccaboni		07-26-18	1131
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

# of Bottles Delivered: 8 GOS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt

Temperature: 4 °C

Initials: GOS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☐	☒
Received from a refrigerator?	☐	☒	☐

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*

COC-Single Revision 2 Revised: 03/12/2015

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT
INDUSTRIAL WASTEWATER CONTROL SECTION
SAMPLE COLLECTION FIELD NOTES 1807189-01

SAMPLE LOCATION: Green Valley WRF - Wet Haul Sludge

LOCATION ID: **25000-1962** SAMPLERS: Silva, Riccaboni SAMPLE DATE: 07-24-2018
Last names only, primary sampler first.

SAMPLE D or C	PARAMETER	START TIME	END TIME	FREQUENCY	Time Flow	Auto Man.	Volume Submitted	Bottle Type & Preservation
D	**Priority Pollutant Metals**	7-24-18	0900	Grab			1000 ml	**Dissolve Metals / Ice**
D	**503 Metals**							
D	**Cyanide, Total**						1000 ml	**Dissolved Metals / Ice**
D	**Dioxin Scan**						1000 ml	**Amber / Ice**
D	**Org. Pesticides**						1000 ml	**Amber / Ice**
D	**Semivolatile Organics**						1000 ml	**Amber / Ice**
D	**Solids, Total**						1000 ml	**General Purpose / Ice**
D	**Solids, Total**						1000 ml	**General Purpose / Ice**
D	**Acrolein and Acrylonitrile**						40 ml	**Septum vial / Ice**
D	**Acrolein and Acrylonitrile**						40 ml	**Septum vial / Ice**
D	**Acrolein and Acrylonitrile**						40 ml	**Septum vial / Ice**
D	**Acrolein and Acrylonitrile**						40 ml	**Septum vial / Ice**
D	**Purgeable Organics**						40 ml	**Septum vial / Ice**
D	**Purgeable Organics**						40 ml	**Septum vial / Ice**
D	**Purgeable Organics**						40 ml	**Septum vial / Ice**
D	**Purgeable Organics**						40 ml	**Septum vial / Ice**

pH METER CALIBRATION LOG

Time	Model #	Serial #	Auto/Man.	Buffer	Reading	Buffer	Reading	Temp.	Slope	Initials
			N/A							

FIELD MEASUREMENTS

Sample	Parameter & Method	Result	Time	Initials	Sample	Parameter & Method	Result	Time	Initials
			N/A						

Notes: All Samples are Unpreserved
Purgeable + Ac/Ac sent to outside lab in 1- 8oz soil jar

EQUIPMENT USED: ☐ **Grab Sampler** ☐ Automatic Sampler ☐ Electric Pump ☐ Other

CHAIN OF CUSTODY RECORD

LEGEND Technical Services, Inc.

☐ 17631 N. 25th Avenue • Phoenix, AZ 85023 • (602) 324-6100 • Fax (602) 324-6101
☐ 4585 S. Palo Verde Rd, Ste 423 • Tucson, AZ 85714 • (520) 327-1234 • Fax (520) 327-0518

Page 1 of 1

Please Print Clearly

Client Name	Address	City	State	Zip	Phone	Fax Number or Email Address
Pima County CRAO Lab	2955 W Calle Agua Nueva	Tucson	AZ	85745	520-724-6016	joseph.doranski@pima.gov

Project Name	Project Number	Contact	P.O. No.	
Volatiles #21		Joe Doranski	19-002668	Fax Results ☐ Email Results ☒ QC Report ☐ EDD ☒ Special Detection Limits ☐

DW=Drinking Water, WW=Wastewater, SW=Surface Water, GW=Groundwater, ~~O=Other~~, S=Soil/Solid, T=Travel Blank, F=Food, G=Sludge/Biosolids

Laboratory Authorization Required for Rush
☒ Standard 10 - 15 Day
☐ Other _____

Client's Sample Identification	Date	Time	Sample Location	Composite	Grab	Sample Type	Compliance	No. of Containers	EPA 8260	EPA 8260 blank	Ac/Ac and 2-CEVE	Ac/Ac blank	Cyanide, total mg/kg dry	Total % solids	
1807191-01	07/26/18	1000	DMAFB PL#8		X	WW		7	X		X				01
			Travel blank			T		2		X		X			02
1807191-~~02~~ 03	07/26/18	1020	DMAFB PL#9		X	WW		7	X		X				03
03 08-10-18			Travel blank			T		2		X		X			04
1807189-01	07/26/18	900	Green Valley WRF wet haul sludge		X	G	X	3	X		X		X	X	05

Comments / Special Instructions: Please report the results for the sludge sample in mg/kg dry.

	°C	
	Y	N
	Y	N
	Y	N

		Date		Date
① Sampler Signature		7/26/18	Signature	7/26/18
Sampler Printed Name	Greg Spence	Time 1355	Printed Name Amanda Rizzo	Time 1355
② Signature		Date	Signature	Date
Printed Name		Time	Printed Name	Time
③ Signature		Date	Signature	Date
Printed Name		Time	Printed Name	Time

WHITE-LAB YELLOW-CLIENT

PIMA COUNTY
WASTEWATER RECLAMATION
COMPLIANCE AND REGULATORY AFFAIRS OFFICE LABORATORY
2955 W Calle Agua Nueva, Tucson, AZ 85745
Telephone: (520) 724-6200

LIMS CHECKLIST FOR SUBCONTRACT DATA

LIMS ID	**1807189-01, 1807191-01, -03**	**DO**	**19-002668**
CONTRACT LAB	**Legend Technical Services of Arizona, Inc., Phoenix**	**SAMPLE GROUP**	**Volatiles #21**
ANALYSES	**Acrolein & Acrylonitrile; Purgeable 8260, Cyanide (biosolids), %TS**	**REPORT ID**	**18G2898**

TRANSFER & CONVERT FILES:	
Was the contract lab spreadsheet file saved to \\Splimsapp\elementshare\TransferIn ?	Y
Was the above mentioned file converted from a .xls file to a .mdb file for each WO#, and further, for each subcontract location, or separate analysis (as applicable), on the contract lab report? (Element>Project Management>Reports)	Y
Was the converted file attached to the sample in LIMS?	Y
VALIDATING CONTRACT LAB REPORT , CHAIN OF CUSTODY(S), AND DO#:	
Contract Lab Report signed and dated?	Y
Copy of contract lab COC included with contract Lab Report?	Y
Contract lab COC verified with CRAO COC(s) for Sample ID, Sample Date, Analysis Requested?	Y
Sample dates and received dates on the CL report match the CL COC?	Y
CL report includes all requested analysis?	Y
CL licensed in AZ for the reported methods?	Y
Check that DO matches COC in types and number of tests?	N/A
DO received in Pima Core?	N/A
CONTRACT LAB REPORT, EXCEL SPREADSHEET, and QC:	
CL report and CL spreadsheet report the same sample results, sample date, and analysis date?	Y
Was a Case Narrative Included in Contract Lab report?	Y
Data packet includes QC Report from primary lab and any secondary subcontract labs?	Y
Did CL report list applicable AZ Data Qualifiers?	Y
Were there any dilutions made to samples that were reported as ND?	Y
If so, were they qualified due to matrix interference?	Y
Was QC included for every analysis method: typically Blk, LCS, MS, MSD?	Y
Did QC pass stated acceptance limits, or was it qualified?	Y
Were samples analyzed within required holding times?	Y
Check that MDLs are below water quality standards, If not notify Belinda Gamboa-Felix? (Cyanide, Hexachlorobenzene)	Y
Semivolatiles & Volatiles: Check that all analytes were delivered?	Y
COMPLIANCE LIMIT REVIEW	
Were results compared to the discharge permit?.	N/A
Was Belinda Gamboa-Felix notified of any exceedences?	N/A
WET TESTING SPECIFIC REQUIREMENTS	
Statement of Pass/Fail reflected in End Points?	N/A
Report states if zeolite treatment was utilized?	N/A
Survival and Reproduction or Growth Data included (P. promelas or Ceriodaphnia only)?	N/A

Chemistry data included?			N/A
Reference Toxicant Test Results and Control Chart within limits?			N/A
PMSD Determination included and within acceptable range? (minimum acceptable= 13)			N/A
End Points include TUc, NOEC, LOEC, and IC25?			N/A
Statistics verify endpoints			N/A
Control Charts Updated to include month of analysis			N/A
Reviewer Initials:	**ABR**	**Review Date:**	**11-2-18**

PEER/FINAL REVIEW:	PR	FR
LIMS/Excel data matches printed CL report?	✓	
Analysis dates are correct?	✓	
Correct Data Qualifiers included if necessary.	✓	
CRAO report shows result is from Contract Lab?	✓	
CRAO report shows correct Contract Lab (e.g. Legend Technical Services of Arizona, Phoenix)?	✓	
DO received in Pima Core	✓	
Analysis set to Reported?		✓

Peer Reviewer Initials:	JLQ	**Review Date:**	11-16-18
Biomonitor Supervisor Initials:	N/A	**Review Date:**	
Final Reviewer Initials:	JEC	**Review Date:**	11·16·18

CORRECTIVE ACTION REPORT:			
Preliminary Review:		Date:	
QA/QC Review:		Date:	
Data Entry:		Date:	
Peer Review:		Date:	
Lab Supervisor:		Date:	

LIMS #:	**DEVIATION:**	**CORRECTIVE ACTION:**
1807191-03	CL Lab Report has 1807191-02	COC filled out incorrectly. JLQ 11-16-18

DEVIATIONS FROM ACCEPTABLE QA/QC:

Missing QC Report/Data
Holding Time for analysis exceeded.
Inappropriate dilution performed.
Missing COC.
Missing Data Qualifiers.
Incorrect Analysis Method.
Incorrect Sample IDs.
Other.

CORRECTIVE ACTION:

Request report correction from Subcontract Lab project manager.
Add missing Data Qualifiers.
Notify data end-user of deviation.
Arrange for resampling.
Other.

Bea Ronan

From: Joseph Doranski
Sent: Wednesday, August 1, 2018 14:10
To: Kaitlyn Martel
Cc: Bea Ronan
Subject: RE: Volatiles #21- Trip Blank

That should not be a problem. Believe me when I say I've made too many mistakes to count. As long as they don't repeat, all is good.
Thanks,

From: Kaitlyn Martel [mailto:kmartel@legend-group.com]
Sent: Wednesday, August 1, 2018 8:48 AM
To: Joseph Doranski <Joseph.Doranski@pima.gov>
Subject: Volatiles #21- Trip Blank

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

Hello,
Due to a lab analyst error, the 8260 preserved trip blank for 1807191-02 was improperly processed with a 524 batch. As there was only the one trip blank, the lab will be unable to provide trip blank results for this sample as the two test analytes are not equivalent. The analyst has been re-trained to ensure proper loading of samples in the auto-sampler and I apologize for the inconvenience.

