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Centers for Disease Control  
and Prevention (CDC)  
National Institute for Occupational  
Safety and Health (NIOSH)  
1095 Willowdale Road  
Morgantown, WV 26505-2888

May 23, 2008  
HETA 2008-0127  
Interim Letter I

Mr. Eric Frumin  
UNITE HERE  
275 Seventh Avenue  
New York, NY 10001

Dear Mr. Frumin:

In February 2008, the National Institute for Occupational Safety and Health (NIOSH) received a Health Hazard Evaluation request from the international union UNITE HERE to evaluate both respiratory health and inhalation exposures of food preparation workers at Aramark – JP Morgan Chase, 1 Chase Manhattan Plaza, New York, NY. The purpose of this letter is to report on the preliminary analysis of the data.

On February 26, 2008, the New York City Department of Health and Mental Hygiene upon NIOSH's request collected bulk samples at 1 Chase Manhattan Plaza of four current-use cooking oils: Sterling product #35025 (Aramark #6359566), Frymax product #35071 (Aramark #3185345), Prep product #35041 (Aramark #8007759), and Prep product #35077 (Aramark #6040410). The samples were sent to NIOSH for analysis where we detected trace amounts of diacetyl in the Prep product #35077 using gas chromatography with mass spectrometry. We did not detect diacetyl in the other three bulk samples.

On March 11-12, 2008, we completed a walk-through visit of this location where we interviewed current workers about their exposures and job duties, performed air sampling, evaluated the cooking area ventilation systems, collected bulk samples of current-use cooking oils, and reviewed material safety data sheets (MSDSs) and the Occupational Safety and Health Administration (OSHA) 300 Log. We collected personal and general area air samples for diacetyl and acetoin using the modified OSHA method PV2118 and general-area air samples for volatile organic compounds (VOCs) using NIOSH method 2549. We also performed real-time air sampling for total VOC concentrations using a programmable pocket photo-ionization detector (ToxiRAE, RAE Systems Inc., San Jose, CA); for airborne particle concentrations in the respirable size range using a particulate monitor (pDR-1000AN *personal*DataRAM, Thermo Scientific Corp., Franklin, MA); and for carbon monoxide (CO) concentrations using a single gas monitor (T82, Industrial Scientific Corp., Oakdale, PA). We used direct-reading indicator tubes to sample for nitrous fumes (NO<sub>x</sub>) and nitrogen dioxide (NO<sub>2</sub>). Additionally, we measured ventilation air flow, air temperature, and relative humidity.

We did not detect diacetyl, acetoin, NO<sub>x</sub>, or NO<sub>2</sub> in any air samples; limits of detection were 0.02, 0.07, 0.5, and 0.5 parts per million (ppm), respectively. We detected CO in two separate one-minute meter readings (6 ppm and 3 ppm) above a pan of butter cooking on a range inside a



ventilated hood on level B2. Note that these short-term concentrations are well below the OSHA Permissible Exposure Limit (8-hour time-weighted average of 50 ppm) and the NIOSH Recommended Exposure Limit (8-hour time-weighted average of 25 ppm) for CO. All other CO measures were below detectable levels in air, less than 1 ppm.

We also measured approximately 2 ppm VOCs while the butter was cooking. We did not detect VOCs away from the range or during cooking of French toast with Prep product #35077 (Aramark #6040410) on a flattop grill inside a ventilated hood on level B2. General-area air samples (using NIOSH method 2549) and bulk oil samples for VOC screening done during the survey are undergoing laboratory analysis and are not currently available.

We measured 2.5 milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ) airborne particles (in the respirable size range) over the fryer on level B1. Most levels of airborne particles detected during real-time sampling ranged from below detection limits to  $2.5 \text{ mg}/\text{m}^3$ , with most levels under  $1.0 \text{ mg}/\text{m}^3$ .

During our walk-through visit, numerous employees complained that smoke from the sauté station was irritating. The station was not operational during the industrial hygiene survey; we noted no exhaust hood at this location during our survey. We observed workers cleaning heated grills with cleaning agents; these workers were not using personal protective equipment (PPE).

