

**Bay Area Air Quality Management District**

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**Permit Evaluation  
and  
Statement of Basis  
for  
MAJOR FACILITY REVIEW PERMIT**

**for  
The Dow Chemical Company  
Facility #A0031**

**Facility Address:**  
901 Lovridge Road  
Pittsburg, CA 94565

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November 2015

## TABLE OF CONTENTS

A.	Background .....	3
B.	Facility Description .....	5
C.	Permit Content.....	9
I.	Standard Conditions .....	9
II.	Equipment .....	9
III.	Generally Applicable Requirements .....	16
IV.	Source-Specific Applicable Requirements.....	17
V.	Schedule of Compliance.....	78
VI.	Permit Conditions.....	79
VII.	Applicable Limits and Compliance Monitoring Requirements .....	83
VIII.	Test Methods .....	117
IX.	Permit Shield .....	118
D.	Alternate Operating Scenarios.....	118
	APPENDIX A GLOSSARY .....	119
	APPENDIX B DOW CHEMICAL LETTER DATED 11/22/13 .....	130
	APPENDIX C 40 CFR PART 64 COMPLIANCE ASSURANCE MONITORING APPLICABILITY DETERMINATION.....	132
	APPENDIX D CAM PLANS .....	137
	APPENDIX E ENGINEERING EVALUATIONS .....	150

## **Title V Statement of Basis**

### **A. Background**

The Dow Chemical Company owns and operates a chemical manufacturing facility located at 901 Loveridge Road in Pittsburg, California (“Dow” or “facility”). This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Volume 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a major facility as defined by BAAQMD Regulation 2-6-212. It was designated a major facility because it had the “potential to emit,” as defined by BAAQMD Regulation 2-6-218, more than:

100 tons per year of a regulated air pollutant (NO<sub>x</sub> and CO);

when the District began screening for major facilities. This determination included numerous combustion sources used to supply electricity and steam to the facility. These sources were later sold to Calpine and became Calpine Pittsburg (Site B1928). At the present time all of the sources at Calpine Pittsburg have been permanently retired except for S-11 Auxiliary Boiler which has been transferred to Dow and is now identified as S-1011.

The potential to emit from Dow has decreased significantly since it was originally designated as a major facility. The reduction in potential to emit is primarily due to shutdown of the combustion sources used to supply electricity and steam to the site. At the time of the initial Title V permit issuance, the potential to emit of hazardous air pollutants also exceeded the major source thresholds of 10 tons per year of a single hazardous air pollutant and the 25 tons per year of aggregate hazardous air pollutants. Dow has voluntarily added emissions controls over the years to reduce hazardous air pollutants emissions.

On May 7, 2008, Dow accepted a facility wide condition to limit HAP emissions below 9 tons/year of any single HAP and 23 tons/year for aggregate HAP (See engineering evaluation for application 17940). The facility has maintained a District approved emission inventory of hazardous air pollutants that demonstrates that actual emissions have remained below 9 ton/year and 23 ton/year since 2008.

As of November 22, 2013, Dow has requested to return to being a major source of hazardous air pollutants (see Letter dated 11/22/13 from M. Louie of Dow to B. Lusher of the District). The change in major source status will primarily impact the applicability of two National Emissions Standard for Hazardous Air Pollutants (NESHAP) standards contained in 40 CFR Part 63.

If Dow remained a minor source of hazardous air pollutants, then the facility would be required to comply with the requirements of 40 CFR Part 63 Subpart VVVVVV NESHAP for Chemical Manufacturing Area Sources. Dow has elected to return to being a major source of hazardous air pollutants upon issuance of the renewed Title V permit. At the time of permit issuance, Dow intends to comply with 40 CFR Part 63 Subpart FFFF NESHAP: Miscellaneous Organic Chemical Manufacturing. Dow intends to

comply with Subpart FFFF following the compliance dates for a minor source that is becoming major for hazardous air pollutants.

The sulfuryl fluoride process unit at the facility was sold to a third party in 2015. S-712 sulfuryl fluoride plant and associated sources were transferred from Dow to the new owner effective July 1, 2015. These sources shown in the Table below will be removed from the Dow Title V permit.

**Sulfuryl Fluoride Plant Sources transferred to Douglas Products (effective July 1, 2015)**

<b>SOURCE</b>	<b>DESCRIPTION</b>
268	T-4 SO2 Storage Tank
269	T-5 HF Storage Tank
308	SF Cylinder Paint Hood
311	SF Cylinder Filling Hood
312	SF Cylinder Valve Removal Vent Hood
314	Cap Painting Booth
468	T-1W Cylinder Loading
472	T-13A Storage Tank
473	T-13B Storage Tank
653	T-27 Anhydrous HCl Storage Tank
705	Shot Blast Unit
712	SF Process
713	HF Process Tank
714	T-70 SF Process Tank
715	T-72 SF Process Tank
716	U-3 Furnace – Natural Gas Air Heater
717	U-1 Furnace – Natural Gas Air Heater (not installed)
Abatement Device #	
A-198	Wheelabrator Dust Collector
A-201	Venturi Scrubber, Cylinder Filling Operation
A-202	Caustic (KOH) Scrubber
A-203	Cylinder Painting Carbon Adsorber
A-204	SF Recovery System

Major Facility Operating permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6. The permits must contain all applicable requirements (as defined in BAAQMD Regulation 2-6-202),

monitoring requirements, recordkeeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year.

In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is A0031.

## B. Facility Description

The facility currently manufactures agricultural products and intermediates, Dowicil® antimicrobials for use in paints and cosmetics, and hydrochloric acid. The manufacturing site is an integrated chemical plant utilizing chlorine, anhydrous hydrogen fluoride, potassium fluoride, methyl pyridine and dichloropropene in reactions to produce the various products.

The equipment utilized at the facility includes, reactors, storage tanks, combustion devices, loading and unloading facilities, pumps, valves, and flanges. Emissions from most of the equipment are collected and controlled using abatement equipment such as vapor recovery systems, scrubbers, absorbers or thermal destruction devices. The major types of emissions at the facility are methylene chloride and Freon 22.

The emissions from the facility have varied with the amount of chemical products produced each year. The actual emissions summaries submitted by the plant for 2003, 2011, 2012 and 2013 are shown below.

Year	NO <sub>x</sub> (tons/year)	CO (tons/year)	POC (tons/year) <sup>1</sup>	PM <sub>10</sub> (tons/year)	SO <sub>x</sub> (tons/year)	HAP (tons/year) <sup>2</sup>
2003	1510.8	335.4	27.4	59.1	< 1.0	21.44
2011	9.6	1.8	22.6	7.8	< 1.0	<9.0, < 23.0
2012	9.7	1.9	99.4	7.6	< 1.0	<9.0, < 23.0
2013	9.0	2.4	97.6	7.2	< 1.0	<9.0, < 23.0

Notes:

<sup>1</sup>The 2012 and 2013 POC emissions include an estimate for fugitive components in heavy liquid service of 79.5 tons/year. 2003 and 2011 do not have an estimate for POC emissions from fugitive components in heavy liquid service.

<sup>2</sup>HAP emissions for 2011, 2012, and 2013 were less than 9 tons/year for any single HAP and less than 23 tons/year for aggregate HAP.

The emissions summary for 2003 includes the emissions from combustion sources that supplied electricity and steam to Dow. These sources were later sold to Calpine (Calpine Pittsburg Site B1928). All of these sources have been shutdown except for an Auxiliary

Boiler S-11 at Calpine Pittsburg which was transferred to Dow in 2010 and is identified as S-1011. The emissions from the facility have decreased since 2003.

The emissions summary for 2011, 2012, and 2013 include the S-1011 Auxiliary Boiler emissions. This boiler is a standby unit and is only used when Los Medanos Energy Center (Site B1866) cannot supply Dow steam. The data is from the District's data bank.

**Applications Processed Requiring Title V Revision (Since Last Title V Revision)**

Dow has submitted numerous NSR permit applications since the last Title V permit revision that require a revision to the Title V permit. These applications that will be processed with the Title V renewal application 18262 are shown below.

<b>NSR Application No.</b>	<b>Description</b>	<b>Title V Revision</b>	<b>Number of Sources</b>	<b>NSR Issuance Date</b>
14456	MEI Plant Upgrade	23985, Minor	6	5/29/07
14456	MEI Condition Change subsumed into TV Renewal (A18262)	17126, Minor, Fee paid under 23985 (TV)	6	Cancel 17126 (TV)
14909	DCP Unloading Rack	23985, Minor	1	9/21/06
15133	Dryer Replacement, S-464 replaced with S-465	15211, Minor	1	10/11/06
17600	S-449 Alteration, Change of Conditions	23985, Minor	1	5/22/08
17940	HAP Minor Condition, Facility Wide	23414, Significant <sup>1</sup>	155	5/7/08
18563	CO Catalyst Installation, A-205	23985, Minor	1	12/3/08
19565	GDF Modification, Remove Phase II	23985, Minor	1	3/19/09
21795	Carbon Tetrachloride Rail Car Loading Rack, S-483	23985, Minor	1	11/9/10
21858	Nitrapyrin Formulation Plant, S-718, S-728, and others	23985, Minor	2	10/4/10
Source Transfer (See Title V 23414)	S-1011 Auxiliary Boiler	23414, Minor	1	Not Applicable
22775	Alteration of TF and	23985,	2	8/2/11

<b>NSR Application No.</b>	<b>Description</b>	<b>Title V Revision</b>	<b>Number of Sources</b>	<b>NSR Issuance Date</b>
	FTF Plants (S-474 and S-694)	Minor		
23595	Burner retrofit on S-444 to meet Regulation 9, Rule 7 requirements.	23596, Minor	1	10/11/11
23934	Change of conditions for S-680 Carbon Tetrachloride Storage Tank and S-681 Truck Loading/Unloading Operation	23936, Minor	2	2/29/12
24429	Change of conditions for S-718 Nitrapyrin Plant	24430, Minor	1	11/8/12
25041	S-460 U-83 Dowtherm Burner retrofit to meet Regulation 9, Rule 7 requirements.	25042, Minor	1	2/20/13
25436	MEI Throughput Increase	25437 Minor	6	11/18/13
25438	Nitrapyrin Throughput Increase	25439	18	1/17/14

Notes:

<sup>1</sup> A23414 may become a minor revision since Dow has decided to remain a major source of hazardous air pollutants (see letter dated 11/22/2013 from Marv Louie to Brian Lusher).

The engineering evaluations for all applications that required a revision to the Title V permit are attached to this document in Appendix E.

**Applications Processed Requiring No Title V Revision (Since Last Title V Revision)**

Dow has submitted numerous permit applications since the last Title V permit revision that required no revision to the Title V permit. These applications are summarized below.

<b>NSR Application No.</b>	<b>Description</b>	<b>Title V Revision</b>	<b>Number of Sources</b>	<b>NSR Issuance Date</b>
14668	Process Vessel Replacement	None	1	7/12/06
15723	Alteration of A-86	None	1	4/12/07
16041	Modify S-25, AC Expired	None	1	6/19/07
16335	Alteration S-44, S-446	None	2	9/18/07
16877	Replace Reactor S-446	None	1	1/9/08
16988	Alteration A-85	None	1	3/10/08
18690	S-434 Alteration	None	1	9/16/08
20156	Alteration A-192	None	1	4/20/09
21055	Banking, Shutdown S-25, S-209	None	2	10/27/09
23852	Replacement of T-3 process vessel with an identical process vessel at S-44 N-Serve Plant.	None	1	3/7/12
24755	Application to modify A-192 Solvent Recovery System	None	A-192	Cancelled
24763	Solvent Recovery	None		Cancelled
25401	Alteration of A-86 hydrochloric acid falling film adsorber	None	A-86	9/10/13
25402	Alteration of S-434 Manufacturing Services Facility, replacement of two process vessels	None	1	9/11/13
25599	HCL Truck Loading Scrubber A-165	None	1	11/13/13

The engineering evaluations for all applications that did not require a revision to the Title V permit are attached to this document in Appendix E.



## **C. Permit Content**

The legal and factual basis for the permit follows. The permit sections are described in the order presented in the permit.

### **I. Standard Conditions**

This section contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for certain fossil-fuel fired electrical generating facilities or the accidental release (40 CFR § 68) programs apply, this section of the permit will contain a standard condition pertaining to these programs. Many of these conditions derive from 40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

The standard conditions also contain references to BAAQMD Regulation 1 and Regulation 2. These are the District's General Provisions and Permitting rules.

Changes to the permit:

- The rule applicability dates were updated in the permit. The basis for each condition was reviewed and updated as necessary.
- Condition B.1 had the following text added to it.

If the permit renewal has not been issued by [                    ], but a complete application for renewal has been submitted in accordance with the above deadlines, the existing permit will continue in force until the District takes final action on the renewal application.

- Condition B.12 was added to the permit.

12. The permit holder is responsible for compliance, and certification of compliance, with all conditions of the permit, regardless whether it acts through employees, agents, contractors, or subcontractors. (Regulation 2-6-307)

### **II. Equipment**

This section of the permit lists all permitted or significant sources. Each source is identified by an S prefix and a number (e.g., S-24). Permitted sources, listed in Table IIA, are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302. Significant sources, listed in Table IIC, are those exempt sources that have a potential to emit more than 2 tons per year of a "regulated air pollutant," as defined in BAAQMD Rule 2-6-222, or 400 pounds per year of a "hazardous air pollutant," as defined in BAAQMD Rule 2-6-210.

All abatement (control) devices that control permitted or significant sources are listed in Table IIB. Each abatement device whose primary function is to reduce emissions is identified by an A prefix and a number (e.g., A-24). If a source also acts as an abatement device, such as when an engine controls VOC emissions, it will be listed in the abatement device table but will have an “S” number. An abatement device may also be a source (such as a thermal oxidizer that burns fuel) of secondary emissions. If the primary function of a device is to control emissions, it is considered an abatement (or “A”) device. If the primary function of a device is a non-control function, the device is considered to be a source (or “S”).

The equipment section is considered to be part of the facility description. It contains information that is necessary for applicability determinations, such as fuel types, contents or sizes of tanks, etc. This information is part of the factual basis of the permit.

Each of the permitted sources has previously been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. These permits are issued in accordance with state law and the District’s regulations. The capacities in the permitted sources table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-403. Significant sources are also included in this section, even if they are not required to hold a District permit to operate.

Changes to the permit:

The main changes to Table II-A and II-B are the removal of shutdown equipment, the addition of a few new permitted sources, and the addition of exempt sources with a District source number to Table II-A. The previous Title V permit for the facility did not list the exempt sources in Table II-A. For Table II-B, several abatement devices were added that abate exempt sources, new abatement devices that have been added since the last Title V permit revision were also added to the Table, and finally the abatement devices that have been shutdown were removed from the Table. Following are the differences in the permitted equipment list and the abatement device list from the draft Title V permit and the last permit revision:

**Sources shutdown since last Title V permit revision and removed from Table II-A:**

- S-25, T-734 Material Flow Latex, Fixed Roof Tank
- S-198, T-198 Latex Plant Process Recycle Tank
- S-199, T-367 Latex Plant Process Tank
- S-207, T-5 Latex Plant, Butadiene Storage Tank
- S-208, T-6 Latex Plant, Butadiene Storage Tank
- S-209, T-1 Latex Plant Styrene Storage Tank
- S-222, T-3 Latex Plant Hydroxyethyl Acrylate Storage Tank
- S-226, T-364 Latex Plant Process Tank
- S-229, RM 1 Latex Plant Tank Car Unloading
- S-345, T-1 Vikane Plant Storage Tank
- S-421, T-368 Latex Plant Process Recycle Tank
- S-429, T-130A Environmental Services, Pressure Tank
- S-449, T-30 Hydrochloric Acid Storage Tank

S-454, Vikane Plant  
S-464, Plant 663 D-413 Dryer  
S-489, B 100 Latex Still  
S-490, B 310 Partial Condensor  
S-491, T-363 Pressure Tank  
S-506, Manufacturing Services, Storage Tank T-404  
S-507, Latex Plant Reactor R-100  
S-531, T410C Storage Tank Tote  
S-532, T410D Storage Tank Tote  
S-586, T-371 Recycle Tank  
S-587, Tank Truck Loading at Latex Plant for Recycle Styrene  
S-588, Drum Filling Station  
S-589, Product Recovery Tank T-203  
S-609, Acetone Truck Loading 720 Rack  
S-638, Truck Mounted Bulk Transportable Pressure Tank X-205  
S-675, Carbon Tetrachloride Railcar Storage  
S-682, B-250 Groundwater Treatment Plant Air Stripper  
S-683, D-110A Storage Vessel  
S-684, Dovicil Packaging System  
S-704, Acrylonitrile Storage Tank D120-A

**Sources permitted since last Title V permit revision (non-exempt sources) and added to Table II-A:**

S-465, Plant 663 D-413 Product Dryer (application 15133)  
S-483, Carbon Tetrachloride Rail Car Loading Rack (application 21795)  
S-718 Nitrapyrin Formulation Plant (applications 21858, 24429, 25438)

Including the following sources:

S-719 (D-121 A) Aromatic 200 Pressure Tank, 35,900 gallons, exempt 2-1-123.3.2  
S-720 (T-310) Organic Mix, 9,000 gallons  
S-721 (D-110A) PAPI Storage Pressure Tank, 7,900 gallons, exempt 2-1-123.3.2  
S-722 (T-8) Tergitol S-15, 5,900 gallons, exempt 2-1-123.3.6  
S-723 (T-9) Tergitol S-15, 5,900 gallons, exempt 2-1-123.3.6  
S-724 (T-15) Propylene Glycol Storage, 7,800 gallons, exempt 2-1-123.3.2  
S-725 (V-250) Aqueous Mix, 2,900 gallons  
S-726 (T-112) Emulsion Storage, 8,800 gallons  
S-727 (T-11) Gel Phase Mix, 1,500 gallons  
S-728 (T-20) Ethylene Diamine Storage Pressure Tank, 8,200 gallons  
S-729 (V-100) Encapsulation Vessel, 8,200 gallons  
S-730 (T-569) Nitrapyrin Formulation Storage, 80,000 gallons  
S-731 (T-570) Nitrapyrin Formulation Storage, 80,000 gallons  
S-732 (T-16) Dispersant Tank, 13,500 gallons  
S-733 (T-216) Product Check Tank, 11,500 gallons  
S-734 N-Serve TG Isotainer  
S-735 (T-751) Proxell Tote, 375 gallons  
S-1011, Auxiliary Boiler (transferred source from Calpine Pittsburg to Dow)

**Devices with Changed Permit Status:**

- S-140, HCl Storage Tank T-606F (this source no longer stores HCl and now stores KCl which is exempt use per 2-1-123.2)
- S-401, B-901 Acid Adsorber, Hydrochloric Acid (this source was not in Table II-A, but is a permitted source)
- S-428, H-300 Sym-Tet Processing (exempt per 2-1-123.3.2), Dow Custom Design, 25 feet X 15 feet (this source was in Table II-A of the existing Title V permit, but was not identified as exempt)
- S-448, H-200 Sym-Tet (exempt per 2-1-123.3.2), Dow Custom Design, Separation/purification (this source was in Table II-A of the existing Title V permit, but was not identified as exempt)
- S-710, Onan Standby Generator (exempt per 2-1-114.2.1) 50 bhp (this source was identified as a permitted source in Table II-A of the existing Title V permit, but was determined to be exempt since it is less than 50 bhp)

**Exempt sources added to Table II-A in Title V draft permit.**

- S-10, T-503A Material Flow
- S-11, T-503B Material Flow
- S-12, T-705 Rainwater Storage at former Latex Plant (exempt 2-1-123.2)
- S-13, T-504B Material Flow
- S-14, T-504C Paraffins
- S-15, T 701 Wastewater (exempt 2-1-123.2)
- S-16, T-702 Rainwater Storage at former Latex Plant (exempt 2-1-123.2)
- S-17, T-703 Rainwater Storage at former Latex Plant (exempt 2-1-123.2)
- S-18, T-704 Rainwater Storage at former Latex Plant (exempt 2-1-123.2)
- S-21, T-507 Material Flow, n-methylpyrrolidine (exempt 2-1-123.3)
- S-26, T-604B Glycols (exempt 2-1-123.3), Fixed Roof Tank
- S-34, T-721 Inorganic Liquid (exempt), Fixed Roof Tank
- S-37, T-771 Terminalized Products (exempt), Fixed Roof Tank
- S-38, T-772 Terminalized Products (exempt), Fixed Roof Tank
- S-46, T13 N-Serve (exempt) Fixed Roof Tank
- S-47, T-18 N-Serve (exempt) Fixed Roof Tank
- S-51, T-22 N-Serve (exempt) Pressure Tank
- S-54, T-26 N-Serve (exempt) Pressure Tank
- S-64, Heat Transfer Operation – Other (exempt), Natural Gas Fired
- S-81, T-183 Sym Tet (exempt), Pressure Tank
- S-154, T-616 Fresh Water Storage (exempt), Aqueous Materials Storage Tank
- S-161, Maintenance Paint Booth M-1
- S-164, Maintenance Exhaust Area M-2 (exempt)
- S-167, Maintenance Welding Facility W-5 (exempt)
- S-168, Maintenance Welding Facility W-6 (exempt)
- S-170, Maintenance Paint Booth M-4
- S-172, Maintenance Exhaust Area M-5 (exempt)
- S-188, T-641 Aqueous Potassium Chloride (exempt)
- S-189, T-642 Partially Chlorinated Heterocyclics (exempt), Fixed Roof Tank

S-190, T-643 Product Storage, Partially Chlorinated Heterocyclics (exempt), Fixed Roof Tank  
S-191, T-664 Product Storage Glycols (exempt), Fixed Roof Tank  
S-192, T-646A Material Handling (exempt), Fixed Roof Tank  
S-193, T-646B Material Handling (exempt), Fixed Roof Tank  
S-194, T-647 Feed Tank (exempt), Fixed Roof Tank  
S-195, T-648 Partially Chlorinated Heterocyclics (exempt), Fixed Roof Tank  
S-196, T-731 Material Handling Wastewater (exempt), Fixed Roof Tank  
S-197, T-725 Terminalized Products (exempt), Fixed Roof Tank  
S-210, T-8 Latex Plant Antioxidant Storage (exempt), Fixed Roof Tank  
S-211, T-9 Latex Plant Antioxidant Storage (exempt), Fixed Roof Tank  
S-212, Latex Plant Seed Latex Storage (exempt), Fixed Roof Tank  
S-220, T-4 Sodium Lauryl Sulfate Storage (exempt), Fixed Roof Tank  
S-224, T-31 Latex Tank Defoamer Storage (exempt), Fixed Roof Tank  
S-225, T-45 Versonal Tank (exempt), Fixed Roof Tank  
S-227, Bulk Plant (truck/rail), (exempt)  
S-228, Bulk Plant (truck/rail), (exempt)  
S-230, Bulk Plant (truck/rail), RM-2 Latex Plant Tank Car Unloading (exempt)  
S-231, T-112 Latex Product Tank (exempt)  
S-232, T-301A Latex Product Filter Feed (exempt), Fixed Roof Tank  
S-233, T-302A Latex Product Filter Feed (exempt), Fixed Roof Tank  
S-234, T-303A Latex Product Filter Feed (exempt), Fixed Roof Tank  
S-236, T-301B Latex Product Filter Feed (exempt), Fixed Roof Tank  
S-237, T-302B Latex Product Filter Feed (exempt), Fixed Roof Tank  
S-238, T-303B Latex Product Filter Feed (exempt), Fixed Roof Tank  
S-240, T-216 Latex Storage (exempt), Fixed Roof Tank  
S-241, T-16 Latex Plant Dowfax Storage (exempt), Fixed Roof Tank  
S-243, T-610 Latex Products (exempt), Fixed Roof Tank  
S-245, T-520 Latex Products (exempt), Fixed Roof Tank  
S-246, T-521 Latex Products (exempt), Fixed Roof Tank  
S-247, T-522 Latex Products (exempt), Fixed Roof Tank  
S-248, T-523 Latex Products (exempt), Fixed Roof Tank  
S-249, T-524 Latex Products (exempt), Fixed Roof Tank  
S-250, T-525 Latex Products (exempt), Fixed Roof Tank  
S-251, T-526 Latex Products (exempt), Fixed Roof Tank  
S-252, T-527 Latex Products (exempt), Fixed Roof Tank  
S-253, T-528 Latex Products (exempt), Fixed Roof Tank  
S-260, T-562 Latex Products (exempt), Fixed Roof Tank  
S-261, T-563 Latex Products (exempt), Fixed Roof Tank  
S-262, T-564 Latex Products (exempt), Fixed Roof Tank  
S-263, T-565 Latex Products (exempt), Fixed Roof Tank  
S-264, T-566 Latex Products (exempt), Fixed Roof Tank  
S-265, T-567 Latex Products (exempt), Fixed Roof Tank  
S-266, T-568 Latex Products (exempt), Fixed Roof Tank  
S-299, T-113 Hydrochloric Acid Storage Tank (exempt)  
S-301, T-103 Hydrochloric Acid Storage (exempt)  
S-309, Heat Transfer Operation – Other (exempt 2-1-114.1.2), Natural Gas Fired

S-320, T-100 Teminalized Products, Ethers (exempt), Fixed Roof Tank  
S-325, Dock Flush Tank, Fixed Roof Tank (exempt)  
S-327, T-602 Dock Recovery Tank, Wastewater (exempt), Fixed Roof Tank  
S-373, Dowtherm Heat Exchange Fluid Storage (exempt), Pressure Tank  
S-375, Heat Transfer Operation – Other (exempt 2-1-114.1.2), Natural Gas Fired  
S-393, T-121 Water Storage (exempt), Fixed Roof Tank  
S-423, T-301 Sym-Tet Partially Chlorinated Heterocyclics Storage (exempt),  
Fixed Roof Tank  
S-424, T-302 Sym-Tet Partially Chlorinated Heterocyclics Storage (exempt),  
Fixed Roof Tank  
S-425, T-303 Sym-Tet Partially Chlorinated Heterocyclics Storage (exempt),  
Fixed Roof Tank  
S-426, T-304 Sym-Tet Partially Chlorinated Heterocyclics Storage (exempt),  
Fixed Roof Tank  
S-435, T-126 N-Serve Distillation Vessel  
S-439, T-306 Sym-Tet Partially Chlorinated Heterocyclics Storage (exempt),  
Pressure Tank  
S-440, T-164 Sym-Tet Partially Chlorinated Heterocyclics (exempt), Fixed Roof  
Tank  
S-441, T171E Sym-Tet Partially Chlorinated Heterocyclics (exempt), Pressure  
Tank  
S-442, T-171C Sym-Tet Partially Chlorinated Heterocyclics (exempt), Pressure  
Tank  
S-443, T-172 Sym Tet Pechlorinated heterocyclics (exempt), Fixed Roof Tank  
S-450, T-32A Sodium Hydroxide Storage (exempt), Fixed Roof Tank  
S-451, T-32B Sodium Hydroxide Storage (exempt), Fixed Roof Tank  
S-509, T-20 T-Dodecyl Mercaptan Storage (exempt), Pressure Tank  
S-515, T-16A Anhydrous Hydrochloric Acid Storage (exempt), Pressure Tank  
S-516, T-16B Anhydrous Hydrochloric Acid Storage (exempt), Pressure Tank  
S-584, Drum Stations, Perchlorinated Heterocyclics (exempt)  
S-602, Bulk Plant (truck/rail), Partially Chlorinated Heterocyclics (exempt)  
S-606, T-602 Partially Chlorinated Heterocyclics Storage (exempt), Pressure  
Tank  
S-618, Cooling Tower, Water (exempt)  
S-622, Bulk Plant (Rail/Truck), Chlorinated Pyridine Truck Loading (exempt),  
Splash fill  
S-623, T-650 Chlorinated Pyridine Storage (exempt), Pressure Tank  
S-630, Liquid Chlorine Unloading Operation (exempt)  
S-632, T-432 Wastewater Storage Tank (exempt)  
S-674, H-350 Chlorinated Pyridine Purification Storage (exempt)  
S-703, Degreaser (Cold Cleaner), Methylated Siloxane (exempt 2-1-118.4)  
S-719, Aromatic 200 Storage (exempt), Pressure Tank  
S-721, D-110A Organic Liquid Storage Tank (exempt), Pressure Tank  
S-722, T-8 Tergitol Storage Tank (exempt), Pressure Tank  
S-723, T-9 Tergitol Storage Tank (exempt), Pressure Tank  
S-724, T-15 Propylene Glycol Storage (exempt), Fixed Roof Tank

**Abatement Devices added to Table II-B in Title V draft permit.**

- A-24, Maintenance Dynamic Cyclone abating S-164 (exempt 2-1-128.1)
- A-26, Maintenance Two Stage Electrostatic Precipitator abating S-167 (exempt 2-1-128.1)
- A-27, Maintenance Two Stage Electrostatic Precipitator abating S-168 (exempt 2-1-128.1)
- A-125, Vapor Recovery System abating S-321, S-322, S-323, S-324, S-535 (A-336 downstream), existing abatement device not listed in previous Title V permit.
- A-139, Venturi Scrubber abating S-584, existing abatement device not listed in previous Title V permit.
- A-144, Vapor Balance for DCP Unloading at S-5 (Identified as A-140 in application 14909)
- A-155, Vapor Return for Truck Loading Facility – vapor balance abating S-602 (exempt source, vents to S-606)
- A-169, B-32 Caustic Scrubber – packed bed scrubber abating S-450 and S-451, existing abatement device not listed in previous Title V permit.
- A-196, X 523 Venturi Scrubber abating S-694, existing abatement device not listed in previous Title V permit.
- A-205, R-503 Carbon Monoxide Scrubber abating S-389, (Downstream of A-74, A-75, A-76, A-80, A-77, A-147, A-149), this is a new abatement device permitted under application 18563.
- A-1011, Selective Catalytic Reduction System abating S-1011, this abatement device was transferred with S-1011.

**Abatement Devices removed from Table II-B in Title V draft permit.**

- A-42, B-368 Latex Plant Styrene Scrubber, packed bed scrubber
- A-46, B-7 Caustic Scrubber at Vikane, packed bed scrubber.
- A-90, H-30 Acid Absorber
- A-91, B-30 Absorber
- A-95, F-413 Bag Filter, reverse jet baghouse
- A-101, H-205 Falling Film Absorber
- A-102, B-206 Scrubber
- A-121, In Process Technology, Thermal Abatement Device
- A-141, Vapor Balance for Latex Recycle Styrene Truck Loading
- A-142, Vapor Balance System abating S-588
- A-150, Vapor Balance System for Styrene Tank Truck Loading
- A-151, Vapor Balance System abating S-25
- A-161, Sorbathene for Acetone Truck Loading
- A-184, ME 290 A/B Carbon Beds, this abatement device no longer abates S-648, S-649, S-650 S-651, S-652. These sources are abated by A-181 and A-182. A-182 is no longer vented to A-184. A-184 is now only vented to S-336 Thermal Oxidizer.
- A-193, Cartridge Dust Collector System abating S-684
- A-197, B-4 Caustic Scrubber abating S-268, S-269, S-454

**Other Changes to Table II-B**

- A-97, B-201 Organic Scrubber does not abate S-474 anymore and Table II-B has been amended.
- A-99, B-203 Scrubber exhaust is now routed to S-694 Reaction/HCL Absorption System and Table II-B has been amended.
- A-114, Vacuum System with Condenser, now abates S-465 (replacement to S-464) in Table II-B. The condition S-465 is subject to has been identified as 23250 (S-464 was previously subject to Condition 1359).
- A-150, Vapor Balance System no longer abates the styrene tank at the latex plant (S-25).
- A-401, Acid Absorber, B-901, no longer has A-121 upstream.

**Changes to Table II-C**

Internal Combustion Engines were removed since these engines do not emit more than 2 tons/year and are not considered significant sources under 2-6-239.

**District permit applications not included in this proposed permit**

The following NSR permit applications are still pending. The Title V permit will be revised periodically to incorporate these applications as permit revisions, if appropriate, following the procedures in Regulation 2, Rule 6, Major Facility Review.

<b>Application #</b>	<b>Project Description</b>
25995 NSR, 25996 TV MR	MEI throughput increase
26077 NSR, 26078 TV MR	Block 640 A Addition (New N-Serve manufacturing block)
26116 NSR, 26117 TV MR	Nitrapyrin formulation changes, Application Cancelled
A26661 NSR 26663 TV MR	Nitrapyrin formulation changes

**III. Generally Applicable Requirements**

This section of the permit lists requirements that generally apply to all sources at a facility including insignificant sources and portable equipment that may not require a District permit. If a generally applicable requirement applies specifically to a source that is permitted or significant, the standard will also appear in Section IV and the monitoring for that requirement will appear in Sections IV and VII of the permit. Parts of this section apply to all facilities (e.g., particulate, architectural coating, odorous substance, and sandblasting standards). In addition, standards that apply to insignificant or unpermitted sources at a facility (e.g., refrigeration units that use more than 50 pounds of an ozone-depleting compound) are placed in this section.

Unpermitted sources are exempt from normal District permits pursuant to an exemption in BAAQMD Regulation 2, Rule 1 and are identified in Table II-A. The *significant sources* pursuant to the definition in BAAQMD Rule 2-6-239 are identified in Table II-B.



