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September 13, 2011

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Re: Letter of Transmittal – Onondaga Lake Repository Addition

The below document has been approved by the New York State Department of Environmental Conservation (NYSDEC) and is enclosed for your document holdings:

- Onondaga Lake Pre-Design Investigation: Phase VI Addendum 6 Work Plan, Air Emissions and Odors, dated August 2011

Sincerely,

John P. McAuliffe by ccc

John P. McAuliffe, P.E.
Program Director, Syracuse

Enc.

cc: Timothy J. Larson, P.E., Project Manager

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau D, 12th Floor
625 Broadway, Albany, New York 12233-7013
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Joe Martens
Commissioner

August 30, 2011

Mr. John P. McAuliffe, P.E.
Program Director, Syracuse
Honeywell
301 Plainfield Road, Suite 330
Syracuse, NY 13212

Re: Onondaga Lake PDI: Phase VI Addendum 6 Work Plan, Air Emissions and Odors, dated August 2011 (Ops-15)

Dear Mr. McAuliffe:

We have received and reviewed the above-referenced document, dated August 2011, and find that the document has satisfactorily addressed our previous comments. Therefore, the August 2011 version of the document is approved.

Please distribute copies of the document, containing this approval letter, to the document repositories selected for this site.

Sincerely,

Timothy J. Larson, P.E.
Project Manager

ec: B. Israel, Esq, - Arnold & Porter
J. Gregg – NYSDEC
J. Davis - NYSDOL, Albany
J. Heath, Esq.
T. Joyal, Esq.
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Mark Distler

From: Tim Larson <tjlarson@gw.dec.state.ny.us>
Sent: Thursday, August 25, 2011 2:23 PM
To: Mark Distler
Cc: Babcock, Dave; Parker, Reginald; Paul.Blue@; Scott Manchester; thomas.drachenberg@
Subject: RE: FW: Fwd: Potential VOC Sources Near Honeywell Sites

Mark,
I am pleased to inform you that the version of the Onondaga Lake PDI: Phase VI Addendum 6 Work Plan, Air Emissions and Odors, dated August 2011 and attached to your email (shown below), is acceptable and upon receipt of a hard copy I will formally approved the work plan. Please contact me regarding the hard copy/electronic copy distribution list for this document.
Thank you,
Tim

>>> Mark Distler <Mark.Distler@obg.com> 8/11/2011 11:30 AM >>>

Reggie and Tim,

Please find the attached final version of the PDI Work Plan for the Department's approval.

Thanks for all your work to complete the plan.

Mark

WORK PLAN

Onondaga Lake Pre-Design Investigation: Phase VI Addendum 6 Work Plan, Air Emissions and Odors

Honeywell

Honeywell, Inc.

August 2011

O'BRIEN & GERE

1163 | 41712

Onondaga Lake Pre-Design Investigation: Phase VI Addendum 6 Work Plan, Air Emissions and Odors

Honeywell

Honeywell, Inc.

MARK DISTLER, VICE PRESIDENT
O'Brien & Gere Engineers, Inc.

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1. PROJECT BACKGROUND

1.1 INTRODUCTION

Honeywell is planning the dredging of Onondaga Lake and the placement of dredged material in a sediment consolidation area (SCA). An air monitoring program will be conducted concurrent with the remedial activities (including the SCA operation), and will monitor for ambient air concentrations of individual volatile organic compounds (VOCs) as well as other parameters.

This Work Plan summarizes the Onondaga Lake Phase VI Addendum 6 Pre-Design Investigation (PDI) activities to evaluate VOC levels at the air monitoring stations attributable to off-site VOC air emission sources before dredging operations begins. The results of this PDI will used to support the upcoming SCA operation air monitoring to be specified in the future Dredging and Capping Community Health and Safety Plan. The intent of this PDI is not to establish background levels for data correction during the SCA operation air monitoring, as is anticipated that background will be estimated on an ongoing basis during the SCA operation air monitoring using upwind sampling results.

