

**ADDENDUM TO THE
COMPREHENSIVE PERFORMANCE TEST PLAN
FOR THE
FIXED BOX INCINERATOR #2**

Revision 2

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1.0 INTRODUCTION AND BACKGROUND

Momentive Performance Materials (Momentive) operates a hazardous waste incinerator at its facility in Waterford, New York designated as the Fixed Box Incinerator #2 (FBI #2). The FBI #2 is subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Hazardous Waste Combustors (HWC), codified as 40 CFR, Part 63, Subpart EEE. The NESHAP specifies emissions standards that reflect emissions performance of Maximum Achievable Control Technologies (MACT), and is commonly referred to as the HWC MACT. Ongoing compliance with the HWC MACT standards must be demonstrated by conducting a Comprehensive Performance Test (CPT) according to 40 CFR §63.1207(d).

Momentive submitted a CPT Plan to the New York State Department of Environmental Conservation (NYSDEC) in August 2010. The CPT for the FBI #2 was conducted on October 13-18, 2010 and December 7-9, 2010. A Notification of Compliance (NOC) was submitted on March 9, 2011 in accordance with 40 CFR §63.1210(d).

The lead emission results obtained from one of the two exhaust stacks from the FBI #2 were above the HWC MACT emission limit for semi-volatile metals during the Maximum Temperature Condition. Analysis of the field blank sample collected at the North FBI #2 stack location indicated that the cause of the high lead emissions was contamination of the sample train. In order to demonstrate that emissions from the FBI #2 are in compliance with the HWC MACT standard, Momentive intends to repeat the Maximum Temperature Condition of the CPT. The repeated Maximum Temperature Condition is scheduled to occur the week of September 26, 2011. The data from the September 2011 CPT will replace the data from the December 2010 Maximum Temperature Condition.

This document is submitted as an Addendum to the August 2010 CPT Plan. The purposes of this Addendum are to:

- Define the target process operating conditions that will be demonstrated during the test;
- Provide notice of the scheduled test date; and
- Describe the sampling and analytical methods to be used during the test, as well as data collection and reduction techniques.

Changes to the planned test activities, sampling and analysis methods, or test procedures from the August 2010 CPT Plan and Quality Assurance Project Plan (QAPP) are described in the remaining section of this Addendum. Momentive requests that the NYSDEC review and approve this Addendum to the August 2010 CPT Plan for the incinerator.

In order to simplify the review of this Addendum, information from the previously-submitted August 2010 CPT Plan that has not changed is generally not repeated in this document, unless it is necessary for clarity. For example, a detailed engineering description of the incineration system, air pollution control system, monitoring equipment, and automatic waste feed cutoff system is provided in Section 3.2 of the August 2010 CPT Plan, but is not repeated in this Addendum. Test activities, methods, and procedures not addressed in this Addendum but still applicable to the Maximum Temperature Condition can be assumed to be consistent with those in the August 2010 CPT Plan.

2.0 CPT OBJECTIVES

The objectives of the September 2011 CPT are to demonstrate compliance with the HWC MACT emission standards for existing hazardous waste incinerators presented in Table 2-1 and to establish selected operating parameter limits (OPLs) for the incineration system.

This section presents discussion of how the test will be conducted and how operating data and emission data collected during the test will be utilized to establish OPLs that will assure compliance with the HWC MACT standard.

2.1 Test Protocol and Schedule

The test will consist of one operating condition (Maximum Temperature Condition) with three replicate runs as described in Section 3.4.2 of the August 2010 CPT Plan. The test will be conducted under worst-case test conditions that maximize the potential for emissions of the pollutants of concern. Wastes typical of the type of wastes burned in the incinerator will be fed during the test. Metals will be spiked into the waste feedstreams to increase the feed rate of these constituents to worst-case levels. A summary of the test protocol is presented in Table 2-2.

It is expected that two runs will be conducted on the first day of testing and the third run will be conducted on the second day of testing. The first day of CPT testing is expected to last approximately 10 hours, including time for performing pre-test calibrations, establishing steady state operations, setup of sampling equipment, and sample recovery, while the second day is expected to last 6 hours. A tentative schedule for the test is shown below:

- Day 1: Site safety training and mobilization for testing
- Day 2: Pretesting for particulate emissions
- Day 3: Runs 1 and 2 of the Maximum Temperature Condition
- Day 4: Run 3 of the Maximum Temperature Condition and contingency testing time
- Day 5: Contingency testing and/or demobilization

2.2 Target Operating Conditions and Operating Parameter Limits

Target operating conditions for the test are intended to be worst-case conditions for the demonstration of the CPT objectives. Table 2-3 presents the target values for operational parameters during the CPT. These targets are based on the August 2010 CPT Plan targets and/or achieved values from the December 2010 Maximum Temperature Condition CPT.

OPLs will be established based on data collected during the CPT per 40 CFR §63.1209 and other applicable sections consistent with the methodology established in the March 2011 NOC. The

specific OPLs that will be established based on the September 2011 CPT are also listed in Table 2-3.

Although many of the OPLs listed in Table 2-3 will be established based only on the results of the September 2011 CPT, consistent with the August 2010 CPT plan and March 2011 NOC, there are several Air Pollution Control System (APCS)-related OPLs that will be based upon both the results of the September 2011 Maximum Temperature Condition test and the Minimum Temperature Condition as demonstrated during the October 2010 test. The combination of the maximum and minimum temperature conditions is referred to as Normal Mode. These OPLs include:

- Maximum Combustion Gas Flow Rate #1 Stack
- Maximum Combustion Gas Flow Rate #2 Stack
- Minimum Ionizing Wet Scrubber pH (OPL for each stage of each train)

In addition, the Maximum Chlorine/Chloride Feed Rate OPL will be based upon the more conservative value demonstrated in either the September 2011 Maximum Temperature Condition or the October 2010 Minimum Temperature Condition.

The OPLs for feed rates of low volatile metals (LVM), semi-volatile metals (SVM), and mercury may be extrapolated up to a maximum of 130% of the feed rate demonstrated during the September 2011 Maximum Temperature Condition, as described in Sections 3.3.4.3 and 3.4.2.1 of the August 2010 CPT Plan, provided that the results are not near the emission limits and no potential risk assessment problems are identified with any increased emissions.

2.3 Waste Feedstreams and Spiking

A summary of the characteristics of the CPT waste and spiking streams is presented in Table 2-4. Bulk and constituent feed rates of ash (as SiO₂), chlorine/chloride, and metals are shown in Table 2-5. The expected quantities are based on providing 30 hours of materials at the target feed rates. The basis for 30 hours is to provide sufficient materials for the time required for stack sampling, startup and establishing steady state, time between test runs, and contingency time, in case a run must be repeated.