Thank you,

Kaitlyn Martel
Tucson Lab Manager
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.
4585 S. Palo Verde Road, Ste. 423
Tucson, AZ 85714
(520) 327-1234
Fax: (520) 327-0518
kmartel@legend-group.com

Ask me about how to connect to our on-line data access portal, ClientConnect. https://az.legend-group.com/

Help the environment & save time with paperless reporting, monthly summary invoicing and

Bea Ronan

From: Brian Merritt <bmerritt@legend-group.com>
Sent: Thursday, November 1, 2018 17:05
To: Bea Ronan
Cc: Jenelle Chraft
Subject: RE: 18G2898 Qualifier Question

****
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****

Hi Bea,

Method 8260 references Method 8000 for quality control. In Method 8000C, Section 9.5.4 It states as a general rule, the recoveries of most compounds spiked into samples should fall within the range of 70-130%, and this range should be used as a guide in evaluating in house performance.

The surrogate in question was outside our laboratory control limits of 79%-120% at 76%, but still within method default limits.

If you have questions let me know.

Thank you,

Brian Merritt
Director of Operations
Legend Technical Services, Inc

Phone: 520-327-1234
Cell: 520-991-8347
Fax: 520-327-0518
bmerritt@legend-group.com
http://www.legend-group.com

From: Bea Ronan <Bea.Ronan@pima.gov>
Sent: Thursday, November 01, 2018 2:43 PM
To: Brian Merritt <bmerritt@legend-group.com>
Cc: Jenelle Chraft <Jenelle.Chraft@pima.gov>
Subject: 18G2898 Qualifier Question

Brian,

While reviewing the report for 18G2898 ("Volatiles #21"), I noticed that an S5 qualifier was listed, as it had been applied to the 1,2-Dichloroethane-d4 surrogate for B8G1834. After confirming with our Organic unit supervisor that there are no method surrogate acceptance limits specified for 8260, we would like some clarification on what acceptance limits, if not the lab's limits, are being referred to by use of this qualifier. Can you provide some clarification for us?

Thanks,

Bea Ronan
Chemist, Quality Assurance Unit
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory
(520) 724-6183

Bea Ronan

From: Kaitlyn Martel <kmartel@legend-group.com>
Sent: Thursday, November 1, 2018 10:49
To: Bea Ronan
Cc: Brian Merritt
Subject: RE: MDLs missing from 18G2898, "Volatiles #21"
Attachments: 18G2898 Sample2MDL_lowestCOC Rev TUCSON FINAL 11 01 18 1045.pdf; 18G2898 FINAL EXCEL 01 Nov 18 1045.xls

****
This message and sender come from outside Pima County. If you did not expect this message, proceed with caution. Verify the sender's identity before performing any action, such as clicking on a link or opening an attachment.
****

Requested report attached

Thank you,

Kaitlyn Martel
Tucson Lab Manager
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.
4585 S. Palo Verde Road, Ste. 423
Tucson, AZ 85714
(520) 327-1234
Fax: (520) 327-0518
kmartel@legend-group.com

Ask me about how to connect to our on-line data access portal, ClientConnect. https://az.legend-group.com/

Help the environment & save time with paperless reporting, monthly summary invoicing and

From: Bea Ronan [mailto:Bea.Ronan@pima.gov]
Sent: Wednesday, October 31, 2018 4:36 PM
To: Kaitlyn Martel <kmartel@legend-group.com>
Cc: Brian Merritt <bmerritt@legend-group.com>
Subject: MDLs missing from 18G2898, "Volatiles #21"

Kaitlyn,

The MDLs for some analytes (Total Cyanide, 2-CEVE, Acrolein, Acrylonitrile) requested on sample # 18G2898-05 were not included in the report. I also noticed that in the EDD, the cells within the "Report to MDL" column that correspond with those analytes say FALSE. Would you please send us a revised report and EDD that lists all MDLs for each requested analyte?

Thanks,
Bea Ronan

Chemist, Quality Assurance Unit
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory
(520) 724-6183

LEGEND
Technical Services, Inc.

4585 S. Palo Verde Rd., Ste. 423 • Tucson, AZ 85714
P (520) 327-1234 • F (520) 327-0518
www.legend-group.com

01 November 2018

Joe Doranski
Pima County RWRD CRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745
Fax: (520) 579-6002

RE: Volatiles
Laboratory Work Order No.: 18G2898

Legend Technical Services of Arizona, Inc. is pleased to provide the enclosed analytical results for the aforementioned project. These results relate only to the items tested. This cover letter and the accompanying pages represent the full report for these analyses and should only be reproduced in full. Samples for this project were received by the laboratory on 07/26/18 14:45.

The samples were processed in accordance with the Chain of Custody document and the results presented relate only to the samples tested. The Chain of Custody is considered part of this report.

All samples will be retained by LEGEND for 30 days from the date of this report and then discarded unless other arrangements are made. Due to hold-time and method sample volume requirements, microbiological samples are not retained unless other arrangements are made.

This entire report was reviewed and approved for release by the undersigned. If you have any questions concerning this report, please feel free to contact me.

Sincerely,
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.

Kaitlyn Martel

Kaitlyn M. Martel For P. Brian Merritt
Client Services Representative
(602) 324-6100

This laboratory report is confidential and is intended for the sole use of LEGEND and it's client.

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Volatiles Project Number: Volatiles #21 7/26/18 Project Manager: Joe Doranski	**Reported:** 11/01/18 10:45

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
1807191-01	18G2898-01	Wastewater	Grab	07/26/18 10:00	07/26/18 14:45
1807191-01	18G2898-02	Wastewater	Grab	07/26/18 10:00	07/26/18 14:45
1807191-02	18G2898-03	Wastewater	Grab	07/26/18 10:20	07/26/18 14:45
1807189-01	18G2898-05	Solid (Dry Weight)	Grab	07/26/18 09:00	07/26/18 14:45

Sample Condition Upon Receipt:

Temperature: 2.30 C

All samples were received in acceptable condition unless noted otherwise in the case narrative.

Case Narrative:

Holding Times: All holding times were met unless otherwise qualified.

QA/QC Criteria: All analyses met method requirements unless otherwise qualified.

Certifications: AZ(PHX)0004, AZ(TUC)OOO4, AIHA#102982, CDC ELITE Member.

Accreditation is applicable only to the test methods specified on the scope of accreditation held by LEGEND.

Comments: All reporting limits utilized in this report are from the approved method with the lowest possible levels of detection. All samples were analyzed on a "wet" basis unless designated as "dry weight".

The wrong trip blank was pulled from the sample fridge and loaded on the GCMS #105 autosampler. The 8260 trip blank cannot be reported from the 524.2 analysis, because only 524.2 QC was run and the detects in the TB are all 8260 list analytes.
The sample (18G2898-03) associated with the 8260 trip blank was reported to the MDL, and had a detect for Acetone at 90.55ppb, all other detects were below the MDL.

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Volatiles Project Number: Volatiles #21 7/26/18 Project Manager: Joe Doranski	**Reported:** 11/01/18 10:45

1807191-02 (18G2898-03) Wastewater (Grab) Sampled: 07/26/18 10:20 Received: 07/26/18 14:45

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Legend Technical Services of Arizona, Inc.							
Volatile Organic Compounds										D1
trans-1,3-Dichloropropene	<	0.614	10.0	ug/L	5	B8G1866	07/27/18 10:00	07/27/18 17:03	EPA 8260B	E8
trans-1,4-Dichloro-2-butene	<	5.55	50.0	ug/L	5	B8G1866	07/27/18 10:00	07/27/18 17:03	EPA 8260B	E8
Trichloroethene	<	0.462	10.0	ug/L	5	B8G1866	07/27/18 10:00	07/27/18 17:03	EPA 8260B	E8
Trichlorofluoromethane	<	0.820	10.0	ug/L	5	B8G1866	07/27/18 10:00	07/27/18 17:03	EPA 8260B	E8
Vinyl chloride	<	0.565	2.50	ug/L	5	B8G1866	07/27/18 10:00	07/27/18 17:03	EPA 8260B	E8
Xylenes (total)	<		30.0	ug/L	5	B8G1866	07/27/18 10:00	07/27/18 17:03	EPA 8260B	E8
Surrogate: 1,2-Dichlorobenzene-d4			*106 %*		*80-120*	*B8G1866*	*07/27/18*	*07/27/18*	*EPA 8260B*	
Surrogate: 1,2-Dichloroethane-d4			*98 %*		*80-125*	*B8G1866*	*07/27/18*	*07/27/18*	*EPA 8260B*	
Surrogate: 4-Bromofluorobenzene			*94 %*		*74-120*	*B8G1866*	*07/27/18*	*07/27/18*	*EPA 8260B*	
Surrogate: Pentafluorobenzene			*100 %*		*80-120*	*B8G1866*	*07/27/18*	*07/27/18*	*EPA 8260B*	

1807189-01 (18G2898-05) Solid (Dry Weight) (Grab) Sampled: 07/26/18 09:00 Received: 07/26/18 14:45

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Legend Technical Services of Arizona, Inc.							
Inorganic Chemistry										
Cyanide, Total	<	0.855	3.33	mg/kg dry	1	B8H1158	08/03/18 09:40	08/03/18 15:06	EPA 9014	E8
% Solids	3		1	%	1	B8H1085	07/31/18 15:45	07/31/18 15:45	SM 2540 G	
Volatile Organic Compounds										D1
2-Chloroethylvinyl ether	<	1340	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Acrolein	<	31600	133000	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8, M2
Acrylonitrile	<	19200	66400	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Surrogate: 1,2-Dichlorobenzene-d4			*65 %*		*44-130*	*B8G1834*	*07/27/18*	*07/30/18*	*EPA 8260B*	
Surrogate: 1,2-Dichloroethane-d4			*58 %*		*48-123*	*B8G1834*	*07/27/18*	*07/30/18*	*EPA 8260B*	
Surrogate: 4-Bromofluorobenzene			*57 %*		*32-122*	*B8G1834*	*07/27/18*	*07/30/18*	*EPA 8260B*	
Surrogate: Pentafluorobenzene			*58 %*		*39-128*	*B8G1834*	*07/27/18*	*07/30/18*	*EPA 8260B*	
1,1,1,2-Tetrachloroethane	<	1600	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,1,1-Trichloroethane	<	2830	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,1,2,2-Tetrachloroethane	<	2120	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,1,2-Trichloroethane	<	771	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,1-Dichloroethane	<	2870	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,1-Dichloroethene	<	3570	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,1-Dichloropropene	<	3180	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,2,3-Trichlorobenzene	<	1710	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,2,3-Trichloropropane	<	2480	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,2,4-Trichlorobenzene	<	1970	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,2,4-Trimethylbenzene	<	2430	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,2-Dibromo-3-chloropropane	<	3240	33200	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,2-Dibromoethane (EDB)	<	2370	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,2-Dichlorobenzene	<	1700	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,2-Dichloroethane	<	3530	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Volatiles Project Number: Volatiles #21 7/26/18 Project Manager: Joe Doranski	**Reported:** 11/01/18 10:45

