

Statement of Basis For Title V Permit

Company Name	Millennium Inorganic Chemicals, Inc. - Plant 1	
Premise Number	02-04-01-0200	
What makes this facility a Title V facility?	PE, SO ₂ , CO, NO _x , & HAPs (COS & HCl).	
Has each insignificant emissions unit been reviewed to confirm it meets the definition in 3745-77-01 (U)?	Yes.	
Were there any “common control” issues associated with this facility? If yes, provide a summary of those issues and explain how the DAPC decided to resolve them.	No.	

Part II (State and Federally Enforceable Requirements)			
Term and Condition (paragraph)	Basis		Comments
	SIP (3745-)	Other	
A.1., A.1.a. - A.1.d.		40 CFR 63	The permittee may be subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Miscellaneous Organic Chemical Manufacturing (MON), 40 CFR Part 63, Subpart FFFF and to National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial Boilers, Institutional/Commercial Boilers and Process Heaters, 40 CFR Part 63, Subpart DDDDD.
A.2.		112(r) of the Act	A 112(r) Risk Management Plan has been submitted.

C Instructions for Part II:

Each paragraph in Part II must be identified and the remainder of the table completed. If the SIP (not including 31-05) is the basis for the term and condition, identify the specific rule. If the SIP is not the basis for the term and condition, place an “N” in the column under “SIP.” If the basis for the term and condition is something other than the SIP, including 3745-31-05, NSPS or MACT, a “Y” should be noted in the “Other” column, and if not, an “N” should be noted. Whether the basis for the term and condition is the “SIP” or “Other,” an explanation of each term and condition in Part II must be provided in the “Comments” section.

Part III (Requirements Within the State & Federally Enforceable Section)

Any unusual requirements or aspects of the terms and conditions in Part III that are not self-explanatory should be explained in the appropriate comment field or in a paragraph following the table for Part III.

EU (s)	Limitation	Basis		N D	OR	M	St	ENF	R	St	Rp	St	ET	Misc	Comments
		SIP (3745-)	Other												
B001 B002	20% opacity, 6-min. ave.	17-07(A)		N	N	Y	N	N	Y	N	Y	N	N	N	M, R, Rp - daily visible emissions check of stack for not inherently clean E.U. B001 & B002 may combust no. 6 fuel oil. Et-not usually required w/out mass emissions test.
B001 B002	0.020 lb PE/mmBtu when nat'l gas or #2 oil is burned	17-10(B)(1)		N	N	N	N	N	N	N	N	N	N	N	M, R, Rp, ET - calculations show combustion of nat'l gas or no.2 oil is ≤ 50% of allowable rate.
B001 B002	0.22 lb PE/mmBtu when #6 oil is burned	17-10(C)(1)		N	N	N	N	N	N	N	N	N	N	N	M, R, Rp, ET - calculations show combustion of no.6 oil is 50% of allowable rate.
B001 B002	1.6 lb SO ₂ /mmBtu when oil is burned	18-06(B)		N	Y	Y	N	N	Y	N	Y	N	N	N	OR, R, Rp - sulfur content analysis of fuel oil. ET - calculations show combustion of no.6 oil is within allowable rate.
B005	20% opacity, 6-min. ave.	17-07(A)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	OR, M, R, Rp - Natural gas fuel usage restriction for inherently clean E.U. St - B005 in PTI 02-4450. Et - not required for inherently clean E.U.
B005	0.020 lb PE/mmBtu when nat'l gas is burned	17-10(B)(1)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	OR, M, R, Rp - Natural gas fuel usage restriction for inherently clean E.U. St - B005 in PTI 02-4450. Et - not required for inherently clean E.U.
B005	employ BAT	23-06(B)		N	N	N	Y	N	N	Y	N	Y	N	N	OR, M, R, Rp, Et - not required since low NOx burners are inherent design.