The proposed PDI activities will consist of the following:

- collection of 24-hour integrated ambient air samples at four of the SCA perimeter air monitoring stations currently used for monitoring of the SCA construction activities,
- laboratory analysis of each sample for 25 project-specific individual VOCs
- data evaluation of VOC concentrations with respect to wind conditions, and
- summary reporting .

This Work Plan contains details on the VOCs, sampling and analysis procedures, quality control procedures, and reporting.

1.2 WORK PLAN ORGANIZATION

This Work Plan is organized into three sections. Section 1 presents relevant background information on Onondaga Lake, and background information pertaining to the development of the scope of this investigation.. Section 2 describes the PDI objectives, and presents the field sampling and analysis activities associated with this investigation. Section 3 presents how the PDI will be reported.

1.3 BACKGROUND

On July 1, 2005, the NYSDEC and United States Environmental Protection Agency (USEPA) Region 2 issued the Record of Decision (ROD) for the Lake. The remedy specified in the ROD includes the dredging of up to an estimated 2.65 million cubic yards of sediment from the lake, and capping of an estimated 579 acres of remaining sediment. Dredged sediments will be dewatered in geotubes, within a lined sediment consolidation area (SCA) located on Wastebed 13, in the Town of Camillus.

A human health risk assessment (HHRA) was performed by USEPA to evaluate potential risks posed to the local communities by the remedial activities at the SCA. The HHRA identified 25 organic chemical compounds that satisfied two criteria (known to exist in Lake sediments, and considered volatile) for potentially posing a risk. Table 1 presents the project-specific VOCs that were identified in the HHRA, which will be evaluated during this Investigation.

Based on current discussions with NYSDEC, air quality at the work perimeter of the SCA will be monitored for VOCs and other parameters during the upcoming SCA operation to confirm protection of human health at off-site locations. Monitoring results of individual VOC concentrations will be compared to long-term (annual average) exposure regulatory guideline values. Some annual VOC guideline values are near or below existing (background) ambient air concentrations that have been measured by NYSDEC in other areas of New York State. Therefore, it will become necessary to differentiate VOC levels attributable to SCA operations from those attributable to existing off-site sources.

2. PDI OVERVIEW

This section presents the objectives of the PDI, data needs and use, field sampling locations and activities, and quality control/assurance.

2.1 PDI OBJECTIVE

The objective is to evaluate air quality levels at the SCA air monitoring stations that are attributable to off-site VOC air emission sources. The intent of this PDI is not to establish background levels for data correction during the upcoming SCA operation air monitoring, as it is anticipated that background will be estimated on an ongoing basis during the SCA operation monitoring using upwind sampling results. As such, background data from this PDI will assist in predicting the influence from off-site sources before dredging and operations air monitoring begins, and will provide data upon which any warranted modifications of the monitoring criteria and program can be made.

2.2 DATA NEEDS AND DATA USE

The PDI data is intended to identify site-specific relationships between ambient air VOC concentrations and wind conditions that will provide confidence and help data interpretation of background levels measured during the SCA operations monitoring.

Figure 1 presents the known off-site sources of VOC air emissions. Information about the point sources was obtained from NYSDEC Region 5 computer database and files. To evaluate off-site air emission sources, ambient air samples will be collected at selected existing SCA air monitoring stations and analyzed for the 25 project-specific VOCs. Since off-site air emission sources are located at various upwind directions from the SCA, meteorological data, particularly wind speed and wind direction, will also be measured, using the existing meteorological tower, concurrently with the VOC sample collection.

Ambient air samples will be collected during SCA construction activities. Therefore, samples collected upwind of the SCA are more likely to represent off-site sources than samples collected downwind of both off-site and on-site sources.

Off-site source contributions to VOC air concentrations may vary from day to day and season to season, as weather conditions and source emission levels change. For instance, an off-site source may operate only during week days and not weekends. To address day to day variations, PDI sampling will occur during different days of the week. Similarly, vehicular air emissions are substantially higher under cold ambient temperatures than warm ambient temperatures. To address these seasonal variations, PDI sampling will occur during different times of the year.