Changes to the permit:

Table III Generally Applicable Requirements was revised to update the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to the facility as shown below:

Action	Title/Description
Revised Effective Dates for BAAQMD Rules and Regulations. Verified federal enforceability status for each requirement listed in Table III.	Adoption dates of District Rules need to be updated. SIP Rules need to have effective dates revised.
Added SIP Version of Regulation 2-1-429	Federal Emissions Statement
Added BAAQMD Regulation 6, Rule 1	Particulate Matter, General Requirements
Added SIP Regulation 6	Particulate Matter and Visible Emissions
Added SIP Regulation 8, Rule 2	Organic Compounds – Miscellaneous Operations
Removed SIP Regulation 8, Rule 4	Organic Compounds – General Solvent and Surface Coating Operations
Added SIP Regulation 8, Rule 40	Organic Compounds – Aeration of Contaminated Soil and Removal of Underground Storage Tanks
Added SIP Regulation 8, Rule 47	Organic Compounds – Air Stripping and Soil Vapor Extraction Operations
Added California Health and Safety Code Section 41750 et seq.	Portable Equipment
Added California Health and Safety Code, Title 17, Section 93115	Airborne Toxics Control Measure for Stationary Compression Ignition Engines
Added California Health and Safety Code Title 17, Section 93116	Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater

#### IV. Source-Specific Applicable Requirements

This section of the permit lists the applicable requirements that apply to permitted or significant sources. These applicable requirements are contained in tables that pertain to one or more sources that have the same requirements. The order of the requirements is:

- District Rules
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District rules that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are “federally enforceable” and a “Y” (yes) indication will appear in the “Federally Enforceable” column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the “Federally Enforceable” column will have a “Y” for “yes”. If the SIP rule is not the current District rule, the SIP rule or the necessary portion of the SIP rule is cited separately after the District rule. The SIP portion will be federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)

- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

Section IV of the permit contains citations of *all* applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District's or EPA's websites, or in permit conditions included in the facility's District permits to operate, which are found in Section VI of the Title V permit. The District's policy is to not include citations of exemptions as applicable requirements. Therefore, where no regulation applies to a specific operation due to one or more exemptions under the potentially applicable regulations, the source will not be included in Sections IV and VII of the permit unless specific permit conditions apply. All monitoring and recordkeeping requirements are also cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section VII of this permit evaluation/statement of basis.

### **Complex Applicability Determinations**

The facility is subject to numerous regulations which are discussed below.

#### **Process Units**

The emissions from the process unit vents consist of acid, which may be in the form of acid vapor or acid mist, and organic compounds. Acid mist emissions are defined as particulate emissions and are therefore subject to Regulation 6, Rule 1. Sources of organic emissions are subject to the requirements in a specific Regulation 8 rule or to the requirements of Regulation 8, Rule 2, except for those operations meeting the exemption criteria in Regulation 8, Rule 1, Section 110.3, 3/17/82:

*“Any operation or group of operations which are related to each other by being a part of a continuous process, or a series of such operations on the same process material, which are subject to Regulation 8, Rule 2 or Rule 4, and for which emissions of organic compounds are reduced at least 85% on a mass basis. Where such reduction is achieved by incineration, at least 90% of the organic carbon shall be oxidized to carbon dioxide.”*

The operations with organic emissions meeting these criteria are “*exempted from the provisions of this regulation*” and are therefore not subject to the requirements of any other rule in Regulation 8.

In addition, organic and inorganic hazardous air pollutant emissions may be subject to National Emission Standards for Hazardous Air Pollutants (40 CFR Part 63). These standards are often referred to as the Maximum Available Control Technology (MACT) standards for hazardous air pollutants.

#### **Dowicil® Production**

Dowicil® is a solid (powder) preservative and antimicrobial used in hand lotions and other products. Dowicil® is produced by reaction of a solid amine and dichloropropene,

a chlorinated alkene (VOC), in methylene chloride. There are no byproducts from this reaction. Emissions from the operation include VOC (chlorinated alkene), methylene chloride, and particulate matter.

**S-580, T-3A Specialty Chemicals Storage Tank**

**S-581, T-3B Specialty Chemicals Storage Tank**

**S-582, T-215 Specialty Chemicals Storage Tank**

**S-583, T-200 Specialty Chemicals Storage Tank**

The alkene is delivered to the site by rail car and hard-piped to these pressure vessels for storage. The material is hard-piped from these vessels to the reactors. They are subject to Regulation 8, Rule 5.

**S-662, Storage Tank T-243**

**S-663, Storage Tank T-242**

**S-664, Storage Tank T-244**

These tanks store methylene chloride for delivery to the reaction process, S-302 and S-303. They are subject to Regulation 8, Rule 5.

**S-302, Fungicides Product Dryer and Collector D-201A**

**S-303, Fungicides Product Dryer and Collector D-201B**

**S-389, Sym-Tet Thermal Oxidizer**

**S-496, T-241 Storage Tank Specialty Chemicals**

**A-192, Vent Recovery System**

Dowicil® is produced at S-302 and S-303, which are abated by A-192 to remove the methylene chloride from the vent stream by refrigeration. The methylene chloride is stored at S-496. A-192 is followed by abatement at S-389, if the Thermal Oxidizer is operating. S-302 and S-303 are not subject to any District regulation. Regulation 8, Rule 2 applies to miscellaneous operations, but only those operations which result in precursor organic compound emissions. Methylene chloride is a non-precursor organic compound, therefore this regulation does not apply. S-496 receives the methylene chloride recovered from the process and is subject to Regulation 8, Rule 5.

**S-322, D203A/B Portable Dryers**

**S-631, D-203C Portable Resin Drier**

These dryers are used to remove water from the methylene chloride before it is used as a solvent in the Dowicil® process. They are not subject to any District regulation. Regulation 8, Rule 2 applies to miscellaneous operations, but only those operations which result in precursor organic compound emissions. Methylene chloride is a non-precursor organic compound, therefore this regulation does not apply.

40 CFR Part 63, Subpart VVVVVV, National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources: The Dowicil® unit is currently subject to Subpart VVVVVV since it meets the applicability criteria in 63.11494(a). 1,3-

dichloropropene and methylene chloride are listed in Table 1 of this subpart and is present in the process fluid at concentrations greater than 0.1 percent for carcinogens and greater than 1.0 percent for noncarcinogens.

Subpart VVVVVV has requirements for process vents, storage vessels, and transfer operations and will apply until the issuance of the renewed Title V permit for the facility.

Upon the issuance of the renewed Title V permit, the facility will be required to comply with 40 CFR Part 63, Subpart FFFF, National Emissions Standards for Hazardous Air Pollutants for Miscellaneous Organic Chemical Manufacturing. The Dowacil® unit will be subject to this standard.

### **Former Latex Plant**

This plant has been shutdown.

### **Hydrochloric Acid Production**

Hydrochloric acid is produced at the Catalytic Hydrogen Chloride Plant, S-647, by conversion of carbon tetrachloride (a byproduct from the Sym-Tet Plant, S-446). It is also produced as a byproduct of several other manufacturing processes (the Sym-Tet Plant, the N-Serve® Plant, the Lontrel Plant, the Trifluoro Plant), and by combustion of chlorinated compounds in the waste streams that are vented to the S-336, Manufacturing Services Thermal Oxidizer and S-389, Sym-Tet Thermal Oxidizer. All of the sources in acid service are subject to Regulation 6, Rule 1 for potential emissions of acid mist, in addition to any other regulations indicated.

### **The Catalytic Hydrogen Chloride process:**

**S-431, Carbon Tetrachloride Pressure Vessel D-260A**

**S-432, Carbon Tetrachloride Pressure Vessel D-260B**

Carbon tetrachloride from the Sym-Tet Plant, S-446, is stored at S-429, S-431, and S-432, prior to conversion at the Catalytic Hydrogen Chloride Plant. These tanks are subject to Regulation 8, Rule 5.

**S-647, Catalytic Hydrogen Chloride Plant**

**S-648, E-277 HCl Absorber**

**S-649, T-277 36% HCl Storage Tank**

**S-650, T-280A 36% HCl Storage Tank**

**S-651, T-280B 36% HCl Storage Tank**

**S-652, T-280C 36% HCl Storage Tank**

**A-181, Water Scrubber**

**A-182, Water Scrubber**

Carbon tetrachloride from S-431 and S-432 is delivered to the Catalytic Hydrogen Chloride Plant, S-647, where the carbon tetrachloride is converted to anhydrous hydrogen chloride. Emissions from S-647 include carbon tetrachloride and carbon dioxide, CO<sub>2</sub>. The vent stream from the Catalytic Hydrogen Chloride Plant (anhydrous HCl) is then forwarded through S-648, the HCl absorption system, to recover HCl in the form of 36%

HCl. All of the recovered HCl is forwarded first to S-649, a receiving tank, then to S-650, S-651, and S-652 check tanks which are vapor balanced back to S-649. Any residual HCl vapors in the vent stream and the vent from S-649 are then directed to A-181 and A-182, Water Scrubbers, in series to ensure complete removal of HCl. The vent stream is then sent to the primary abatement device, S-336 Thermal Oxidizer. The Catalytic Hydrogen Chloride Plant is subject to Regulation 8, Rule 2 for organic emissions. S-648 is subject to Regulation 6, Rule 1 due to potential emissions of acid mist. S-649 through S-652 are also subject to Regulation 6, Rule 1, however, due to the vapor balancing, the emissions from S-650, S-651, and S-652 are directed back to S-649. S-649 is the only direct source of emissions.

Subpart NNNNN applies to S-647 through S-652 since the acid strength is greater than 30% and these sources are located at a major source of hazardous air pollutants (See 40 CFR Part 63.8985).

#### **HCl from the N-Serve® Plant, S-44, and the Sym-Tet Plant, S-446:**

S-515, T-16A Anhydrous HCl Storage at Block 660 (exempt)

S-516, T-16B Anhydrous HCl Storage at Block 660 (exempt)

The anhydrous HCl produced as a byproduct at the N-Serve® and Sym-Tet plants is stored in the exempt pressure vessels, S-515 and S-516. The anhydrous HCl is then forwarded to either A-87/A-85 auxiliary HCl Absorption System or the acid absorption system at S-434, Manufacturing Services Facility, to produce aqueous HCl.

#### **HCl from the Trifluoro Plant, S-474:**

The HCl produced as a byproduct at the Trifluoro Plant, S-474, is sent to A-98, B-202 Reactor Vent Scrubber, followed by A-99, B-203 Scrubber as the primary system, followed by S-694 Reaction/HCL Absorption System, followed by A-196, X-523 Venturi Scrubber, followed by A-195, B-615 Scrubber.

Subpart NNNNN National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production does not apply to S-474 since the HCl produced by these units is less than 30% by weight (see 40 CFR Part 63.8985).

#### **HCl from the Lontrel Plant, Plant 663:**

The Lontrel Plant produces 20% by weight HCl, which is exempt from permit requirements. The 20% HCl is stored in exempt tanks T-426A and T-426B.

#### **S-336, Manufacturing Services Thermal Oxidizer**

**S-135, HCl Storage Tank T-606A**

**S-136, HCl Storage Tank T-606B**

The HCl recovered from the Manufacturing Services Thermal Oxidizer is sent to S-135 and S-136 for storage.

**S-389, Sym-Tet Thermal Oxidizer**  
**S-301, T-103 (exempt)**  
**S-519, T-502A**  
**S-520, T-501B**

Chlorinated pyridine is stored at S-519 and S-520 prior to being fed to S-389. The Sym-Tet Thermal Oxidizer produces aqueous 20% HCl, which is stored in exempt check tanks T-510A and T-510B, then in exempt storage tank S-301, T-103.

**S-4, HCl Rail Tank Car Loading, Central Rail Loading Rack, Acid TC-1**  
**S-620, HCl Truck Loading Operation**  
**S-646, 36% Hydrochloric Acid Tank Truck Loading Operation**

The HCl is loaded from the storage tanks for delivery to customers at S-4, Rail Tank Car Loading and at S-620 and S-646, Tank Truck Loading Operations.

**S-137, HCl Storage Tank T-606C**  
**S-138, HCl Storage Tank T-606D**  
**S-139, HCl Storage n Tank T-606E**  
**S-530, T-902 HCl Storage Tank (36%)**

These storage tanks are permitted to store 36% HCl. The acid comes from various processes at Dow that produce HCl and is all transferred to these tanks by pipeline. S-530 is currently out of service, but could also be put into acid service at any time.

**40 CFR Part 63, Subpart NNNNN, National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production (HCl MACT):** Some of the operations related to HCl production are also subject to the HCl MACT. These sources include:

**S-135, HCl Storage Tank T-606A**  
**S-136, HCl Storage Tank T-606B**  
**S-137, HCl Storage Tank T-606C**  
**S-138, HCl Storage Tank T-606D**  
**S-139, HCl Storage n Tank T-606E**  
**S-434, Manufacturing Services Facility -HCl Absorber Systems**  
**S-576, HCl Storage Tank, T-122**  
**S-620, HCl Truck Loading Operation**  
**S-646, HCl Tank Truck Loading Operation (Only subject to Subpart NNNNN when handling HCl with a concentration greater than 30 weight percent see 63.8985(a))**  
**S-647, Catalytic Hydrogen Chloride Plant**  
**S-648, Hydrogen Chloride Absorber**  
**S-649, T-277 36% HCl Storage Tank**  
**S-650, T-280A 36% HCl Storage Tank**  
**S-651, T-280B 36% HCl Storage Tank**  
**S-652, T-280C 36% HCl Storage Tank**

Subpart NNNNN has been included in the applicable requirements for each of these sources.

Subpart NNNNN is a NESHAP for hydrochloric acid (HCl) production facilities. The rule defines an HCl production facility as the collection of equipment used to produce, store, and transfer for shipping HCl at a concentration of 30 percent by weight or greater. An HCl production facility is any process that routes a gaseous stream that contains HCl to an absorber, thereby creating a liquid HCl product.

Subpart NNNNN emissions standards apply to the following types of emission points:

- HCl process vents: Chlorine > 99 percent emissions reduction or outlet concentration <100 ppmv, HCl > 99 percent emissions reduction or outlet concentration <20 ppmv;
- HCl storage tanks: HCl > 99 percent emissions reduction or outlet concentration <120 ppmv;
- HCl transfer operations: HCl > 99 percent emissions reduction or outlet concentration <120 ppmv; and
- Leaks from equipment in HCl service.

Process units or plants that produce anhydrous HCl are not subject to Subpart NNNNN since no aqueous HCl is produced. These units are the Sulfuryl Fluoride plant and Chlorpyridines plant (Alpha and Beta).

Process units or plants that only produce HCl at less than 30% by weight are also not subject to Subpart NNNNN (Section 63.8985). The plants that produce aqueous HCl with a concentration less than 30% by weight are Trifluoro (TF) and proprietary chemical (FTF).

Plants subject to NNNNN are the Hydrochloric Acid Absorption plant at S-434 Manufacturing Services Facility with A-199 or S-336 as the control device, multiple tanks (S-135 through S-140) containing 36% HCl that vent to A-18 (B-607), Railcar loading rack (S-646) that vents to S-336 and S-389, S-620 HCl tank truck self-loader that vents to A-165 (B-480), and Catacid plant with S-336 as the control device. S-576, HCl Storage Tank, T-122 is subject to Subpart NNNNN since it stores HCl at a strength greater than 36% by weight. S-576 is abated by A-87 HCl Absorber and A-85, B-102 Absorber in series, followed by A-199, Manufacturing Services Scrubber, B-12.

Subpart NNNNN requires an affected process unit or plant to demonstrate compliance with the emission limitations under this regulation by: design evaluation or a performance test. The Subpart also requires each affected source to establish operating limits to demonstrate continuous compliance with applicable emission limits. Operating parameter must be monitored by continuous monitoring systems that must be operated in accordance with the Subpart.

The compliance demonstration used by each source subject to Subpart NNNNN is shown below:

- S-135, HCl Storage Tank T-606A, HCl absorber design evaluation
- S-136, HCl Storage Tank T-606B, HCl absorber design evaluation
- S-137, HCl Storage Tank T-606C, HCl absorber design evaluation
- S-138, HCl Storage Tank T-606D, HCl absorber design evaluation
- S-139, HCl Storage Tank T-606E, HCl absorber design evaluation
- S-434, Manufacturing Services Facility -HCl Absorber Systems, performance test
- S-576, HCl Storage Tank, T-122, performance test
- S-620, HCl Truck Loading Operation, HCl absorber design evaluation
- S-646, HCl Tank Truck Loading Operation abated by S-336 Manufacturing Services Thermal Oxidizer during operations that are subject to Subpart NNNNN (Performance Test not required since S-336 subject to Subpart EEE, RCRA and BIF permits see 63.9000(c)(4))
- S-647, Catalytic Hydrogen Chloride Plant, abated by S-336 Manufacturing Services Thermal Oxidizer (Performance Test not required since S-336 subject to Subpart EEE, RCRA and BIF permits see 63.9000(c)(4))
- S-648, Hydrogen Chloride Absorber, abated by S-336 Manufacturing Services Thermal Oxidizer (Performance Test not required since S-336 subject to Subpart EEE, RCRA and BIF permits see 63.9000(c)(4))
- S-649, T-277 36% HCl Storage Tank, abated by S-336 Manufacturing Services Thermal Oxidizer (Performance Test not required since S-336 subject to Subpart EEE, RCRA and BIF permits see 63.9000(c)(4))
- S-650, T-280A 36% HCl Storage Tank, abated by S-336 Manufacturing Services Thermal Oxidizer (Performance Test not required since S-336 subject to Subpart EEE, RCRA and BIF permits see 63.9000(c)(4))
- S-651, T-280B 36% HCl Storage Tank, abated by S-336 Manufacturing Services Thermal Oxidizer (Performance Test not required since S-336 subject to Subpart EEE, RCRA and BIF permits see 63.9000(c)(4))
- S-652, T-280C 36% HCl Storage Tank, abated by S-336 Manufacturing Services Thermal Oxidizer (Performance Test not required since S-336 subject to Subpart EEE, RCRA and BIF permits see 63.9000(c)(4))

S-576, T-122 is considered process equipment that is part of the HCl absorption facility. Performance testing was used to demonstrate HCl absorption system process vent met Subpart NNNNN emissions requirements.