1807189-01 (18G2898-05) Solid (Dry Weight) (Grab) Sampled: 07/26/18 09:00 Received: 07/26/18 14:45

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds										**D1**
1,2-Dichloropropane	<	2710	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,3,5-Trimethylbenzene	<	2640	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,3-Dichlorobenzene	<	2620	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,3-Dichloropropane	<	1550	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
1,4-Dichlorobenzene	<	2340	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
2,2-Dichloropropane	<	3530	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
2-Butanone	<	23300	66400	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
2-Chlorotoluene	<	2640	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
2-Hexanone	<	17500	66400	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
4-Chlorotoluene	<	2500	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
4-Methyl-2-pentanone	<	21900	66400	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Acetone	<	40500	133000	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Benzene	<	2560	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Bromobenzene	<	2550	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Bromochloromethane	<	3700	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Bromodichloromethane	<	2830	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Bromoform	<	2170	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8, V1
Bromomethane	<	4520	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Carbon disulfide	<	5300	66400	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Carbon Tetrachloride	<	3530	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Chlorobenzene	<	2020	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Chloroethane	<	4100	33200	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Chloroform	<	2800	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Chloromethane	<	3280	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
cis-1,2-Dichloroethylene	<	3560	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
cis-1,3-Dichloropropene	<	2890	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Dibromochloromethane	<	1490	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Dibromomethane	<	2270	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Dichlorodifluoromethane	<	7490	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Dichloromethane	<	3160	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Ethylbenzene	<	2660	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Hexachlorobutadiene	<	2840	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Iodomethane	<	36700	66400	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Isopropylbenzene	<	2540	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
m,p-Xylene	<	2330	26600	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Methyl methacrylate	<	28500	66400	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Methyl-tert-butyl ether	<	10200	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Naphthalene	<	1460	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
n-Butylbenzene	<	2510	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Volatiles Project Number: Volatiles #21 7/26/18 Project Manager: Joe Doranski	**Reported:** 11/01/18 10:45

1807189-01 (18G2898-05) Solid (Dry Weight) (Grab) Sampled: 07/26/18 09:00 Received: 07/26/18 14:45

Legend Technical Services of Arizona, Inc.

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds										**D1**
n-Propylbenzene	<	3390	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
o-Xylene	<	1840	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
p-Isopropyltoluene	<	2770	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
sec-Butylbenzene	<	3030	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Styrene	<	2010	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
tert-Butylbenzene	<	2730	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Tetrachloroethene	<	3150	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Toluene	**173000**	**2810**	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	M3
Total THMs	<		13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
trans-1,2-Dichloroethene	<	2830	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
trans-1,3-Dichloropropene	<	1930	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
trans-1,4-Dichloro-2-butene	<	39700	66400	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8, M2
Trichloroethene	<	2770	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Trichlorofluoromethane	<	4370	13300	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Vinyl chloride	<	1400	3320	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Xylenes (total)	<		39900	ug/kg dry	2	B8G1834	07/27/18 08:15	07/30/18 18:44	EPA 8260B	E8
Surrogate: 1,2-Dichlorobenzene-d4			*70 %*		*44-130*	*B8G1834*	*07/27/18*	*07/30/18*	*EPA 8260B*	
Surrogate: 1,2-Dichloroethane-d4			*62 %*		*48-123*	*B8G1834*	*07/27/18*	*07/30/18*	*EPA 8260B*	
Surrogate: 4-Bromofluorobenzene			*60 %*		*32-122*	*B8G1834*	*07/27/18*	*07/30/18*	*EPA 8260B*	
Surrogate: Pentafluorobenzene			*61 %*		*39-128*	*B8G1834*	*07/27/18*	*07/30/18*	*EPA 8260B*	

Pima County RWRD CRAO Lab	Project: Volatiles	
2955 W Calle Agua Nueva	Project Number: Volatiles #21 7/26/18	**Reported:**
Tucson, AZ 85745	Project Manager: Joe Doranski	11/01/18 10:45

Notes and Definitions

V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.
S5	Surrogate recovery was below laboratory acceptance limits, but within method acceptance limits.
R7	LFB/LFBD RPD exceeded the laboratory acceptance limit. Recovery met acceptance criteria.
R5	MS/MSD RPD exceeded laboratory acceptance limit. Recovery met acceptance criteria.
N1	See case narrative.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike recovery was acceptable.
M2	Matrix spike recovery was low; the associated blank spike recovery was acceptable.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL), but above the MDL.
D1	Sample required dilution due to matrix.
BLK	Method Blank
LCS/Dup	Laboratory Control Sample/Laboratory Fortified Blank/Duplicate
MS/Dup	Matrix Spike/Duplicate
Dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Pima County RWRD CRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745

Project: Volatiles
Project Number: Volatiles #21 7/26/18
Project Manager: Joe Doranski

Reported:
11/01/18 10:45

18G2898

CHAIN OF CUSTODY RECORD

LEGEND Technical Services, Inc.

☐ 17631 N. 25th Avenue • Phoenix, AZ 85023 • (602) 324-6100 • Fax (602) 324-6101
☐ 4585 S. Palo Verde Rd, Ste 423 • Tucson, AZ 85714 • (520) 327-1234 • Fax (520) 327-0518

Page 1 of 1

Please Print Clearly

CLIENT INFORMATION

Client Name	Address	City	State	Zip	Phone	Fax Number or Email Address
Pima County CRAO Lab	2955 W Calle Agua Nueva	Tucson	AZ	85745	520-724-6016	joseph.doranski@pima.gov

Project Name	Project Number	Contact	P.O. No.	
Volatiles #21		Joe Doranski	19-002668	Fax Results ☐ Email Results ☒ QC Report ☐ EDD ☒ Special Detection Limits ☐

SAMPLE TYPE CODES: DW=Drinking Water, WW=Wastewater, SW=Surface Water, GW=Groundwater, G=Other, S=Soil/Solid, T=Travel Blank, F=Food, G=Sludge/Bioasolids

TURN AROUND TIME: Laboratory Authorization Required for Rush ☒ Standard 10 - 15 Day ☐ Other

REQUESTED ANALYSES

Client's Sample Identification	Date	Time	Sample Location	Composite	Grab	Sample Type	Compliance	No. of Containers	EPA 8260	EPA 8260 blank	Acid/Ac and 2-CEVE	Acid/Ac blank	Cyanide, total mg/kg dry	Total % solids	
1807191-01	07/26/18	1000	DMAFB PL#8		X	WW		7	X		X				01
			Travel blank			T		2		X		X			02
1807191-02	07/26/18	1020	DMAFB PL#9		X	WW		7	X		X				03
			Travel blank			T		2		X		X			04
1807189-01	07/26/18	900	Green Valley WRF wet haul sludge		X	G	X	3	X		X		X	X	05

TO ENSURE COMPLETION OF ANALYSIS, SAMPLES MUST BE RECEIVED AT LEAST 3 HOURS PRIOR TO THE HOLD TIME EXPIRATION

Comments / Special Instructions: Please report the results for the sludge sample in mg/kg dry.

SAMPLE CONDITION UPON RECEIPT BY LAB		
No. of Containers	21	
Temperature	2.3 °C	
Custody Seals	Y	N
Seals Intact	Y	N
Preserved	Y	N

WHITE-LAB YELLOW-CLIENT

	RELINQUISHED BY		SAMPLES RECEIVED BY	
①	Sampler Signature / Sampler Printed Name: Greg Spence	Date 7/26/18 Time 1355	Signature / Printed Name: Amanda Rizzo	Date 7/26/18 Time 1355
②	Signature / Printed Name	Date / Time	Signature / Printed Name: @lab	Date 7/26/18 Time 1945
③	Signature / Printed Name: Amanda Rizzo	Date 7/26/18 Time 1600	Signature / Printed Name: Courier	Date 7/26/18 Time 1600

Courier 7/27/18 730 Amanda Rio 7/27/18 730

FORM CS-016.2 (07/18)

PIMA COUNTY
WASTEWATER RECLAMATION

Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office (CRAO) Laboratory
2955 W. Calle Agua Nueva, Tucson, Arizona 85745-9750, Phone (520) 724-6200

Report Date: 02/12/2019
Laboratory License: AZO159

Sample Analysis Report

Client:	Industrial Wastewater Control	Work Order ID:	1810128
Project:	Green Valley WRF	Lab Received Date:	10/18/18 11:40
Permit Type:	AZPDES	Project Number:	25000

Sample Integrity

SAMPLE RECEIPT: Samples were received intact at the required temperature, unless otherwise noted with a data qualifier. Please refer to the Chain of Custody for sample receipt details.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Pima County CRAO Laboratory Quality Manual.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Bio-solids sample 1810128-01 analyzed by CRAO Lab for EPA Methods 624, 625, 8260, 8270C: MRLs corrected and recalculated in this printed Report version. Sample results not changed. JEC 2/8/19 -edited JEC 2/12/19

All results on this report intended for compliance submission must have the associated chain(s) of custody attached for the results to meet reporting requirements as per ADHS Laboratory Licensure Rules. If you have received this report for compliance purposes and it is not complete, please contact the Compliance and Regulatory Affairs Office for a final report in its entirety.

Reviewed By:

Jenelle Graff 2·12·19

Laboratory Director or Designee
Pima County Regional Wastewater Reclamation Department
Compliance and Regulatory Affairs Office Laboratory

Date

Sample ID: **1810128-01** **Sample Start Date/Time** 10/18/2018 9:00:00

Site Location: Wet Haul Sludge **Sample End Date/Time** 10/18/2018 9:00:00

Site Number: 25000-1962 **Sampled By:** Rusty Riccaboni

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
Antimony	D	EPA 6010D	11/27/18 14:02	**ND**	mg/kg dry		6.39		MLB	
Arsenic	D	EPA 6010D	11/27/18 14:02	**7.29**	mg/kg dry		6.39		MLB	
Beryllium	D	EPA 6010D	11/8/18 15:07	**ND**	mg/kg dry		1.28		MLB	
Cadmium	D	EPA 6010D	11/27/18 14:02	**ND**	mg/kg dry		2.56		MLB	
Chromium	D	EPA 6010D	11/27/18 14:02	**10.9**	mg/kg dry		6.39		MLB	
Copper	D	EPA 6010D	11/27/18 14:02	**244**	mg/kg dry		6.39		MLB	
Lead	D	EPA 6010D	11/27/18 14:02	**ND**	mg/kg dry		6.39		MLB	
Molybdenum	D	EPA 6010D	11/27/18 14:02	**7.51**	mg/kg dry		2.56		MLB	
Nickel	D	EPA 6010D	11/27/18 14:02	**9.38**	mg/kg dry		6.39		MLB	
Selenium	D	EPA 6010D	11/27/18 14:02	**ND**	mg/kg dry		12.78		MLB	
Silver	D	EPA 6010D	11/28/18 13:23	**1.58**	mg/kg dry		0.64		MLB	
Thallium	D	EPA 6010D	11/27/18 14:02	**ND**	mg/kg dry		6.39		MLB	
Zinc	D	EPA 6010D	11/27/18 14:02	**430**	mg/kg dry		6.39		MLB	
Mercury	D	EPA 7471B	10/30/18 14:14	**0.54**	mg/kg dry		0.01		MJC	
% Solids	D	% calculation	11/12/18 11:32	**3.0**	%				BDP	*

