UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

June 18, 2010

In Reply Refer To: WTR-7

James Ritchie, Production Manager
Aramark Uniform Services
3836 West Buckeye Road, Suite F
Phoenix, Arizona 85009

Re: September 23, 2009 Clean Water Act Inspection

Dear Mr. Ritchie:

Enclosed is the June 18, 2010 report for our September 23, 2009 inspection of Aramark Uniform Services in Phoenix. Please submit a short response to the findings in Sections 2 to 4, to EPA, Phoenix, and ADEQ, by **July 30, 2010**. The main findings are summarized below:

1 Aramark Phoenix is a significant industrial user. The Phoenix permit correctly applies local limits and correctly does not apply Federal standards.

2 Aramark Phoenix has consistently complied with its permit limits since October 2007 with only a single pH violation. Compliance depends on solids removal, pH adjustment, and source control through customer limitations. Chemical aided flotation improves performance. Consistent operations are maintained through excellent documentation and recordkeeping practices. However, the sources of cadmium, copper, selenium, zinc, and molybdenum are not identified, and there is no final pH adjustment of all wastewaters.

3 The monitoring and self-monitoring are representative over the sampling day and the reporting period. Frequencies could be reduced for the pollutants found near detection limits. The pollutants of concern are cadmium, copper, molybdenum, selenium, zinc, fluoride, bis(2-ethylhexyl)phthalate, and as indicators, BOD, TSS, TDS, and pH.

I appreciate your helpfulness extended to me during this inspection. I remain available to the City of Phoenix, and to you to assist in any way. Please do not hesitate to call me at (415) 972-3504 or e-mail at arthur.greg@epa.gov.

Sincerely,

Original signed by:

Greg V. Arthur
CWA Compliance Office

Enclosure

cc: Deborah Swartz, Senior Water Quality Inspector, City of Phoenix
Gregory Frech, WQ Compliance, ADEQ

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION REPORT

Industrial User:	Aramark Uniform Services 3836 West Buckeye Road, Phoenix, Arizona 85009 Non-Categorical Significant Industrial User
Treatment Works:	City of Phoenix, 91st Avenue Wastewater Treatment Plant NPDES Permit No. AZ0020524
Pretreatment Program:	City of Phoenix
Date of Inspection:	September 23, 2009
Data Review:	October 1, 2007 through October 31, 2009

Inspection Participants:

US EPA:	Greg V. Arthur, Region 9, CWA Compliance Office, (415) 972-3504
Arizona DEQ:	None
City of Phoenix:	Deborah Swartz, Senior Water Quality Inspector, (602) 534-2082
Aramark Phoenix:	Bob Wilke, Assistant Maintenance Helper, (602) 484-0904 James Ritchie, Production Manager, (602) 484-0904

Report Prepared By:	Greg V. Arthur, Environmental Engineer June 18, 2010

1.0 Scope and Purpose

On September 23, 2009, EPA and the City of Phoenix conducted a compliance evaluation inspection of Aramark Uniform Services in Phoenix, Arizona ("Aramark Phoenix"). The purpose was to ensure compliance with the Federal regulations covering the discharge of non-domestic wastewaters into the sewers. In particular, it was to ensure:

- Classification in the proper Federal categories;
- Application of the correct standards at the correct sampling points;
- Consistent compliance with the standards; and
- Fulfillment of Federal self-monitoring requirements.

Aramark Phoenix is a significant industrial user ("SIU") within sewer service areas administered by the City of Phoenix whose compliance was assessed as part of an on-going EPA evaluation of industrial users in EPA Region 9 by sector. The inspection participants are listed on the title page. Arthur conducted the inspection.

See Appendix 1 on page 11 for a schematic of the layout and configuration of wastewater handling. Photo documentation of this inspection follows in Section 1.7 on pages 4.