For S-434 HCl Absorber Systems the control device is S-336 Halogen Acid Furnace Manufacturing Services which is exempt from performance demonstration since the Halogen Acid Furnace is a permitted RCRA Industrial Furnace.

### **Chlorpyridines Plant**

The N-Serve® and Sym-Tet production processes, called the chlorpyridines plant, are very similar and described below. They have some equipment in common and can produce different ratios of the same materials.



### **N-Serve® Production**

N-Serve® is an agricultural product, which is applied with fertilizer to keep the nitrogen in the fertilizer available to the plant roots for a longer time. The raw materials to the process are picoline (methyl pyridine) and chlorine. The product is a chlorinated heterocyclic, or chlorinated pyridine. HCl is a byproduct of this reaction.

**S-36, T-722 N-Serve® Plant Storage**

**S-44, N-Serve® Plant**

**S-48, T19A N-Serve®**

**S-49, T19B N-Serve®**

**S-56, T-31 N-Serve®**

**S-383, Petroleum Hydrocarbon Distillate Tank T-724**

**S-389, Halogen Acid Furnace: Sym-Tet Thermal Oxidizer**

**S-515, T-16A Anhydrous HCl Storage at Block 660 (exempt)**

**S-516, T-16B Anhydrous HCl Storage at Block 660 (exempt)**

**S-630, Liquid Chlorine Unloading Operation (exempt)**

**S-674 Chlorinated Pyridine Purification System H-350 (exempt)**

The chlorine is received onsite, unloaded from railcars at exempt source S-630 and delivered to S-44 from the chlorine distribution system. The picoline is unloaded next to the S-5 loading rack, is stored in S-36 T-722 N-Serve Plant Storage and delivered to the plant by pipeline. S-56 and S-383 also contain solvent used to make N-Serve®. S-48 and S-49 are in-process storage tanks.

The plant consists of reaction, purification, and process recovery sections. The anhydrous HCl byproduct is sent directly from the reaction system to the exempt tanks S-515 and S-516, which are abated by A-87 HCl Absorber, A-85 B-102 Absorber and A-199 Manufacturing Services Scrubber. The product is sent to the distillation section, which is abated by S-336 Halogen Acid Furnace: Manufacturing Service Thermal Oxidizer, as the primary abatement system. The backup abatement system is the Process Recovery section, which is abated by A-88 or A-89. The potential particulate emissions (acid mist) from S-44 are subject to Regulation 6, Rule 1 and the organic emissions to Regulation 8, Rules 2 and 10. S-36, S-48, S-49, S-56, and S-383 are subject to Regulation 8, Rule 5.

**S-57, T-32 N-Serve®**

**S-61, T-780 N-Serve®**

**S-62, T-781 N-Serve®**

**S-63, T-782 N-Serve®**

**S-382, N-Serve® Unit Storage T-783**

**S-407, T-728 N-Serve® Formulation Tank**

These tanks are used to store the N-Serve® product or product stabilizer and are subject to Regulation 8, Rule 5. Not all of these tanks are currently in service.

### **Sym-Tet Production**

A variety of chlorinated pyridine products, including symmetrical tetrachloropyridines, are produced by the chlorination of picolines in continuous processes. The reactants include chlorine gas and picolines. Hydrogen chloride gas and carbon tetrachloride are byproducts of the process.

**S-45, T-1 N-Serve®**

**S-447, T-774**

**S-498, Sym Tet T-102 Storage Tank**

**S-680, T-440 Pressure Vessel Storage Tank**

**S-681, Truck Transfer**

S-45, S-447, and S-498 store the organic feed material. These tanks are subject to Regulation 8, Rule 5. The carbon tetrachloride from S-680 is delivered to the Sym-Tet Plant by tank truck, S-681, if needed for use in the utility system. S-681 is subject to Regulation 8, Rule 6. Chlorine is delivered to the site in railcars. The chlorine is delivered to this process via a surge tank followed by the chlorine distribution system header. After the chlorine and picoline are reacted, the reaction mixture of chlorinated pyridines is forwarded for purification.

**S-446, Sym-Tet Plant**

**S-423, Sym-Tet T-301**

**S-424, Sym-Tet T-302**

**S-425, Sym-Tet T-303**

**S-426, Sym-Tet T-304**

**S-439, T-306 Sym-Tet**

**S-441, T-171E Sym-Tet**

**S-442, T-171C Sym-Tet**

**S-389, Halogen Acid Furnace: Sym-Tet Thermal Oxidizer, R-501**

**S-428, H-300 Sym-Tet Processing**

**S-448, H-200 Sym-Tet**

**S-515, T-16A Anhydrous HCl Storage at Block 660 - exempt**

**S-516, T-16B Anhydrous HCl Storage at Block 660 - exempt**

**S-674, Chlorinated Pyridine Purification System H-350 – exempt**

**S-703, T-300 - exempt**

The Sym-Tet Plant, S-446, consists of reactors, in process tanks, and separation systems. After reaction, the products are purified at S-428 and S-448 and then sent to storage. The exempt pressure vessel, S-674, is a purification system that is used to purify chlorinated pyridines for use at the Lontrel Plant.

The Lontrel Plant is abated in the same manner at the N-Serve® Plant above, with S-389 the primary abatement system and a process recovery section abated by A-88 B-106 Scrubber Sym-Tet or A-89 X-3 Emergency Venturi as backup abatement devices. The HCl byproduct is sent to the exempt storage tanks, S-515 and S-516, which are abated by S-434 Manufacturing Services Facility or A-87 HCl Absorber/Heat Exchanger, H-109 and A-85 B-102 Absorber. Any particulate emissions in the form of acid mist from the

Sym-Tet Plant, S-446, are subject to Regulation 6, Rule 1 and the organic emissions are subject to Regulation 8, Rules 2 and 10. Regulation 8, Rule 10 does not apply to S-428 or S-448 since they are never operated above 1 psig and are vented to an abatement device at all times. The separated chlorinated pyridines produced from this process are stored in exempt tanks.

**S-431, Carbon Tetrachloride Pressure Vessel D-260A**

**S-432, Carbon Tetrachloride Pressure Vessel D-260B**

Carbon tetrachloride from the Sym-Tet Plant, S-446, is stored at S-429, S-431, and S-432 prior to conversion at the Catalytic Hydrogen Chloride Plant. These tanks are subject to Regulation 8, Rule 5.

**S-444, U-183 Dowtherm Heater**

**S-460, U-83 Dowtherm Burner**

S-444 and S-460 are natural gas fired process heaters used to heat Dowtherm G®, a heat transfer fluid that is used in the S-44 N-Serve® and S-446 Sym-Tet Plants and in the purification systems associated with S-44 and S-446. They are subject to the regulations for combustion devices, Regulation 6, Rule 1, Regulation 9, Rules 1 and 7. They are not subject to Regulation 8, Rule 2, which exempts natural gas operations.

**S-440, T-164 Sym-Tet**

**S-443, T-172 Sym-Tet**

These tanks are used to store the product and are subject to Regulation 8, Rule 5.

**40 CFR Part 63, Subpart VVVVVV, National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources:** This standard applied to the Beta process at the Sym-Tet Plant (S-446) which manufactures intermediate products for agricultural applications. This standard will apply until the renewed Title V permit is issued to the facility. The intermediate products are converted/formulated into finished agricultural products within the Pittsburg facility or at other Dow locations. The Beta process produces a variety of chlorinated pyridine products by the chlorination of picolines in continuous processes. Hydrogen chloride gas and carbon tetrachloride are co-products of the chlorination reactions. Low levels of hexachlorobenzene are formed during the production of the intermediate products. All emissions from these processes are controlled using scrubbers and/or thermal treatment.

The Beta process at S-446 is subject to Subpart VVVVVV (until the renewed Title V permit is issued) since it meets the applicability criteria in 63.11494(a). Hexachlorobenzene is listed in Table 1 of this subpart and is present in the process fluid at concentrations greater than 0.1 percent for carcinogens and greater than 1.0 percent for noncarcinogens. EPA has defined hexachlorobenzene as a probable human carcinogen (Group B2, see <http://www.epa.gov/ttn/atw/hlthef/hexa-ben.html> for more information).

Subpart VVVVVV has requirements for process vents, storage vessels, transfer operations.

**40 CFR Part 63, Subpart FFFF, National Emission Standards for Hazardous Air Pollutants for Miscellaneous Organic Chemical Manufacturing:** S-446 will be subject to 40 CFR Part 63 Subpart FFFF, National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing upon issuance of the renewed Title V permit.

Subpart FFFF has requirements for process vents, storage vessels, transfer operations. Subpart FFFF applicability and monitoring requirements will be added to the Title V permit at some point in the future.

**40 CFR Part 63, Subparts H and I, National Emission Standards for Hazardous Air Pollutants: Equipment Leaks and Certain Processes Subject to the Negotiated Regulation for Equipment Leaks:** The facility is not subject to Synthetic Organic Chemical Manufacturing Industry requirements contained in 40 CFR 63 Subpart F, Subpart G, and Subpart H. The requirements of 40 CFR 60 Subpart I apply to the Symtet manufacturing area of the Dow facility. The Sym-Tet Plant is a symmetrical tetrachloropyridine production plant as specified in Section 63.190(b)(4)(vi) and is therefore subject to the fugitive emission sections of these rules. Dow reports fugitives as required in Section 63.182(b) with applicability to Subpart H and I. All of the Subpart H/I requirements have been included in the Source Specific Applicable Requirements section of the Title V permit in a single table for components subject to these regulations.

Sources subject to Subpart H monitoring for Subpart I applicability are generally equipment containing greater than 5% carbon tetrachloride and system containing perchloroethylene. S-44 N-Serve Plant and S-446 Sym-Tet are the process units that generate carbon tetrachloride. The following sources are subject to Subpart H monitoring:

**S-29 T-608B Terminalized Products Storage Tank**

**S-44 N-Serve Plant (includes T-70 and T-74 all components containing greater than 5% carbon tetrachloride)**

**S-55 T-30 N-Serve N2-Padded Heat Transfer Fluid Pressure Tank**

**S-151 T-614 Terminalized Products**

**S-372, T-20 Perchloroethylene Tank Fugitive Components**

**S-434 Manufacturing Services (Carbon Tetrachloride Distillation System and all components containing greater than 5% carbon tetrachloride)**

**S-446, Sym-Tet Plant**

**S-458 T-80 Perchloroethylene Expansion Pressure Tank**

**S-482 Carbon Tetrachloride Loading Rack**

**S-483 Carbon Tetrachloride Loading Rack**

**Trifluoro Plant, Plant 421**

This plant produces agricultural intermediates, which are shipped offsite for further processing. The plant reacts a chlorinated pyridine with HF to produce a fluorinated

pyridine, with HCl as a byproduct. Emissions from the process are HCl, HF, and hydrocarbons.

**S-474, Reactor R-210 (Plant 421) – Verdict**

**S-476, Plant 421 Trifluoro**

The plant is composed of the reactor section, S-474, where the product is produced, and the separation section, S-476. The HCl byproduct from S-474 is abated by A-98, B-202 Reactor Vent Scrubber, followed by A-99, B-203 Scrubber, followed by S-694 Reaction/HCl Absorption System. The product from S-474 and S-476 is stored in T-226 and T-227, exempt storage tanks.

The existing Title V permit identified 40 CFR Part 63 Subpart NNNNN (NESHAP for Hydrochloric Acid Production) as an applicable requirement. S-476, Plant 421, produces aqueous HCl acid at less than 30% concentration, therefore, Subpart NNNNN does not apply (Section 63.8985).

**Plant 663, Lontrel Plant**

Lontrel is a solid herbicide. The Lontrel Process reacts a chlorinated pyridine with an aqueous solution of sulfuric acid to produce and insoluble organic acid. HCl is a byproduct of this reaction. The process results in emissions of particulate matter, including acid mist.

**S-461, Plant 663 R-401 Reactor**

**S-462, Plant 663 R-402 Reactor**

**S-463, Plant 663 F-403 Separator**

**S-465, Plant 663 D-413 Dryer**

**S-466, Plant 663 T-408A Intermediate Product Storage**

**S-467, Plant 663 T-408B Intermediate Product Storage**

**S-190, T-643 (exempt)**

**S-195, T-648 (exempt)**

**S-194, Fixed Roof Tank (exempt)**

The chlorinated pyridine is fed to the reactor, S-461, by pipeline from the exempt tank, S-194. The sulfuric acid is delivered to an exempt storage tank from a tank truck and then from the exempt storage tank to the Lontrel process by pipeline. S-461 is vented to an acid absorber, A-96, to remove HCl from the gas stream. The chiller/condenser returns any unreacted sulfuric acid to the reactor. The pyridine is a high boiling point material and is not vaporized at S-461. The product organic acid is precipitated out of solution by the addition of water in S-462 to form a slurry. The product can be packaged directly after the Separator, S-463 or after the Dryer, S-465. The acid can also be formulated with water and monoethanol amine to produce a salt in S-466 and S-467, which is then stored in exempt tanks S-190 and S-195. These sources are subject to Regulation 6, Rule 1 requirements.

**40 CFR Part 63, Subpart MMM, National Emission Standards for Hazardous Air Pollutant Emissions: Pesticide Active Ingredient Production (PAI MACT):** The

Lontrel Plant is subject by the Pesticide Active Ingredient MACT, 40 CFR Part 63, Subpart MMM, due to meeting the definition of a pesticide active ingredient manufacturing process unit that process, use, or produce hazardous air pollutants (see Section 63.1360). The hazardous air pollutant processed and emitted by these sources is hydrochloric acid (HCl).

The effective date of the PAI MACT was 6-23-1999, with a compliance deadline of December 23, 2003. Subpart MMM has been included in the applicable requirements for S-461 and S-462.

A-96, B-405 packed bed scrubber is used to control hydrochloric acid emissions to comply with Subpart MMM. Compliance with emissions standards was demonstrated by performance test.

Requirements of Subpart H under Subpart MMM are not applicable to S-461 and S-462 because there are no organic hazardous air pollutants listed in section 112(b) of the Clean Air Act in use in the Lontrel Plant.

#### **Plant 640, MEI Plant**

This plant produces a methyl ester intermediate, which is an intermediate for the herbicide Starane. The reactants include a fully halogenated heterocycle, potassium fluoride (KF), aqueous ammonia, potassium hydroxide (KOH), and methyl chloroacetate (MCA). N-methyl pyrrolidone (NMP) is used as a solvent. The reaction produces the herbicide intermediate and byproducts potassium chloride (KCl) salt, a pyridine tar waste, and a wastewater stream contaminated with organic material (mostly methanol), all of these reaction byproducts are shipped offsite. Emissions include methyl chloride, methyl chloroacetate, N-methyl-pyrrolidone, methanol, and ammonia.

**S-593, Plant 640 Section 1, abated by A-146, Packed Bed NMP Scrubber and A-147, Packed Bed Water Scrubber in series**

**S-594, Plant 640 Section 2, abated by A-147, Packed Bed Water Scrubber**

**S-595, Plant 640 Section 3, abated by A-149, Packed Bed Water Scrubber**

**S-596, Plant 640 Section 4, abated by A-148, Packed Bed Water Scrubber and A-147, Packed Bed Water Scrubber in series**

The plant is composed of reactors, storage tanks, columns, and 4 scrubbers. At different stages of the reaction, the feed heterocycle is processed through different chemical intermediates until the final product is produced and isolated.

The aqueous KF is unloaded from a railcar and delivered by pipeline to the potassium fluoride storage tank for use in this plant. The feed heterocycle is delivered to this plant by pipeline. Aqueous ammonia is unloaded from a truck into a storage tank within the process. Potassium hydroxide in water is unloaded from a railcar, stored in an exempt tank, and delivered by pipeline to the process. Methyl chloroacetate is delivered by tank truck directly into a process storage tank.

The sources in this manufacturing process are subject to Regulation 8, Rule 2, due to emissions of various organic compounds. S-595, Section 3 of the process, also emits ammonia.

**S-602, Tank Truck Loading Facility (exempt)**

**S-604, Truck Loading Facility**

**S-606, Storage Tank T-602 (exempt)**

**S-607, Storage Tank T-1904**

The low vapor pressure pyridine tar waste from this process is stored at S-606 and loaded at S-602 to be sent offsite for disposal. Process wastewater is stored at S-607 and loaded at S-604 to be sent offsite for disposal.

**40 CFR Part 63, Subpart FFFF, National Emission Standards for Hazardous Air Pollutants for Miscellaneous Organic Chemical Manufacturing:** S-446 will be subject to 40 CFR Part 63 Subpart FFFF, National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing upon issuance of the renewed Title V permit. The facility was not required to meet the original compliance date since it was considered a minor source of hazardous air pollutants at the time.

Subpart FFFF has requirements for process vents, storage vessels, transfer operations.

**AFTF Process**

Dow produces a fluorinated pyridine, a fungicide intermediate, for export sales. This process is similar to the Trifluoro process, with reactants including a chlorinated pyridine and anhydrous hydrogen fluoride. The fluorinated pyridine and hydrochloric acid are co-products of the reaction, with potassium salts produced as a byproduct. Emissions include hydrocarbons, hydrochloric acid, and hydrofluoric acid.