* Analysis Performed by:Legend Technical Services, Inc., St. Paul - See attached contract lab report for official results.

delta-BHC	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.46	2.5	E8	MRH	*
beta-BHC	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.45	2.5	E8	MRH	*
alpha-Chlordane	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.47	2.5	E8	MRH	*
alpha-BHC	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.43	2.5	E8	MRH	*
Aldrin	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.44	2.5	E8	MRH	*
4,4'-DDT	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.47	2.5	E8	MRH	*
4,4'-DDE	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.47	2.5	E8	MRH	*
Endosulfan II	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.47	2.5	E8	MRH	*
4,4'-DDD	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.47	2.5	E8	MRH	*
Heptachlor epoxide	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.46	2.5	E8	MRH	*
Dieldrin	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.47	2.5	E8	MRH	*
Methoxychlor	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.46	2.5	E8	MRH	*
Endosulfan I	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.45	2.5	E8	MRH	*
Heptachlor	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.44	2.5	E8	MRH	*
gamma-Chlordane	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.46	2.5	E8	MRH	*
gamma-BHC (Lindane)	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.44	2.5	E8	MRH	*
Endrin ketone	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.45	2.5	E8	MRH	*
Endrin aldehyde	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.42	2.5	E8	MRH	*
Endrin	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.45	2.5	E8	MRH	*
Endosulfan sulfate	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.48	2.5	E8	MRH	*
Toxaphene	D	EPA 8081B	11/1/18 03:41	**ND**	mg/kg dry	0.94	5.0	E8	MRH	*

* Analysis Performed by:Legend Technical Services, Inc., St. Paul - See attached contract lab report for official results.

Aroclor 1260	D	EPA 8082A	11/1/18 21:59	**ND**	mg/kg dry	1.4	13	E8, S11	MRH	*
Aroclor 1254	D	EPA 8082A	11/1/18 21:59	**ND**	mg/kg dry	1.6	13	E8, S11	MRH	*
Aroclor 1248	D	EPA 8082A	11/1/18 21:59	**ND**	mg/kg dry	1.3	13	E8, S11	MRH	*
Aroclor 1242	D	EPA 8082A	11/1/18 21:59	**ND**	mg/kg dry	1.1	13	E8, S11	MRH	*
Aroclor 1232	D	EPA 8082A	11/1/18 21:59	**ND**	mg/kg dry	3.3	13	E8, S11	MRH	*
Aroclor 1221	D	EPA 8082A	11/1/18 21:59	**ND**	mg/kg dry	3.3	13	E8, S11	MRH	*
Aroclor 1016	D	EPA 8082A	11/1/18 21:59	**ND**	mg/kg dry	1.8	13	E8, S11	MRH	*

* Analysis Performed by:Legend Technical Services, Inc., St. Paul - See attached contract lab report for official results.

Cyanide, Total	D	EPA 9014	10/26/18 15:59	**ND**	mg/kg dry	0.794	3.10	E8	AM	*

* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.

Sample ID: **1810128-01** **Sample Start Date/Time** 10/18/2018 9:00:00

Site Location: Wet Haul Sludge **Sample End Date/Time** 10/18/2018 9:00:00

Site Number: 25000-1962 **Sampled By:** Rusty Riccaboni

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
% Solids	D	SM 2540 G	10/24/18 15:35	**3**	%		1		SLL	*
* Analysis Performed by:Legend Technical Services of Arizona, Inc. - See attached contract lab report for official results.										
% Solids	D	SM 2540G	10/19/18 13:07	3.35	%		0.01		ANM	
Acrolein	D	EPA 624	10/29/18 21:03	**ND**	mg/kg dry	0.0202	0.10	S4, V1	JEL	
Acrylonitrile	D	EPA 624	10/29/18 21:03	**ND**	mg/kg dry	0.0350	0.10	S4, V1	JEL	
Vinyl chloride	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.004	0.01		ADP	
Trichlorofluoromethane	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.005	0.01		ADP	
Trichloroethene	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.003	0.01		ADP	
trans-1,3-Dichloropropene	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.002	0.01		ADP	
trans-1,2-Dichloroethene	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.003	0.01		ADP	
Total Trihalomethanes	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.006	0.01		ADP	
Tetrachloroethene	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.004	0.01		ADP	
1,1-Dichloroethene	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.002	0.01		ADP	
1,1-Dichloroethane	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.003	0.01		ADP	
1,1,2-Trichloroethane	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.002	0.01		ADP	
1,1,2,2-Tetrachloroethane	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.001	0.01		ADP	
1,1,1-Trichloroethane	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.004	0.01		ADP	
1,2-Dichloroethane	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.002	0.01		ADP	
1,2-Dichloropropane	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.002	0.01		ADP	
Carbon Tetrachloride	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.007	0.01		ADP	
Methylene Chloride	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.004	0.01		ADP	
Ethyl Benzene	D	EPA 624	11/1/18 15:19	**1.40**	mg/kg dry	0.002	0.01	N1	ADP	
Dibromochloromethane	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.001	0.01		ADP	
cis-1,3-Dichloropropene	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.002	0.01		ADP	
Chloromethane	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.004	0.01		ADP	
Chloroform	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.003	0.01		ADP	
1,2-Dichlorobenzene	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.002	0.01		ADP	
Chlorobenzene	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.001	0.01		ADP	
Toluene	D	EPA 624	11/1/18 15:19	**54.99**	mg/kg dry	0.003	0.01		ADP	
Bromomethane	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.003	0.01		ADP	
Bromoform	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.006	0.01		ADP	
Bromodichloromethane	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.005	0.01		ADP	
Benzene	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.002	0.01		ADP	
2-Chloroethyl vinyl ether	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.005	0.01		ADP	
1,4-Dichlorobenzene	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.003	0.01		ADP	
1,3-Dichlorobenzene	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.002	0.01		ADP	
Chloroethane	D	EPA 624	11/1/18 15:19	**ND**	mg/kg dry	0.004	0.01		ADP	
2,3,7,8-TCDD - Dioxin Scan	D	EPA 625	11/7/18 17:50	**ND**	ug/kg dry		0.75		SJM	
1,2,4-Trichlorobenzene	D	EPA 625	12/3/18 21:31	**ND**	mg/kg dry	0.06	0.08	D1, D7	SJM	
Acenaphthene	D	EPA 625	12/3/18 21:31	**ND**	mg/kg dry	0.06	0.08	D1, D7	SJM	
2,4,6-Trichlorophenol	D	EPA 625	12/3/18 21:31	**ND**	mg/kg dry	0.05	0.08	D1, D7	SJM	
4-Methylphenol	D	EPA 625	12/6/18 18:19	**465.2**	mg/kg dry	0.07	0.40	D1, D2, D7, H2, L4, N1	SJM	
4-Chlorophenyl phenyl ether	D	EPA 625	12/3/18 21:31	**ND**	mg/kg dry	0.05	0.08	D1, D7	SJM	
4-Chloro-3-methylphenol	D	EPA 625	12/3/18 21:31	**ND**	mg/kg dry	0.09	0.24	D1, D7	SJM	
4-Bromophenyl phenyl ether	D	EPA 625	12/3/18 21:31	**ND**	mg/kg dry	0.05	0.08	D1, D7	SJM	
3,3-Dichlorobenzidine	D	EPA 625	12/3/18 21:31	**ND**	mg/kg dry	0.09	0.20	D1, D7, PC3	SJM	
2-Nitrophenol	D	EPA 625	12/3/18 21:31	**ND**	mg/kg dry	0.11	0.24	D1, D7	SJM	
2-Methylphenol	D	EPA 625	12/3/18 21:31	**ND**	mg/kg dry	0.05	0.08	D1, D7	SJM	
2,3-Dichloroaniline	D	EPA 625	12/3/18 21:31	**ND**	mg/kg dry	0.09	0.24	D1, D7	SJM	
2-Chlorophenol	D	EPA 625	12/3/18 21:31	**ND**	mg/kg dry	0.05	0.08	D1, D7	SJM	
2-Chloronaphthalene	D	EPA 625	12/3/18 21:31	**ND**	mg/kg dry	0.06	0.08	D1, D7	SJM	
2,6-Dinitrotoluene	D	EPA 625	12/3/18 21:31	**ND**	mg/kg dry	0.06	0.08	D1, D7	SJM	
2,4-Dinitrotoluene	D	EPA 625	12/3/18 21:31	**ND**	mg/kg dry	0.09	0.24	D1, D7	SJM	