2.3.1 Waste Streams

Momentive burns a variety of waste feedstreams in the incinerator. More information on the characteristics of Momentive's waste feedstreams is provided in Section 3.3 of the August 2010 CPT Plan. Momentive plans to feed the following wastes during the CPT:

- Non-Polar Solvent waste (discussed in Section 3.3.1.1.1 of the August 2010 CPT Plan)
- Chlorosilane Slurry waste (discussed in Section 3.3.2.1 of the August 2010 CPT Plan)
- Silane waste (fed as methyltrichlorosilane) (discussed in Section 3.3.2.2 and 3.3.4.4 of the August 2010 CPT Plan)

These wastes are the same wastes that were fed during the Maximum Temperature Condition of the December 2010 CPT. In order to achieve the target chlorine/chloride feed rate, the normal silane waste material will be replaced with >95% pure methyltrichlorosilane. Methyltrichlorosilane has a high chlorine content and no other spiking will be required to obtain the desired chlorine/chloride feed rate. This waste stream will be sampled as described in Section 2.4.2 of this Addendum.

2.3.2 *Spiking Materials and Equipment*

The spiking protocol for the September 2011 CPT varies from the spiking protocol described in Section 3.3.4.3 of the August 2010 CPT Plan. Even though a different spiking protocol is being used, the overall target constituent feed rates for each metal are the same as for the December 2010 CPT. Momentive will spike LVM as arsenic, beryllium, chromium and nickel. The spiked SVM will be cadmium and lead. Mercury will also be spiked during the upcoming test.

The metal spikes will be delivered to the incinerator via 4 different spiking streams. The compounds used for spiking the metals listed above and the associated spiking streams are:

- Spiking Stream 1 – beryllium sulfate and nickel sulfate in water
- Spiking Stream 2 – sodium arsenate in water
- Spiking Stream 3 – cadmium acetate, lead acetate, and mercuric acetate in water
- Spiking Stream 4 – sodium dichromate in water

The specific metal compounds were selected based on several criteria. The first criterion is that these metal salts are soluble in water and will remain in a stable solution throughout the duration of the test. These solutions will be relatively easy to handle and pump as they have a density and viscosity roughly equivalent to water. Because testing is being conducted in early fall, there is little likelihood of freezing temperatures that would adversely affect water-based solutions. The second criterion is that these compounds were successfully used in the 2004 CPT of the FBI #2. A certificate of analysis (COA) for each stream will be available prior to the beginning of the test. The spikes will be formulated, samples will be collected from each “batch”, and those samples will be analyzed to generate the COA.

The use of four separate spikes was established based on past experience. Arsenic will not stay in solution if other metals are present. The lead, cadmium and mercuric acetates will all stay in solution when combined. While beryllium and nickel sulfates can be combined in a single solution, it is not known if sodium dichromate can be mixed with them. For the purposes of this Addendum it is assumed that the sodium dichromate will be a separate stream. Prior to the test, the spiking contractor will perform a bench-scale study to evaluate the stability of a sodium dichromate/beryllium sulfate/nickel sulfate solution. If the solution proves to be stable, Momentive may choose to combine the sodium dichromate with the beryllium and nickel sulfates in a single solution, while the target rates for each metal will remain the same.

The specific feed rates of the spiked metals were selected to meet the goals of having sufficient operational flexibility for setting an OPL, while allowing for sufficient quantities in the stack gas for detection limits. In-stack detection limits and conservative estimates of the removal efficiency for each metal category were used to calculate a minimum required metal feed rate. A copy of the spreadsheet calculation for minimum metals quantities is provided in Appendix I of this Addendum. As the data in Appendix I show, the selected metal feed rates will be sufficient to result in emissions that will be detected in the stack gas. It should be noted that the target metals spiking feed rates may be adjusted on the day of the test based on the concentrations of metals in the waste or the achievable waste feed rates. It should also be noted that depending on the results of the bench scale tests of the spikes, the bulk spiking rate of one or more of the streams may change, with a corresponding change in respective metals concentrations in order to maintain the target feed rates. This type of change will only affect the amount of water that is used as a carrier fluid and fed to the incinerator.

The spiking equipment will consist of drums for storage of the materials, transport lines, pumps, flowmeters, and a computer-based flow controller and data logger. The spiking materials will be shipped to the site in drums and will remain in those drums until the materials are fed to the incinerator. The drums will be placed on spill containment pallets and tubing will connect the drum to the spiking pumps. Each spiking stream will have a dedicated metering pump and flowmeter. The flow rate from each pump is monitored using a coriolis mass flowmeter that is connected to a computerized flow measurement and control system. The control system computer varies the pump speed to control the feed rate of the spiking material to the desired setpoint. The pump discharge is connected to tubing that transports the spike to the injection location. For the September 2011 CPT, the spikes will be pumped separately and will only commingle in a header at the point of injection into a dedicated waste injection lance. This lance is not being used to feed waste during the test.

A pre-test calibration of the system will be conducted at the spiking contractor's shop prior to shipment of the equipment to the field. A post-test calibration will be performed at the contractor's shop after the equipment is returned. The calibration records will be included in the spiking report.

2.4 Sampling and Analysis

A summary of the CPT sampling and analytical program is presented in Table 2-6, Table 2-7, and Table 2-8. A detailed discussion of the sampling and analytical equipment, procedures, equipment calibrations, quality assurance/quality control, and sample handling procedures is provided in the QAPP which is included as Section 4.0 of the August 2010 CPT Plan. Differences in the sampling and analysis procedures presented in the August 2010 QAPP are discussed in Section 3.0 of this document.

2.4.1 Stack Gas Samples

Stack gas sampling will be performed at both FBI #2 stacks in sample ports installed in each stack for particulate matter, hydrogen chloride/chlorine gas, metals, and carbon monoxide. The sampling methods listed in Table 2-6 are the same methods as described in the August 2010 CPT Plan. For the September 2011 CPT, the stack gas will be analyzed for the following metals using Method 6020A from US EPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods":

- Aluminum
- Antimony
- Arsenic
- Barium
- Beryllium
- Cadmium
- Chromium
- Cobalt
- Copper
- Lead
- Manganese
- Nickel
- Selenium
- Silver
- Thallium
- Zinc

The mercury concentration will be analyzed using SW-846 Method 7470A. The stack sampling contractor will maintain custody of the samples from the time of collection until they are relinquished to the analytical laboratory.