We visited again on April 1-2, 2008, to perform a medical survey consisting of an interviewer-administered questionnaire and spirometry (lung function) testing. We performed spirometry following the American Thoracic Society guidelines. We used a dry rolling-seal spirometer interfaced to a personal computer and compared spirometry results to reference values based on U.S. population data from the Third National Health and Nutrition Examination Survey. We selected each participating worker's largest forced vital capacity (FVC) and forced expiratory volume in the first second of exhalation ( $\text{FEV}_1$ ) for analysis. We defined obstruction as an  $\text{FEV}_1/\text{FVC}$  ratio and an  $\text{FEV}_1$  below their respective lower limits of normal. An obstructive abnormality indicates that air is exhaled from the lungs more slowly than normal. This can be seen in certain lung conditions such as asthma, bronchitis, emphysema, or bronchiolitis obliterans. We defined borderline obstruction as an  $\text{FEV}_1/\text{FVC}$  ratio below the lower limit of normal with normal  $\text{FEV}_1$  and FVC. A borderline obstructive abnormality may indicate early evidence of obstruction, which also requires a low  $\text{FEV}_1$ . We defined restriction as an FVC below the lower limit of normal with a normal  $\text{FEV}_1/\text{FVC}$  ratio. A restrictive abnormality indicates that the amount of air exhaled is smaller than normal. This can be seen in certain lung conditions, such as lung scarring or fibrosis, or in people who are considerably overweight. Restriction can also be seen in people who have a severe obstructive abnormality. We defined a mixed pattern (obstruction and restriction) as an  $\text{FEV}_1/\text{FVC}$  ratio,  $\text{FEV}_1$ , and FVC all below their respective lower limits of normal. Workers with evidence of airways obstruction were administered albuterol, a bronchodilator medication used to treat obstructive lung diseases such as asthma, and were then re-tested after 10 minutes to see if the obstruction was reversible. We defined reversible obstruction (such as asthma) as an improvement in the  $\text{FEV}_1$  of at least 12% and at least 200 milliliters after administration of albuterol. We defined fixed obstruction (such as bronchiolitis obliterans) as airways obstruction in which neither the FVC nor  $\text{FEV}_1$  increased by 12% or more and at least 200 milliliters after the administration of albuterol.

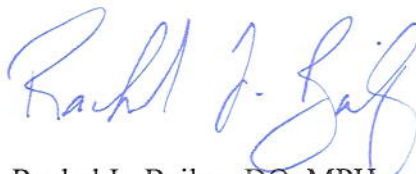
Thirty-three of 40 current employees participated in the medical survey. Of the 33 participants, 31 performed spirometry testing. Two participants with medical contraindications did not perform the spirometry testing. Twenty-one participants had spirometry test results within normal limits. Six participants had breathing tests below the range of normal, of which four demonstrated a restrictive abnormality, and two had a reduction in the FEV<sub>1</sub> without clear restriction or obstruction. Four participants' tests were not entirely interpretable, but obstruction was ruled out in two of the tests. On May 1, 2008, we sent individual spirometry test results to each participant. In the cover letter accompanying the results, we recommended that each participant provide a copy of his or her spirometry results to his or her personal physician.

**Interim Recommendations for Aramark Facility at 1 Chase Manhattan Plaza:**

1. Use a ventilation hood for all cooking with an open-flame grill, flattop or ridged (marked) grill or griddle, panini press, or when sautéing or frying in a pan.
2. Personal protective equipment (PPE) such as gloves, goggles, and/or a respirator may be required for chemical cleaning of heated grills. Review and follow MSDS recommendations regarding PPE for cooking and cleaning products.
3. Ensure all workers, including temporary workers, receive initial and annual safety training regarding safe work practices. OSHA's Hazard Communication Standard, also known as the "Right to Know Law" (29 CFR 1910.1200 available at <http://www.osha.gov>), requires that employees are informed and trained of potential work hazards and associated safe practices, procedures, and protective measures. Training should be in Spanish for workers whose primary language is Spanish.

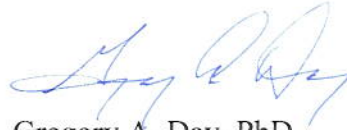
We appreciate the cooperation of UNITE HERE, Aramark, and employees during our surveys. We will continue to analyze the data from this facility and will provide you with a final report, including final recommendations, in the future. If you have any questions or concerns, please feel free to contact Dr. Rachel Bailey at (304) 285-5757 or Dr. Gregory Day at (304) 285-6387.

Sincerely,



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Lieutenant Commander, U.S. Public Health Service  
Respiratory Disease Hazard Evaluation and  
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cc:

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