Sample ID: **1810128-01** **Sample Start Date/Time** 10/18/2018 9:00:00

Site Location: Wet Haul Sludge **Sample End Date/Time** 10/18/2018 9:00:00

Site Number: 25000-1962 **Sampled By:** Rusty Riccaboni

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
2,4-Dinitrophenol	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.34	0.40	D1, D7	SJM	
2,4-Dimethylphenol	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.14	0.24	D1, D7	SJM	
2,4-Dichlorophenol	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.07	0.08	D1, D7	SJM	
2-Methyl-4,6-dinitrophenol	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.21	0.24	D1, D7	SJM	
Acenaphthylene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
4-Nitrophenol	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.19	0.24	D1, D7	SJM	
bis(2-chloroethyl)ether	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.08	0.24	D1, D7	SJM	
Diethyl phthalate	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.09	0.24	D1, D7, N1	SJM	
Dibenzo(a,h)anthracene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.12	0.24	D1, D7	SJM	
Di-n-octyl phthalate	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.10	0.24	D1, D7	SJM	
Di-n-butyl phthalate	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.10	0.24	D1, D7	SJM	
Chrysene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
Carbazole	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.11	0.24	D1, D7	SJM	
Butylbenzylphthalate	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.08	0.08	D1, D7	SJM	
Fluoranthene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
bis(2-chloroisopropyl)ether	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.07	0.08	D1, D7	SJM	
Fluorene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
bis(2-chloroethoxy)methane	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.08	0.08	D1, D7	SJM	
Benzo[k]fluoranthene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.09	0.24	D1, D7	SJM	
Benzo[ghi]perylene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.12	0.24	D1, D7	SJM	
Benzo[b]fluoranthene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
Benzo[a]pyrene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.08	0.08	D1, D7	SJM	
Benzo[a]anthracene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
Benzidine	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.26	0.40	D1, D7	SJM	
Anthracene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.08	0.08	D1, D7	SJM	
bis(2-ethylhexyl)phthalate	D	EPA 625	12/3/18 21:31	3.99	mg/kg dry	0.11	0.24	D1, D7	SJM	
N-Nitrosodimethylamine	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.08	0.24	D1, D7	SJM	
Phenol	D	EPA 625	12/3/18 21:31	12.95	mg/kg dry	0.10	0.24	D1, D7	SJM	
Phenanthrene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.07	0.08	D1, D7	SJM	
Pentachlorophenol	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.16	0.24	D1, D7	SJM	
Nitrobenzene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.08	0.24	D1, D7	SJM	
Naphthalene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.07	0.08	D1, D7	SJM	
Dimethyl phthalate	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.02	0.08	D1, D7, N1	SJM	
N-Nitrosodiphenylamine	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.24	0.40	D1, D7	SJM	
Pyrene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
N-Nitrosodi-n-propylamine	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.10	0.24	D1, D7	SJM	
n-Decane	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.08	0.08	D1, D7	SJM	
Isophorone	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.07	0.08	D1, D7	SJM	
Indeno(1,2,3-cd)pyrene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.11	0.24	D1, D7	SJM	
Hexachloroethane	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.05	0.08	D1, D7	SJM	
Hexachlorocyclopentadiene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.17	0.24	D1, D7, N1	SJM	
Hexachlorobutadiene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.04	0.08	D1, D7	SJM	
Hexachlorobenzene	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.02	0.08	D1, D7	SJM	
n-Octadecane	D	EPA 625	12/3/18 21:31	ND	mg/kg dry	0.09	0.24	D1, D7	SJM	
1,2-Dibromoethane	D	EPA 8260	11/1/18 15:19	ND	mg/kg dry	0.002	0.01		ADP	
Xylenes, total	D	EPA 8260	11/1/18 15:19	2.01	mg/kg dry	0.003	0.02	N1	ADP	
Styrene	D	EPA 8260	11/1/18 15:19	1.09	mg/kg dry	0.002	0.01	N1	ADP	
o-Xylene	D	EPA 8260	11/1/18 15:19	ND	mg/kg dry	0.002	0.01		ADP	
m,p-Xylenes	D	EPA 8260	11/1/18 15:19	2.01	mg/kg dry	0.003	0.02	N1	ADP	
1,2-Dibromo-3-chloropropane	D	EPA 8260	11/1/18 15:19	ND	mg/kg dry	0.002	0.02		ADP	
1,2,4-Trichlorobenzene	D	EPA 8260	11/1/18 15:19	ND	mg/kg dry	0.002	0.01		ADP	
cis-1,2-Dichloroethene	D	EPA 8260	11/1/18 15:19	ND	mg/kg dry	0.004	0.01		ADP	
Pyridine	D	EPA 8270C	12/3/18 21:31	ND	mg/kg dry	0.06	0.08	D1, D7	SJM	
3 & 4-Methylphenol	D	EPA 8270C	12/6/18 18:19	465	mg/kg dry	0.09	1.20	D1, D2, D7, H2	SJM	
2,4,5-Trichlorophenol	D	EPA 8270C	12/3/18 21:31	ND	mg/kg dry	0.10	0.24	D1, D7	SJM	

Sample ID: **1810128-01**

Site Location: Wet Haul Sludge

Site Number: 25000-1962

Sample Start Date/Time 10/18/2018 9:00:00

Sample End Date/Time 10/18/2018 9:00:00

Sampled By: Rusty Riccaboni

Parameter	Sample Type	Analysis Method	Analysis Date/Time	Analysis Value	Units	MDL	MRL	Data Qualifiers	Analyst	SubLab
1,2-Diphenylhydrazine	D	EPA 8270C	12/3/18 21:31	**ND**	mg/kg dry	0.04	0.08	D1, D7	SJM	

Qualifier Definitions

D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of target analyte.
D7	Minimum Reporting Limit adjusted to reflect sample dilution.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
L4	The associated blank spike recovery was below method acceptance limits.
N1	See case narrative.
PC3	Semi-quantitation is included in the case narrative.
S11	Surrogate recovery was high. Data reported per ADEQ policy 0154.000
S4	Surrogate recovery was above laboratory and method acceptance limits. No target analytes were detected in the sample.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Notes and Definitions

J	Equivalent to E4 Qualifier - Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL) but above MDL.
ND	Analyte NOT DETECTED at or above reporting limit (MDL). Equivalent to E8 Qualifier - Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
C	Sample Type - Composite
CD	Sample Type - Composite Duplicate
D	Sample Type - Discrete
DD	Sample Type - Discrete Duplicate
NR	Not Reported
DET	Analyte DETECTED
DRY	Sample results reported on a dry weight basis.
RPD	Relative Percent Difference.
Analysis Date	Analysis Date represents the final reading date.
Field Results	Field Results are not subject to approval of Laboratory Director.
Solids, Total Volatile	Used for process control samples only.
RE	Re-analysis has been performed.
FD	Field Duplicate
FB	Field Blank
UC	Under Construction
EB	Equipment Blank

Case Narrative(s)

1810128-01
EPA Method 624/8260 Purgeables: Due to linear calibration model, results for analytes flagged with N1 are biased high. MCD 12/12/2018

1810128-01
EPA Method 625 Semi-volatiles: Target analytes flagged with N1 failed the Matrix Spike Recovery or MS/MSD RPD from the same extraction batch, but the spike was performed on a different sample. SJM 01/03/1. Edited by MCD 1/9/19.

Semi-Quantitation
Method: 625
1810128-01

Compound Name	Concentration-mg/Kg
Palmitic Acid	5607
Oleic Acid	9589
Butanoic Acid	850
Butanoic Acid, 3-methyl-	1240
Pentanoic Acid	318

SJM 01/03/19

Pima County Regional Wastewater Reclamation Department

Compliance and Regulatory Affairs Office Laboratory

CHAIN OF CUSTODY

WORK ORDER & SAMPLE(S): 1810128-01

PROJECT & LOCATION: Green Valley WRF - Wet Haul Sludge (Quarterly)

PROJECT-LOCATION NUMBER: 25000-1962 (XXXXX-XXXX)

SAMPLE START DATE: (MM/DD/YY OR MM/DD/YYYY) SAMPLE START TIME: (Military time)

SAMPLE END DATE: 10-18-2018 (MM/DD/YY OR MM/DD/YYYY) SAMPLE END TIME: 0900 (Military time)

CLIENT: IWC

SAMPLER(S): Riccaboni, Silva (Print Last Name(s) Only)

Permit Type: ☐ APP ■ AZPDES ☐ IWC ☐ Investigative ☐ Reuse ☐ Air ■ 503 ☐ Process Control ☐ Other

Matrix: ■ Biosolids ☐ Groundwater ☐ Industrial ☐ Soil ☐ Stormwater ☐ Surface Water ☐ Wastewater ☐ Air ☐ Other

INORGANIC CHEMISTRY

METALS	Tot	Diss	D	C
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Boron	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Calcium	☐	☐	☐	☐
Chromium	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Hardness	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Magnesium	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	×		■	☐
Mercury LL	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Potassium	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Sodium	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Tin	☐	☐	☐	☐

METALS	Tot	Diss	D	C
Titanium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
PPMs *	×		■	☐
TCLP Metals			☐	☐
503 Metals **			■	☐
Dissolved Cr+6			☐	☐

WET METHODS	D	C
Ammonia as N	☐	☐
Chloride	☐	☐
Cyanide, Total contract	■	☐
Cyanide, Amenable	☐	☐
Fluoride	☐	☐
Ignitability	☐	☐
Nitrate as N	☐	☐
Nitrite as N	☐	☐
Nitrate/Nitrite as N	☐	☐
Nitrogen, Total Kjeldahl	☐	☐
Nitrogen, Total as N	☐	☐
Orthophosphate as P	☐	☐
Phosphorus, Total as P	☐	☐
Sulfate	☐	☐
Sulfide	☐	☐
Other	☐	☐
Other	☐	☐

ORGANIC CHEMISTRY

	D	C
Acrolein and Acrylonitrile	■	☐
Dioxin GC/SIM/MS Scan contract	■	☐
Organochlorine Pesticides & PCBs	■	☐
Purgeable Organics (GCMS)	■	☐
Semivolatile Organics (GCMS)	■	☐
Bis(2-ethylhexyl) phthalate	☐	☐
Digester Gas	☐	☐
Oil and Grease	☐	☐
Organic Carbon, Total	☐	☐
Organic Carbon, Dissolved	☐	☐
TCLP Herbicides (Contract Lab)	☐	☐
TCLP Pesticides	☐	☐
TCLP Semivolatile Organics	☐	☐
TCLP Volatile Organics	☐	☐
TTHM	☐	☐
Total Petroleum Hydrocarbons	☐	☐
Volatile Acids	☐	☐
Other	☐	☐
Other	☐	☐

EFFLUENT TOXICITY TESTING

	D	C
Chronic *P. promelas*	☐	☐
Chronic *C. dubia*	☐	☐
Chronic *Selenastrum capricornutum*	☐	☐
Other	☐	☐

MICROBIOLOGY - WET CHEM

	D	C
Alkalinity	☐	☐
BOD	☐	☐
COD	☐	☐
Coliform, Fecal	☐	☐
Coliform, Total	☐	☐
Specific Conductance	☐	☐
E. coli	☐	☐
Oxygen, Dissolved	☐	☐
pH	☐	☐
Solids, Total % contract	■	☐
Solids, Total Dissolved	☐	☐
Solids, Total Suspended	☐	☐
Solids, Total Volatile	☐	☐
Solids, Volatile Suspended	☐	☐
Other	☐	☐

OTHER

	D	C
Paint Filter	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

COMPLIANCE FIELD MEASUREMENTS

	Result	Units
☐ Chlorine *Hach 10014*		µg/L
☐ Specific Conductance *SM 2510 B*		µmhos/cm
☐ Oxygen, Dissolved *SM 4500-O G*		mg/L
☐ pH @ pH Temp *SM 4500-H B*	@	pH Units @ °C
☐ Temperature *SM 2550 B*		°C
☐ Total Depth of Well		feet
☐ Depth to Water		feet
☐ Other		

Comments/Instructions: Cyanide, pesticides and 1 of 2 TSS sent to Lancaster TS. GOS 10-18-18 PO# 19-011596

Septum Blank Prep Date & Initials: 10-09-2018 lej +abr

Chain of Custody Record (Signatures Only)

Relinquished by Sampler:	Received by:	Date:	Time: (Military time)
[signature]	[signature]	10-18-18	1140
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)
Relinquished by:	Received by:	Date:	Time: (Military time)

Sample Integrity/Preservation:

of Bottles Delivered: 9 GOS

Transported on Ice: ☒ YES ☐ NO

Lab Receipt:

Temperature: 3 °C

Initials: GOS

Q6 qualifier? ☐ YES ☒ NO

LAB USE ONLY

Sample Inspection:	Yes	No	NA
Chain of Custody Record completed appropriately?	☒	☐	☐
Sample labels match Chain of Custody?	☒	☐	☐
Correct number of sample bottles were delivered?	☒	☐	☐
Custody seals intact?	☐	☐	☒
Within holding time?	☒	☐	☐
Sufficient sample volume for analysis?	☒	☐	☐
Samples are in properly preserved containers?	☒	☐	☐
Sample containers damaged/leaking/frozen?	☐	☒	☐
40 ml vials headspace, > pea-sized air bubble?	☐	☒	☐
Received from a refrigerator?	☐	☒	☐

* *Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Mercury(Cold Vapor)*
** *As, Cd, Cr, Cu, Pb, Mercury, Mo, Ni, Se, Zn*

B10128-01

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT
INDUSTRIAL WASTEWATER CONTROL SECTION
SAMPLE COLLECTION FIELD NOTES

SAMPLE LOCATION: Green Valley WRF - Wet Haul Sludge

LOCATION ID: 25000-1962 SAMPLERS: Riccaboni, Silva SAMPLE DATE: 10-18-18

Last names only, primary sampler first.