2.4.2 *Waste Samples*

Consistent with the August 2010 CPT Plan, grab samples of the liquid waste streams will be collected as follows:

- Non-Polar Solvent waste – once every 15 minutes; composited for each run
- Chlorosilane Slurry waste – at the beginning, middle, and end of each run
- Silane waste – at the beginning, middle, and end of each run

Each container sent to the analytical laboratory will be clearly identified and labeled and will be documented on a chain of custody form.

Each grab of the Non-Polar Solvent waste samples will consist of approximately 150 ml and will be collected in a new, clean glass bottle that has been rinsed after the sample line has been flushed. The grab samples from the Non-Polar Solvent waste will be composited for each run. The grab samples will be composited in a large jar (likely 1 gallon) and thoroughly mixed prior to being divided into the number of glass bottles requested by the analytical laboratory. Adequate material will be collected so that NYSDEC can have split samples from each run composite, to be poured into bottles provided by NYSDEC.

As with previous testing of the FBI #2, the samples of Chlorosilane Slurry waste and Silane waste will be collected in stainless steel containers. Each collected grab sample of the Chlorosilane Slurry waste and the Silane waste samples will be analyzed individually, and the samples will not be composited.

The waste stream samples will be analyzed for heating value, density, and the concentration of ash, halogens, metals, and ash (as SiO₂) via the test methods shown in Table 2-7. For purposes of calculating LVM, SVM, mercury, chlorine/chloride, and ash feed rate limits from the CPT data, the concentration of any constituents determined not to be present at detectable levels will be assumed to be “zero”, consistent with the August 2010 CPT Plan.

2.4.3 *Spiking Stream Samples*

A grab sample of each of the four spiking streams will be collected from a “T” in the respective spiking line at the beginning, middle, and end of each run. An additional set of grab samples from each of the four spiking streams will be collected and composited during Run 2 for duplicate analysis. The grab samples for each stream will be composited for each run. Each spiking stream grab sample will consist of approximately 150 ml and will be collected in a new, clean glass bottle that has been rinsed after the sample line has been flushed. The grab samples

will be composited for each run for each spiking stream (i.e., one composite sample for each spiking stream will be generated for each test run). The grab samples will be composited in a large jar (likely 1 gallon) and thoroughly mixed prior to being divided into the number of glass bottles requested by the analytical laboratory. Adequate material will be collected so that NYSDEC can have split samples from each run composite, to be poured into bottles provided by NYSDEC. The concentrations of the metal constituents present in each stream will be determined by the test methods shown in Table 2-8. Each spiking stream will only be tested for the metals present in that specific spiking stream. For example, Spiking Stream 1 (beryllium sulfate and nickel sulfate in water) will only be tested for beryllium and nickel. The metals that will be analyzed for each spiking stream are summarized in Table 2-8.

2.5 Operation of the Incinerator during the Test

In order to maintain a stable operation at extreme operating conditions, the automatic waste feed cutoff (AWFCO) interlocks will be reset during the September 2011 CPT per 40 CFR §63.1207(h). Resetting the AWFCOs to less restrictive values during the CPT will allow for demonstration of the worst-case conditions for these parameters and minimize the risk of a test interruption due to minor variability in a process parameter. These AWFCO parameters will be returned to their normal values at the conclusion of the test. Any AWFCOs that occur during the test will be logged in the facility operating record. A record of any AWFCOs during testing will also be included in the CPT Report. Momentive also intends to perform operational pretesting one day prior to commencing the test. Momentive intends to reset the AWFCOs during the operational pretesting for a period of time not to exceed 720 hours per 40 CFR §63.1207(h)(2).

In 40 CFR §63.1207(g)(1)(iii), the HWC MACT standard requires that prior to obtaining performance test data the system must function under performance test conditions until steady-state operation is reached with respect to emissions of pollutants that are to be measured during the performance test and operating parameters for which limits will be established. Prior to the initiation of stack sampling, the incinerator will be brought up to target levels for the key parameters listed in Table 2-2. Once the target levels have been achieved, the incinerator will be operated at a steady state and at the target spiking rates for at least one hour prior to initiating stack sampling as described in Section 3.4 of the August 2010 CPT Plan. The required recovery time for any potential interruptions encountered during testing will be coordinated with NYSDEC staff responsible for oversight of the performance test prior to the resumption of testing if a recovery period of less than one-hour is deemed to be appropriate.

**Table 2-1
HWC MACT Emissions Performance Requirements for Existing Incinerators**

Regulatory Citation	Constituent	Maximum Allowable Emissions	To Be Demonstrated During the September 2011 CPT
§63.1219(a)(1)(ii)	Dioxins/Furans	0.4 ng/dscm TEQ ^a , corrected to 7% O ₂	No
§63.1219(a)(2)	Mercury	130 µg/dscm, corrected to 7% O ₂	Yes
§63.1219(e)(2)(i) ^b	Cadmium, Lead, and Selenium	230 µg/dscm, corrected to 7% O ₂	Yes
§63.1219(e)(2)(ii) ^b	Antimony, Arsenic, Beryllium, Chromium, Cobalt, Manganese, and Nickel	92 µg/dscm, corrected to 7% O ₂	Yes
§63.1219(a)(5)(i) ^c	Carbon Monoxide	100 ppmv, dry, corrected to 7% O ₂	Yes
§63.1219(a)(5)(ii) ^c	Total Hydrocarbons (THC as propane)	10 ppmv, dry, corrected to 7% O ₂	No
§63.1219(a)(6) and NYCRR 373-2.15(d)(2) ^d	Hydrogen Chloride / Chlorine	32 ppmv, dry, corrected to 7% O ₂ (Cl(-) equivalent) and 1.8 kg/hr or 1% of the HCl entering the control equipment	Yes
§63.1219(e) and NYCRR 373-2.15(d)(3) ^b	Particulate Matter	0.08 gr/dscf ^b , corrected to 7% O ₂	Yes
§63.1219(c) and NYCRR 373-2.15(d)(1)(i)	DRE of POHCs	99.99% destruction and removal efficiency	No

Notes:

^a TEQ is toxic equivalence quotient to 2,3,7,8-TCDD.

^b Emissions of particulate matter (PM) will be assessed with respect to the alternative metals emission control requirements of 40 CFR §63.1219(e). In addition, emissions of PM will need to be less than 0.08 gr/dscf to be in compliance with NYCRR 373-2.15(d)(3).

^c The hydrocarbon standard can be demonstrated by the use of either THC or CO CEMS. Momentive chooses to monitor CO emissions. Because no DRE testing will be performed during this CPT, THC sampling and analysis will not be performed.

^d In addition to the requirement in 40 CFR §63.1219(a)(6), emissions of HCl will need to be less than 1.8 kg/hr or 1% of the HCl entering the control equipment to be in compliance with NYCRR 373-2.15(d)(2).