2.3 SAMPLING LOCATIONS AND DURATIONS

VOC samples are proposed to be collected at the following four existing SCA perimeter air monitoring locations, shown on Figure 2.

- OL-SCA2
- OL-SCA3
- OL-SCA5
- OL-SCA7

The rationale used in selecting these locations included the monitoring locations' proximity and downwind direction to off-site sources. Monitoring at the other four locations is not proposed since one or more of the selected locations will be representative of selected locations.

Samples are proposed to be collected over 24-hour periods (± 1 hour) on days that represent various wind directions and various days of the week. Sampling will start in the morning of the designated day and end in the

morning of the following day. The start and end times for each of the four locations will be approximately concurrent, within 2 to 3 hours of each other.

Sampling is proposed to start in April 2011. Sampling days will be conducted approximately 5 days per month (4 stations per day for a total of 20 samples per month) and for one month per calendar quarter (months of April, July, and October 2011, and January 2012). Therefore there will be a total of 20 samples per station and 80 samples for the entire PDI. An attempt will be made to sample during 1 weekend day and 4 different week days for each sampling month.

Sampling days will be selected to represent various wind direction days so that the 5 sampling days per month will be collected during 24-hour periods with different wind directions. Wind conditions will be forecasted daily for the succeeding day. NYSDEC will be notified by email when a decision is made to collect samples on the forecasted day. Sampling results will be continuously evaluated to assess the merits of additional samples. For instance, additional sampling may be conducted to confirm previous results for particular wind directions. Honeywell will notify NYSDEC if and when additional sampling is conducted.

2.4 SAMPLE COLLECTION AND ANALYSIS PROCEDURES

The following details the procedures to collect and analyze 24-hour integrated ambient air samples.

2.4.1 Sample Collection

Ambient air samples will be collected into batch-certified clean 6-liter pre-evacuated canisters positioned inside the air monitoring stations' shelters and with Teflon inlets positioned outside the shelter. Samples will be collected during a 24-hour period following procedures specified in a standard operating procedure provided in Appendix A.

The sampling rate will be maintained by laboratory-supplied constant-differential low-volume flow controllers. Vacuum readings of the canisters will be obtained and documented prior to sample collection and upon completion of sampling. Sample identification, vacuum readings, flow controller identification numbers, and other relevant information will be recorded on a field form, presented in Appendix B.

2.4.2 Sample Analysis

After sample collection, samples (canisters) will be delivered under routine Chain-of-Custody protocols to a third party laboratory certified by the Environmental Laboratory Approval Program (ELAP) and certified by NYSDOH for USEPA Method TO-15 analyses. The samples will be analyzed for the 25 project-specific VOCs. In order to achieve the reporting limits shown in Table 1, the lab will need to analyze each canister twice, once with the mass spectrometer in its SCAN mode and another time with the mass spectrometer in its SIM (selected ion monitoring) mode. The SIM mode is necessary to achieve reporting limits below 0.1 micrograms per cubic meter ($\mu g/m^3$). The actual reporting limits may be higher than those identified in Table 1, depending on the amount of dilution needed for the analysis and calibration.

2.5 QUALITY CONTROL AND QUALITY ASSURANCE

Two duplicate (co-located) samples of ambient air will be collected once every five sampling days (i.e., two duplicate samples for every 20 field samples). Precision of the sampling will be assessed by the duplicate samples in terms of relative percent difference (RPD). Sample results that are outside the expected range of ±30% will be flagged as estimated but not invalidated.

Trip or equipment blanks will not be collected. Analytical QA/QC requirements of Method TO-15 will be followed by the laboratory. Data will be validated and a data usability summary report (DUSR) will be prepared. Data qualifiers will be identified in subsequent reporting.

Data completeness is expected to be 90 percent or above. Samples may be invalidated if the canisters do not collect sufficient sample volumes, defined as final vacuums of 15 inches Hg or less.

