



John R. Kasich, Governor  
Mary Taylor, Lt. Governor  
Scott J. Nally, Director

August 29, 2013

Ms. Barb Wagner  
Metropolitan Sewer District of Greater Cincinnati  
1600 Gest Street  
Cincinnati, Ohio 45204

**RE: Compliance Evaluation Inspection  
NPDES Permit 1PG00018\*FD/OH0025623  
Mayflower Estates WWTP**

Dear Ms. Wagner:

On August 23, 2013, I inspected the Mayflower Estates Wastewater Treatment Plant for compliance with the NPDES permit for this facility. Attached is a copy of my inspection report. A Notice of Violation is included in the report for the violations reported during the review period. No response is required for this inspection. If you have any questions regarding the compliance evaluation, please call me at (937) 285-6101.

Sincerely,

Mary Osika  
Environmental Specialist  
Division of Surface Water

MO/kb

Enclosure

cc: Bob Houser, MSD  
Barb Wagner, MSD



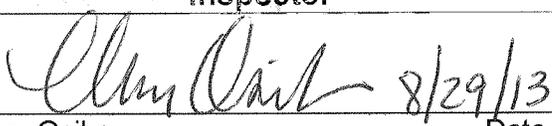
State of Ohio Environmental Protection Agency  
Southwest District Office

NPDES Compliance Inspection Report

Section A: National Data System Coding					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
1PG00018*FD	OH0025623	8/23/2013	Compliance	State	Public

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Mayflower Estates WWTP 3055 Overdale Drive Cincinnati, Ohio	10:00 am	May 1, 2011
	Exit Time	Permit Expiration Date
	11:00 am	April 30, 2016
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
Barb Wagner, Manager Wastewater Treatment Bob Houser, Plant Supervisor	(513) 324-1930 (513) 353-9940	
Name, Address and Title of Responsible Official	Phone Number	
Barb Wagner, Manager Wastewater Treatment Metropolitan Sewer District of Greater Cincinnati 1600 Gest Street Cincinnati, Ohio 45204	(513) 324-1930	

Section C: Areas Evaluated During Inspection					
(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)					
S	Permit	S	Flow Measurement	N	Pretreatment
S	Records/Reports	N	Laboratory	S	Compliance Schedule
S	Operations & Maintenance	M	Effluent/Receiving Waters	S	Self-Monitoring Program
S	Facility Site Review	S	Sludge Storage/Disposal	N	Other
S	Collection System				

Section D: Summary of Findings (Attach additional sheets if necessary)	
See end of Report for Summary of Findings.	
Inspector	Reviewer
 Mary Osika Environmental Specialist Division of Surface Water Southwest District Office	 Martyn Burt Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office
8/29/13 Date	8/30/13 Date

Sections E thru K: Complete on all inspections as appropriate  
**Y – Yes, N – No, N/A – Not Applicable, N/E – Not Evaluated**

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**Section E: Permit Verification**

Inspection observations verify the permit

- (a) Correct name and mailing address of permittee ..... Y
- (b) Flows and loadings conform with NPDES permit..... Y
- (c) Treatment processes are as described in permit application... Y
- (d) All discharges are permitted..... Y
- (e) Number and location of discharge points are as described  
in permit..... Y
- (f) Storm water discharges properly permitted..... N/A

**Comments/Status:**

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**Section F: Compliance**

- (a) Any permit violations since the last inspection..... Y
- (b) Appropriate Non-compliance notification of violations..... Y
- (c) Permittee is taking actions to resolve violations..... Y
- (d) Permittee has a compliance schedule..... Y
- (e) Compliance schedule contained in...NPDES Permit Compliance Schedule
- (f) Permittee is in compliance with schedule..... Y
- (g) Has biomonitoring shown toxicity in discharge since last inspection N/E

**Comments/Status: See summary at end of report for violations and NOV.**

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**Section G: Operation & Maintenance**

**Treatment Works:**

Treatment facility properly operated and maintained

- (a) Standby power available.....generator  or dual feed ..... N
  - i. What does the back-up power source operate.....
  - ii. How often is the generator tested under load.....
- (b) Which components have an alarm system available for power or  
equipment failures.....