B005	0.54 lb PE/hr	31-05(A)(3)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	OR, M, R, Rp - Natural gas fuel usage restriction for inherently clean E.U. St - B005 in PTI 02-4450. Et - 0.09 lb PE/hr, M5 test conducted on 7/28/99.
EU (s)	Limitation	SIP (3745-)	Other	N D	O R	M	St	ENF	R	St	Rp	St	ET	Misc	Comments
B005	3.65 lbs Nox/hr	31-05(A)(3)		N	N	N	Y	N	N	N	N	Y	N	N	OR, M, R, Rp, Et - not required since low NOx burners are inherent design. Et - 2.07 lb NOx/hr, M7E test on 7/28/99.
B005	2.35 PE, 27.5 CO, 16.0 NOx in TPY	31-05(A)(3)		N	N	N	Y	N	N	Y	Y	Y	N	Y	OR, M, R, Et - not required since PTE is ≤ allowable rate. Misc. - application to modify PTI requests op. hour restriction to limit annual PE/PM10 rate.
B005	see comments	40CFR60.40c-60.48c		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	OR, M, R, Rp - Natural gas fuel usage restriction so that EU is exempt from SO2 & PE limits.
F001	6 min VE/60 min observation paved areas	17-07(B)(4)		N	N	Y	N	N	Y	N	Y	N	N	N	M - ≤ 3 day/week inspections for fugitive VE. R, Rp - inspections & dates when dust control employed. Et - periodic inspections rather than M22.
F001	13 min VE/60 min observation unpaved	17-07(B)(4)		N	N	Y	N	N	Y	N	Y	N	N	N	M - ≤ 3 day/week inspections for fugitive VE. R, Rp - inspections & dates when dust control employed. Et - periodic inspections rather than M22.
F001	employ RACM	17-08(B)		N	N	Y	N	N	Y	N	Y	N	N	N	M - ≤ 3 day/week inspections for fugitive VE. R, Rp - inspections & dates when dust control employed. Et - employ RACM, see term A.I.2.g.
P001	20% opacity, 6-min. ave.	17-07(A)		N	Y	Y	N	N	Y	N	Y	N	Y	N	OR, M, R, Rp - use primary & secondary controls on each of 3 control equipment trains: normal op., maintenance & cold startup of reactor, & maintain w/in normal op. parameters. Et - M9 VE observation of cold startup egress & M9 observation during normal op during M5 test.

P001	29.1 lbs PE/hr	17-11		N	Y	Y	N	N	Y	N	Y	N	Y	Y	OR, M, R, Rp - use primary & secondary controls on each of 3 control equipment trains: normal op., maintenance & cold startup of reactor, & maintain w/in normal op. parameters. Et - M5 during normal op at max. capacity. Misc. - OEPA will request PTI appl. may need to enforce more stringent BAT limit for PE rate.
EU (s)	Limitation	SIP (3745-)	Other	N D	O R	M	St	ENF	R	St	Rp	St	ET	Misc	Comments
P001	213 lbs SO ₂ /hr	18-06(D)(2)		N	N	N	N	N	N	N	N	N	N	Y	OR, M, R, Rp - no control devices claimed to minimize SO ₂ emissions. Et - 5.8 lbs SO ₂ /hr, M6C test on July 31 & August 1 of 1999. Misc. - OEPA will request PTI appl. may need to enforce more stringent BAT limit for PE rate.
P002	20% opacity, 6-min. ave.	17-07(A)		N	Y	Y	N	N	Y	N	Y	N	N	N	OR, M, R, Rp - nat'l gas fuel restriction at burner. M, R, Rp - daily visible emissions check for not inherently clean E.U. Stack exhaust is natural gas burner combustion + PE from dryer. Et-required when M5 test conducted.
P002	14.5 lbs PE/hr	17-11		N	Y	Y	N	N	Y	N	Y	N	N	N	OR, M, R, Rp - nat'l gas fuel restriction at burner. Product capture baghouses are not only for dust control, therefore no OR for them. M, R, Rp - daily visible emissions check for not inherently clean E.U. Stack exhaust is natural gas burner combustion + PE from dryer. Et-M5 test required.