Table 2-2
CPT Protocol
FBI #2 – Maximum Temperature Condition Retest

Operating Parameters	Emissions Testing	Feedstreams
<p><u>Combustion-related parameters</u></p> <ul style="list-style-type: none"> • Maximum combustion chamber temperature • Maximum stack gas flow rates • Maximum Group II hazardous waste feed rate • Maximum low volatility metals feed rate • Maximum semi-volatile metals feed rate • Maximum mercury metals feed rate • Maximum chlorine/chloride feed rate • Maximum ash feed rate (as SiO₂) <p><u>APCS-related parameters</u></p> <ul style="list-style-type: none"> • Minimum Quench makeup water flow rate • Minimum Countercurrent Scrubber #1 and #2 makeup water flow rates • Minimum total Ionizing Wet Scrubber power (each APCS train) • Minimum 2nd stage Ionizing Wet Scrubber power (each APCS train) • Minimum Ionizing Wet Scrubber makeup water flow rate (each stage) • Minimum Ionizing Wet Scrubber Crossflow Scrubber water flow rate (each stage) • Minimum pH in Ionizing Wet Scrubber (each stage) 	<ul style="list-style-type: none"> • Particulate matter • Hydrogen chloride / chlorine gas (HCl/Cl₂) • Metals (Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Hg, Ni, Se, Ag, Tl, Zn) • Carbon monoxide and oxygen (on-site CEMS) 	<ul style="list-style-type: none"> • Non-Polar Solvent waste • Chlorosilane Slurry waste • Silane waste (fed as methyltrichlorosilane) • Metals spikes dissolved in water <ol style="list-style-type: none"> 1. Beryllium sulfate and nickel sulfate 2. Sodium arsenate 3. Cadmium acetate, lead acetate and mercuric acetate 4. Sodium dichromate

**Table 2-3
Target Operating Conditions
FBI #2 – Maximum Temperature Condition Retest**

Parameter	Units	2010 Target	OPL from 2011 NOC	2011 Target	Averaging Period	Method of Establishing OPL
Maximum Combustion Chamber Gas Temperature	°C	1200	1210	1200	HRA	Average of the run averages for the Maximum Temperature Condition
Maximum Combustion Gas Flow Rate #1 Stack	acfm	6000	6422	6200	HRA	Average of the maximum hourly averages for the Normal Mode test runs
Maximum Combustion Gas Flow Rate #2 Stack	acfm	6000	6244	6000	HRA	Average of the maximum hourly averages for the Normal Mode test runs
Maximum Group II Waste Feed Rate	lb/min	4 gpm	41 lb/min	41 lb/min	HRA	Average of the maximum hourly averages for the Maximum Temperature Condition
Maximum Ash Feed Rate (as SiO ₂)	lb/hr	1344	1007	1000	12-HRA	Average of the run averages for the Maximum Temperature Condition
Maximum Chlorine/Chloride Feed Rate	lb/hr	1152	896	1000	12-HRA	The more conservative of the average of the run averages for either the Minimum Temperature Condition or the Maximum Temperatures Condition
Maximum LVM Total Feed Rate (Sb, As, Be, Cr, Co, Mn, Ni)	lb/hr	0.595	0.63	0.595	12-HRA	Extrapolation to 130% of the average of the run averages for the Maximum Temperature Condition ^a
Maximum Mercury Feed Rate	lb/hr	0.0051	0.0075	0.0051	12-HRA	Extrapolation to 130% of the average of the run averages for the Maximum Temperature Condition ^a
Maximum SVM Total Feed Rate (Cd, Pb, and Se)	lb/hr	0.251	0.29	0.251	12-HRA	Extrapolation to 130% of the average of the run averages for the Maximum Temperature Condition ^a
Minimum Quench Tower Makeup Water Flow Rate	gpm	140	156	150	HRA	Average of the run averages for the Maximum Temperature Condition

Notes:

^a The metals feed rate OPLs may be extrapolated to 130% of the demonstrated feed rate, provided that the results are not near the emission limits and no potential risk assessment problems are identified with the increased emissions.

**Table 2-3
Target Operating Conditions (continued)
FBI #2 – Maximum Temperature Condition Retest**

Parameter	Units	2010 Target	OPL from 2011 NOC	2011 Target	Averaging Period	Method of Establishing OPL
Counter Current Scrubber #1 Makeup Water Flow Rate	gpm	950	995	1000	HRA	Average of the run averages for the Maximum Temperature Condition
Counter Current Scrubber #2 Makeup Water Flow Rate	gpm	1100	1183	1180	HRA	Average of the run averages for the Maximum Temperature Condition
Ionizing Wet Scrubber Total Train Power (sum of 1 st and 2 nd stage for each train)	KW	5	4.8 (each train)	5	HRA	Average of the run averages for the Maximum Temperature Condition
2 nd Stage Ionizing Wet Scrubber Power (2nd stage IWS unit for each train)	KW	4.5	3.4 (each unit)	3.5	HRA	Average of the run averages for the Maximum Temperature Condition
Ionizing Wet Scrubber Makeup Water Flow Rate (each stage)	gpm	50	<u>#1 Side</u> IWS-1: 30 IWS-2: 38 <u>#2 Side</u> IWS-1: 31 IWS-2: 36	35	HRA	Average of the run averages for the Maximum Temperature Condition
Ionizing Wet Scrubber Crossflow Scrubber Recirculation Water Flow Rate (each stage)	gpm	350	<u>#1 Side</u> IWS-1: 181 IWS-2: 321 <u>#2 Side</u> IWS-1: 220 IWS-2: 341	300	HRA	Average of the run averages for Maximum Temperature Condition
Minimum Ionizing Wet Scrubber pH (each stage)	std. pH units	8.8	<u>#1 Side</u> IWS-1: 9.1 IWS-2: 9.0 <u>#2 Side</u> IWS-1: 9.0 IWS-2: 9.0	9.0	HRA	Average of the run averages for the Normal Mode test runs