1.1 Process Description

Aramark Phoenix operates an industrial uniform service. Aramark owns the uniforms, mats, sheets, and towels, and provides a weekly delivery and pick-up service. Aramark drivers collect the laundry. At the Phoenix plant the laundry is sorted by type and color, counted, washed, dried, dry heat pressed, hand sorted, and rebundled for return. Aramark Phoenix operates one shift, five days per week, 5:00a to 1:30p M-F.

The laundering involve s five industrial washers each of which is set to run multiple cycles through detergent sudsing, caustic and solvent breaking, multiple rinsing steps, souring to neutralize alkalinity, softening, and spin extraction. The chemical additives are listed below:

- fluorosilicic acid (souring)
- sodium thiosulfate (rinse water dechlorination)
- 2-N-octyl-4-isothiozolin (mildewcide)
- calcium chloride / isopropynol (softening)
- bleach and caustic
- nonyl phenol ethyoxylate (detergent)
- petroleum hydrocarbon distillate
- 1,2,4-trimethylbenzene
- xylene
- isopropylbenzene

Aramark Phoenix does not service accounts involving blood borne pathogens, nuclear processes, or hazardous waste. The main accounts are food service establishments and to a lesser degree, oily and industrial operations.

Aramark Phoenix discharges non-domestic wastewaters to the Phoenix domestic sewers through a single sewer connection under Phoenix permit 0610-2180. Domestic sewage discharges through separate connections downstream of the industrial wastewater connection.

1.2 Facility SIC Code

Aramark Phoenix is assigned the SIC code for industrial launderers (SIC 7218).

1.3 Facility Wastewater Sources

The laundering washers and facility support operations generate rinse cycle drainages, spin cycle drainage, boiler blowdown, cooling water condensate, emergency hot water diversion, and water softener regeneration brines. There is one non-domestic connection to the sewers that receives untreated softener brines and treated wastewaters from an on-site industrial wastewater treatment plant. ***See*** Photos #1 through #4 in Section 1.7 on page 4.

1.4 Facility Process Wastewater Handling

Discharge – All process wastewaters from Aramark Phoenix drain through a sampling flume to a single sewer connection into the Phoenix domestic sewers. The Phoenix permit identifies the sampling flume as outfall 2180.01, designated in this report after the permit number as IWD-2180.01. The permit establishes a peak discharge of 100,000 gallons per day. Effluent metering averaged 33,000 gpd since 2007. ***See*** Photo #4 in Section 1.7 on page 4.

Composition - The process-related wastewaters listed in section 1.3 above would be expected to contain surfactants, oils, grime, organics, alkalinity, acidity, fluorides, zinc, additive solvents, and the minerals entrained in the water supply.

Delivery – All laundering washer drainages, backwashes, condensate, and washdowns drain by gravity through trenches to a common pit feeding through on-site treatment. The spent water softener brines are sewered separately around the on-site treatment. ***See*** Photo #1 in Section 1.7 of this report on page 4.

Treatment – All laundering washer drainages, backwashes, condensate, and washdowns are treated through bar screens that feed into a 1,600 gallon "acid pit" for pH adjustment, followed by shaker screening, a 21,000 surge tank, coagulation, flocculation, and induced air flotation to remove solids floc. The wastewaters at midpoint also pass through a heat exchanger to reclaim heat into the cold water input. The regeneration brines from the water softening resin columns are not run through the solids removal treatment. ***See*** Appendix 1 on page 11 of this report for the configuration and lay-out of the wastewater handling on-site. ***Also see*** Section 3.2 of this report on page 8.

1.5 Sampling Record

The Phoenix permit requires Aramark Phoenix to self-monitor for pH, arsenic, bis(2-ethylhexyl)phthalate, cadmium, copper, cyanide, lead, mercury, molybdenum, selenium, silver, and zinc. The Phoenix permit also requires flow proportional composite sampling, which then means Aramark Phoenix implicitly must also self-monitor for the discharge flow

rate, even though this is not explicitly required. The City of Phoenix conducts its own multiday quarterly sampling for arsenic, beryllium, cadmium, chromium, copper, fluoride, lead, mercury, molybdenum, nickel, selenium, silver, zinc, total cyanide, toxic organics, total dissolved solids, total suspended solids, pH, and biochemical oxygen demand.