P006	PMMAP use	15-06(D)		N	N	Y	Y	Y	Y	Y	Y	Y	N	N	M, R, Rp - Preventative Maintenance Malfunction Abatement Plan (PMMAP) to prevent malfunctions of thermal oxidizer & minimize CO & OC emissions. R- thermal convertor bypass incidents, bypass valve inspections, CO content in bypass line & thermal convertor temp & EU op. time. Rp - thermal convertor bypass incidents immediately, quarterly summary of thermal convertor bypass incidents with emissions/incident & account of when PMMAP not followed when malfunction occurred. ET - none needed for procedures.
P006	20% opacity, 6-min. ave.	17-07(A)		N	Y	Y	Y	N	Y	Y	Y	Y	Y	N	OR, M, R, Rp, - 4 control devices on normal op. control train, 3 control devices on maintenance control train & 2 control devices on cold startup control train must be used & maintained w/in normal op. parameters.
P006	29.1 lbs PE/hr	17-11		N	Y	Y	Y	N	Y	Y	Y	Y	Y	N	See comments for 20% opacity PE limit at P006.
P006	213 lbs/hr	18-06(D)(2)		N	Y	Y	Y	N	Y	Y	Y	Y	Y	N	OR, M, R, Rp, - use packed column SBR-5390 scrubber on normal op. control train & maintain static pressure & water flow at min. op. rates.
EU (s)	Limitation	SIP (3745-)	Other	N D	O R	M	St	ENF	R	St	Rp	St	ET	Misc	Comments
P006	employ BAT	23-06(B)		N	N	N	Y	N	N	Y	N	Y	Y	N	See comments for 0.5 lb NO _x /hr limit at P006.
P006	1.25 lbs PE/hr	31-05(A)(3)		N	Y	Y	Y	N	Y	Y	Y	Y	Y	N	See comments for 20% opacity PE limit at P006 plus use of 6th control device on normal op. train & maintenance of normal op. parameters.
P006	8.9 lbs SO ₂ /hr	31-05(A)(3)		N	Y	Y	Y	N	Y	Y	Y	Y	Y	N	See comments for 213 lbs SO ₂ /hr at P006.
P006	12.7 lbs CO/hr	31-05(A)(3)		N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	OR, M, R, Rp -maintain thermal oxidizer w/in 50F of 1350F/ave. temp. during compliance test and employ PMMAP for thermal oxidizer.
P006	0.5 lb NO _x /hr	31-05(A)(3)		N	N	N	Y	N	N	Y	N	Y	Y	N	OR, M, R, Rp - no control devices claimed to minimize NO _x emissions. ET- M7E test is required.

P006	3.79 lbs HCl/hr	31-05(A)(3)		N	Y	Y	Y	N	N	Y	Y	Y	Y	N	OR, M, R, Rp - maintain spray tower(5300), separator tower(5310) & caustic scrubber(5350). 1 st , 2 nd & 3 rd devices on normal op. control train w/in normal operating parameters.
P006	5.48 PE, 39 SO ₂ , 55.7 CO, 2.19 NOx & 16.6 HCl in TPY	31-05(A)(3)		N	N	N	Y	Y	N	Y	Y	N	N	Y	OR, M, R, ET - no rolling limits, annual limits are based on hourly limits x 8760 hrs/yr. Misc. - Appl. for PTI 02-15582 submitted to include hourly & annual limits for OC (carbonyl sulfide) & H ₂ SO ₄ mist, the latter of which is subject to PSD rule.
P006	Use control to limit Cl ₂	31-05(A)(3)		N	N	Y	Y	N	Y	Y	Y	Y	N	N	M, R, Rp - employ methane injection if excess Cl ₂ detected in exhaust lines located right after reactor(s) is required by PTI 02-4450. (Permittee claims recent control device upgrade can control Cl ₂ releases.) ET - Cl ₂ releases are caused by reactor malfunctions so testing isn't practical.
P007	20% opacity, 6 min ave.	17-07(A)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	OR, M, R, Rp - employ caustic scrubber & maintain of pH of 8 or more. M, R, Rp - daily VE check of spray dryer STK7537 egress. ET - M9 reading usually not required w/out M5
EU (s)	Limitation	SIP (3745-)	Other	N D	O R	M	St	ENF	R	St	Rp	St	ET	Misc	Comments
P007	0.020 lb PE/mmBtu	17-10(B)(1)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	OR, M, R, Rp - use of natural gas fuel at TiCl ₄ vaporizer, at O ₂ preheater burner & at TiO ₂ paste dryer burner. These burners are inherently clean. ET- actual emissions estimates are below allowable rates.
P007	x lbs PE/hr	17-11		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	OR, M, R, Rp - See comments for 1.11 lbs PE/hr for P007. ET- actual emissions estimates are below allowable rates.
P007	use BAT	23-06(B)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	See comments for 0.020 lb PE/mmBtu for P007.