**Table 2-4
CPT Waste and Spike Compositions
Fixed Box Incinerator #2 – Maximum Temperature Condition Retest**

Parameter	Units	Non-Polar Solvents ^a	Chlorosilane Slurry ^a	Silanes ^{a, b}	Metals Spike 1 ^c	Metals Spike 2 ^d	Metals Spike 3 ^e	Metals Spike 4 ^f
Heating Value	Btu/lb	14,610	8,765	9.780	0	0	0	0
Silicon	%	4.0	23.1	18.7	N/A	N/A	N/A	N/A
Chlorine	%	0.2	35.0	71.2	N/A	N/A	N/A	N/A
Arsenic	ppm	0	0	0	N/A	3,233	N/A	N/A
Beryllium	ppm	0	0	0	537	N/A	N/A	N/A
Chromium	ppm	0	4.2	0	N/A	N/A	N/A	7,350
Antimony	ppm	0	0	0	N/A	N/A	N/A	N/A
Cobalt	ppm	0	0	0	N/A	N/A	N/A	N/A
Manganese	ppm	0	42.9	0	N/A	N/A	N/A	N/A
Nickel	ppm	0	0	0	6,900	N/A	N/A	N/A
Cadmium	ppm	0	0	0	N/A	N/A	390	N/A
Lead	ppm	0	0	0	N/A	N/A	7,867	N/A
Selenium	ppm	0	1.6	0	N/A	N/A	N/A	N/A
Mercury	ppm	0.085	0	0	N/A	N/A	167	N/A

Notes:

- ^a The actual CPT waste composition will depend on the facility production schedule and generation rates for specific waste streams. Waste stream constituent concentrations are based on historical WAP data results from 2004 to January 2008.
- ^b Silane %Cl value derived from theoretical calculated mass of Cl in SiCl₃CH₃.
- ^c Spiking Stream 1 is beryllium sulfate and nickel sulfate in water.
- ^d Spiking Stream 2 is sodium arsenate in water.
- ^e Spiking Stream 3 is cadmium acetate, lead acetate, and mercuric acetate in water.
- ^f Spiking Stream 4 is sodium dichromate in water.

**Table 2-5
CPT Waste and Spike Feed Rates
Fixed Box Incinerator #2 – Maximum Temperature Condition Retest**

Parameter	Units	Non-Polar Solvents ^a	Chlorosilane Slurry ^a	Silanes ^{a, b}	Metals Spike 1 ^c	Metals Spike 2 ^d	Metals Spike 3 ^e	Metals Spike 4 ^f	Total
Stream Feed Rate	lb/hr	766	2,178	500	30	15	30	30	3,446
Test Time	hr	30	30	30	30	30	30	30	-
Qty. Required	lb	22,980	65,340	15,000	900	450	900	900	-
SiO ₂	lb/hr	66	1,076	200	N/A	N/A	N/A	N/A	1,342
Chlorine/Chloride (as HCl)	lb/hr	2	784	366	N/A	N/A	N/A	N/A	1,152
Low-Volatility Metals									0.5947
Arsenic	lb/hr	0	0	0	N/A	0.0485	N/A	N/A	0.0485
Beryllium	lb/hr	0	0	0	0.0161	N/A	N/A	N/A	0.0161
Chromium	lb/hr	0	0.0091	0	N/A	N/A	N/A	0.2205	0.2296
Antimony	lb/hr	0	0	0	N/A	N/A	N/A	N/A	0
Cobalt	lb/hr	0	0	0	N/A	N/A	N/A	N/A	0
Manganese	lb/hr	0	0.0934	0	N/A	N/A	N/A	N/A	0.0934
Nickel	lb/hr	0	0	0	0.2070	N/A	N/A	N/A	0.2070
Semi-Volatile Metals									0.2512
Cadmium	lb/hr	0	0	0	N/A	N/A	0.0117	N/A	0.0117
Lead	lb/hr	0	0	0	N/A	N/A	0.2360	N/A	0.2360
Selenium	lb/hr	0	0.0035	0	N/A	N/A	N/A	N/A	0.0035
Mercury	lb/hr	0.0001	0	0	N/A	N/A	0.0050	N/A	0.0051

Notes:

- ^a The actual CPT waste composition will depend on the facility production schedule and generation rates for specific waste streams. Waste stream constituent concentrations are based on historical WAP data results from 2004 to January 2008.
- ^b Silane %Cl value derived from theoretical calculated mass of Cl in SiCl₃CH₃.
- ^c Spiking Stream 1 is beryllium sulfate and nickel sulfate in water.
- ^d Spiking Stream 2 is sodium arsenate in water.
- ^e Spiking Stream 3 is cadmium acetate, lead acetate, and mercuric acetate in water.
- ^f Spiking Stream 4 is sodium dichromate in water.

**Table 2-6
Stack Gas Sampling and Analysis
FBI #2 – Maximum Temperature Condition Retest**

Sampling Method ^a	Number of Sampling Runs per Stack	Sampling Time per Run ^b	Analytical Parameters	Analytical Method ^a
EPA Method 1	1	N/A	Traverse Point Locations	EPA Method 1
EPA Method 2	6	2 hours ^d	Volumetric Flow Rate	EPA Method 2
EPA Method 3A ^c	6	2 hours ^d	Molecular Weight (CO ₂ , and O ₂)	EPA Method 3A
EPA Method 4	6	2 hours ^d	Moisture (H ₂ O)	EPA Method 4
EPA Method 5/26A	3	2 hours	Particulate Matter	EPA Method 5
			Hydrogen Chloride/Chlorine (HCl/Cl ₂)	SW-846 Method 9056A
EPA Method 29	3	2 hours	Metals ^e	SW-846 Method 6020A
			Mercury	SW-846 Method 7470A
CEMS	3	Continuous	Carbon Monoxide (CO)	Installed CEMS
			Oxygen (O ₂)	Installed CEMS

Notes:

- ^a Unless otherwise noted, methods are from 40 CFR 60 Appendix A. Methods designated as “SW-846” are from US EPA’s “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.”
- ^b Sampling times are nominal and may be slightly longer.
- ^c Method 3A will be performed continuously over the run using a CEMS provided by the stack sampling contractor.
- ^d Methods 2, 3A, and 4 are performed as part of the other isokinetic sampling methods.
- ^e Metals train samples will be analyzed for the following metals using SW-846 Method 6020A: aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, nickel, selenium, silver, thallium, and zinc.