**Facility has telemetry for power outage or treatment unit failure. EQ tank can handle several hours of storage during a power outage.**

- (c) All treatment units in service other than backup units..... Y
- (d) Software system is used for scheduling routine & preventative maintenance ..... Y
- (e) Any major equipment breakdown since last inspection..... Y
- (f) Operation and maintenance manual provided and maintained..... Y
- (g) Any plant bypasses since last inspection..... N
- (h) Any plant upsets since last inspection..... N

**Comments/Status:** (e) air system had mechanical issues that resulted in ammonia nitrogen effluent limit violations. See Summary of Findings.

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**Section G: Operation & Maintenance con't**

**Record Keeping/Operator of Record:**

- (a) Wastewater Treatment Works classification (OAC 3745-7)..... Y
- (b) Operator of Record holds unexpired license of class required by Permit..... Y
- (c) Copy of certificate of Operator of Record displayed on-site..... Y
- (d) Has the Operator of Record submitted an ORC Notification form.. Y
- (e) Minimum operator staffing requirements fulfilled (OAC 3745-7.... Y
- (f) If a Staffing Reduction plan has been approved, are the stipulations of the plan being met..... N/A
- (g) Operator of Record log book provided..... Y
- (h) Format of log book - hard bound book
- (i) Log book kept onsite (in an area protected from weather)..... Y
- (j) Log book contains the following:
  - I. Identification of treatment works..... Y
  - II. Date/times of arrival/departure for Operator of Record and any other operator required by OAC 3745-7..... Y
  - iii. Daily record of operator and maintenance activities (including preventative maintenance, repairs and request for repairs, process control test results, etc.)..... Y
  - iv. Laboratory results (unless documented on bench sheets)... N
  - v. Identification of person making entries..... Y
- (k) Has the Operator of Record submitted written notifications to the permittee, Ohio EPA and, if applicable, any local environmental agencies when a collection system overflow, treatment plant bypass or effluent limit violation has occurred..... Y

**Comments/Status:**

**Section G: Operation & Maintenance con't**

**Collection System:**

- (a) Are there pump stations in the collection system..... N
  - i. How many publicly-owned pump stations equipped with permanent standby power or equivalent..... \_\_\_\_\_
  - ii. How many pump stations have telemetered alarms..... \_\_\_\_\_
  - iii. How many pump stations have operable alarms..... \_\_\_\_\_
- (b) Any chronic collection system overflows since last inspection..... N
- (c) Regulatory agency notified of all overflows..... Y
- (d) CSOs in the collection system....if so, what is the LCTP status..... N
- (e) How are CSOs monitored (chalk, block, level sensor, etc.)..... N/A
- (f) Portable pumps available for collection system maintenance..... Y
- (g) RDII Program established and active..... N/A
- (h) Any WIB complaint received since last inspection..... N
- (i) Is there a WIB response plan..... Y
- (j) Is any portion of the collection system at or near dry weather Capacity..... N

**Comments/Status:**

**Section H: Sludge Management**

- (a) Method of Sludge Disposal...
  - Land Application
  - Haul to Another NPDES Permittee
  - Haul to a Mixed Solid Waste Landfill
- (b) Has amount of sludge generated changed significantly since the last inspection..... N
- (c) How much sludge storage is provided at the plant.....

Sludge is periodically wasted and hauled to another WWTP
- (d) Records kept in accordance with State and Federal law (5 years according to OAC 3745-40-06)..... Y
- (e) Any complaints received in last year regarding sludge..... N
- (f) 5/8" screen at headworks for facilities that land apply sludge..... N/A
- (g) Are sludge application sites inspected to verify compliance with NPDES permit..... N/A

**Comments/Status:**

**Section I: Self-Monitoring Program**

**Flow Measurement:**

- (a) Primary/Secondary flow measuring devices (e.g. weir with ultrasonic level sensor):  

weir with ultrasonic level sensor
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- (b) Flow meter calibrated annually ..... Y  
(Date of last calibration: 7/17/2012, next 8/28/2013)
- (c) 24-hour recording instruments operated and maintained..... Y
- (d) Flow measurement equipment adequate to handle full range of flows..... Y
- (e) All discharged flow is measured..... Y

**Sampling:**

- (a) Sampling location(s) are as specified by permit..... Y
- (b) Parameters and sampling frequency agree with permit..... Y
- (c) Permittee uses required sampling method..... Y  
(see GLC page)
- (d) Monitoring records (i.e., flow, pH, DO) maintained for a minimum of three years including all original strip chart recordings (i.e, continuous monitoring instrumentation, calibration and maintenance records)..... Y