P007	1.11 lbs PE/hr	31-05(A)(3)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	See comments for 20 % opacity & 0.020 lb PE/mmBtu for P007.
P007	4.36 lbs NO _x /hr	31-05(A)(3)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	See comments for 0.020 lb PE/mmBtu for P007.
P007	4.86 PE & 19.1NO _x TPY.	31-05(A)(3)		N	N	N	Y	N	N	N	Y	Y	N	Y	OR, M, R, ET - not needed since allowable limits based on PTE. Misc. - application for PTI 02-15582 proposes increase in annual, allowable limits.
P009	20% opacity, 6 min ave.	17-07(A)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	See 10% opacity, as 6-min ave. for P009.
P009	x lbs PE/hr	17-11		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	See 10% opacity, as 6-min ave. for P009.
P009	use BAT	23-06(B)		N	N	N	Y	N	N	N	Y	N	N	N	See comments for 0.82 lb NO _x /hr for P009.
P009	10% opacity, 6 min ave.	31-05(A)(3)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	OR, R, M, Rp - maintain 3 control devices w/in normal op. parameters. R, M, Rp - daily VE check of bin vent dust collector (COL-5081) egress. ET- M9 test not usually required w/out M5 test.
P009	0.99 lb PE/hr	31-05(A)(3)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	See 10% opacity, as 6-min ave. for P009. ET - 0.66 lb PE/hr, M5 test on 02/25/02.
P009	2.30 lbs CO/hr	31-05(A)(3)		N	N	N	Y	N	N	Y	N	Y	N	N	OR, R, M, Rp - no control of CO is claimed. ET - 0.15 lb PE/hr, M10 test on 02/25/02.
P009	0.82 lb NO _x /hr	31-05(A)(3)		N	N	N	Y	N	N	Y	N	Y	N	N	OR, R, M, Rp - no control of NO _x is claimed. ET - 0.45 lb PE/hr, M10 test on 02/25/02.
P009	4.34 PE, 10.1 CO & 3.59 NO _x in TPY	31-05(A)(3)		N	N	N	Y	Y	N	Y	Y	N	N	N	OR, M, R, ET - no rolling limits, annual limits are based on PTE.
P011	20% opacity, 6 min ave.	17-07(A)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	OR, M, R, Rp - nat'l gas fuel restriction at burners. M, R, Rp - daily visible emissions check for not inherently clean E.U. Et-M9 test not normally required w/out M5 test.
P011	0.020 lb PE/mmBty	17-10(B)(1)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	OR, M, R, Rp - nat'l gas fuel restriction at burners results in PE rate w/in allowable limit. ET-estimated PE rate is w/in allowable limit.
P011	use BAT	23-06(B)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	See 1.42 lbs NO _x /hr for P011.

P011	1.19 lbs CO/hr-VAP1901 & 0.57 lb CO/hr-HTR-1902	31-05(A)(3)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	OR, M, R, Rp - nat'l gas fuel restriction at burners results in CO rate w/in allowable limit. ET-estimated CO rate is w/in allowable limit.
P011	1.42 lbs NO _x /hVAP-1901, 0.68 lb NO _x /hr-HTR-1902	31-05(A)(3)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	OR, M, R, Rp - nat'l gas fuel restriction at burners results in NO _x rate w/in allowable limit. ET-estimated NO _x rate is w/in allowable limit.
P011	0.16 lb OC/hr-VAP1901 & 0.08 lb OC/hr-HTR-1902	31-05(A)(3)		N	Y	Y	Y	N	Y	Y	Y	Y	N	N	OR, M, R, Rp - nat'l gas fuel restriction at burners results in OC rate w/in allowable limit. ET-estimated OC rate is w/in allowable limit.
P011	1.89 PE, 7.72CO, 9.19NO _x & 1.01OC, TPY	31-05(A)(3)		N	N	N	Y	N	N	Y	Y	Y	N	N	OR, M, R, ET - no rolling limits, annual limits are based on PTE.
P901	20% opacity, 3 min, ave. - fugitive	17-07(B)(1)		N	N	Y	N	N	Y	N	Y	N	N	N	M, R, Rp -daily VE check of fugitive egress. ET - periodic inspections rather than M22.
P901	20% opacity, 6-min, ave. stack	17-07(A)		N	Y	Y	N	N	Y	N	Y	N	N	N	M, R, Rp -daily VE check of stack egress points. OR, M, R, Rp - use of 2 dust control devices whenever material transfer operations occur. ET - periodic inspections rather than M9.
P901	use RACM	17-08(B)		N	N	Y	N	N	Y	N	Y	N	N	N	M, R, Rp -see opacity limits for P901. ET - employ RACM, see term A.I.2.c.
P901	32.0 lbs PE/hr	17-11		N	Y	Y	N	N	Y	N	Y	N	N	N	See opacity limits & RACM for P901. ET-estimated PE rate is w/in allowable limit.