**Table 2-7
Waste Feedstream Sampling and Analysis
FBI #2 – Maximum Temperature Condition Retest**

Stream	Sampling Method	Frequency of Sampling	Total Number of Samples for Analysis	Analytical Parameter	Analytical Method
Non-Polar Solvent waste	Grab sample from tap in feed line located upstream of spiking materials	Grab sample once every 15 minutes; samples will be composited for each run	3	Heating Value	ASTM D4809-06
				Ash	ASTM D482-03
				Density	ASTM D1475-98(08)
				Chlorine/Chloride	SW-846 9056A and an oxygen flask technique
				Metals ^b	SW-846 6010C
				Mercury	SW-846 7470A/7471B
				SiO ₂	CAS ^b Internal Method GEN-SILICON
Chlorosilane Slurry waste	Grab sample from tap in feed line located upstream of spiking materials	Grab sample at beginning, middle, and end of each run (not composited)	9 ^c	Heating Value	ASTM D4809-06
				Ash	ASTM D482-03
				Density	ASTM D1475-98(08)
				Chlorine/Chloride	SW-846 9056A and an oxygen flask technique
				Metals ^b	SW-846 6010C
				Mercury	SW-846 7470A/7471B
				SiO ₂	CAS ^b Internal Method GEN-SILICON
Silane waste (fed as methyltrichlorosilane)	Grab sample from tap in feed line located upstream of spiking materials	Grab sample at beginning, middle, and end of each run (not composited)	9 ^c	Heating Value	ASTM D4809-06
				Ash	ASTM D482-03
				Density	ASTM D1475-98(08)
				Chlorine/Chloride	SW-846 9056A and an oxygen flask technique
				Metals ^b	SW-846 6010C
				Mercury	SW-846 7470A/7471B
		SiO ₂	CAS ^b Internal Method GEN-SILICON		

Notes:

^a Metals include: aluminum, arsenic, antimony, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, nickel, selenium, silver, thallium, and zinc.

^b CAS – Columbia Analytical Services.

^c Samples will not be composited.

Table 2-8
Spike Feedstream Sampling and Analysis
FBI #2 – Maximum Temperature Condition Retest

Stream	Sampling Method	Frequency of Sampling	Total Number of Samples for Analysis	Analytical Parameter	Analytical Method
Spiking Stream 1 – Beryllium sulfate and nickel sulfate in water	Grab sample from “T” in spiking line	Beginning, middle, and end of each run; composited for each run	4 ^a	Beryllium and nickel	SW-846 6010C
Spiking Stream 2 – Sodium arsenate in water	Grab sample from “T” in spiking line	Beginning, middle, and end of each run; composited for each run	4 ^a	Arsenic	SW-846 6010C
Spiking Stream 3 – Cadmium acetate, lead acetate, and mercuric acetate in water	Grab sample from “T” in spiking line	Beginning, middle, and end of each run; composited for each run	4 ^a	Cadmium and lead	SW-846 6010C
				Mercury	SW-846 7470A
Spiking Stream 4 – Sodium dichromate in water	Grab sample from “T” in spiking line	Beginning, middle, and end of each run; composited for each run	4 ^a	Chromium	SW-846 6010C

Notes:

^a Duplicate spike samples will be collected during Run 2 for analytical QA/QC purposes.

3.0 QUALITY ASSURANCE PROJECT PLAN

A detailed discussion of the sampling and analytical equipment, procedures, equipment calibrations, quality assurance/quality control, and sample handling procedures is provided in the QAPP, which was included as Section 4.0 of the August 2010 CPT Plan. Any differences in the information presented in the August 2010 QAPP are discussed in this section.

3.1 Project Organization and Responsibilities

Mr. Mark Lunden of Momentive is responsible for the overall execution of the test. Franklin Engineering Group, Inc. (Franklin Engineering) will be responsible for on-site test coordination and oversight. Mr. Duncan Kimbro of Franklin Engineering will be the on-site CPT Coordinator. Mr. Kimbro is experienced in hazardous waste incinerator test planning, execution and reporting for RCRA and HWC MACT compliance. Mr. Dennis R. Knisley, P.E., of Franklin Engineering will be the overall test Quality Assurance Officer and will be performing on-site inspections of sampling equipment and field data validation during testing. Mr. Knisley has experience in emission testing of hazardous waste combustors, as well as permitting and testing for RCRA and HWC MACT compliance. Franklin Engineering will also provide an additional engineer to coordinating the feed sampling and handling, documentation, and sample shipping activities.

Several subcontractors to Franklin Engineering will be responsible for various aspects of this HWC MACT CPT. They are listed below:

Emission Sampling:	DEECO, Inc. of Raleigh, NC
Emission Sample Analysis:	Element One, Inc. of Wilmington, NC
Spiking Materials and Services:	Triad Chemicals, Inc. of Greensboro, NC
Feedstream/Spike Sample Analysis:	Columbia Analytical Services of Rochester, NY

3.2 Differences in Sampling Methodology

The purpose of this section of the Addendum is to document differences in the sampling and analysis activities planned for the upcoming test from the descriptions provided in the August 2010 CPT Plan and QAPP. These differences are broken out by sampling train or analytical method.

3.2.1 Stack Gas Sampling

EPA Method 5/26A – Particulate Matter and Halogens (HCl and Cl₂)

The second paragraph of Section 4.4.4.1 of the August 2010 CPT Plan (page 4-35) states that a tare-weighted quartz fiber filter will be used. Instead, the contracted stack sampler will use a

tare-weighted Teflon-coated glass fiber filter consistent with standard practice for Method 26A when it is combined with Method 5.

The third paragraph of Section 4.4.4.1 of the August 2010 CPT Plan (page 4-35) is replaced with the following description of impingers:

Upon exiting the filter, the gas will be drawn through a series of six impingers containing the halogen absorbing solutions and silica gel. The first impinger will contain 50 ml of a 0.1N H₂SO₄ that will be used as a water knockout trap. The second and third impingers will each contain 100 ml of 0.1N H₂SO₄ solution to capture the HCl in the flue gas stream. The fourth and fifth impingers will each contain 100 ml of a 0.1N NaOH solution to remove the Cl₂. The sixth impinger will contain a pre-weighed amount of silica gel to remove any residual moisture present in the gas stream. Following the impinger system, the gas will be drawn through a dry gas meter, a calibrated orifice, and a leak-free pump.

Steps 5, 6, and 7 of the recovery procedure described in Section 4.4.4.1 of the August 2010 CPT Plan (page 4-36 to 4-37) are replaced with the following steps:

5. Measure the volume of or weigh the first, second, and third impingers to the nearest ± 1 ml or nearest ± 0.5 g, respectively. (the remainder of the step remains unchanged).
6. Measure the volume of or weigh the fourth and fifth impingers to the nearest ± 1 ml or nearest ± 0.5 g, respectively. (the remainder of the step remains unchanged).
7. The sixth impinger will have already been pre-weighed before sampling begins. Weigh the sixth impinger (including the spent silica gel) to the nearest ± 0.5 g in order to determine the final weight of the spent silica gel.

It should also be noted that the sodium thiosulfate will not be added in the field because if too much is added it can cause analytical interferences. The appropriate amount of sodium thiosulfate will be added in the laboratory.