1.6 POTW Legal Authorities

The City of Phoenix has enacted an ordinance to implement a pretreatment program in the areas serviced by the 91st and 23rd Avenue Wastewater Treatment Plants. Under this authority, the City issued City permit No.0610 authorizing discharge of non-domestic wastewater from Aramark Phoenix to the sewers.

1.7 Photo Documentation

Three of four photographs taken during this inspection are depicted below and saved as *aramarkphx-01.jpg through -04.jpg.* The fourth photo file was corrupted and not saved.

Photo #1: One of Five Laundering Washers
Taken By: Greg V. Arthur
Date: 09/23/09

Photo #2: Drainage Trench Behind Washer
Taken By: Greg V. Arthur
Date: 09/23/09

Photo #3: Induced Air Flotation Unit
Taken By: Greg V. Arthur
Date: 09/23/09

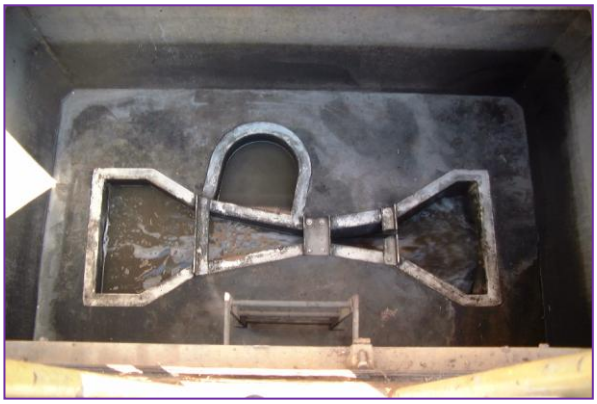


Photo #4: Final Outfall Flume, IWD-2180.01
Taken By: Greg V. Arthur
Date: 09/23/09

2.0 Sewer Discharge Standards and Limits

Federal categorical pretreatment standards (where they exist), national prohibitions, and the local limits (where they exist) must be applied to the sewered discharges from industrial users. (40 CFR 403.5 and 403.6).

Summary

No Federal categorical pretreatment standards apply to the discharge from Aramark Phoenix to the Phoenix sewers, although the national prohibitions do apply. The Phoenix permit applies local limits protective of the Phoenix 91st Avenue Wastewater Treatment Plant and its contributing sewers. The application of Federal standards, national prohibitions, and local limits was determined through visual inspection. ***See*** Appendix 2 on page 12 of this report for the permit limits.

Requirements

- None.

Recommendations

- None.

2.1 Classification by Federal Point Source Category

Aramark Phoenix does not qualify for regulation under any Federal categorical pretreatment standard in 40 CFR 403-471. It does qualify as a significant industrial user under the definitions in 40 CFR 403.3 because the discharge flow rates and pollutant loadings are great enough to pose a risk of adversely impacting the municipal sewerage works. Significant industrial users are required to self-report compliance at least twice per year.

2.2 Local Limits and National Prohibitions

National prohibitions in 40 CFR 403.5 and local limits are meant to express the limitations on non-domestic discharges necessary to protect against adverse impact in the sewers, treatment plants and receiving waters. In particular, they prohibit discharges that can cause the pass-through of pollutants into the receiving waters or reuse, the operational interference of the sewage treatment works, the contamination of the sewage sludge, sewer worker health and safety risks, fire or explosive risks, and corrosive sewer damage. The national prohibitions apply nationwide to all non-domestic sewer discharges. The Phoenix local limits apply to non-domestic discharges in the service areas of the Phoenix 91st Avenue WWTP.