**S-693, Distillation System**

**S-694, Reaction/HCl Absorption System**

**A-194, X-600 Venturi Scrubber**

**A-195, B-615 Scrubber**

The chlorinated pyridine for this process is produced onsite and delivered to S-694 by pipeline. The hydrogen fluoride is stored at the Trifluoro plant until it is delivered to this process, also by pipeline. After the conversion takes place at S-694, the HCl byproduct is absorbed into water. The unrefined product is then transferred to S-693 for purification, and the potassium salt byproduct is forwarded for use at another process by pipeline or tank truck. The vent from S-694 is abated by A-195, a packed bed caustic scrubbing column. S-693 is abated by A-194, a caustic venturi scrubber. The pressure relief valves in acid gas service are also abated by A-194. The acid mist emissions are subject to Regulation 6, Rule 1. The organic emissions are subject to Regulation 8, Rules 2 and 10.

Subpart NNNNN National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production does not apply to S-693 and S-694 since the HCl produced by these units is less than 30% by weight (see 40 CFR Part 63.8985).

**S-695, T-580 FTF Storage**

**S-696, T-585**

**S-697, ISO Container Loading Operation**

**S-699, Purge Tank/Drum Loading Operation**

The purified product is stored for shipment in S-695 and S-696 prior to be loaded into containers at S-697 for shipping offsite. The storage tanks are subject to Regulation 8, Rule 5. A small organic purge stream from the process, containing impurities, is loaded into containers at S-699 and shipped offsite for disposal. S-697 and S-699 are exempt from Regulation 8, Rule 6 due to the low vapor pressure of the liquids being transferred.

**Utility Closed Loop System**

These tanks function as head tanks or wide spots in the lines of a closed-loop perchloroethylene utility system. The perchloroethylene is heated or cooled by circulating through a heat exchanger, then delivered to process heat exchangers for condensing reactor and distillation column vapors and to moderate the temperature of process liquid streams at the various production plants. The perchloroethylene is then returned to the recirculating pumps. These tanks act as reservoirs to provide vapor space for expansion and to provide liquid head to prevent the recirculating pumps from cavitating.

**S-55, T-30 N-Serve®**

**S-346, T-241**

**S-372, T-20 in Block 560**

**S-458, T-80 Block 660**

**S-625, T-610 Perc Expansion Tank**

**Resin Bed Dryers**

These dryers are used to remove water from chlorinated solvents that are terminalized at the facility or received for use in a production process at the facility. None of these driers are currently in use. They are either subject to Regulation 8, Rule 2, or exempt from Regulation 8 requirements through Section 8-1-110.3.

**S-321, D-608A Dryer**

**S-323, D-605A Dryer**

**S-324, D-609 Dryer**

**S-535, D-605B Portable Dryer**

**Storage Tanks**

The storage tanks are subject to District Regulation 6, Rule 1 or Regulation 8, depending on whether they store acids or organic compounds. All storage tanks not included in the discussion of the production plants above are for storage of terminalized products or exempt materials

For the tanks that store acids, the acid emissions may be in the form of acid vapor or acid mist. Acid mist emissions, being a form of particulate emissions, are subject to



Regulation 6, Rule 1. The District does not have source test data for each source to demonstrate how much, if any, of the acid emissions are particulate, as opposed to acid vapor. Therefore, Regulation 6, Rule 1 requirements have been included as applicable requirements for all acid storage tanks.

Organic liquid tanks are subject to the storage and loading requirements in Regulation 8, Rule 5, except the tanks used for processing are subject to Regulation 8, Rule 2 or a more specific Regulation 8 rule. Some of the tanks subject to Regulation 8, Rule 5 are exempted from the standards in Regulation 8, Rule 5 due to storing materials with low vapor pressure. As explained previously, the tanks that are exempt from Rule 8-5 are not subject to Rule 8-2, as the exemption in Rule 8-5 does not direct applicability back to Rule 8-2. A few tanks are also subject to MACT standards in addition to District regulations, as they are considered an integral part of the production process as defined by the MACT. Where this is the case, a full discussion of the MACT applicability is included with the production process description.

In addition, Regulation 8, Rule 6 contains standards that apply to the loading of certain tanks. Loading of portable tanks/delivery vehicles is subject to Section 8-6-302. Section 8-6-304 has requirements that apply to the “transfer” of materials with vapor pressure  $\geq$  1.5 psia into tanks between 7.6 and 150 cubic meters in size. The term “transfer” is not defined in the regulation, but in every other use of the term in the regulation is in conjunction with loading of delivery vehicles or transportable containers. Therefore, Section 8-6-304 is shown in the permit to apply to the six tanks at the facility which may be loaded from delivery vehicles/transportable containers and which meet the size and material vapor pressure restrictions.

**40 CFR Part 60, Subpart Kb Standards of Performance for Volatile Organic Liquid Storage Vessels:** This regulation applies only when storing a volatile organic liquid as defined in 40 CFR 51.100. The following storage tanks at the facility are subject to the requirements of Subpart Kb due to the size or the tank and the properties of the materials that are stored.

**S-27, T-605A Terminalized Products abated by S-336 or S-389**  
**S-30, Material Flow Tank T-608B abated by S-336 or S-389**

**40 CFR Part 63, Subpart EEEE, National Emission Standards for Hazardous Air Pollutant Emissions: Organic Distribution MACT (OLD MACT):** This standard applies organic liquid distribution and storage at the sources shown below due to the properties of the materials that are loaded/unloaded and stored in tanks and due to the fact that the facility was major source of HAP at the time of the compliance date (February 2, 2007).

Dow operates the following sources that are subject to Subpart EEEE (Organic Liquids Distribution):

**S-5, 720 Terminalized Products**  
**S-28, T-605B Material Flow**

**S-30, T-608B Terminalized Products, 333,000 gallons**  
**S-36, N-Serve Plant Storage**  
**S-44, N-Serve Plant, Note this applies to T-70 and T-74 at N-Serve Plant (No Source Numbers)**  
**S-45, T-1 N-Serve**  
**S-56, T-31 N-Serve**  
**S-57, T-32 N-Serve**  
**S-61, T-780 N-Serve**  
**S-62, T-781 N-Serve**  
**S-63, T-782 N-Serve**  
**S-151, T-614 Terminalized Products, 700,000 gallons**  
**S-346, T-241**  
**S-372, T-20 Block 560 Storage Tank**  
**S-382, N-Serve Unit Storage T-783**  
**S-383, Petroleum Hydrocarbon Distillate Tank**  
**S-407, T-728 N-Serve Formulation Tank**  
**S-447, T-774**  
**S-466, Plant 663 T-408A Intermediate Product Storage**  
**S-467, Plant 663 T-408B Intermediate Product Storage**  
**S-498, Sym Tet T-102 Storage Tank**  
**S-625, T-610 Perc Expansion Tank**  
**S-662, Storage Tank, T-243, Pressure Tank, 15,000 gallons**  
**S-663, Storage Tank, T-242, Pressure Tank, 15,000 gallons**  
**S-664, Storage Tank, T-244, Pressure Tank, 15,000 gallons**  
**S-680, Pressure Tank, T-440**

As shown above many tanks are subject to Subpart EEEE, but are exempt from having to install controls under this regulation due to the size of the tank, storage is in pressure vessel, and based on the properties of the materials in each tank. The majority of the loading racks on site are exempt from control since each rack is used less than 300 hours per year. Fugitive monitoring requirements contained in Subpart H apply to tanks that are subject to EEEE. Subpart EEEE does not require monitoring of all connectors, but does require monitoring the first valve off of the tank.

Dow operates five storage tanks that require controls under Subpart EEEE:

**S-30, T-608B Terminalized Products, 333,000 gallons**  
**S-151, T-614 Terminalized Products, 700,000 gallons**  
**S-662, Storage Tank, T-243, Pressure Tank, 15,000 gallons**  
**S-663, Storage Tank, T-242, Pressure Tank, 15,000 gallons**  
**S-664, Storage Tank, T-244, Pressure Tank, 15,000 gallons**

All of these tanks are abated by one of the Halogen Acid Furnaces (HAF) S-336 Manufacturing Services Thermal Oxidizer or S-389 Sym-Tet Thermal Oxidizer. The temperature of each oxidizer is monitored to ensure the abatement device is operating properly. For storage tanks with a closed vent system the fugitive emissions are

inspected annually. Associate pumps are inspected weekly using an auditory visual observation of each pump.

S-5, 720 Terminalized Products is required by Subpart EEEE to have controls and to keep records of the annual loading volume based on a 3-year rolling average.

### **Chlorinolysis Process**

Chlorinolysis Train 1 (S-504) processes an aqueous stream containing organics and treats it with heat and sodium hypochlorite (bleach) to decompose the small amounts of organics in the stream. Chlorinolysis Train 2 (S-505) processes an aqueous stream containing sodium hydroxide, sodium chloride, bleach and low levels of organics. The aqueous stream is treated with hydrogen peroxide to remove the organics and bleach. The vent streams from these sources are sent to the A-400 (S-400) Thermal Oxidizer and the treated water is then recycled. These miscellaneous operations are subject to Regulation 8, Rule 2 due to organic emissions.

### **Nitrapyrin Production**

Nitrapyrin nitrogen stabilizer is a commercial agricultural product that optimizes the yield potential of corn crops by ensuring nitrogen is available in the root zone during key stages of corn growth when used with liquid fertilizer or manure. The Nitrapyrin plant consists of the following sources:

#### **S-718 Nitrapyrin Formulation Plant**

**S-719 (D-121 A) Aromatic 200 Pressure Tank, 35,900 gallons, exempt 2-1-123.3.2**

**S-720 (T-310) Organic Mix, 9,000 gallons**

**S-721 (D-110A) PAPI Storage Pressure Tank, 7,900 gallons, exempt 2-1-123.3.2**

**S-722 (T-8) Tergitol S-15, 5,900 gallons, exempt 2-1-123.3.6**

**S-723 (T-9) Tergitol S-15, 5,900 gallons, exempt 2-1-123.3.6**

**S-724 (T-15) Propylene Glycol Storage, 7,800 gallons, exempt 2-1-123.3.2**

**S-725 (V-250) Aqueous Mix, 2,900 gallons**

**S-726 (T-112) Emulsion Storage, 8,800 gallons**

**S-727 (T-11) Gel Phase Mix, 1,500 gallons**

**S-728 (T-20) Ethylene Diamine Storage Pressure Tank, 8,200 gallons**

**S-729 (V-100) Encapsulation Vessel, 8,200 gallons**

**S-730 (T-569) Nitrapyrin Formulation Storage, 80,000 gallons**

**S-731 (T-570) Nitrapyrin Formulation Storage, 80,000 gallons**

**S-732 (T-16) Dispersant Tank, 13,500 gallons**

**S-733 (T-216) Product Check Tank, 11,500 gallons**

**S-734 N-Serve TG Isotainer**

**S-735 (T-751) Proxell Tote, 375 gallons**

The primary source of emissions is from the tanks and fugitive components associated with the Nitrapyrin plant. The fugitive emissions are subject to District Regulation 8, Rule 18 requirements. The non-exempt tanks meet the low vapor pressure exemption under Regulation 8, Rule 5.

### **Components**

The components at the facility with fugitive emissions such as valves, flanges, pumps, pressure relief devices, connectors, are subject to District Regulation 8, Rules 18 and 28. District Regulation 8, Rule 25 was deleted on January 7, 1998, however a version still exists in the District's SIP. This SIP rule also applies. These requirements have been listed in a Component table in Section IV of the permit.

In addition to District regulations, the components at certain production processes are also subject to the National Emission Standards for Hazardous Air Pollutants for Source Categories – Other Processes Subject to the Negotiated Regulation for Equipment Leaks. This was discussed under the descriptions of the specific subject production processes. The requirements from this regulation have been listed in a separate table in Section IV of the permit. Since these components are not individually tracked with District identifiers, such as with sources and abatement devices, the subject components are identified by the production processes in the table for these MACT standards.

**40 CFR Part 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Boilers and Process Heaters:** Table II-A of the draft permit has numerous exempt combustion sources (S-64, S-309, and S-375) which do not require complex applicability determinations. If these exempt combustion sources are required to meet 40 CFR Part 63 requirements (NESHAP or MACT standards), then these requirements are discussed at the process unit level. S-64, S-309, and S-375 are not considered process heaters or boilers under Subpart DDDDD.

S-444 U-183 Dowtherm Heater and S-460 U-83 Dowtherm Heater which were discussed above are subject to NESHAP Subpart DDDDD since each unit is a heater as defined under Section 63.7575 and located at a major source of hazardous air pollutants. S-1011 Auxiliary Boiler is also subject to Subpart DDDDD as discussed below. Dow will return to being a major source of hazardous air pollutants upon issuance of the renewed Title V permit.

### **S-1011 Auxiliary Boiler**

At one time the facility operated a cogeneration facility that consisted of several gas turbines. All of these sources were transferred to Calpine Pittsburgh which has now been shutdown. Calpine Pittsburg transferred a large auxiliary boiler (S-1011, 307 MMBtu/hour) back to Dow when this facility was permanently shutdown. S-1011 auxiliary boiler is subject to the following District regulations: Regulation 6, Rule 1 requirements for particulate matter, Regulation 9, Rule 1 requirements for sulfur dioxides, Regulation 9, Rule 3 requirements for nitrogen oxides, Regulation 9, Rule 7 requirements for nitrogen oxides and carbon monoxide. The auxiliary boiler is also subject to the New Source Performance Standards contained in 40 CFR Part 60 Subpart Db Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units and the NESHAPS in 40 CFR Part 63 Subpart DDDDD National Emissions Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. S-1011 is subject to NSPS Subpart Db since it is greater than 100 MMBtu/hour and commenced construction after June 19, 1984. S-

1011 is subject to NESHAP Subpart DDDDD since it is a boiler as defined under Section 63.7575 and located at a major source of hazardous air pollutants. Dow will return to being a major source of hazardous air pollutants upon issuance of the renewed Title V permit.

**S-336 Halogenated Acid Furnace: Manufacturing Service Thermal Oxidizer**  
**S-389 Halogenated Acid Furnace: Sym-Tet Thermal Oxidizer**  
**A-400 (S-400) Experimental Thermal Oxidizer R-901**

The primary purpose of these devices is to oxidize surplus chlorinated organic byproducts to generate hydrochloric acid. Therefore, these devices were permitted as sources rather than abatement devices. A-400 (S-400) was originally permitted to burn chlorinated liquids and vapors, but Dow has since decided to burn the chlorinated liquids at S-336 and S-389 exclusively. The devices are subject to Regulation 6, Rule 1 for particulate emissions and acid mist, Regulation 8, Rule 2 for organic compounds, and Regulation 9, Rule 1 for sulfur dioxide. Note that Regulation 6-1-311 does not apply to A-400, as it is a heat exchanger.

S-336 and S-389 are not subject to Regulation 9, Rule 7, which applies to heaters that heat process streams indirectly. These combustion devices heat the waste and process streams directly. A-400 is however subject to Regulation 9, Rule 7, but only to the low fuel usage requirements in 9-7-309, which will be met through the annual tuning provisions of 309.2.

The combustion devices S-336 and S-389 also act to abate vent emissions from other sources at this facility. In some cases, the abatement is voluntary and in others it is required by the regulations that apply to the abated sources. Where the abatement is required, the requirement (usually a permit condition) has been listed as an applicable requirement in the table for the abated source. S-336 burns natural gas and abates chlorinated compounds from tank vents. S-389 burns natural gas and abates chlorinated compounds as well as tar byproducts from the SymTet plant, which contain nitrogen. Due to the nitrogen-containing materials, the permitting for S-389 included NO<sub>x</sub> abatement – non-selective catalytic reduction (NSCR – hydrogen and catalyst, no ammonia) and more stringent NO<sub>x</sub> limits and monitoring. To protect this catalyst bed, S-389 also has more stringent organic (carbon absorption) and particulate (MistAir Scrubber) removal systems than S-336.

The large Thermal Oxidizers, S-336 and S-389, are also subject to the Boiler and Industrial Furnace Rule under the Resource Conservation and Recovery Act (RCRA), 40 CFR 266, Subpart H, and are operating under an RCRA permit issued by the California Environmental Protection Agency, Department of Toxic Substances Control. However, the RCRA permit is not required to be included as part of the Title V permit, as the Title V permit contains only air quality requirements defined under Regulation 2-6-202.

**40 CFR Part 63 Subpart EEE-National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors**

Thermal oxidizers (S-336, S-389) are classified as hazardous waste hydrochloric acid production furnaces (halogen acid furnace defined under 40 CFR 60 Section 261.10. The definition of “industrial furnace” under 261.10 means any of the following enclosed devices that are integral components of manufacturing processes and that use thermal treatment to accomplish recovery of materials or energy:

(12) Halogen acid furnaces (HAFs) for the production of acid from halogenated hazardous waste generated by chemical production facilities where the furnace is located on the site of a chemical production facility, the acid product has a halogen acid content of at least 3%, the acid product is used in a manufacturing process, and, except for hazardous waste burned as fuel, hazardous waste fed to the furnace has a minimum halogen content of 20% as-generated.