SAMPLE D or C	PARAMETER	START TIME	END TIME	FREQUENCY	Time Flow	Auto Man.	Volume Submitted	Bottle Type & Preservation
D	Priority Pollutant Metals	10-18-18	0900	Grab			1000 ml	Dissolve Metals / Ice
D	503 Metals							
D	Cyanide, Total						1000 ml	Dissolved Metals / Ice
D	Dioxin Scan						1000 ml	Amber / Ice
D	Org. Pesticides						1000 ml	Amber / Ice
D	Semivolatile Organics						1000 ml	Amber / Ice
D	Solids, Total						1000 ml	General Purpose / Ice
D	Solids, Total						1000 ml	General Purpose / Ice
D	Acrolein and Acrylonitrile						40 ml	Septum vial / Ice
D	Acrolein and Acrylonitrile						40 ml	Septum vial / Ice
D	Acrolein and Acrylonitrile						40 ml	Septum vial / Ice
D	Acrolein and Acrylonitrile						40 ml	Septum vial / Ice
D	Purgeable Organics						40 ml	Septum vial / Ice
D	Purgeable Organics						40 ml	Septum vial / Ice
D	Purgeable Organics						40 ml	Septum vial / Ice
D	Purgeable Organics						40 ml	Septum vial / Ice

pH METER CALIBRATION LOG

Time	Model #	Serial #	Auto/Man.	Buffer	Reading	Buffer	Reading	Temp.	Slope	Initials
			N/A							

FIELD MEASUREMENTS

Sample	Parameter & Method	Result	Time	Initials	Sample	Parameter & Method	Result	Time	Initials
		N/A				N/A			

Notes: All Samples are Unpreserved

EQUIPMENT USED: ☐ Grab Sampler ☐ Automatic Sampler ☐ Electric Pump ☐ Other _____

CHAIN OF CUSTODY RECORD

LEGEND Technical Services, Inc.
☐ 17631 N. 25th Avenue • Phoenix, AZ 85023 • (602) 324-6100 • Fax (602) 324-6101
☐ 4585 S. Palo Verde Rd, Ste 423 • Tucson, AZ 85714 • (520) 327-1234 • Fax (520) 327-0518

Page 1 of 1

Please Print Clearly

Client Name	Address	City	State	Zip	Phone	Fax Number or Email Address
Pima County CRAO Lab	2955 W Calle Agua Nueva	Tucson	AZ	85745	520-724-6016	joseph.doranski@pima.gov

Project Name	Project Number	Contact	P.O. No.	
Green Valley		Joe Doranski	19-011596	Fax Results ☐ Email Results ☒ QC Report ☐ EDD ☒ Special Detection Limits ☐

DW=Drinking Water, WW=Wastewater, SW=Surface Water, GW=Groundwater, O=Other, S=Soil/Solid, T=Travel Blank, F=Food, G=Sludge/Biosolids

Laboratory Authorization Required for Rush
☑ Standard 10 - 15 Day
☐ Other _____

Client's Sample Identification	Date	Time	Sample Location	Composite	Grab	Sample Type	Compliance	No. of Containers	EPA 608 extended	EPA 8081/8082 mg/kg	Total cyanide mg/kg	Total % solids dry weight
1810128-01	10/18/18	900	Green Valley WRF - wet haul sludge		X	G	X	3		X	X	X

Comments / Special Instructions: Analyte list emailed. Samples are unpreserved. EPA 608, total PCBs and Methoxychlor. Please report results from the sludge samples in mg/kg dry weight.

		°C
	Y	N
	Y	N
	Y	N

	Sampler Signature	Date	Signature	Date
①	Sampler Printed Name: Greg Spence	Time 1105	Printed Name: Alyssa Marsa	Time 1105
②	Signature	Date	Signature	Date
	Printed Name	Time	Printed Name	Time
③	Signature	Date	Signature	Date
	Printed Name	Time	Printed Name	Time

WHITE-LAB YELLOW-CLIENT

FORM CS-016.2 (07/18)

PIMA COUNTY

WASTEWATER RECLAMATION

COMPLIANCE AND REGULATORY AFFAIRS OFFICE LABORATORY
2955 W Calle Agua Nueva, Tucson, AZ 85745
Telephone: (520) 724-6200

LIMS CHECKLIST FOR SUBCONTRACT DATA

LIMS ID	**1810128-01**	**DO**	**19-011596**
CONTRACT LAB	**Legend Technical Services, St. Paul; Phoenix**	**SAMPLE GROUP**	**Pesticides – Green Valley**
ANALYSES	**Pesticides, CN and %TS (Biosolids)**	**REPORT ID**	**18J2331**

TRANSFER & CONVERT FILES:	
Was the contract lab spreadsheet file saved to \\Splimsapp\elementshare\TransferIn ?	Y
Was the above mentioned file converted from a .xls file to a .mdb file for each WO#, and further, for each subcontract location, or separate analysis (as applicable), on the contract lab report? (Element>Project Management>Reports)	Y
Was the converted file attached to the sample in LIMS?	Y
VALIDATING CONTRACT LAB REPORT , CHAIN OF CUSTODY(S), AND DO#:	
Contract Lab Report signed and dated?	Y
Copy of contract lab COC included with contract Lab Report?	Y
Contract lab COC verified with CRAO COC(s) for Sample ID, Sample Date, Analysis Requested?	Y
Sample dates and received dates on the CL report match the CL COC?	Y
CL report includes all requested analysis?	Y
CL licensed in AZ for the reported methods?	Y
Check that DO matches COC in types and number of tests?	N/A
DO received in Pima Core?	N/A
CONTRACT LAB REPORT, EXCEL SPREADSHEET, and QC:	
CL report and CL spreadsheet report the same sample results, sample date, and analysis date?	Y
Was a Case Narrative Included in Contract Lab report?	Y
Data packet includes QC Report from primary lab and any secondary subcontract labs?	Y
Did CL report list applicable AZ Data Qualifiers?	Y
Were there any dilutions made to samples that were reported as ND?	N
If so, were they qualified due to matrix interference?	NA
Was QC included for every analysis method: typically Blk, LCS, MS, MSD?	Y
Did QC pass stated acceptance limits, or was it qualified?	Y
Were samples analyzed within required holding times?	Y
Check that MDLs are below water quality standards, If not notify Belinda Gamboa-Felix? (Cyanide, Hexachlorobenzene)	Y
Semivolatiles & Volatiles: Check that all analytes were delivered?	N/A
COMPLIANCE LIMIT REVIEW	
Were results compared to the discharge permit?.	N/A
Was Belinda Gamboa-Felix notified of any exceedences?	N/A
WET TESTING SPECIFIC REQUIREMENTS	
Statement of Pass/Fail reflected in End Points?	N/A
Report states if zeolite treatment was utilized?	N/A
Survival and Reproduction or Growth Data included (P. promelas or Ceriodaphnia only)?	N/A
Chemistry data included?	N/A

Reference Toxicant Test Results and Control Chart within limits?	N/A
PMSD Determination included and within acceptable range? (minimum acceptable= 13)	N/A
End Points include TUc, NOEC, LOEC, and IC25?	N/A
Statistics verify endpoints	N/A
Control Charts Updated to include month of analysis	N/A

Reviewer Initials:	**ABR**	**Review Date:**	**12-14-18**

PEER/FINAL REVIEW:	PR	FR
LIMS/Excel data matches printed CL report?	✓	
Analysis dates are correct?	✓	
Correct Data Qualifiers included if necessary.	✓	
CRAO report shows result is from Contract Lab?	✓	
CRAO report shows correct Contract Lab (e.g. Legend Technical Services of Arizona, Phoenix)?	✓	
DO received in Pima Core	✓	
Analysis set to Reported?		✓

Peer Reviewer Initials:	JD	**Review Date:**	12-19-18
Biomonitor Supervisor Initials:	N/A	**Review Date:**	
Final Reviewer Initials:	JEC	**Review Date:**	12·28·18

CORRECTIVE ACTION REPORT:			
Preliminary Review:		Date:	
QA/QC Review:		Date:	
Data Entry:		Date:	
Peer Review:		Date:	
Lab Supervisor:		Date:	

LIMS #:	**DEVIATION:**	**CORRECTIVE ACTION:**

DEVIATIONS FROM ACCEPTABLE QA/QC:

Missing QC Report/Data
Holding Time for analysis exceeded.
Inappropriate dilution performed.
Missing COC.
Missing Data Qualifiers.
Incorrect Analysis Method.
Incorrect Sample IDs.
Other.

CORRECTIVE ACTION:

Request report correction from Subcontract Lab project manager.
Add missing Data Qualifiers.
Notify data end-user of deviation.
Arrange for resampling.
Other.

QA-18 SubcontractDataChecklist-Reports Rev 16
Effective 7-25-16

Page 2 of 2

LEGEND
Technical Services, Inc.

4585 S. Palo Verde Rd., Ste. 423 • Tucson, AZ 85714
P (520) 327-1234 • F (520) 327-0518
www.legend-group.com

20 November 2018

Joe Doranski
Pima County RWRD CRAO Lab
2955 W Calle Agua Nueva
Tucson, AZ 85745
Fax: (520) 579-6002

RE: Pesticides

Laboratory Work Order No.: 18J2331

Legend Technical Services of Arizona, Inc. is pleased to provide the enclosed analytical results for the aforementioned project. These results relate only to the items tested. This cover letter and the accompanying pages represent the full report for these analyses and should only be reproduced in full. Samples for this project were received by the laboratory on 10/22/18 12:20.

The samples were processed in accordance with the Chain of Custody document and the results presented relate only to the samples tested. The Chain of Custody is considered part of this report.

All samples will be retained by LEGEND for 30 days from the date of this report and then discarded unless other arrangements are made. Due to hold-time and method sample volume requirements, microbiological samples are not retained unless other arrangements are made.

This entire report was reviewed and approved for release by the undersigned. If you have any questions concerning this report, please feel free to contact me.

Sincerely,
LEGEND TECHNICAL SERVICES OF ARIZONA, INC.

Kaitlyn Martel

Kaitlyn M. Martel For P. Brian Merritt
Client Services Representative
(602) 324-6100

This laboratory report is confidential and is intended for the sole use of LEGEND and it's client.

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Green Valley 10/18/18 Project Manager: Joe Doranski	Reported: 11/20/18 09:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
1810128-01	18J2331-01	Solid (Dry Weight)	Grab	10/18/18 09:00	10/22/18 12:20

Sample Condition Upon Receipt:

Temperature: 4.10 C

All samples were received in acceptable condition unless noted otherwise in the case narrative.