2.3 Federal Prohibitions

The Federal standards in 40 CFR 403.17 prohibit the bypassing of any on-site treatment necessary to comply with standards unless the bypass was unavoidable to prevent the loss of life, injury, or property damage, and there were no feasible alternatives. This provision explicitly prohibits bypasses that are the result of a short-sighted lack of back-up equipment for normal downtimes or preventive maintenance. It also explicitly prohibits bypasses that could be prevented through wastewater retention or the procurement of auxiliary equipment. It specifically allows bypasses that do not result in violations of the standards as long as there is prior notice and approval from the sewerage agency or State.

The City of Phoenix sewer use ordinance does not establish a prohibition against bypassing treatment necessary to comply but does establish related provisions for protection from accidental discharges (§28-53).

2.4 Compliance Sampling and Point(s) of Compliance

The permit identifies the final outfall IWD-2180.01 as the final compliance sampling point. ***See*** Section 1.3 of this report on page 3. Local limits and the national prohibitions apply end-of-pipe to non-domestic flows. The final outfall is a suitable end-of-pipe sample point representative of the day-to-day non-domestic wastewater discharges from Aramark Phoenix. Local limits and national prohibitions are instantaneous-maximums comparable to samples of any length. ***See*** Section 4.0 on page 10 and Appendix 3 on page 13.

3.0 Compliance with Local Limits and National Prohibitions

All non-domestic wastewater discharges to the sewers must comply with local limits and the national prohibitions. 40 CFR 403.5(a,b,d).

Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).

The sample record shows that Aramark Phoenix has consistently complied with its permit limits for metals, cyanide, toxic organics, pesticides, PCBs, pH, and discharge flow rate. There was a single pH violation slightly over the upper limit registered on just one of the more than 300 sampling days. Aramark Phoenix does not treat for the specific permit-limited pollutants but rather removes solids, adjusts for pH, and limits service to certain customers who would not be expected to impart toxics. Incoming laundry is the likely source of cadmium, copper, selenium, and wastewater strength as measured by BOD and TSS. The laundering process on-site is the source of fluorides, bis(2-ethylhexly)phthalate, and acidity as measured by pH. Both the laundry and laundering are likely sources of zinc, and waste-water strength as measured by TDS. Cooling water additives on-site are a likely source of molybdenum. ***See*** Appendix 3 on page 13 of this report.

Requirements

- None.

Recommendations

- Aramark Phoenix should identify any laundry, laundering, or support sources of cadmium, copper, molybdenum, selenium, and zinc.

3.1 National Objectives

The general pretreatment regulations were promulgated in order to fulfill the national objectives to prevent the introduction of pollutants that:

(1) cause operational interference with sewage treatment or sludge disposal,
(2) pass-through sewage treatment into the receiving waters or sludge,
(3) are in any way incompatible with the sewerage works, or
(4) do not improve the opportunities to recycle municipal wastewaters and sludge.

This inspection did not include an evaluation of whether achievement of the national objectives in 40 CFR 403.2 have been demonstrated fully by the Phoenix 91st Avenue wastewater treatment plant through consistent compliance with its discharge, reclaim, and sludge limits.

3.2 Sampling Results

EPA evaluated the self-monitoring and city-conducted monitoring for October 1, 2007 to October 31, 2009. The sampling results for IWD-2180.01 consistently complied with all Phoenix permit limits. There was just a single pH violation (just over the 10.5 s.u. upper limit) registered in the 312 sampling days with pH measurements since October 1, 2007. For all other parameters, all samples were in compliance with limits. However, some isolated sample results approached the limits with the sample record maximums within 68% of the permit limit for cadmium, 80% for copper, 81% for selenium, and 74% for zinc. In addition, the sampling results also registered consistent levels of a few key unregulated parameters, including bis(2-ethylhexyl)phthalate, fluoride, molybdenum, BOD, TSS, and TDS, all of which are of interest in sewage treatment.