These oxidizers are halogen acid furnaces, which are included in the industrial furnace category, and therefore defined as hazardous waste hydrochloric acid production furnace under Subpart EEE. Subpart EEE requires establishment of a minimum operating temperature and other operating conditions through a Performance Test and installation of a temperature monitor with continuous recorder for the primary control devices, S-336 and S-389. These oxidizers were already equipped with continuous temperature monitors as required by the existing District permit conditions. The oxidizers are also equipped with continuous monitoring systems to monitor other key process parameters specified by Subpart EEE.

Subpart EEE requires the owner/operator of each of these oxidizers to document all of the key process parameters during the performance test and to monitor these parameters during normal operation to ensure that the unit meets the destruction and removal efficiency requirements of 99.99% (63.1218(c)(1)). The oxidizers are also required to meet a CO emission limit of 100 ppm @7% O<sub>2</sub> (63.1218(a)(5)). Each oxidizer is equipped with a CO continuous emission monitor to ensure that this emission limit is met. The oxidizers are also subject to hydrochloric acid and chlorine limit of 150 ppm @7% O<sub>2</sub> as Cl(-) equivalent (63.1218(a)(6)).

These boilers are also subject to the Boiler and Industrial Furnace Rule, 40 CFR 266, Subpart H, for which trial burns were conducted in October and November of 1999 as part of the Resource Conservation and Recovery Act (RCRA) permitting process.

The two remaining large combustion devices, S-444 and S-460, are natural gas heaters used to heat Dowtherm, a heat transfer fluid. They are subject to the visible and outlet grain loading standards in Regulation 6, Rule 1, exempt from Regulation 8, Rule 2 (since they burn natural gas exclusively), and subject to Regulation 9, Rules 1 and 7. These two sources are also heat exchangers and therefore not subject Regulation 6-1-311.

Dow also has permits for several small emergency standby diesel generators and one emergency propane/natural gas generator. These generators were permitted recently due to a change in District regulations governing emergency generators. The combustion emissions from these sources are subject to the standards in Regulation 6, Rule 1, Regulation 9, Rules 1 and 8. They are exempt from Regulation 8, under Section 8-1-

110.2. The Regulation 1 exclusion in the State Implementation Plan (SIP) for generators used exclusively for backup power has not yet been removed. Inclusion of District regulations in the SIP makes the requirements federally enforceable, so all current District regulations that apply to these generators have been listed as non-federally enforceable for these sources, even if those regulations are themselves in the SIP and are otherwise federally enforceable for other source categories.

### **Groundwater Treatment**

Dow formerly operated a groundwater treatment plant. The associated sources, S-531, T410C Storage Tank Tote and S-532, T410D Storage Tote Tank have been shutdown. These sources were subject to District Regulation 8, Rule 47, Organic Compounds – Air Stripping and Soil Vapor Extraction Operations. The operation was also regulated under the Department of Toxic Substances Control Permit by Rule Tiered Permitting Program. These requirements were not included in the Title V permit, which is required to contain only air quality requirements defined under Regulation 2-6-202.

### **40 CFR Part 63 Subpart ZZZZ-National Emission Standards for Hazardous Air Pollutants from Stationary Reciprocating Internal Combustion Engines**

This standard applies to Reciprocating Internal Combustion Engines located at Area and Major Sources of Hazardous Air Pollutants. The facility operates several diesel engines shown below that are subject to this standard.

**S-706, Diesel Engine for FPI Standby Generator (535 bhp, Initial 11/26/01)**

**S-707, Diesel Engine Backup Generator P1A (328 bhp, Initial 4/15/02)**

**S-708, Diesel Engine Backup Generator P1B (328 bhp, Initial 4/15/02)**

**S-709, IC Engine Backup Generator (LPG) 471A (58 bhp, Initial 4/15/02)**

**S-711, Diesel Engine Backup Generator 223 (86 bhp, Initial 4/15/02)**

### **Facility Requirements**

In addition to the Generally Applicable Requirements listed in Section III of the permit, a facility table has been included in Section IV of the permit for those requirements that apply to in a general manner to the relevant operations at the facility, but which may also require monitoring.

### **40 CFR Part 63 Subpart GGGGG National Emission Standards for Hazardous Air Pollutants: Site Remediation (10/8/2003)**

This standard applies to site remediation activities located at a major source of Hazardous Air Pollutants. The facility submitted the initial notification for this MACT standard. The facility never invoked any of the requirements of this standard as a minor source of HAP. Subpart GGGGG will apply to the facility upon issuance of the Title V renewal. The facility will be required to be in compliance by the schedule contained in Section 63.7883(d).

### **Clean Air Act Section 112(j)**

At this time no MACT standards that would apply to this facility are subject to the Clean Air Act Section 112(j) process.

### **Compliance Assurance Monitoring (CAM), 40 CFR Part 64:**

This regulation was developed to provide assurance that facilities were complying with applicable emissions limitations by adequately monitoring control devices. The CAM rule became effective on November 21, 1997. However, most facilities are not affected by CAM requirements until they submit applications for Title V permit renewal. As required, Dow has conducted an applicability analysis for CAM and prepared CAM plans for sources subject to this regulation as part of this renewal application (see Appendices). The applicable requirements have been incorporated in Table IV-A for the facility and in the Table IV for CAM sources and abatement devices.

CAM applies to a source of criteria pollutant or hazardous air pollutant (HAP) emissions if all the following requirements are met:

- The source is located at a major source for which a Title V permit is required; and
- The source is subject to a federally enforceable emission limitation or standard for a criteria pollutant or HAP; and
- The source uses a control device to comply with the federally enforceable emission limitation or standard; and
- The source has potential pre-control emissions of the regulated pollutant that are equal to or greater than the major source threshold for the pollutant (in BAAQMD, the major source thresholds are 100 tons per year for each criteria pollutant, 10 tons per year for a single HAP, and 25 tons per year for two or more HAPs); and
- The source is not otherwise exempt from CAM.

The applicability of 40 CFR, Part 64, Compliance Assurance Monitoring, was reviewed for all sources at the facility. In order to identify sources that may be subject to CAM, Dow has prepared emission estimates for each source at the facility which estimated unabated potential to emit. The emission estimates and assumptions were reviewed by District staff. The inventory identified sources with unabated emissions above major source thresholds and these are shown in the CAM applicability analysis table shown in the Appendix. Dow and District staff then reviewed emission limits for all sources with unabated emissions that were greater than major source thresholds. These emission limits and sources are summarized in the CAM applicability analysis table. All emission limits were then reviewed to determine if they were exempt from CAM requirements. The applicability analysis highlights the following sources and associated abatement devices that are subject to CAM requirements under 40 CFR Part 64.2.



**Sources:**

**S-151 T-614 Terminalized Products abated by S-336 or S-389**

**S-633 Water Treatment Carbon Beds Regeneration abated by S-336 or S-389**

**S-434, Carbon Tetrachloride Purification System, abated by S-336**

**S-446 Sym-Tet S-Plant abated by S-389**

**S-302 Dowicil Train 1, abated by S-336 or S-389**

**S-303 Dowicil Train 2 abated by S-336 or S-389**

**S-322 D-203 A/B Portable Dryers abated by S-336 or S-389**

**S-631 D-203 C Portable Resin Dryer abated by S-336 or S-389**

**S-504 Chlorinolysis Train 1 abated by A-400 (S-400)**

**S-505 Chlorinolysis Train 2 abated by A-400 (S-400)**

**Abatement Devices:**

**S-336 Halogenated Acid Furnace: Manufacturing Service Thermal Oxidizer**

**S-389 Halogenated Acid Furnace: Sym-Tet Thermal Oxidizer**

**A-400 (S-400) R-901 Thermal Oxidizer**

Dow Chemical also prepared CAM Plans for these sources and associated abatement devices and these are also included in the Appendix. The draft permit has a CAM Tables in Section IV and Section VII.

The information in the CAM applicability analysis and CAM plans was used to develop a CAM Condition #TBD that is shown in Section VI of the draft permit. This condition has all of the CAM requirements for the facility.

**Chemical Accident Prevention Provisions, 40 CFR Part 68:** This facility is subject to the requirements of this rule, including submittal of a Risk Management Plan (RMP). Although the RMP is not required to be included in the Title V permit, the requirement to have a RMP must be contained in the permit and compliance with the RMP must be addressed within the compliance certifications required by the Title V program. The citation of this requirement can be found in Section I of the permit.

**Air Toxics “Hot Spots” Information and Assessment Act of 1987, California Health and Safety Code Section 44300 et seq, California Assembly Bill 2588 (AB2588):** This facility is subject to the AB2588 requirements, listed in the Generally Applicable Requirements, Section III of the permit. The original risk assessment from 1991 under AB2588 designated Dow a Level 1 facility (total offsite cancer risk in excess of 10 in a million), which required the facility to perform quarterly public notifications. Since the institution of these requirements, Dow has reduced toxic emissions such that the facility risk has been cut by more than 50%. In some cases, these reductions have been achieved through abatement of emissions not required by District regulations. The basis for the permit conditions documenting these reductions is indicated as a “voluntary limit.” The revised risk assessment documenting the reduction in emissions and risk was submitted November 21, 2001, reviewed by the District and the California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, and approved October 16, 2002. As a result of being redesignated a Level 0 facility, with overall risk

of less than 10 in a million, Dow is no longer required to issue public notifications under this program.

**Changes to the permit:**

Section IV of the permit contains citations to all of the applicable requirements for particular sources. The text of the requirements is found in the regulations, which are readily available on the District’s or EPA’s websites, or in the permit conditions, which are found in Section VI of the permit. All monitoring requirements are cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section C.VII of this permit evaluation/statement of basis.

The draft permit has numerous tables removed from the permit due to shutdown sources. The draft permit also has new tables inserted into the permit. The tables are identified by a letter identifier from the existing permit. The new inserted tables are identified as Table IV-TBD (To Be Determined). The new tables are inserted in an order based on the source numbers. All of the tables will be renumbered to account for the new tables and the deleted tables when the draft permit is finalized.

**Table IV-A**

Table IV-A has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to the facility as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 1 requirements and updated SIP Regulation 1 requirements	General Provisions and Definitions
Added Regulation 8, Rule 5 requirements and updated SIP Regulation 8, Rule 5 requirements	Storage of Organic Liquids
Added Regulation 8, Rule 10 requirements and updated SIP Version Regulation 8, Rule 10	Organic Compounds – Process Vessel Depressurization
Added 40 CFR Part 60, Subpart A	New Source Performance Standards: General Provisions
Added 40 CFR Part 63, Subpart NNNNN	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production (4/17/2003)
Added 40 CFR Part 63, Subpart MMM	National Emission Standards for Hazardous Air Pollutants: Pesticide Active Ingredient (6/23/1999)
Added 40 CFR Part 63, Subpart EEE	National Emission Standards for Hazardous Air Pollutants: Hazardous Waste Combustor (9/30/1999)

<b>Action</b>	<b>Title/Description</b>
Added 40 CFR Part 63, Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) (1/30/2013)
Added 40 CFR Part 63, Subpart VVVVVV	National Emissions Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources (12/21/2012),
Added 40 CFR Part 63, Subpart DDDDD	National Emissions Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters (1/31/2013),
Added 40 CFR Part 64	Compliance Assurance Monitoring (10/22/1997)

The NESHAP (40 CFR Part 63, MACT) standards that apply to any portion of the facility have also been listed in Table IV-A Source-specific Applicable Requirements for the facility. The MACT standards are also included in the source specific Table IVs. The MACT standards have detailed applicable requirements presented in a MACT standard specific Table IV at the end of Section IV of the draft permit.

**Table IV-B**

Table IV-B has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to S-4 HCl Rail Car Loading operation as shown below.

<b>Action</b>	<b>Title/Description</b>
Added BAAQMD Regulation 6, Rule 1	Particulate Matter and Visible Emissions
Added SIP Version Regulation 6	Particulate Matter and Visible Emissions
Added condition 17985 part 6	pH and caustic strength limits for A-199

Subpart NNNNN applies to S-4 because this source produces aqueous HCl with a weight percent of over 30% (see 63.8985(a)) and is located at a major source of hazardous air pollutants.

**Table IV-C**

Table IV-C was revised to add new applicable requirements to S-5 725 Terminalized Products as shown below.

<b>Action</b>	<b>Title/Description</b>
Added 40 CFR Part 63, Subpart EEEE	National Emission Standards for Hazardous Air Pollutants: Organic Liquids

Action	Title/Description
	Distribution (Non-Gasoline)
Added changes to Part 3 of Condition 11276	Removed references to A-150 vapor balance for styrene loading in definitions and in part 3. Added abatement requirement for 1,3-dichloropropene loading to part 3.

Subpart EEEE applies to S-5 at the locations where materials that are regulated by the standard are being handled. The pumps, valves, and sampling connections that operate in organic liquid service for at least 300 hour per year under Subpart EEEE located at S-5, 720 Terminalized Products are subject to the fugitive monitoring provisions of 40 CFR Part 63, Subpart H - National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks. Please note that equipment leaks subject to Subpart EEEE refer to Subpart H only applies to valves and pumps (not connectors). These applicable requirements are contained in Table IV-DA.

**Table IV-D**

There were no changes made to Table IV-D for S-6, 725 Terminalized Products.

**Table IV-E**

There were no changes made to Table IV-E for S-7, 725 Block Truck Loading.

**Table IV-F**

This table has been deleted from the draft permit. S-25 Material Flow Latex Tank has been permanently shutdown.

**Table IV-G**

Table IV-G has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to Terminalized Product Storage as shown below.

Action	Title/Description
Added Regulation 8, Rule 5 requirements and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids

40 CFR Part 60 Subpart Kb New Source Performance Standard for Standards of Performance for Volatile Organic Liquid Storage Vessels applies to these storage tanks due to the size of the tanks and vapor pressure of the material.

**Table IV-H**

Table IV-H has been revised to add 40 CFR Part 63, Subpart EEEE which only applies to two storage tanks S-346 (T-241) and S-372 (T-20).

<b>Action</b>	<b>Title/Description</b>
Added Limited Exemption contained in 8-5-117 for current and SIP version of the regulation.	Low Vapor Pressure less than or equal to 0.5 psia.
Added 40 CFR Part 63, Subpart EEEE	National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline) This Only Applies To S-346 (T-241) and S-372 (T-20)

**Table IV-I**

Table IV-I has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to Terminalized Products Tanks abated by thermal oxidizer as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 5 requirements and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added 40 CFR Part 64 (applies to S-151)	Compliance Assurance Monitoring

**Table IV-J**

Table IV-J has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to S-40 Water Treatment HCl Storage as shown below.

<b>Action</b>	<b>Title/Description</b>
Added District Regulation 6, Rule 1 requirements	Particulate Matter and Visible Emissions
Added SIP Regulation 6 requirements	Particulate Matter and Visible Emissions

**Table IV-K**

Table IV-K has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to S-44 N-Serve Plant as shown below.

<b>Action</b>	<b>Title/Description</b>
Added District Regulation 6, Rule 1 requirements	Particulate Matter and Visible Emissions
Added SIP Regulation 6 requirements	Particulate Matter and Visible Emissions
Added Regulation 8, Rule 10 requirements and added SIP Regulation 8, Rule 10 requirements	Organic Compounds – Process Vessel Depressurization
Added 40 CFR Part 63, Subpart EEEE	National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline) This Only Applies To T-70 and T-74 at the N-Serve Plant
Added 40 CFR Part 63, Subpart FFFF	National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing
Removed District Condition 21060	Recordkeeping requirements for process vessel depressurization

The fugitive components at storage tank T-70 and T-74 are subject to the fugitive monitoring provisions of 40 CFR Part 63, Subpart H - National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks. These applicable requirements are contained in Table IV-DA.

The facility has elected to return to being a major source of hazardous air pollutants effective when the Title V renewal permit is issued by the District. The facility will then be required to comply with Subpart FFFF following the schedule for a minor source of hazardous air pollutants that becomes a major source of hazardous air pollutants.

District condition 21060 required recordkeeping for process vessel depressurization until Regulation 8, Rule 10 was amended to include chemical plants. This regulation was amended and condition 21060 is no longer necessary and this condition has been archived.

**Table IV-L**

Table IV-L for S-48, T-19A N-Serve and S-49, T-19B N-Serve has been revised to add condition 5148 part 1.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 5 requirements and added SIP Regulation 8, Rule 5 requirements.	Storage of Organic Liquids
Added BAAQMD Condition Part 1	Requirements for A-154 Vent Recovery

Action	Title/Description
	System (85% abatement by weight or less than 15 lbs/day as carbon).

**Table IV-M**

Table IV-M has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to S-55 and S-408 Pressure Tanks as shown below.

Action	Title/Description
Added Regulation 8, Rule 5 requirements and added SIP Regulation 8, Rule 5 requirements.	Storage of Organic Liquids

**Table IV-N**

Table IV-N has been removed and S-135 and S-136 are now included in Table IV-O.

**Table IV-O**

Table IV-O has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to HCl Storage Tanks as shown below.

Action	Title/Description
Added District Regulation 6, Rule 1 requirements	Particulate Matter and Visible Emissions
Added SIP Regulation 6 requirements	Particulate Matter and Visible Emissions

Subpart NNNNN applies to these tanks since the tanks store aqueous HCl at a strength that is greater than 30% by weight (see 63.8985(a)) and since the facility is a major source of hazardous air pollutants. Subpart NNNNN was previously listed as a future effective requirement. The compliance date has passed and the facility is meeting the requirements of this regulation.