3. PDI REPORTING

Sampling results will be analyzed to identify potential site-specific relationships between ambient air VOC concentrations and wind conditions.

Validated data in the form of summary tables of ambient air concentrations and wind speed and direction for each sampling day will be submitted to NYSDEC approximately two months after the end of each sampling month.

A complete sampling report containing all validated data will be submitted to NYSDEC approximately three months after the end of the last sample collection. The report will consist of the following:

- Sampling program overview
- Sampling and analytical methods
- Field forms
- QA/QC results and discussion
- Laboratory reports, data sheets and Chain-of-Custody Forms (Category B documentation)
- Results and discussion
- Data evaluation (including tables and figures)
- Conclusions/Recommendations

4. REFERENCES

OBG, 2009. *Onondaga Lake Pre-Design Investigation: Phase III Addendum 7 Summary Report, Air Emissions and Odors.* O'Brien & Gere Engineers, Inc. April 2009.

Parsons, 2007. *Onondaga Lake Pre-Design Investigation: Phase II & III Odorant Characterization and Analysis Summary Report.* Parsons Corporation. Revised August 2007.

Service Engineering Group, 2008. *Wind Tunnel Testing Report.* Service Engineering Group. Revised June 2008.

USEPA, 2010. *Human Health Risk Assessment, Onondaga Lake, Lake Bottom Subsite: Sediment Consolidation Area, Camillus, NY.* U.S. Environmental Protection Agency, Region III, Emergency and Remedial Response Division, New York, NY. June 2010.