Aramark Phoenix does not treat for the specific permit limited pollutants but rather (1) removes solids through chemical-aided induced air flotation, (2) provides initial pH adjustment, and (3) screens its service to customers who would not be expected to impart toxics. The incoming laundry is the likely source of cadmium, copper, selenium, and wastewater strength as measured by BOD and TSS. The laundering operation on-site is the source of fluorides, bis(2-ethylhexly)phthalate, and acidity as measured by pH. Both the laundry and laundering are likely source of zinc, and wastewater strength as measured by TDS. The on-site support providing water cooling is a likely source of molybdenum. The good aspects of (+) and deficiencies with (-) wastewater handling are listed below.

+ Excellent log documentation of the industrial wastewater treatment operations.
+ Excellent overall record keeping.
+ IAF unit effectively removes oils, solids, dirt, and conventional pollutants.
+ Dual chemical aids further improve the removal of solids.
- Dissolved metals control is dependent on source controls and not treatment.
- The laundry, laundering, and support sources of cadmium, copper, molybdenum, selenium, and zinc are not specifically identified.
- Less than 24-hours of surge capacity does not fully attenuate daily peaks.
- There is no final pH adjustment for all wastewaters including softener brines.

3.3 Local Limits for Oxygen Demanding Pollutants and The National Prohibition Against Interference

High-Strength Organics – There are no local limits in effect for oxygen demanding pollutants. However, the wastewaters discharged to the sewers are not high enough in organics strength to pose a risk of treatment interference given the capacity of the Phoenix 91st Avenue wastewater treatment plant. The organics strength is high enough to potentially produce septic conditions in the sewers.

Metals, Cyanide, Toxics – There have been no violations of the local limits since October 2007 for the toxic pollutants that could cause an operational interference of the Phoenix 91st Avenue wastewater treatment plant thereby resulting in violations of the NPDES permit. There is no evidence that discharges from Aramark Phoenix resulted in any interference.

3.4 Local Limits for Toxic Metals, Cyanide, and Other Pollutants and The National Prohibition Against Pass-Through

Metals and Cyanide – There have been no violations of the local limits since October 2007 for the pollutants that could contribute to their pass-through of the treatment plant. There is no evidence that discharges from Aramark Phoenix resulted in the pass-through of any pollutants from the 91st Avenue wastewater treatment plants to the receiving waters or sludge, thereby causing violations of the NPDES permits. There are no local limits for molybdenum, fluoride, or bis(2-ethylhexyl)phthalate, although these pollutants at high enough levels could contribute to NPDES permit violations.

Oil and Grease – There are no local limits for oil and grease.

3.5 Local Limits for pH and Sulfides, and The National Prohibitions Against Safety Hazards and Corrosive Structural Damage

Corrosion - Sewer collection system interferences related to the formation of hydrogen sulfide and the resulting acidic disintegration of the sewers are possible since the discharges from Aramark Phoenix are high-strength enough in biodegradable organics to allow the formation of septic conditions in the sewers.

Flammability - Flammability would not be expected because sampling shows that the discharges to the sewer entrain negligible amounts of volatile organics.

3.6 Bypass Provision

Nearly all wastewaters are delivered to treatment and discharge through the identified sample point. However, the softener brines by design do not undergo on-site treatment. The untreated brines could constitute bypassing if they contribute to high pH measurements exceeding the permit upper limit.

4.0 Compliance with Federal Monitoring Requirements

Significant industrial users must self-monitor for all regulated parameters at least twice per year unless the sewerage agency monitors in place of self-monitoring. 40 CFR 403.12(e) & 403.12(g).

Each sample must be representative of the sampling day's operations. Sampling must be representative of the conditions occurring during the reporting period. 40 CFR 403.12(g) and 403.12(h).

Permit Requirements – Aramark Phoenix is required to self-monitor for pH, flow rate, and a number of metals, minerals, organics, and indicator pollutants. The City of Phoenix also collects samples to determine compliance with the local limits, and does so quarterly on consecutive multiple days. Since October 2007, the sample record for the final outfall IWD-2180.01 shows that Aramark and Phoenix (1) collected all samples from the designated compliance sampling point, and (2) correctly obtained 24-hour composites for metals and grabs for the other pollutants. It could not be determined from this inspection or from the review of the sample record whether the sampling followed appropriate chain-of-custody procedures.