**Laboratory:**

*General*

- (a) Does the Quality Assurance Manual contain written Standard Operating Procedures (SOP's) for all analysis performed onsite..... Y
- (b) Do SOP's include the following if applicable:
  - Title
  - Scope and Application
  - Summary
  - Sample Handling and Preservation
  - Interferences
  - Apparatus and Materials
  - Reagents
  - Procedure
  - Calculations
  - Quality Control
  - Maintenance
  - Corrective Action
  - Reference (Parent Method)

*Note: Standard Methods 1020A establishes that "Quality assurance (QA) is the definitive program for laboratory operation that specifies the measure required to produce defensible data of known precision and accuracy. "Standard operating procedures are to be used in the laboratory in sufficient detail that a competent analyst unfamiliar with the method can conduct a reliable review and/or obtain acceptable results." SOPs should be developed for each analytical procedure.*

- (c) EPA approved analytical testing procedures used (40 CFR 136.3).. Y

- (d) If alternate analytical procedures are used, proper approval has been obtained..... Y
- (e) Analyses being performed more frequently than required by permit. N
- (f) If (e) is yes, are results in permittee's self-monitoring report..... N/A
- (g) Satisfactory calibration and maintenance of instruments/equipment. Y  
(MSD using other off site WWTP lab – See GLC for applicable here)
- (h) Commercial laboratory used..... N  
Parameters analyzed by commercial lab:  
Lab name: MSD Muddy Creek, MSD DIW

*Discharge Monitoring Report Quality Assurance (DMRQA)*

- (a) Participation in latest USEPA quality assurance performance sampling..... N  
Date:
- (b) Were any parameters "Unsatisfactory"..... N/A
- (c) Reasons for "Unsatisfactory" parameters.....

**Comments/Status:** Onsite analysis consists of using a multi parameter probe for pH, Dissolved Oxygen and Temperature. See attached GLC pages.

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**Section J: Effluent/Receiving Water Observations**

Outfall # 001

Outfall Description: Treated effluent from final disinfection tank (UV)

Receiving Stream: tributary of Banklick Creek

Receiving Stream Description: very little flow in stream on day of inspection.

**Comments/Status:**

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**Section K: Multimedia Observations**

- (a) Are there indications of sloppy housekeeping or poor maintenance in work and storage areas or laboratories..... N
- (b) Do you notice staining or discoloration of soils, pavement or floors.. N
- (c) Do you notice distressed (unhealthy, discolored, dead) vegetation.. N
- (d) Do you see unidentified dark smoke or dust clouds coming from sources other than smokestacks..... N
- (e) Do you notice any unusual odors or strong chemical smells..... N
- (f) Do you see any open or unmarked drums, unsecured liquids, or damaged containment facilities..... N

If any of the above are observed, ask the following questions:

- (1) What is the cause of the condition?
- (2) Is the observed condition or source a waste product?
- (3) Where is the suspected contaminant normally disposed?
- (4) Is this disposal permitted?
- (5) How long has the condition existed and when did it begin?

Permit # : 1PG00018\*FD  
NPDES #: OH0025623

**Summary of Findings/Comments:**

Compliance with NPDES Permit 1PG00018\*FD was reviewed during the period of January 1, 2012 through July 31, 2013. Violations of the NPDES permit are noted in the Notice of Violation below. MSD submitted the proper non-compliance notifications as required by the permit. No response to the NOV is required.

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**Notice of Violation (NOV) for outfall 1PG00018 001**

**Please be advised that failure to comply with the effluent limitations or reporting requirement of your NPDES permit may be cause for enforcement action pursuant to the Ohio Revised Code Section 6111.**

The following discharge data reported to this agency are considered violations of the conditions of the NPDES Permit 1PG00018\*FD.