Project-Specific VOCs

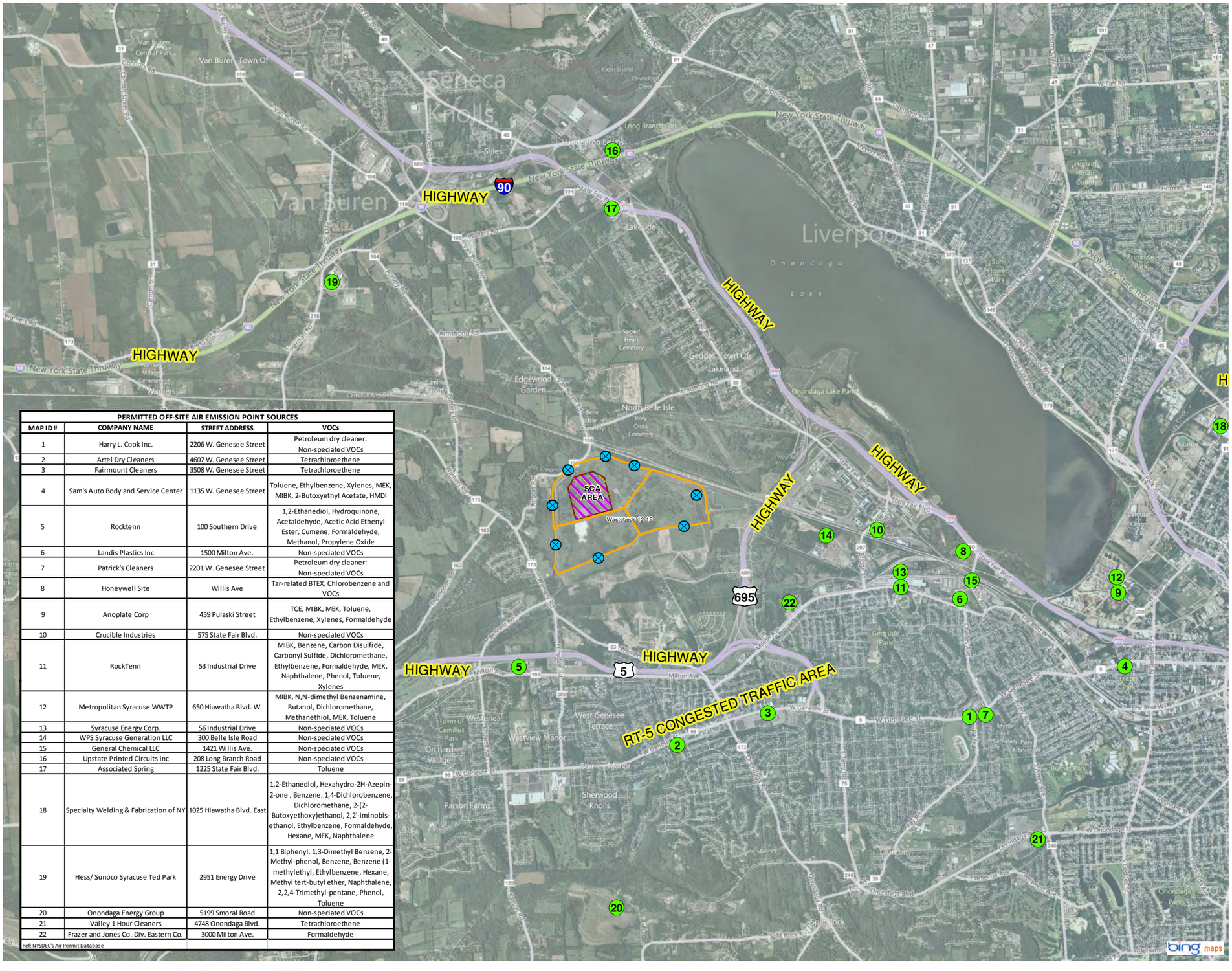
Table 1. Project Specific VOCs

Project Specific VOCs	Anticipated Reporting Limits ($\mu g/m^3$)
Acetone	2.4
Benzene	0.064
2-Butanone	2.9
Carbon Tetrachloride	0.031
Chlorobenzene	1.4
Chloroform	0.068
1,2-Dichlorobenzene	2.4
1,4-Dichlorobenzene	0.27
1,1-Dichloroethane	1.2
1,2-Dichloroethane	0.02
1,1-Dichloroethene	0.79
t-1,2-Dichloroethene	0.79
Ethyl benzene	1.3
Methyl t-Butyl Ether	3.6
Methylene Chloride	1.0
Naphthalene	0.068
Tetrachloroethene	0.14
Toluene	1.1
1,2,4-Trichlorobenzene	1.2
Trichloroethene	0.027
1,1,1-Trichloroethane	1.6
1,2,4-Trimethylbenzene	2.5
1,3,5-Trimethylbenzene	2.5
Vinyl Chloride	0.51
Xylenes	1.3

Off-Site VOC Air Emission Sources

PATH: I:\Honeywell.1163\45153.Aq-Monitoring-WDocs\DWG\MXD\PotOffSiteEmissions4mile_Aerial.mxd