EPA Method 29 – Metals

The second paragraph of Section 4.4.4.2 of the August 2010 CPT Plan (page 4-38) is replaced with the following description of impingers:

Sample gas will be drawn through the nozzle and probe isokinetically and then pass through a heated glass fiber filter (248 °F ± 25 °F). Upon exiting the filter, the gas will be drawn through a series of seven impingers containing the reagents prescribed by the method. The first impinger will be empty and will be used as a moisture knockout impinger. The second and third impingers will each contain 100 ml 5% HNO₃/10% H₂O₂ solution to enhance the collection of metals of interest. The fourth impinger will be empty and functions as another knockout impinger. The fifth and sixth impingers will each contain 100 ml 10% H₂O₂/4% potassium permanganate solution for the removal of mercury. The seventh impinger will contain a pre-weighed amount of silica gel to remove any residual moisture present in the gas stream. Following the impinger system, the gas will be drawn through a dry gas meter, a calibrated orifice, and a leak-free pump.

Steps 4, 5, 6, 7, and 8 of the recovery procedure described in Section 4.4.4.2 of the August 2010 CPT Plan (page 4-38 to 4-39) are replaced with the following steps:

4. Brush and rinse the front half of the train (nozzle, probe, and front-half filter housing) with exactly 100 ml of acetone into a pre-cleaned container. Each surface will be rinsed three times, with each rinse using approximately one-third of the acetone. Seal and label the container (Container #2).
5. Rinse the front-half of the train (nozzle, probe, and front-half filter housing) with exactly 100 ml of 0.1 N HNO₃ solution into a pre-cleaned container. Each surface will be rinsed three times, with each rinse using approximately one-third of the HNO₃. Seal and label the container (Container #3).
6. In lieu of measuring the volume of the liquid from the first three impingers to within 0.5 ml, the contracted stack sampler will weigh the impingers before stack sampling begins and will weigh the impingers after stack sampling to determine the mass of collected liquid to within ± 0.5 g. Transfer the combined liquid to a pre-cleaned sample container (Container #4). Rinse the first three impingers, the filter support, the back half of the filter housing, and connecting glassware with exactly 100 ml of 0.1 N HNO₃ and transfer the rinsate to Container #4. Each surface will be rinsed three times, with each rinse using approximately one-third of the HNO₃.
7. In lieu of measuring the volume of the liquid from the fourth impinger to within 0.5 ml, the contracted stack sampler will weigh the impinger before and after

stack sampling to determine the mass of collected liquid to within ± 0.5 g. Rinse the fourth impinger with exactly 100 ml of 0.1 N HNO₃ and place the rinse along with the liquid from the fourth impinger into a pre-cleaned container (Container #5A). Each surface will be rinsed three times, with each rinse using approximately one-third of the HNO₃.

In lieu of measuring the volume of the liquid from the fifth and sixth impingers to within 0.5 ml, the contracted stack sampler will weigh the impingers before and after stack sampling to determine the mass of collected liquid to within ± 0.5 g. Rinse the fifth and sixth impingers a minimum of three times with exactly 100 ml (total) of fresh acidified KMnO₄ solution. Then, rinse the fifth and sixth impingers a minimum of three times with exactly 100 ml total of water. Place the rinses along with the liquid from the fifth and sixth impingers into a pre-cleaned container (Container #5B).

If visible deposits remain after the water rinse, rinse the fifth and sixth impingers with exactly 25 ml total of 8N HCl. Add 200 ml of water into a pre-cleaned container, then add the 25 ml of 8N HCl used to rinse the impingers into the container (Container #5C).

8. The seventh impinger will have already been pre-weighed before sampling begins. Weigh the seventh impinger (including the spent silica gel) to the nearest ± 0.5 g in order to determine the final weight of the spent silica gel.

3.2.2 Waste Stream Sampling

Sampling of the waste streams is described in Section 2.4.2 of this document. One main difference from the August 2010 CPT Plan is the list of analytical parameters. The August 2010 CPT Plan stated that viscosity and an elemental analysis would be performed for each feedstream. During the 2010 CPT, viscosity could not be determined for the Chlorosilane Slurry and the Silane feedstreams because the sample volatilized quickly and left behind a silicone residue that damaged the analytical equipment. An elemental analysis is not needed in order to meet the objectives of the September 2011 CPT. Therefore, viscosity and elemental analysis will not be performed as part of the upcoming test.

3.2.3 Spiking Stream Sampling

Sampling of the spiking streams is described in Section 2.4.3 of this document. There are no differences in the sampling methodology from the August 2010 CPT Plan.

3.3 Differences in Analytical Procedures

3.3.1 Stack Gas Analysis

Momentive intends to use SW-846 Method 6020A (Inductively Coupled Plasma/Mass Spectroscopy) for analysis of the emission samples for metals (excluding mercury) instead of SW-846 Method 6010B (Inductively Coupled Plasma-Atomic Emission Spectrometry) because Method 6020A can provide lower detection limits on a metal-by-metal basis.

In Table 4.3-6 of the August 2010 CPT Plan there is a Quality Assurance objective titled “Accuracy-filters”. This item is not required by the US EPA sampling or analysis methods for metals and is non-standard. As this item is not required by the methods, it will not be performed by the analytical laboratory.

3.3.2 Waste Stream Analysis

Momentive intends to use SW-846 Method 6010C (Inductively Coupled Plasma-Atomic Emission Spectrometry) for analysis of the waste feedstream samples for non-mercury metals instead of SW-846 Method 6010B. SW-846 Method 6010C is the most recently published method and the contracted analytical laboratory is able to perform this method.

The remainder of the analytical methods shown in Table 2-7 share the same method number as specified for waste analysis in the August 2010 CPT Plan, but have been updated to reflect the more current methods used by Columbia Analytical Services (i.e., the use of SW-846 Method 7471B instead of 7471A for mercury, or the use of ASTM D4809-06 (2006 revision) instead of ASTM D4809-97 (1997 revision)).

3.3.3 Spiking Stream Analysis

Similar to the waste stream analyses, Momentive intends to use SW-846 Method 6010C for analysis of the spiking stream samples for non-mercury metals.

3.4 Quality Assurance Practices and Measures

The purpose of this section is to describe Quality Assurance practices and measures that will be performed to minimize the likelihood of invalid or questionable data. Most of these measures are items that will be done either before or during the test, so that any items of concern can be addressed as quickly as possible. These measures are summarized below.

Prior to the test, a random filter will be selected from the batch of filters to be used for the metals trains. That random filter will be digested and analyzed so that the background metals

concentration can be known prior to testing and to minimize the chance of filter (i.e., reagent) contamination.