Parameter	Limit Type	Limit	Reported Value	Violation Date
E. coli	7D Conc	362	428.848	6/8/2012
Nitrogen, Ammonia (NH3)	7D Conc	2.3	6.08	6/8/2013
Nitrogen, Ammonia (NH3)	7D Qty	0.697	.82846	6/8/2013
Nitrogen, Ammonia (NH3)	30D Conc	1.5	3.04	6/1/2013

# Mayflower WWTP - General Lab Criteria Review 8/23/13

Criteria	Standard Methods Requirement		Rating
<b>pH Meter</b>			Acceptable?
<ul style="list-style-type: none"> <li>• Calibration Frequency / Documentation</li> </ul>	<ul style="list-style-type: none"> <li>• Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples)<sup>3</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	<ul style="list-style-type: none"> <li>• Logbook maintained<sup>2</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<ul style="list-style-type: none"> <li>• Minimum of 2 point calibration</li> </ul>	<ul style="list-style-type: none"> <li>• Calibration per manufacturer specification and calibration buffers must bracket anticipated result<sup>7</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<ul style="list-style-type: none"> <li>• Slope Documentation / Acceptability</li> </ul>	<ul style="list-style-type: none"> <li>• Slope acceptable range indicated on benchsheet<sup>2</sup></li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<ul style="list-style-type: none"> <li>• Buffer Expiration Date</li> </ul>	<ul style="list-style-type: none"> <li>• Buffers must not be expired</li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<ul style="list-style-type: none"> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Instrument manual available</li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<ul style="list-style-type: none"> <li>• Teflon covered magnetic stirrer or equivalent for mixing<sup>8</sup></li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<p><b>Comments: Calibration of probe done at the Taylor Creek WWTP before going to Mayflower WWTP. All bench sheets and calibration records are kept at the Taylor Creek WWTP.</b></p>			
Criteria	Standard Methods Requirement		Rating
<b>Dissolved Oxygen Meter</b>			Acceptable?
<ul style="list-style-type: none"> <li>• Calibration Method</li> </ul>	<ul style="list-style-type: none"> <li>• Air or known DO calibration method<sup>10</sup></li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<ul style="list-style-type: none"> <li>• Calibration per manufacturer specification<sup>10</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<ul style="list-style-type: none"> <li>• Calibration Frequency / Documentation</li> </ul>	<ul style="list-style-type: none"> <li>• Logbook maintained<sup>2</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	<ul style="list-style-type: none"> <li>• Calibration verification required at least once each day the meter is used.<sup>3</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<ul style="list-style-type: none"> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Small to no bubble present under membrane (must be smaller than the lead in number 2 pencil)<sup>11</sup></li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<ul style="list-style-type: none"> <li>• Instrument manual available</li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<p><b>Comments: Calibration of probe done at the Taylor Creek WWTP before going to Mayflower WWTP. All bench sheets and calibration records are kept at the Taylor Creek WWTP.</b></p>			

# Mayflower WWTP - General Lab Criteria Review 8/23/13

Criteria	Standard Methods Requirement		Rating	
<b>Sample Collection/Handling</b>	Acceptable?			
• Sample Labeling	• Samples container labeled (description, date, time, preservative added, initialed). <sup>19</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Chain of Custody	• Chain of custody (description, date, time, signature). <sup>19</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Composite samples refrigerated during sample collection <sup>14</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Equipment blanks utilized <sup>14</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• SOP for cleaning of sampling equipment	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Logbook being maintained <sup>2</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
<p>Comments: Samples are kept in ice and taken to the Taylor Creek WWTP. SOP and log book kept at Taylor Creek WWTP lab area.</p>				

# Mayflower WWTP - General Lab Criteria Review 8/23/13

Criteria	Standard Methods Requirement		Rating
Final Effluent Temperature Monitoring		Acceptable?	
• General Criteria	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	• Thermometer scaled to 0.1° Celsius and accurate to 0.5° C <sup>5</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	• Log book being maintained <sup>2</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Comments: MSD has purchased a new multi-parameter probe with temperature reading. After one year of use, this probe should be calibrated annually with the NIST traceable thermometer.			
<b>Number of Criteria Rated:</b>			Acceptable
			Marginal
			Unacceptable
			Total Number of Areas Rated
<b>Acceptable Ratings</b> – No action required (recommend SOP's written or updated, perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, written response not required).			
<b>Marginal Ratings</b> – Improvements required, written response required (recommend SOP's be written or updated, recommend they perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, require deficiencies to be addressed in written response).			
<b>Unsatisfactory Rating</b> - Improvements required, written response required, NOV issued (recommend SOP's be written or updated, recommend they perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, require deficiencies to be addressed in written response to NOV).			
Consider recommending PAI Audit from DES when:	>60% of ratings are Marginal >45% of ratings are a combination of Marginal or Unacceptable >30% of ratings are Unacceptable		