FIGURE 1



PERMITTED OFF-SITE AIR EMISSION POINT SOURCES			
MAP ID #	COMPANY NAME	STREET ADDRESS	VOCs
1	Harry L. Cook Inc.	2206 W. Genesee Street	Petroleum dry cleaner: Non-speciated VOCs
2	Artel Dry Cleaners	4607 W. Genesee Street	Tetrachloroethene
3	Fairmount Cleaners	3508 W. Genesee Street	Tetrachloroethene
4	Sam's Auto Body and Service Center	1135 W. Genesee Street	Toluene, Ethylbenzene, Xylenes, MEK, MIBK, 2-Butoxyethyl Acetate, HMDI
5	Rocktenn	100 Southern Drive	1,2-Ethanediol, Hydroquinone, Acetaldehyde, Acetic Acid Ethenyl Ester, Cumene, Formaldehyde, Methanol, Propylene Oxide
6	Landis Plastics Inc	1500 Milton Ave.	Non-speciated VOCs
7	Patrick's Cleaners	2201 W. Genesee Street	Petroleum dry cleaner: Non-speciated VOCs
8	Honeywell Site	Willis Ave	Tar-related BTEX, Chlorobenzene and VOCs
9	Anoplate Corp	459 Pulaski Street	TCE, MIBK, MEK, Toluene, Ethylbenzene, Xylenes, Formaldehyde
10	Crucible Industries	575 State Fair Blvd.	Non-speciated VOCs
11	RockTenn	53 Industrial Drive	MIBK, Benzene, Carbon Disulfide, Carbonyl Sulfide, Dichloromethane, Ethylbenzene, Formaldehyde, MEK, Naphthalene, Phenol, Toluene, Xylenes
12	Metropolitan Syracuse WWTP	650 Hiawatha Blvd. W.	MIBK, N,N-dimethyl Benzenamine, Butanol, Dichloromethane, Methanethiol, MEK, Toluene
13	Syracuse Energy Corp.	56 Industrial Drive	Non-speciated VOCs
14	WPS Syracuse Generation LLC	300 Belle Isle Road	Non-speciated VOCs
15	General Chemical LLC	1421 Willis Ave.	Non-speciated VOCs
16	Upstate Printed Circuits Inc	208 Long Branch Road	Non-speciated VOCs
17	Associated Spring	1225 State Fair Blvd.	Toluene
18	Specialty Welding & Fabrication of NY	1025 Hiawatha Blvd. East	1,2-Ethanediol, Hexahydro-2H-Azepin-2-one , Benzene, 1,4-Dichlorobenzene, Dichloromethane, 2-(2-Butoxyethoxy)ethanol, 2,2'-iminobis-ethanol, Ethylbenzene, Formaldehyde, Hexane, MEK, Naphthalene
19	Hess/ Sunoco Syracuse Ted Park	2951 Energy Drive	1,1 Biphenyl, 1,3-Dimethyl Benzene, 2-Methyl-phenol, Benzene, Benzene (1-methylethyl, Ethylbenzene, Hexane, Methyl tert-butyl ether, Naphthalene, 2,2,4-Trimethyl-pentane, Phenol, Toluene
20	Onondaga Energy Group	5199 Smoral Road	Non-speciated VOCs
21	Valley 1 Hour Cleaners	4748 Onondaga Blvd.	Tetrachloroethene
22	Frazer and Jones Co. Div. Eastern Co.	3000 Milton Ave.	Formaldehyde
Ref: NYSDEC's Air Permit Database			

LEGEND

- SCA WORK PERIMETER AIR MONITORING LOCATION
- 12 PERMITED OFF-SITE AIR EMISSION POINT SOURCE
- HIGHWAY POTENTIAL OFF-SITE AIR EMISSION AREA SOURCE

DRAFT

HONEYWELL SCA

AIR QUALITY MONITORING PROGRAM

SYRACUSE, NEW YORK

OFF-SITE VOC AIR EMISSION SOURCES

0 2,100 4,200 8,400

Feet

JUNE 2011
1163.45153

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DATE: 5/17/2011 3:48:36 PM

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Current SCA Perimeter Air Monitoring Locations

FIGURE 2

AIR QUALITY
MONITORING PROGRAM
SYRACUSE, NEW YORK

CURRENT SCA PERIMETER AIR MONITORING LOCATIONS

O'BRIEN & GERE

Sample Collection Standard Operating Procedure

AMBIENT AIR SAMPLE COLLECTION PROCEDURES

This set of procedures outlines the general steps to collect ambient air samples. The site-specific Sampling and Analysis Work Plan should be consulted for proposed sample locations and sampling duration.

The following procedures will be followed for the collection of ambient air samples:

- Sampling personnel must avoid activities immediately before and during the sampling that may contaminate the sample (e.g., using markers, fueling vehicles, etc.).

- Record weather information (i.e., temperature, barometric pressure, relative humidity, wind speed, and wind direction) at the beginning of the sampling event. Record substantial changes to these conditions that may occur during the course of sampling. The information may be measured with on-site equipment or obtained from a reliable source of local measurements (e.g., a local airport).