**Table IV-TBD (Tables will be renumbered as necessary at issuance)**

Table IV-TBD has been added to show the applicable District Rules and Regulations for S-161 Maintenance Paint Booth M-1 as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 19 requirements	Organic Compounds, Surface Preparation and Coating of Miscellaneous Parts and Products

**Table IV-TBD (Tables will be renumbered as necessary at issuance)**

Table IV-TBD has been added to show the applicable District Rules and Regulations for S-170 Maintenance Paint Booth M-4 and S-172 Maintenance Exhaust Area M-5 as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 19 requirements	Organic Compounds, Surface Preparation and Coating of Miscellaneous Parts and Products

**Table IV-P**

Table IV-P has been revised to add/remove applicable requirements to S-174 Gasoline Dispensing Facility as shown below.

<b>Action</b>	<b>Title/Description</b>
Removed Regulation 8, Rule 7 citations that no longer apply to S-174	Organic Compounds, Gasoline Dispensing Facilities
Removed Condition 14098 requirements	Old condition text has been archived
Added Condition 24289 requirements	Throughput Limit

Dow has limited the throughput for S-174 to less than 20,000 gallons per year. The phase II vapor recovery requirements are no longer applicable to S-174 in accordance with Regulation 8, Rule 7 requirements. The changes to the District permit conditions were permitted under Application 19565.

**Table IV-Q**

Table IV-Q has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to Chloralkali Cooling Towers as shown below.

<b>Action</b>	<b>Title/Description</b>
Added District Regulation 6, Rule 1 requirements	Particulate Matter and Visible Emissions
Added SIP Regulation 6 requirements	Particulate Matter and Visible Emissions



**Table IV-R**

This table has been removed from the draft permit. The Latex Plant sources have been permanently shut down.

**Table IV-S**

This table has been removed from the draft permit. The Latex Plant sources have been permanently shut down.

**Table IV-U**

This table has been removed from the draft permit. The Latex Plant sources have been permanently shut down.

**Table IV-V**

Table IV-V has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add new applicable requirements to S-286 Railcar Purging Facility as shown below.

<b>Action</b>	<b>Title/Description</b>
Added District Regulation 6, Rule 1 requirements	Particulate Matter and Visible Emissions
Added SIP Regulation 6 requirements	Particulate Matter and Visible Emissions

**Table IV-W**

Table IV-W has been revised to add new applicable requirements to S-302 and S-303 Dowicil Trains as shown below.

<b>Action</b>	<b>Title/Description</b>
Added 40 CFR Part 63, Subpart VVVVVV requirements	National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources (applies until Title V renewal permit is issued by the District)
Added 40 CFR Part 63, Subpart FFFF requirements	National Emission Standards for Hazardous Air Pollutants for Micellaneous Organic Chemical Manufacturing (applies when Title V renewal permit is issued by District)
Added condition 14438 part 6	A-192 shall emit no more than 1,233 pounds per day of methylene chloride (Note this is further abated by S-389 or S-336)
Added 40 CFR Part 64	Compliance Assurance Monitoring

The facility was required to be in compliance with Subpart VVVVVV requirements by October 29, 2012. The facility has elected to return to being a major source of hazardous air pollutants effective when the Title V renewal permit is issued by the District. The facility will then be required to comply with Subpart FFFF following the schedule for a minor source of hazardous air pollutants that becomes a major source of hazardous air pollutants.

**Table IV-X**

Table IV-X for S-308 Fumigants Cylinder Paint Hood has been deleted since this source is no longer owned by The Dow Chemical Company.

**Table IV-Y**

Table IV-Y for S-311 Fumigants Gas Cylinder Handling Area and S-312 Fumigants Cylinder Valve Removal Area has been deleted since this source is no longer owned by The Dow Chemical Company.

**Table IV-Z**

Table IV-Z for S-314 Fumigants Paint Booth has been deleted since this source is no longer owned by The Dow Chemical Company.

**Table IV-AA**

No changes were made to Table IV-AA for S-321 Dryer..

**Table IV-AB**

Table IV-AB for S-322 Portable Dryers has been revised to include 40 CFR Part 64 Compliance Assurance Monitoring as an applicable requirement.

Action	Title/Description
Added 40 CFR Part 64	Compliance Assurance Monitoring

**Table IV-AC**

No changes were made to Table IV-AC for S-323 Dryer, S-324 Dryer, S-535 Dryer.

**Table IV-AD**

Table IV-AD for S-326 Storage Tank has been revised to include the SIP version of Regulation 8, Rule 5 and the effectiveness dates were also revised.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 5 requirements added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids

**Table IV-AE**

Table IV-AE for S-336 Manufacturing Services Thermal Oxidizer has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Removed Regulation 1 requirements	General Provisions and Definitions (see Table III and Table IV-A)
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added 40 CFR Part 63 Subpart EEE.	National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors
Added 40 CFR Part 64	Compliance Assurance Monitoring
Basis for several permit condition parts were updated from Toxics Risk Management Policy to Regulation 2, Rule 5.	
Condition 16610 has been deleted.	Latex Plant has been shutdown

S-336 Manufacturing Services Halogen Acid Furnace is subject to Subpart EEE because it is a hazardous waste hydrochloric acid furnace under this subpart (see 40 CFR Part 63, Section 63.1200).

**Table IV-AF**

Table-AF for S-389 Sym-Tet Thermal Oxidizer has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Removed Regulation 1 requirements	General Provisions and Definitions (see Table III and Table IV-A)
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added 40 CFR Part 63 Subpart EEE.	National Emission Standards for Hazardous Air Pollutants from Hazardous Waste

Action	Title/Description
	Combustors
Added 40 CFR Part 64	Compliance Assurance Monitoring
Added changes to part 11 of condition 2039. Phrase added, “and Oxidation Catalyst”.	Oxidation catalyst was added to reduce CO emissions from this unit.
Basis for several permit condition parts were updated from Toxics Risk Management Policy to Regulation 2, Rule 5.	
Condition 16610 has been deleted.	Latex Plant has been shutdown

S-389 Manufacturing Services Halogen Acid Furnace is subject to Subpart EEE because it is a hazardous waste hydrochloric acid furnace under this subpart (see 40 CFR Part 63, Section 63.1200).

**Table IV-AG**

Table-AG for A-400 (S-400) R-901 Thermal Oxidizer has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Removed Regulation 1 requirements	General Provisions and Definitions (see Table III and Table IV-A)
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added Regulation 9, Rule 7 requirements and added SIP Regulation 9, Rule 7 requirements.	Inorganic Gaseous Pollutants –Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters
Added 40 CFR Part 64	Compliance Assurance Monitoring

**Table IV-AH**

Table IV-AH for S-402 HCl Storage Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Basis for several permit condition parts	

<b>Action</b>	<b>Title/Description</b>
were updated from Toxics Risk Management Policy to Regulation 2, Rule 5.	

**Table IV-AI**

Table IV-AI for S-428 Sym-Tet Processing and S-448 Sym-Tet was revised to include condition 5148 part 1. This condition part limits emissions from A-154.

**Table IV-AJ**

Table IV-AJ for S-429 Storage Tank has been deleted since this source has been shutdown.

**Table IV-AK**

Table IV-AK for S-431 Carbon Tetrachloride Pressure Vessel and S-432 Carbon Tetrachloride Pressure Vessel has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 5 requirements and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds - STORAGE OF ORGANIC LIQUIDS
Basis for several permit condition parts were updated from Toxics Risk Management Policy to Regulation 2, Rule 5.	

**Table IV-AL**

Table-AL for S-434 Manufacturing Services has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Removed Regulation 1 requirements.	General Provisions and Definitions (see Table III and Table IV-A)
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added Regulation 8, Rule 10 requirements and added SIP Regulation 8, Rule 10 requirements.	Organic Compounds – Process Vessel Depressurization

<b>Action</b>	<b>Title/Description</b>
Added 40 CFR Part 63 Subpart FFFF.	National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing
Added 40 CFR Part 64	Compliance Assurance Monitoring
Updated basis for each part of condition 17985.	
Deleted condition 21060.	This condition required record keeping of process vessel depressurization until Regulation 9, Rule 10 has been revised to include vessels at chemical plants. This regulation has been revised and the condition is no longer necessary.
Deleted footnote that referred to startup of S-712. Note: S-712 is no longer owned by The Dow Chemical Company.	This source is now in operation and the footnote is no longer necessary.

Subpart NNNNN applies to S-434 since the strength of the aqueous HCl that is produced is greater than 30% by weight (see 63.8985(a)).

**Table IV-AM**

Table-AM for S-444 Dowtherm Heater has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added Regulation 9, Rule 7 requirements and added SIP Regulation 9, Rule 7 requirements.	Inorganic Gaseous Pollutants –Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters
Removed 40 CFR Part 63 Subpart A citations.	See Table IV-A of the draft permit for 40 CFR Part 63 Subpart A citations.
Added 40 CFR Part 63 Subpart DDDDD citation. Permit incorrectly cited Subpart DDDD which applies to plywood and composite wood manufacturing the correct citation is Subpart DDDDD which applies to Industrial, Commercial, and Institutional Boilers and Process Heaters.	Subpart DDDDD—National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters.
Added changes to condition 11054 permitted under application 23595.	This source has an upgraded burner to meet Regulation 9, Rule 7 requirements.

NESHAP Subpart DDDDD applies to this source since it meets the definition of a boiler or heater contained in 40 CFR Part 63 Section 63.7575 and is located at a major source of hazardous air pollutants. Dow will return to being a major source of hazardous air pollutants upon issuance of the renewed Title V permit.

**Table IV-AN**

Table-AN for S-446 Sym-Tet Plant has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Removed Regulation 1 requirements	General Provisions and Definitions (see Table III and Table IV-A)
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added Regulation 8, Rule 10 requirements and added SIP Regulation 8, Rule 10 requirements.	Organic Compounds - Process Vessel Depressurization
Added Subpart FFFF	National Emission Standards for Hazardous Air Pollutants for Miscellaneous Organic Chemical Manufacturing
Added 40 CFR Part 64	Compliance Assurance Monitoring
Removed Condition 21060.	This condition required record keeping of process vessel depressurization until Regulation 9, Rule 10 has been revised to include vessels at chemical plants. This regulation has been revised and the condition is no longer necessary.

The facility has elected to return to being a major source of hazardous air pollutants effective when the Title V renewal permit is issued by the District. The facility will then be required to comply with Subpart FFFF following the schedule for a minor source of hazardous air pollutants that becomes a major source of hazardous air pollutants.

**Table IV-AO**

This table has been deleted since S-449 HCl Storage Tank has been permanently shutdown.

**Table IV-AP**

This table has been deleted since the S-454 Vikane Plant has been permanently shutdown.

**Table IV-AQ**

Table-AQ for S-458 Pressure Tank has been revised to change the effectiveness dates of applicable District Rule and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 5 requirements and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids

**Table IV-AR**

Table-AR for S-460 Dowtherm Heater has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added Regulation 9, Rule 7 requirements and added SIP Regulation 9, Rule 7 requirements.	Inorganic Gaseous Pollutants – Nitrogen Oxides and Carbon Monoxide
Removed 40 CFR Part 63 Subpart A citations.	These citations are in Table IV-A of the draft permit.
Added 40 CFR Part 63 Subpart DDDDD. Permit incorrectly cited Subpart DDDD which applies to plywood and composite wood manufacturing the correct citation is Subpart DDDDD which applies to Industrial, Commercial, and Institutional Boilers and Process Heaters.	Subpart DDDDD—National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters.
Revised Condition 503, Part 3 to reflect changes.	Revised under application 25041 (Regulation 9, Rule 7 burner changeout)

NESHAP Subpart DDDDD applies to this source since it meets the definition of a boiler or heater contained in 40 CFR Part 63 Section 63.7575 and is located at a major source of hazardous air pollutants. Dow will return to being a major source of hazardous air pollutants upon issuance of the Title V permit renewal.

**Table IV-AS**

Table-AS for S-461 Plant 663 Reactor R-401 has been deleted since this source has been shutdown.



**Table IV-AT**

Table-AT for S-462 Plant 663 Reactor R-402 has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Updated citation for 40 CFR Part 63 Subpart MMM.	National Emission Standards for Hazardous Air Pollutants for Pesticide Active Ingredient Production.

**Table IV-AU**

Table IV-AU for S-465 Product Dryer (formerly S-464 Product Dryer) has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below. This table used to apply to S-464 which was replaced by an identical unit S-465, which was permitted under application 15133.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Removed BAAQMD condition 1359 which applies to the former S-464 Product Dryer.	S-464 permanently shutdown and replaced by S-465.
Added BAAQMD condition 23250.	

**Table IV-AV**

Table IV-AV for S-474 Plant 421 Verdict and S-476 Plant 421 Trifluoro has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Removed Regulation 1 requirements.	See Table III and Table IV-A.
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added 40 CFR Part 63 Subpart FFFF	National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing
Removed 40 CFR Part 63 Subpart NNNNN.	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production.

The existing Title V permit identified 40 CFR Part 63 Subpart NNNNN (NESHAP for Hydrochloric Acid Production) as an applicable requirement. S-476, Plant 421, produces aqueous HCl acid at less than 30% concentration, therefore, Subpart NNNNN does not apply (Section 63.8985).

The facility has elected to return to being a major source of hazardous air pollutants effective when the Title V renewal permit is issued by the District. The facility will then be required to comply with Subpart FFFF following the schedule for a minor source of hazardous air pollutants that becomes a major source of hazardous air pollutants.

**Table IV-AW**

No changes were made to Table IV-AV for S-482 Carbon Tetrachloride Rail Car Loading.

**Table IV-TBD**

Table IV-TBD for S-483 Carbon Tetrachloride Rail Car Loading has been added to the draft permit and contains the applicable requirements as shown below. S-483 was permitted under application 21795.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 6 requirements.	Organic Compounds – Organic Liquid Bulk Terminals and Bulk Plants
Added BAAQMD condition 11276.	
Added BAAQMD condition 24779	

**Table IV-AX**

This table has been removed from the draft permit since S-489 Latex Still has been permanently shutdown.

**Table IV-AY**

This table has been removed from the draft permit since S-490 Partial Condenser has been permanently shutdown.

**Table IV-AZ**

Table IV-AZ for S-492 Environmental Services Storage Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added Regulation 8, Rule 5 requirements and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids

**Table IV-BA**

Table IV-BA for S-496 Storage Tank Specialty Chemicals has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added Regulation 8, Rule 5 requirements and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids

**Table IV-BB**

Table IV-BB for S-504 Chlorinolysis Train 1 has been revised to change the effectiveness dates of applicable District Rules and Regulations. A-121 has been shutdown and emissions from S-504 are exhausted to A-400 R-901 Oxidizer at all times of operation. A-400 is followed by A-401 Acid Adsorber B-901 and A-79 Packed Bed Scrubber B-902.

Action	Title/Description
Added 40 CFR Part 64	Compliance Assurance Monitoring

**Table IV-BC**

Table IV-BC for S-505 Chlorinolysis Train 2 has been revised to change the effectiveness dates of applicable District Rules and Regulations. A-121 has been shutdown and emissions from S-505 are exhausted to A-400 R-901 Oxidizer at all times

of operation. A-400 is followed by A-401 Acid Adsorber B-901 and A-79 Packed Bed Scrubber B-902.

Action	Title/Description
Added 40 CFR Part 64	Compliance Assurance Monitoring

**Table IV-BD**

Table IV-BD for S-506 Manufacturing Services Storage Tank has been deleted since this source has been permanently shutdown.

**Table IV-BE**

This table has been removed from the draft permit since S-507 Latex Plant Reactor has been permanently shutdown.

**Table IV-BF**

Table IV-BF for S-519 Chlorinated Pyridine Storage Tank and S-520 Chlorinated Pyridine Storage Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Added Regulation 8, Rule 5 requirements, and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids

**Table IV-BG**

Table IV-BG for S-521 Water Treatment System (Steam Stripper) has been revised to change the effectiveness dates of applicable District Rules and Regulations.

**Table IV-BH**

Table IV-BH for S-530 HCl Storage Tank has been revised as shown below.

Action	Title/Description
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions

**Table IV-BI**

Table IV-BI for S-531 and S-532 Organic Liquid Storage Tanks has been deleted since these sources have been permanently shutdown.

**Table IV-BJ**

Table IV-BJ for S-576 HCl Storage Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Updated citation for 40 CFR Part 63 Subpart NNNNN.	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production

**Table IV-BK**

Table IV-BK for S-580 through S-583 Specialty Chemical Storage Tanks has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 5 requirements and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids

**Table IV-TBD**

Table IV-TBD for S-584 Drum Filling Station (exempt) has been added to the draft permit and contains applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 2 requirements.	Organic Compounds – Miscellaneous Operations
Added Regulation 8, Rule 6 exemptions.	Organic Compounds – Organic Liquid Bulk Terminals and Bulk Plants
Added BAAQMD condition 3500.	

**Table IV-BL**

Table IV-BL for S-586 Recycle Styrene Storage Tank has been deleted since this source has been permanently shutdown.

**Table IV-BM**

Table IV-BM for S-587 Tank Truck Loading at Latex for Recycle Styrene has been deleted since this source has been permanently shutdown.