## Notation of Referenced Method

- |                            |                              |
|----------------------------|------------------------------|
| 1 Method 9020-B, Item 3    | 14 Method 1060A, Item 1      |
| 2 Method 1020-A, Item 1    | 15 Method 4500-CI I, Item 2  |
| 3 Method 1020-B, Item 10   | 16 Method 4500-CI I, Item 4  |
| 4 Method 2540-B, Item 2    | 17 Method 4500-NH3 D, Item 4 |
| 5 Method 2550-B, Item 1    | 18 Method 4500-NH3 D, Item 2 |
| 6 Method 1020-A, Item 1    | 19 Method 1060-B, Item 2     |
| 7 Method 4500-H B, Item 4  | 20 Method 1060-B, Item 1     |
| 8 Method 4500-H B, Item 2  | 21 Method 9222D, Item 1      |
| 9 Method 1020-B, Item 2    | 22 Method 9223 B, Item 2     |
| 10 Method 4500-O B, Item 3 | 23 Method 9223 B, Item 3     |
| 11 Method 4500-O G, Item 3 | 24 Method 1603, Item 2       |
| 12 Method 5210-B, Item 5   | 25 Method 9030-B, Item 3     |
| 13 CFR 136.3, Table II     | 26 Method 9020 B, Table IV   |

# Mayflower WWTP - General Lab Criteria Review 8/23/13

Equipment Logbook Content - all maintenance performed on a piece of equipment should be documented in the logbook. This should include parts replacement and routine maintenance activities. Entries should include date, maintenance performed and initials of person making entry.

## Preservation and Holding Times

Parameter	Container	Min. Sample Size (mL)	Sample Type	Preservation	Maximum Storage Time	
					Recommended	Regulatory
BOD / CBOD	P, G	1000	G, C	Refrigerate $\leq 6^{\circ}\text{C}$	6h	48h
TSS	P, G	200	G, C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 d
pH	P, G	50	G	Analyze immediately	0.25h	0.25 h
NH <sub>3</sub> -N	P, G	500	G, C	Analyze as soon as possible or add H <sub>2</sub> SO <sub>4</sub> to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	28 d
TRC	P, G	500	G	Analyze immediately	0.25h	0.25 h
DO (electrode)	G, BOD Bottle	300	G	Analyze immediately	0.25h	0.25 h
Temperature	P, G	--	G	Analyze immediately	0.25h	0.25 h
Metals, general	P, G	1000	G, C	For dissolved filter immediately and add HNO <sub>3</sub> to pH <2	6 months	6 months
Purgeables by purge and trap	G (PTFE lined lid)	40 (X2)	G	HCl to pH<2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	14 d
Base/Neutrals and acids	G (solvent rinsed or baked)	1000	C, G	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 days until extraction 40 days after extraction
Pesticides	G (PTFE lined lid)	1000	C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 days until extraction 40 days after extraction
Fecal Coliform / E-Coli	G, P (Sterilized)	100	G	Refrigerate $\leq 10^{\circ}\text{C}$ If chlorine present, add sodium thiosulfate tablet	6 hrs transport Start analysis within 2 hrs of receipt in lab.	
Oil and Grease	G	1000	G	HCl or H <sub>2</sub> SO <sub>4</sub> to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	28 d	28 d

## Approved Standard Methods

CBOD / BOD 5 Day	Std Methods 5210-B
Ammonia, Selective Electrode Method	Std Methods 4500-NH <sub>3</sub> D
Total Residual Chlorine, DPD Colorimetric Method	Std Methods 4500-Cl G
Total Suspended Solids, Dried at 103-105 °C	Std Methods 2540-D
Dissolved Oxygen, Membrane Electrode Method	Std Method 4500-O G
pH, Electrometric Method	Std Methods 4500-H+ B
Fecal Coliform, Membrane Filter Procedure	Std Methods 9222D
Escherichia Coli, Enzyme Substrate Test	Std Method 9223B
Escherichia Coli Membrane Filtration Procedure	EPA Method 1603
Oil and Grease	USEPA 1664A or Std Methods 5520B
Metals, general	USEPA 200, Std Methods 3111B or C, or 3120B
Volatiles (Purgeables by purge and trap)	USEPA 6210, Std Methods 624
Semi-Volatiles (Base/Neutrals and acids)	USEPA 6410, Std Methods 625
Pesticides	USEPA 6410 and 6630, Std Methods 608