EU = emissions unit ID

ND = negative declaration (i.e., term that indicates that a particular rule(s) is (are) not applicable to a specific emissions unit)

OR = operational restriction

M = monitoring requirements

St = streamlining term used to replace a PTI monitoring, record keeping, or reporting requirement with an equivalent or more stringent requirement

ENF = did noncompliance issues drive the monitoring requirements?

R = record keeping requirements

Rp = reporting requirements

ET = emission testing requirements (not including compliance method terms)

Misc = miscellaneous requirements

C Instructions for Part III:

C All non-insignificant EUs must be included in this table. For each EU, or group of similar EUs, each emission limitation and control requirement specified in section A.I.1 and A.I.2 of the permit must be identified and the remainder of the table completed.

C If the SIP (not including OAC rule 3745-31-05) is the basis for the term and condition, identify the specific rule. If the SIP is not the basis for the term and condition, place an “N” in the column under “SIP.” If the basis for the term and condition is something other than the SIP, including OAC rule 3745-31-05, NSPS or MACT, a “Y” should be noted in the “Other” column, and if not, an “N” should be noted. If the basis for the term and condition is “Other,” an explanation of the basis must be provided in the “Comments” section. If OAC rule 3745-31-05 is cited in the “Other” column, please indicate in the “Comments” section whether or not all of the requirements have been transferred from the permit to install.

- To complete the remainder of the table after “Basis,” except for the “Comments” section, simply specify a “Y” for yes or an “N” for no. For the “M,” “R,” “Rp,” and “ET” columns, if “N” is specified, there should be a brief explanation in the “Comments” section as to why there are no requirements. If a brief explanation is provided in the “Comments” section, please do not simply indicate that monitoring or testing requirements are not necessary. An explanation of why a requirement is not necessary should be specified.

When periodic monitoring requirements are established to satisfy the provisions of OAC rule 3745-77-07(A)(3)(a)(ii), the basis for the requirements must be explained. Whenever Engineering Guides have been used to establish the periodic monitoring requirements, the applicable Engineering Guide may be referenced in the “Comments” section. An example that should be clarified would be the situation where it has been determined that control equipment parametric monitoring will be used to evaluate ongoing compliance in lieu of performing frequent emission tests. In this situation, Engineering Guide #65 would be referenced along with the fact that the parametric monitoring range (or minimum value) corresponded to the range (or minimum value) documented during the most recent emission tests that demonstrated that the emissions unit was in compliance. If streamlining language is included in the “Monitoring,” “Record Keeping,” or “Reporting” requirements sections of the permit, explain which requirements are being streamlined (mark appropriate column above) and provide a brief explanation of why the streamlined term is equal to or more stringent than the “Monitoring,” “Record Keeping,” or “Reporting” requirements specified in the permit to install. If Engineering Guide #16 was used as the basis for establishing an emission test frequency, a simple note referencing the Engineering Guide in the “Comments” section would be sufficient.

Also, if a “Y” is noted under “OR,” “Misc,” “St,” “ND,” or “ENF” an explanation of the requirements must be provided in the “Comments” section. In addition to a general explanation of the “OR,” “Misc,” “St,” “ND,” and/or “ENF” the following must be provided:

1. For an operational restriction, clarify if appropriate monitoring, record keeping, and reporting requirements have been specified for the operational restriction and indicate whether or not CAM is currently applicable.
2. If a control plan and schedule is included in the “Miscellaneous Requirements” section of the permit, provide an explanation in the “Comments” section of the violation, basis for the violation, and the company’s proposed control plan and schedule.
3. If the “ND” column above is marked, please identify the particular rule(s) that is (are) not applicable to the specified emissions unit.
4. If the “ENF” column above is marked, please provide a brief explanation of the noncompliance issue(s) which prompted the use of the specified monitoring requirement.

An explanation is not required if an “N” is noted in the “OR,” “Misc,” “St,” “ND,” or “ENF” columns.