- Use an evacuated Summa® passivated (or equivalent) stainless-steel canister to collect the ambient air sample. The canister will be provided by the laboratory, along with a flow controller equipped with an in-line particulate filter and a vacuum gauge. The flow controller will be pre-calibrated by the laboratory for the desired flow rate or duration of sample collection, as defined in the site-specific work plan.

- Place the canister at the sampling location. If the sample should be collected from breathing height (e.g., 3 to 5 feet above ground), then mount the canister on a stable platform such that the sample inlet will be at the proper height.

- Remove the protective brass plug from canister. Connect the pre-calibrated flow controller to the canister.

- Record the identification numbers for the canister and flow controller. Record the initial canister pressure on the vacuum gauge (check equipment-specific instructions for taking this

measurement). A canister with a significantly different pressure than originally recorded by the testing laboratory should not be used for sampling. Record these numbers and values on the chain-of custody form for each sample.

- Completely open the valve on the vacuum pressure in the canister. Record the time that the valve was opened (beginning of sampling) and the canister pressure on the vacuum gauge.

- Photograph the canister and the area surrounding the canister.

- Document on a field form an outdoor plot sketch that indicates the building being sampled, streets, sampling location, location of potential outdoor air sources, north direction and paved areas. Also record pertinent observations such as odors, readings from field instrumentation, and significant activities in the vicinity that result in air emissions.

- Monitor the vacuum pressure in the canister routinely during sampling, when practical (sometimes the canister will sample over a 24-hour period and routine monitoring is not practical). During monitoring, note the vacuum pressure on the gauge.

- Stop sample collection after the scheduled duration of sample collection but make sure that the canister still has a minimum amount of vacuum remaining. Check with the laboratory supplying the canister and flow controller for the ideal final vacuum pressure. Typically, the minimum vacuum is between 2 and 5 inches of mercury, but not zero. If there is no vacuum remaining, the sample will be rejected and collected again in a new canister.

- Record the final vacuum pressure and close the canister valves. Record the date and time that sample collection was stopped.

- Remove the flow controller from the canister and replace the protective brass plug.

- Attach labels/tags (sample name, time/date of sampling, etc.) to the canister as directed by the laboratory.

- Place the canister and other laboratory-supplied equipment in the packaging provided by the laboratory.

- Enter the information required for each sample on the chain-of-custody form, making sure to include the identification numbers for the canister and flow controller, and the initial and final canister pressures on the vacuum gauge.

- Include the required copies of the chain-of-custody form in the shipping packaging, as directed by the laboratory. The field crew will retain a copy of the chain-of-custody for the project file.

- Deliver or ship the samples to the laboratory within one business day of sample collection and via overnight delivery (when shipping).

Sample Collection Field Form

Honeywell

Honeywell International, Inc.

Syracuse, NY

SCA Work Zone Perimeter

Sample Start Date: _____

Sample End Date: _____

Operator: _____

Sample Location[a]	Sample ID[b]	Canister S/N	Flow Controller S/N	Gage Zero Reading Prior to Start ("Hg)	Start Time	Initial Canister Pressure ("Hg)	End Time	Final Canister Pressure ("Hg)	Duplicate Sample?

Ambient Meteorological Conditions

Conditions at the Start of Sampling		Conditions at the End of Sampling	
Temperature (Deg. F.):	_____	Temperature (Deg. F.):	_____
Barometric Pressure ("Hg):	_____	Barometric Pressure ("Hg):	_____
Precipitation (Yes/No):	_____	Precipitation (Yes/No):	_____

Comments:

[a]For Sample Location, the following labeling scheme is required: OL-SCA[Station Location]. e.g. Sample Location of station 2 is OL-SCA2

[b]For Sample ID, the following labeling scheme is required: SCA-[COC #]-[sequential number]. e.g. Sample ID of the sample collected at station 2 using COC # 1005 is SCA-1005-01 . For station 3, using the same COC, the Sample ID is SCA-1005-02.

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