Representativeness – The sample record for IWD-2180.01 appears to be representative of the discharges to the sewers over the sampling day and the six-month reporting period.

Pollutants of Concern – The sample record shows that many of the pollutants are present at low levels near their detection limits and far below the local limit. As a result, the pollutants of concern are limited to cadmium, copper, molybdenum, selenium, zinc, fluoride, and bis(2-ethylhexyl)phthalate. The indicator measurements that register at significant levels further include BOD, TSS, TDS, and pH.

Requirements

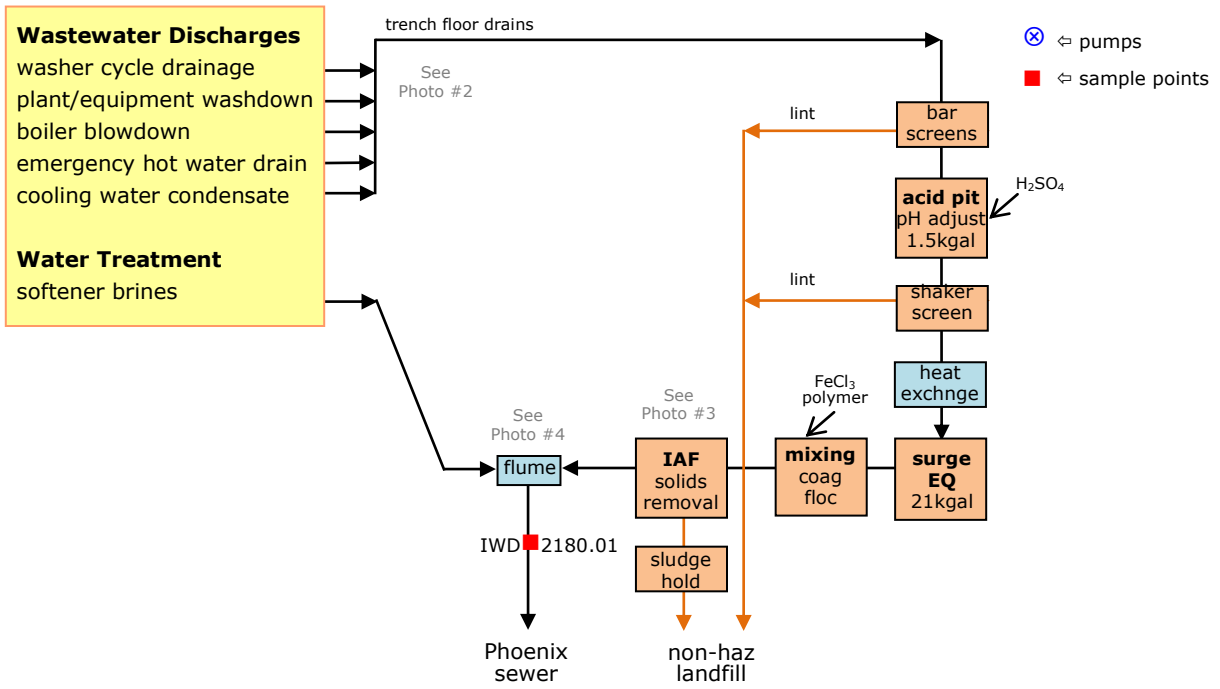
- ***See*** Appendix 2 on page 12 of this report for the self-monitoring and city monitoring requirements that would be considered to be representative of the discharges.

Recommendations

- None.