Case Narrative:

Holding Times: All holding times were met unless otherwise qualified.

QA/QC Criteria: All analyses met method requirements unless otherwise qualified.

Certifications: AZ(PHX)0004, AZ(TUC)OOO4, AIHA#102982, CDC ELITE Member.

Accreditation is applicable only to the test methods specified on the scope of accreditation held by LEGEND.

Comments: All reporting limits utilized in this report are from the approved method with the lowest possible levels of detection. All samples were analyzed on a "wet" basis unless designated as "dry weight".

This report contains data that were produced by a subcontracted laboratory certified for the fields of testing performed.

Legend Technical Services, St. Paul AZ0557

Bach Pham

651.221.4062

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Green Valley 10/18/18 Project Manager: Joe Doranski	Reported: 11/20/18 09:34

1810128-01 (18J2331-01) Solid (Dry Weight) (Grab) Sampled: 10/18/18 09:00 Received: 10/22/18 12:20

Legend Technical Services, Inc. #AZ0557

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PCB 8082A										
Aroclor 1016	<	1.8	13	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 21:59	EPA 8082A	E8a
Aroclor 1221	<	3.3	13	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 21:59	EPA 8082A	E8a
Aroclor 1232	<	3.3	13	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 21:59	EPA 8082A	E8a
Aroclor 1242	<	1.1	13	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 21:59	EPA 8082A	E8a
Aroclor 1248	<	1.3	13	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 21:59	EPA 8082A	E8a
Aroclor 1254	<	1.6	13	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 21:59	EPA 8082A	E8a
Aroclor 1260	<	1.4	13	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 21:59	EPA 8082A	E8a
Surrogate: Decachlorobiphenyl			*122 %*	*57.5-120*		*B8J3101*	*10/31/18*	*11/01/18*	*EPA 8082A*	*S11*
Surrogate: Tetrachloro-meta-xylene			*104 %*	*57.1-114*		*B8J3101*	*10/31/18*	*11/01/18*	*EPA 8082A*	
PERCENT SOLIDS										
% Solids	3.0			%	1	B7J1118	06/22/18 00:00	11/12/18 11:32	% calculation	
PESTICIDES 8081B										
4,4'-DDD	<	0.47	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
4,4'-DDE	<	0.47	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
4,4'-DDT	<	0.47	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
Aldrin	<	0.44	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
alpha-BHC	<	0.43	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
alpha-Chlordane	<	0.47	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
beta-BHC	<	0.45	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
delta-BHC	<	0.46	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
Dieldrin	<	0.47	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
Endosulfan I	<	0.45	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
Endosulfan II	<	0.47	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
Endosulfan sulfate	<	0.48	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
Endrin	<	0.45	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
Endrin aldehyde	<	0.42	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
Endrin ketone	<	0.45	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
gamma-BHC (Lindane)	<	0.44	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
gamma-Chlordane	<	0.46	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
Heptachlor	<	0.44	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
Heptachlor epoxide	<	0.46	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
Methoxychlor	<	0.46	2.5	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
Toxaphene	<	0.94	5.0	mg/kg dry	1	B8J3101	10/31/18 08:15	11/01/18 03:41	EPA 8081B	E8a
Surrogate: Decachlorobiphenyl			*116 %*	*52.5-134*		*B8J3101*	*10/31/18*	*11/01/18*	*EPA 8081B*	
Surrogate: Tetrachloro-meta-xylene			*108 %*	*59.6-120*		*B8J3101*	*10/31/18*	*11/01/18*	*EPA 8081B*	

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Green Valley 10/18/18 Project Manager: Joe Doranski	Reported: 11/20/18 09:34

1810128-01 (18J2331-01) Solid (Dry Weight) (Grab) Sampled: 10/18/18 09:00 Received: 10/22/18 12:20

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Legend Technical Services of Arizona, Inc.										
Inorganic Chemistry										
Cyanide, Total	<	0.794	3.10	mg/kg dry	1	B8J1848	10/26/18 10:00	10/26/18 15:59	EPA 9014	E8
% Solids	3		1	%	1	B8J1770	10/24/18 15:35	10/24/18 15:35	SM 2540 G	

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Green Valley 10/18/18 Project Manager: Joe Doranski	Reported: 11/20/18 09:34

Inorganic Chemistry - Quality Control

Legend Technical Services of Arizona, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8J1770 - NO PREP										
Blank (B8J1770-BLK1)				*Prepared & Analyzed: 10/24/18*						
% Solids	<1	1	%							
Duplicate (B8J1770-DUP1)		**Source: 18J2538-01**		*Prepared & Analyzed: 10/24/18*						
% Solids	62	1	%		61			0.2	5	
Batch B8J1848 - NO PREP										
Blank (B8J1848-BLK1)				*Prepared & Analyzed: 10/26/18*						
Cyanide, Total	<0.010	0.010	mg/kg wet							
LCS (B8J1848-BS1)				*Prepared & Analyzed: 10/26/18*						
Cyanide, Total	0.045	0.010	mg/kg wet	0.0500		90	80-120			
LCS Dup (B8J1848-BSD1)				*Prepared & Analyzed: 10/26/18*						
Cyanide, Total	0.045	0.010	mg/kg wet	0.0500		90	80-120	0	20	
Matrix Spike (B8J1848-MS1)		**Source: 18J2672-02**		*Prepared & Analyzed: 10/26/18*						
Cyanide, Total	1.69	0.546	mg/kg dry	2.73	<0.546	62	80-120			M2
Matrix Spike Dup (B8J1848-MSD1)		**Source: 18J2672-02**		*Prepared & Analyzed: 10/26/18*						
Cyanide, Total	1.69	0.546	mg/kg dry	2.73	<0.546	62	80-120	0	20	M2

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Green Valley 10/18/18 Project Manager: Joe Doranski	**Reported:** 11/20/18 09:34

PCB 8082A - Quality Control

Legend Technical Services, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8J3101 - EPA 3545A ASE Extraction										
Blank (B8J3101-BLK1)				*Prepared & Analyzed: 10/31/18*						
Aroclor 1016	<0.20	0.20	mg/kg wet							
Aroclor 1221	<0.20	0.20	mg/kg wet							
Aroclor 1232	<0.20	0.20	mg/kg wet							
Aroclor 1242	<0.20	0.20	mg/kg wet							
Aroclor 1248	<0.20	0.20	mg/kg wet							
Aroclor 1254	<0.20	0.20	mg/kg wet							
Aroclor 1260	<0.20	0.20	mg/kg wet							
LCS (B8J3101-BS2)				*Prepared & Analyzed: 10/31/18*						
Aroclor 1016	0.402	0.20	mg/kg wet	0.334		120	70-130			
Aroclor 1260	0.368	0.20	mg/kg wet	0.334		110	70-130			
Matrix Spike (B8J3101-MS2)		**Source: 1804525-01**		*Prepared: 10/31/18 Analyzed: 11/01/18*						
Aroclor 1016	0.542	0.37	mg/kg wet	0.622	<0.37	87.1	70-130			
Aroclor 1260	0.575	0.37	mg/kg wet	0.622	<0.37	92.5	70-130			
Matrix Spike Dup (B8J3101-MSD2)		**Source: 1804525-01**		*Prepared: 10/31/18 Analyzed: 11/01/18*						
Aroclor 1016	0.606	0.37	mg/kg wet	0.623	<0.37	97.4	70-130	11.3	27	
Aroclor 1260	0.578	0.37	mg/kg wet	0.623	<0.37	92.9	70-130	0.556	37.3	

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Green Valley 10/18/18 Project Manager: Joe Doranski	Reported: 11/20/18 09:34

PESTICIDES 8081B - Quality Control

Legend Technical Services, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8J3101 - EPA 3545A ASE Extraction										
Blank (B8J3101-BLK1)				*Prepared & Analyzed: 10/31/18*						
4,4'-DDD	<0.040	0.040	mg/kg wet							
4,4'-DDE	<0.040	0.040	mg/kg wet							
4,4'-DDT	<0.040	0.040	mg/kg wet							
Aldrin	<0.040	0.040	mg/kg wet							
alpha-BHC	<0.040	0.040	mg/kg wet							
alpha-Chlordane	<0.040	0.040	mg/kg wet							
beta-BHC	<0.040	0.040	mg/kg wet							
delta-BHC	<0.040	0.040	mg/kg wet							
Dieldrin	<0.040	0.040	mg/kg wet							
Endosulfan I	<0.040	0.040	mg/kg wet							
Endosulfan II	<0.040	0.040	mg/kg wet							
Endosulfan sulfate	<0.040	0.040	mg/kg wet							
Endrin	<0.040	0.040	mg/kg wet							
Endrin aldehyde	<0.040	0.040	mg/kg wet							
Endrin ketone	<0.040	0.040	mg/kg wet							
gamma-BHC (Lindane)	<0.040	0.040	mg/kg wet							
gamma-Chlordane	<0.040	0.040	mg/kg wet							
Heptachlor	<0.040	0.040	mg/kg wet							
Heptachlor epoxide	<0.040	0.040	mg/kg wet							
Methoxychlor	<0.040	0.040	mg/kg wet							
Toxaphene	<0.080	0.080	mg/kg wet							
LCS (B8J3101-BS1)				*Prepared & Analyzed: 10/31/18*						
4,4'-DDD	0.0947	0.040	mg/kg wet	0.0833		114	70-130			
4,4'-DDE	0.0943	0.040	mg/kg wet	0.0833		113	70-130			
4,4'-DDT	0.0950	0.040	mg/kg wet	0.0833		114	70-130			
Aldrin	0.0923	0.040	mg/kg wet	0.0833		111	70-130			
alpha-BHC	0.0943	0.040	mg/kg wet	0.0833		113	70-130			
alpha-Chlordane	0.0940	0.040	mg/kg wet	0.0833		113	70-130			
beta-BHC	0.0930	0.040	mg/kg wet	0.0833		112	70-130			
delta-BHC	0.101	0.040	mg/kg wet	0.0833		121	70-130			
Dieldrin	0.0950	0.040	mg/kg wet	0.0833		114	70-130			
Endosulfan I	0.0937	0.040	mg/kg wet	0.0833		112	70-130			
Endosulfan II	0.0950	0.040	mg/kg wet	0.0833		114	70-130			
Endosulfan sulfate	0.0977	0.040	mg/kg wet	0.0833		117	70-130			
Endrin	0.0917	0.040	mg/kg wet	0.0833		110	70-130			
Endrin aldehyde	0.0923	0.040	mg/kg wet	0.0833		111	70-130			
Endrin ketone	0.0923	0.040	mg/kg wet	0.0833		111	70-130			
gamma-BHC (Lindane)	0.0943	0.040	mg/kg wet	0.0833		113	70-130			
gamma-Chlordane	0.0947	0.040	mg/kg wet	0.0833		114	70-130			
Heptachlor	0.0940	0.040	mg/kg wet	0.0833		113	70-130			
Heptachlor epoxide	0.0937	0.040	mg/kg wet	0.0833		112	70-130			
Methoxychlor	0.0920	0.040	mg/kg wet	0.0833		110	70-130			