During pretest setup and sampling train preparation, the pretest rinses of the metals trains will be archived (one composite sample per train). These samples will not be analyzed unless there is a concern about sampling train contamination, but will allow for elimination of pretest sampling train contamination in the event of a high metals emission result. Additionally, a “rinsate blank”, also referred to as an additional “proof rinse”, will be performed on the metals sampling trains again after each sample has been recovered and before the train is used again. The “rinsate blanks” from the metals sampling trains will be collected and archived but not analyzed unless the test results indicate an unidentified source of contamination.

During the test, all sample train preparation and recoveries will be performed in the contract stack sampler’s laboratory trailer. The exception to this is that the sampling probe/nozzle assembly will be attached to the filter/impinger box after the train has been lifted to the sampling platform to avoid breakage while it is being lifted. Prior to being attached, the ends of the probe will be covered with Teflon tape to avoid contamination. In a like manner, the probe/nozzle assembly will be removed from the box and the ends will be covered with Teflon tape on the platform so that it and the filter/impinger box can be transported back to ground level.

During the test, one full field blank sample will be collected for each of the isokinetic sampling trains, for each stack, for each day of testing for a total of eight field blanks [i.e., two trains (Methods 5/26A and 29) times two stacks times two test days]. A reagent blank will also be collected. One reagent blank will be collected for each reagent at the end of the first test day. These field and reagent blanks will be used to validate the stack emissions results in the event of a high result.

During the test, Momentive’s engineering contractor will perform a third-party review and validation of the emission sample train data to ensure that any issues are addressed quickly. Momentive’s engineering contractor will also provide a dedicated engineer to coordinate waste and spike feedstream sampling, documentation, and preparation for shipping to the analytical laboratory in order to minimize the possibility of sample mishandling or errors.

Separate analysis of the front and back half of the metals trains will be performed to allow discrimination between a non-detect value in one fraction and a detected value in the other, in order to validate or explain the results should there be a high detection limit in one or the other fraction.

The analytical laboratory will retain any residual samples until after the test data have been reviewed by Momentive, so that the residual material can be reanalyzed in the event of unexpected analytical results. Once the data have been reviewed by Momentive the laboratory will return the samples to Momentive for destruction.

As part of the CPT Report for the September 2011 CPT, the laboratory analytical data will be provided in the NYSDEC ASP Category “B” format for data review and validation. This will include all supporting raw data, including the results of all analyses, even for failed runs. Each laboratory will provide project narratives and a summary of data validation procedures and criteria, as well as a comparison of QA/QC results to the stated QA/QC objectives. This will also include example calculations to show how each result is derived from the raw data. The laboratory reports will also include sample preparation procedures, logs and observations, and analytical run logs. The laboratories will provide the method for determining detection limits, although it should be noted that test-specific detection limit studies will not be conducted for the September 2011 CPT.

3.5 Continuous Monitoring System Calibrations

Prior to the test, Momentive will perform calibrations of Continuous Monitoring System (CMS) instruments per standard operating procedures and/or manufacturer specifications. The results of these calibrations will be used to verify that the instrumentation and controls associated with Momentive’s continuous monitoring systems are properly calibrated and are collecting valid data. A Relative Accuracy Test Audit (RATA) will also be performed prior to the test for the Continuous Emission Monitoring System (CEMS) for stack gas carbon monoxide (CO) and oxygen (O₂) concentrations. The results of the instrument calibrations and RATA will be submitted prior to the CPT.

It should be noted that since the CPT Plan was submitted in August 2010, the stack flow meter measurement elements have been replaced with superior technology. The previously-installed Kurz K-Bar thermal mass flow meter elements have been replaced with single-point pitot tubes for determining the stack gas flow rate based on the differential pressure of the flowing gas. The new pitot tubes have proven to be more accurate when compared to the reference method. A RATA of the stack gas flowmeters will be performed and calibration of the new pitot tubes will be verified prior to the test.

4.0 CPT REPORT

The results of the September 2011 CPT will be submitted in a stand-alone CPT Report with a Notification of Compliance (NOC) after the test has been completed and the results have been prepared in report format. As required by 40 CFR §63.7(g) and §63.1207(j), the CPT report will contain, at a minimum, the following information:

- Results of emissions sampling for pollutants of concern
- Results of feedstream analyses
- Operating data summaries
- Other appropriate test data
- Identification and explanation of any deviations from the CPT Plan and QAPP, and
- Anticipated OPLs established as a result of the CPT

Final OPLs that are established based on the results of the CPT will be based on either demonstrated performance of the incinerator during the September 2011 CPT (OPLs related to Maximum Temperature Condition only) or a combination of demonstrated performance of the incinerator during the September 2011 CPT and the December 2010 Minimum Temperature Condition. Momentive has specified the basis for establishing OPLs in the discussion of proposed OPLs in this Addendum in Section 2.0 and in Table 2-2.

Appendices to the CPT Report will be provided to verify analytical results, demonstrate calculations, and include other pertinent information. The following information, at a minimum, will be included as appendices to the CPT Report:

- Emission Sampling and Analysis Report
- Process Sample Analytical Data
- Process Operating Data
- Example Calculations

The CPT Report for the September 2011 CPT will be submitted to the NYSDEC within 90 days of completion of the test, consistent with 40 CFR 63.1207(j)(1)(i). The appendices to the report will be submitted in an electronic format on CD-ROM in a format compatible with the Adobe® Acrobat® Portable Document Format (PDF). Process operating data will also be submitted on disk in a Microsoft® Excel® spreadsheet.

APPENDIX I
METALS SPIKING RATE CALCULATIONS

**Comparison of Minimum Metals Feed Rates
Based on Estimated Metals Detection Limits to CPT Targets**

	Units	LVM	SVM	Hg
Detection Limit	µg/sample	2.0	2.0	2.0
Sample Volume	ft ³	65	65	65
In-Stack Detection Limit	µg/dscf	0.031	0.031	0.031
Stack Gas Flow Rate	dscfm	6,200	6,200	6,200
Minimum Detectable Emission Rate	lb/hr	2.5E-05	2.5E-05	2.5E-05
Removal Efficiency	%	99.5	99	90
Minimum Feed Rate	lb/hr	0.00505	0.00252	0.00025
Target Feed Rate	lb/hr	0.0081	0.0059	0.0025
Is the Target Feed Rate Above the Minimum Feed Rate for Detection?		YES	YES	YES
How Much Above the Minimum Feed Rate?		1.6	2.3	10

Notes:

1. In stack detection limit based on 2 µg reporting limit (conservative) and 65 dscf of gas collected.
2. Stack gas flow rate based on the average values from December 2010 CPT.
3. Removal Efficiency is assumed to be high (i.e., conservative).
4. LVM and SVM feed rates are based on the lowest individual target spiking rate for a metal in that respective category (i.e., most conservative). Each feed rate is one half of the actual target to account for there being two stacks.