Appendix 1
Configuration and Layout

Aramark Phoenix



Appendix 2
Sewer Discharge Standards and Limits for Aramark Phoenix

Pollutants Of Concern	Fed stds (d-max)	Fed stds (mo-avg)	nat'l pro (instant)	local limits (inst/dmax)	monitoring frequency ① discharger	city
Final Outfall @ IWD-2180.01						
arsenic (mg/l)	-	-	-	0.13	1/quarter	1/quarter
cadmium (mg/l)	-	-	-	0.047	2/quarter	2/quarter
copper (mg/l)	-	-	-	1.5	2/quarter	2/quarter
lead (mg/l)	-	-	-	0.41	1/quarter	1/six-mos
mercury (mg/l)	-	-	-	0.0023	③	1/six-mos
molybdenum (mg/l)	-	-	-	②	2/quarter	2/quarter
selenium (mg/l)	-	-	-	0.10	2/quarter	2/quarter
silver (mg/l)	-	-	-	1.2	③	1/six-mos
zinc (mg/l)	-	-	-	3.5	2/quarter	2/quarter
total cyanide (mg/l)	-	-	-	2.0	③	1/six-mos
benzene (mg/l)	-	-	-	0.035	③	1/six-mos
chloroform (mg/l)	-	-	-	2.0	③	1/six-mos
pesticides and PCBs	-	-	-	⑤	③	1/six-mos
bis(2-ethylhexyl)phthalate	-	-	-	②	1/quarter	1/six-mos
BOD (mg/l)	-	-	-	②	③	2/quarter
TSS (mg/l)	-	-	-	②	③	2/quarter
TDS (mg/l)	-	-	-	②	③	2/quarter
fluoride (mg/l)	-	-	-	②	③	2/quarter
flow (gpd)	-	-	-	100,000	daily	n/a
pH (s.u.)	-	-	<5.0	5.0-10.5	daily	2/quarter
explosivity	-	-	<140°F ④	<10% LEL	③	③

① Recommended **reductions in green**. Recommended **increases in red**.
② Pollutants of concern because of the levels found in the discharge from Aramark Phoenix.
③ As part of periodic priority pollutant scans in order to identify changes in discharge quality.
④ Closed-cup flashpoint.
⑤ City ordinance prohibits the introduction of these pollutants in any amount.

Appendix 3
Wastewater Discharge Quality for Aramark Phoenix

Sample Record Summary for IWD-2180.01 (10/01/07-10/31/09)

pollutants (µg/l)	effluent sampling results				violation rate			sample
	mean	99th%	min	max	d-max	mo-av	instant	count
arsenic	5.2	11.4	<5	17.4	-	-	0/48	48
beryllium	<2	<2	<2	<2	-	-	-	27
bis(2-ethylhexyl)phthalate	772.5	1848.4	160	680	-	-	-	5
cadmium	10.7	25.6	3.2	32.0	-	-	0/48	48
chromium	31.0	55.5	13	63	-	-	-	27
copper	489.8	980.9	29	1500	-	-	0/48	48
lead	63.1	138.4	<10	150	-	-	0/35	35
mercury	<0.2	0.3	<0.2	1.0	-	-	0/35	35
molybdenum	110.7	234.0	17	240	-	-	-	35
nickel	40.9	78.9	<20	90	-	-	-	11
selenium	5.2	42.0	<1	80.9	-	-	0/35	35
silver	<5	<5	<5	<5	-	-	0/35	35
zinc	1085	2483	600	2600	-	-	0/35	35
total cyanide	9.3	28.5	<5	27	-	-	0/13	13
total toxic organics ①	140.2	338.2	67	259	-	-	0/5	5
BOD (mg/l)	1005	1895	375	2410	-	-	-	25
TSS (mg/l)	699	1381	290	1410	-	-	-	25
TDS (mg/l)	2340	5290	1450	5580	-	-	-	12
fluoride (mg/l)	16.0	25.6	7.8	26	-	-	-	23
flow (gpd)	33004	58928	3798	56162	0/26	-	-	26
pH (s.u.)	5.80 min – 9.57 median – 10.64 max				-	-	**1/312**	312

Local Limits Violations (101/01/07-10/31/09)

sample date	type	sampler	point	permit local limits		viols	days
02/14/10	continuous	IU	2180.01	pH – daily-maximum	10.5 s.u.	10.6	1

① TTO sampling covers benzene, chloroform, pesticides, PCBs - no violations recorded.