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Green Valley 10/18/18 Project Manager: Joe Doranski	**Reported:** 11/20/18 09:34

PESTICIDES 8081B - Quality Control

Legend Technical Services, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8J3101 - EPA 3545A ASE Extraction										
Matrix Spike (B8J3101-MS1)		**Source: 1804525-01**		*Prepared: 10/31/18 Analyzed: 11/01/18*						
4,4'-DDD	0.155	0.072	mg/kg wet	0.149	<0.072	104	70-130			
4,4'-DDE	0.164	0.072	mg/kg wet	0.149	<0.072	110	70-130			
4,4'-DDT	0.153	0.072	mg/kg wet	0.149	<0.072	102	70-130			
Aldrin	0.154	0.072	mg/kg wet	0.149	<0.072	104	70-130			
alpha-BHC	0.165	0.072	mg/kg wet	0.149	<0.072	111	70-130			
alpha-Chlordane	0.157	0.072	mg/kg wet	0.149	<0.072	105	70-130			
beta-BHC	0.165	0.072	mg/kg wet	0.149	<0.072	111	70-130			
delta-BHC	0.193	0.072	mg/kg wet	0.149	<0.072	130	70-130			
Dieldrin	0.164	0.072	mg/kg wet	0.149	<0.072	110	70-130			
Endosulfan I	0.159	0.072	mg/kg wet	0.149	<0.072	106	70-130			
Endosulfan II	0.160	0.072	mg/kg wet	0.149	<0.072	107	70-130			
Endosulfan sulfate	0.168	0.072	mg/kg wet	0.149	<0.072	113	70-130			
Endrin	0.160	0.072	mg/kg wet	0.149	<0.072	107	70-130			
Endrin aldehyde	0.141	0.072	mg/kg wet	0.149	<0.072	94.4	70-130			
Endrin ketone	0.156	0.072	mg/kg wet	0.149	<0.072	104	70-130			
gamma-BHC (Lindane)	0.157	0.072	mg/kg wet	0.149	<0.072	106	70-130			
gamma-Chlordane	0.160	0.072	mg/kg wet	0.149	<0.072	108	70-130			
Heptachlor	0.157	0.072	mg/kg wet	0.149	<0.072	105	70-130			
Heptachlor epoxide	0.153	0.072	mg/kg wet	0.149	<0.072	103	70-130			
Methoxychlor	0.153	0.072	mg/kg wet	0.149	<0.072	103	70-130			
Matrix Spike Dup (B8J3101-MSD1)		**Source: 1804525-01**		*Prepared: 10/31/18 Analyzed: 11/01/18*						
4,4'-DDD	0.156	0.071	mg/kg wet	0.149	<0.071	105	70-130	0.647	21.9	
4,4'-DDE	0.162	0.071	mg/kg wet	0.149	<0.071	109	70-130	1.58	20.4	
4,4'-DDT	0.148	0.071	mg/kg wet	0.149	<0.071	99.6	70-130	2.89	18.7	
Aldrin	0.155	0.071	mg/kg wet	0.149	<0.071	104	70-130	0.268	22.6	
alpha-BHC	0.165	0.071	mg/kg wet	0.149	<0.071	111	70-130	0.241	23.7	
alpha-Chlordane	0.156	0.071	mg/kg wet	0.149	<0.071	105	70-130	0.500	22.3	
beta-BHC	0.158	0.071	mg/kg wet	0.149	<0.071	106	70-130	4.17	27.7	
delta-BHC	0.193	0.071	mg/kg wet	0.149	<0.071	130	70-130	0.119	24.2	
Dieldrin	0.161	0.071	mg/kg wet	0.149	<0.071	108	70-130	1.95	21.6	
Endosulfan I	0.156	0.071	mg/kg wet	0.149	<0.071	105	70-130	1.63	22	
Endosulfan II	0.156	0.071	mg/kg wet	0.149	<0.071	105	70-130	2.38	20.6	
Endosulfan sulfate	0.163	0.071	mg/kg wet	0.149	<0.071	110	70-130	3.00	20.4	
Endrin	0.159	0.071	mg/kg wet	0.149	<0.071	107	70-130	0.493	22.4	
Endrin aldehyde	0.133	0.071	mg/kg wet	0.149	<0.071	89.6	70-130	5.34	35.9	
Endrin ketone	0.151	0.071	mg/kg wet	0.149	<0.071	102	70-130	2.84	21.3	
gamma-BHC (Lindane)	0.156	0.071	mg/kg wet	0.149	<0.071	105	70-130	0.880	23.6	
gamma-Chlordane	0.158	0.071	mg/kg wet	0.149	<0.071	106	70-130	1.24	22.3	
Heptachlor	0.153	0.071	mg/kg wet	0.149	<0.071	103	70-130	2.43	26.1	
Heptachlor epoxide	0.154	0.071	mg/kg wet	0.149	<0.071	103	70-130	0.269	21.3	
Methoxychlor	0.143	0.071	mg/kg wet	0.149	<0.071	96.4	70-130	6.54	19.4	

Pima County RWRD CRAO Lab	Project: Pesticides	
2955 W Calle Agua Nueva	Project Number: Green Valley 10/18/18	Reported:
Tucson, AZ 85745	Project Manager: Joe Doranski	11/20/18 09:34

Notes and Definitions

S11	Surrogate recovery was high. Data reported per ADEQ policy 0154.000.
M2	Matrix spike recovery was low; the associated blank spike recovery was acceptable.
E8a	Analyte reported to the MDL per project specification. Target analyte was not detected in the sample.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
BLK	Method Blank
LCS/Dup	Laboratory Control Sample/Laboratory Fortified Blank/Duplicate
MS/Dup	Matrix Spike/Duplicate
Dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Green Valley 10/18/18 Project Manager: Joe Doranski	Reported: 11/20/18 09:34

18J2331

CHAIN OF CUSTODY RECORD

LEGEND Technical Services, Inc.

☐ 17831 N. 25th Avenue • Phoenix, AZ 85023 • (602) 324-6100 • Fax (602) 324-6101
☐ 4585 S. Palo Verde Rd, Ste 423 • Tucson AZ 85714 • (520) 327-1204 • Fax (520) 327-0518

Page 1 of 1

Please Print Clearly

CLIENT INFORMATION

Client Name	Address	City	State	Zip	Phone	Fax Number or Email Address
Pima County CRAO Lab	2956 W Calle Agua Nueva	Tucson	AZ	85745	620-724-6016	joseph.doranski@pima.gov

Project Name	Project Number	Contact	P.O. No.	
Green Valley		Joe Doranski	19-011596	Fax Results ☐ Email Results ☑ CC Report ☐ EDD ☑ Special Detection Limits ☐

SAMPLE TYPE CODES DW=Drinking Water, WW=Wastewater, SW=Surface Water, GW=Groundwater, S=Soil/Solid, T=Trip Blank, F=Food, G=Sludge/Biosolids, O=Other

TURNAROUND TIMES Laboratory Authorization Required for Rush: ☑ Standard 10 - 15 Day ☐ Other

REQUESTED ANALYSES

Client's Sample Identification	Date	Time	Sample Location	Composite	Grab	Sample Type	Compliance	No. of Containers	EPA 608 extended	EPA 608 (1668) mod/ng	Total cyanide mg/kg	Total % solids dry weight	
1810128-01	10/18/18	900	Green Valley WRF - wet haul sludge		X	G	X	3		X	X	X	-01

TO ENSURE COMPLETION OF ANALYSIS, SAMPLES MUST BE RECEIVED AT LEAST 4 HOURS PRIOR TO THE HOLD TIME EXPIRATION

Comments / Special Instructions: Analyte list emailed. Samples are unpreserved. EPA 608, total PCBs and Methoxychlor. Please report results from the sludge samples in mg/kg dry weight.

SAMPLE CONDITION UPON RECEIPT (LAB USE ONLY)

Number of Containers	3
Temperature	4.1 °C
Custody Seals Intact	Y N
Sample Preservation	Y N
Sample Labels Complete	Y N

RELINQUISHED BY / SAMPLES RECEIVED BY

	Relinquished By	Date / Time	Received By	Date / Time
1	Sampler Signature / Sampler Printed Name: Greg Spence	10/22/18 1105	Signature / Printed Name: Alyssa Mazza	10/22/18 1105
2	Signature / Printed Name: Amanda Picazzo	10/22/18 1600	Signature / Printed Name: Courier	10/22/18 1600
3	Signature / Printed Name: Courier	10/23/18 0730	Signature / Printed Name: [illegible]	10/23/18 0730

@lab 10/24/18 1220

WHITE-LAB YELLOW-CLIENT

FORM GS-016.2 (07/15)

Pima County RWRD CRAO Lab 2955 W Calle Agua Nueva Tucson, AZ 85745	Project: Pesticides Project Number: Green Valley 10/18/18 Project Manager: Joe Doranski	Reported: 11/20/18 09:34

Legend Technical Services of Arizona, Inc.

LEGEND Technical Services, Inc.

PO Number:

SUBCONTRACT ORDER
18J2331

SENDING LABORATORY:
Legend Technical Services of Arizona, Inc.
17631 North 25th Avenue
Phoenix, AZ 85023
Phone: 602-324-6100
Fax: 602-324-6101
Project Manager: P. Brian Merritt
Project: Pesticides

RECEIVING LABORATORY:
Legend Technical Services, St Paul AZ0557
88 Empire Drive
Saint Paul, MN 55103
Phone :(800) 826-8553
Fax: (651) 642 1239

Client: Pima County RWRD CRAO Lab%Tucson

Analysis	Due	Expires	Leach Date & Time	Sample Comments
Sample ID: 18J2331-01 Solid (Dry We		**Sampled:10/18/18 09:00**		
8081- Subcontract	10/31/18 15:00	10/25/18 09:00		
8082-Subcontract	10/31/18 15:00	11/01/18 09:00		

Containers Supplied:
02_1000mL Amber Glass Cool to 4° C (A)
03_1000ml Plastic Cool to 4° C (B)

For method 608: _____pH check _____Cl2 check
Special Instructions/Comments:

* The sample matrix for leachates supplied to the MN laboratory reflects the matrix of the original sample received by LEGEND AZ.
**For matrices other than Drinking Water requiring drinking water methods (such as EPA 505, etc.), a 10x dilution is acceptable. Appropriate data qualifiers are to be used.

Released By (Print & Sign)	Date	Time	Received By (Print & Sign)	Date	Time
Amanda Pleazza x	10/22/18	16:00	Fed Ex x	10/22/18	16:00
x					

Page 1 of 1

End of Volume 2 of 2

ANNUAL BIOSOLIDS REPORT 2018

PIMA COUNTY
REGIONAL WASTEWATER RECLAMATION DEPARTMENT
PIMA COUNTY, ARIZONA