**Table IV-BN**

This table has been removed from the draft permit since S-588 Drum Filling Station has been permanently shutdown.

**Table IV-BO**

Table IV-BO for S-593 through S-596 of Plant 640 has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below. The MEI Plant was expanded in 2008 under application 14456. The MEI Plant increased its capacity in 2013 under application 25436.

<b>Action</b>	<b>Title/Description</b>
Revised citations for BAAQMD condition 4780. Changed basis of some condition parts from toxics risk management policy to Regulation 2, Rule 5.	This condition was revised under application 14456 (MEI Plant Expansion) and application 25436 (MEI throughput increase).

**Table IV-BP**

The changes to Table IV-BP are shown below.

<b>Action</b>	<b>Title/Description</b>
Revised the basis of parts of condition 4780 from toxics risk management policy to Regulation 2, Rule 5.	

**Table IV-BQ**

Table IV-BQ for S-607 Storage Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added SIP version of Regulation 8, Rule 5.	Organic Compounds – Storage of Organic Liquids
Removed part 16 of condition 4780.	No longer applies to this source. Condition 4780 was revised under application 14456

Action	Title/Description
	(MEI Plant Expansion)

**Table IV-BR**

Table IV-BR for S-609 Acetone Truck Loading Rack has been deleted since this source has been permanently shutdown.

**Table IV-BS**

Table IV-BS for S-620 HCl Truck Loading Operation has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

Action	Title/Description
Removed Regulation 1 requirements.	See Table III and Table IV-A of draft Title V permit.
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added citation for 40 CFR Part 63 Subpart NNNNN.	National Emission Standards for Hazardous Air Pollutants - Hydrochloric Acid Production

**Table IV-TBD**

Table IV-TBD for S-622 Tank Truck Loading of chlorinated pyridine (exempt) has been added to the draft permit and contains applicable requirements as shown below.

Action	Title/Description
Added Regulation 8, Rule 2 requirements.	Organic Compounds – Miscellaneous Operations
Added Regulation 8, Rule 6 exemptions.	Organic Compounds – Organic Liquid Bulk Terminals and Bulk Plants
Added BAAQMD condition 5384.	

**Table IV-TBD**

Table IV-TBD for S-625 Perchloroethylene Expansion Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below. S-209 has been removed from the table since it has been permanently shutdown. A-121 has been removed from the table since it has been permanently shutdown.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 5 requirements and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added 40 CFR Part 63 Subpart EEEE.	National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)

**Table IV-BT**

Table IV-BT for S-631 Portable Resin Dryer has been revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Added 40 CFR Part 64	Compliance Assurance Monitoring

**Table IV-BU**

Table IV-BU for S-633 Water Treatment Carbon Beds Regeneration has been revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Changed the basis of parts of condition 5722 from toxics risk management policy to Regulation 2, Rule 5.	
Added 40 CFR Part 64	Compliance Assurance Monitoring

**Table IV-BV**

This table has been removed from the draft permit since S-638 Truck Mounted Transportable Pressure Tank has been permanently shutdown.

**Table IV-BW**

Table IV-BW for S-641 Groundwater Treatment Plant Decant Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 5 requirements and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids



**Table IV-BX**

Table IV-BX for S-644 and S-645 HCl Storage Tank has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Removed 40 CFR Part 63 Subpart NNNNN	National Emission Standards for Hazardous Air Pollutants – Hydrochloric Acid Production

Subpart NNNNN does not apply to S-644 and S-645 since the strength of the HCl stored in these tanks is less than 30 weight percent during normal operations (see 63.8985(a)).

**Table IV-BY**

Table IV-BY for S-646 Hydrochloric Acid Tank Truck Loading Operation has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Revised citation for 40 CFR Part 63 Subpart NNNNN.	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production

**Table IV-BZ**

Table IV-BZ for S-647 Catalytic Hydrogen Chloride Plant Followed by S-648, HCl Absorber E-277, Vents Abated by A-181, B-278 Packed Bed Column, Followed by A-182, B-279 Packed Bed Column, Followed by A-184, ME 290 A/B Carbon Beds, or S-336, Manufacturing Services Thermal Oxidizer has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Removed Regulation 1 requirements.	See Table III and Table IV-A of the draft Title V permit.
Revised citation for 40 CFR Part 63 Subpart NNNNN.	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production
Changed the basis of parts of condition 8894 from toxics risk management policy to Regulation 2, Rule 5.	

**Table IV-CA**

Table IV-BZ for S-648, Hydrogen Chloride Absorber, E-277 Abated by A-181, B-278 Packed Bed Column, Followed by A-182, B-279 Packed Bed Column, Followed by A-184, ME 290 A/B Carbon Beds or S-336, Manufacturing Services Thermal Oxidizer Thermal Oxidizer has been revised to change the effectiveness dates of applicable District Rules and Regulations and to add additional applicable requirements as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Revised citation for 40 CFR Part 63 Subpart NNNNN.	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production
Changed the basis of parts of condition 8894 from toxics risk management policy to Regulation 2, Rule 5.	

**Table IV-CB**

Table IV-CB source-specific Applicable Requirements S-649, 36% Hydrogen Chloride Acid Storage Tank, V-277 Abated by A-181, B-278 Packed Bed Column, followed by A-182, B-279 Packed Bed Column, followed by A-184, ME 290A/B Carbon Beds or S-336, Manufacturing Services Thermal Oxidizer has been revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Revised citation for 40 CFR Part 63 Subpart NNNNN.	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Changed the basis of parts of condition 8894 from toxics risk management policy to Regulation 2, Rule 5.	

**Table IV-CC**

Table IV-CC source-specific Applicable Requirements S-650, 36% Hydrogen Chloride Acid Storage Tank, V-280A S-651, 36% Hydrogen Chloride Acid Storage Tank, V-280B S-652, 36% Hydrogen Chloride Acid Storage Tank, V-280C Abated by A-181, B-278 Packed Bed Column, followed by A-182, B-279 Packed Bed Column, followed by A-184, ME 290A/B Carbon Beds or S-336, Manufacturing Services Thermal Oxidizer has been revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Revised citation for 40 CFR Part 63 Subpart NNNNN.	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production
Changed the basis of parts of condition 8894 from toxics risk management policy to Regulation 2, Rule 5.	

**Table IV-CD**

Table IV-CD source-specific Applicable Requirements S-654, Abrasive Blasting Operation Abated by A-185, Eagle Containment Screens has been revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Added BAAQMD Regulation 12, Rule 4.	Miscellaneous Standards of Performance – Sandblasting (for unconfined blasting operations).
Added SIP Regulation 12, Rule 4.	Miscellaneous Standards of Performance – Sandblasting (for unconfined blasting operations).

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1 requirements.	Particulate Matter and Visible Emissions
Added SIP version of Regulation 6.	Particulate Matter and Visible Emissions
Changed the basis of part 5 of condition 8591 from Regulation 6 to Regulation 6, Rule 1.	

**Table IV-CE**

Table IV-CE source-specific Applicable Requirements for tanks S-662, S-663, S-664 abated by Abated by A-192, Vent Recovery System, S-336, Manufacturing Services Thermal Oxidizer, S-389, Sym-Tet Thermal Oxidizer, or Pressure Valve Setting has been revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 5 requirements and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added 40 CFR Part 63 Subpart EEEE	National Emission Standards for Hazardous Air Pollutants: Organic Liquid Distribution (Non-Gasoline)

**Table IV-CF**

Table IV-CF has been deleted. S-675 has been permanently shutdown.

**Table IV-CG**

Table IV-CG source-specific Applicable Requirements for tanks S-662, S-663, S-664 abated by Abated by A-192, Vent Recovery System, S-336, Manufacturing Services Thermal Oxidizer, S-389, Sym-Tet Thermal Oxidizer, or Pressure Valve Setting has been revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 5 requirements, and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added Regulation 8, Rule 6.	Organic Compounds – Organic Liquid Bulk Terminals and Bulk Plants
Added 40 CFR Part 63 Subpart EEEE	National Emission Standards for Hazardous Air Pollutants: Organic Liquid Distribution (Non-Gasoline)

**Table IV-CH**

No changes were made to Table IV-CH S-681 Truck Transfer.

**Table IV-CI**

Table IV-CI source-specific Applicable Requirements for ground water treatment air stripper S-682 has been deleted since this source has been permanently shutdown.

**Table IV-CJ**

Table IV-CJ has been deleted since S-683 has been permanently shutdown.

**Table IV-CK**

Table IV-CK has been deleted since S-684 has been permanently shutdown.

**Table IV-CL**

Table IV-CL source-specific Applicable Requirements for S-693, Distillation System abated by A-194, X-600 Venturi and A-195, B-615 Scrubber has been revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1 requirements.	Miscellaneous Operations
Added SIP Regulation 6 requirements.	Miscellaneous Operations
Added Regulation 8, Rule 10 requirements, and added SIP Regulation 8, Rule 10 requirements.	Organic Compounds – Process Vessel Depressurization
Added 40 CFR Part 63 Subpart FFFF	National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing
Removed 40 CFR Part 63 Subpart NNNNN	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production
Changed basis of parts of condition 15932 from TRMP to Regulation 2, Rule 5	
Removed Condition #21060	Regulation 8, Rule 10 has been revised and this condition is no longer necessary.

The facility has elected to return to being a major source of hazardous air pollutants effective when the Title V renewal permit is issued by the District. The facility will then be required to comply with Subpart FFFF following the schedule for a minor source of hazardous air pollutants that becomes a major source of hazardous air pollutants.

Subpart NNNNN National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production does not apply to S-693 since the HCl produced by these units is less than 30% by weight (see 40 CFR Part 63.8985).

**Table IV-CM**

Table IV-CM source-specific Applicable Requirements S-694, Reaction/HCl Absorption System Abated by A-195, B-615 Scrubber has been revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6 , Rule 1 requirements.	Miscellaneous Operations
Added SIP Regulation 6 requirements.	Miscellaneous Operations
Added Regulation 8, Rule 10 requirements, and added SIP Regulation 8, Rule 10 requirements.	Organic Compounds – Process Vessel Depressurization
Added 40 CFR Part 63 Subpart FFFF	National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing
Removed Subpart NNNNN	National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production
Changed basis of parts of condition 15932 from TRMP to Regulation 2, Rule 5	
Deleted 21060	Regulation 8, Rule 10 has been revised and this condition is no longer necessary.

The facility has elected to return to being a major source of hazardous air pollutants effective when the Title V renewal permit is issued by the District. The facility will then be required to comply with Subpart FFFF following the schedule for a minor source of hazardous air pollutants that becomes a major source of hazardous air pollutants.

Subpart NNNNN National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production does not apply to S-694 since the HCl produced by these units is less than 30% by weight (see 40 CFR Part 63.8985).

**Table IV-CN**

Table IV-CN source-specific Applicable Requirements for S-695 Storage Tank, T-580 has been revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 5 requirements and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids

**Table IV-CO**

Table IV-CO source-specific Applicable Requirements for tanks S-696, T-585 has been revised as shown below.

Action	Title/Description
Added Regulation 8, Rule 5 requirements and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids

**Table IV-CP**

Table IV-CP has no changes.

**Table IV-CQ**

Table IV-CQ has no changes.

**Table IV-CR**

Table IV-CR source-specific Pressure Tank Applicable Requirements for S-701, T-12 has been revised as shown below.

Action	Title/Description
Added Regulation 8, Rule 5 requirements and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Changed basis for parts of condition 16612 from TRMP to Regulation 2, Rule 5.	

**Table IV-CS**

Table IV-CS source-specific Applicable Requirements for S-704, D-121, Acrylonitrile Storage Tank has been removed since this source was never installed.

**Table IV-CT**

Table IV-CT source-specific Applicable Requirements for tanks S-705, Shot Blast Unit has been deleted since the source is no longer owned by The Dow Chemical Company.

**Table IV-CU**

Table IV-CU source-specific Applicable Requirements S-706 FPI Standby Generator (Diesel) has been revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1	Miscellaneous Operations
Added SIP Regulation 6	Miscellaneous Operations
Revised Regulation 9, Rule 8	Inorganic Gaseous Pollutants – Nitrogen Oxides from Stationary Engines
Added 40 CFR Part 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)
Added Section 93115, Title 17, California Code of Regulations	Airbourne Toxic Control Measure for Stationary Compression Ignition Engines
Removed Condition #18317	Old Condition replaced by condition 22850
Added Condition #22850	Certified engine allowed up to 50 hours under State ATCM.

Note: S-706 is equipped with a diesel particulate filter that was voluntarily installed by Dow and is not required to meet the ATCM requirements of a maximum diesel PM emission rate of 0.15 g/bhp-hr for up to 50 hours of maintenance and reliability testing (see Table 3 of ATCM). S-706 was certified under CARB Executive Order No. U-R-2-40 to emit a maximum of 0.1 g/bhp-hr.

**Table IV-CV**

Table IV-CV source-specific Applicable Requirements S-707 Diesel Fire Pump, S-708 Diesel Fire Pump, and S-711 Diesel Backup Generator has been revised as shown below. Please note that S-710 has been removed from Table IV-CV since it meets the exemption under Regulation 2, Rule 1, Section 114.2.1 (engines less than or equal to 50 hp).

<b>Action</b>	<b>Title/Description</b>
Added Regulation 6, Rule 1	Miscellaneous Operations
Added SIP Regulation 6	Miscellaneous Operations
Revised Regulation 9, Rule 8	Inorganic Gaseous Pollutants – Nitrogen Oxides from Stationary Engines
Added 40 CFR Part 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)
Added Section 93115, Title 17, California Code of Regulations	Airtoxics Control Measure for Stationary Compression Ignition Engines
Deleted Condition 19724	This condition replaced by 25675 and/or 22830.
Added Condition 25675	This condition applies to S-707 and S-708.
Added Condition 22850	This condition applies to S-711.



**Table IV-CW**

Table IV-CW source specific Applicable Requirements S-709 IC Engine Backup Generator 471A (Propane) has been revised as shown below.

Action	Title/Description
Added Regulation 6, Rule 1 requirements	Miscellaneous Operations
Added SIP Regulation 6 requirements	Miscellaneous Operations
Revised Regulation 9, Rule 1 requirements.	Inorganic Gaseous Pollutants – Sulfur Dioxide
Revised Regulation 9, Rule 8	Inorganic Gaseous Pollutants – Nitrogen Oxides from Stationary Engines
Added 40 CFR Part 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)

**Table IV-CX**

Table IV-CX source specific Applicable Requirements for S-712 Sulfuryl Fluoride Plant has been deleted since this source is no longer owned by The Dow Chemical Company.

**Table IV-TBD**

Table IV-TBD source specific Applicable Requirements for S-718 IC Nitrapyrin Plant has been added to the draft permit.

Action	Title/Description
Added Regulation 8, Rule 18 requirements.	Organic Compounds – Equipment Leaks
Added Condition 24763	Condition for Nitrapyrin Plant

The facility has elected to return to being a major source of hazardous air pollutants effective when the Title V renewal permit is issued by the District. The facility will then be required to comply with Subpart FFFF following the schedule for a minor source of hazardous air pollutants that becomes a major source of hazardous air pollutants.

**Table IV-TBD**

Table IV-TBD source specific Applicable Requirements for S-720 (T-310) Organic Mix, S-725 (V-250) Aqueous Mix, S-726 (T-112) Emulsion Storage, S-727 (T-11) Gel Phase Mix, S-728 (T-20) Ethylene Diamine Storage Pressure Tank, S-729 (V-100) Encapsulation Vessel, S-730 (T-569) Nitrapyrin Formulation Storage, S-731 (T-570) Nitrapyrin Formulation Storage, S-732 (T-16) Dispersant Tank, S-733 (T-216) Product Check Tank, S-734 N-Serve TG Isotainer, S-735 (T-751) Proxell Totehas been added to the draft permit.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 5 requirements, and added SIP Regulation 8, Rule 5 requirements.	Organic Compounds – Storage of Organic Liquids
Added Condition 24763	Condition for Nitrapyrin Plant

**Table IV - TBD**

Table IV-TBD source specific Applicable Requirements for S-1011 Auxiliary Boiler abated by A-1011 SCR has been added to the draft permit.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 1 requirements	General Provisions and Definitions.
Added Regulation 2, Rule 1 requirements	Permits General Requirements
Added Regulation 6, Rule 1 requirements	Miscellaneous Operations
Added SIP Regulation 6 requirements	Miscellaneous Operations
Added Regulation 9, Rule 1 requirements	Inorganic Gaseous Pollutants – Sulfur Dioxide
Added Regulation 9, Rule 3 requirements	Inorganic Gaseous Pollutants – Nitrogen Oxides From Heat Transfer Operations
Added Regulation 9, Rule 7 requirements	Inorganic Gaseous Pollutants – Nitrogen Oxides and Carbon Monoxide from from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters
Added SIP Regulation 9, Rule 7 requirements	Inorganic Gaseous Pollutants – Nitrogen Oxides and Carbon Monoxide from from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters
Added MOP Volume V	Continuous Emission Monitoring Policy and Procedures
Added 40 CFR Part 60 Subpart Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
Added 40 CFR Part 63 Subpart DDDDD	
Added Condition 19356	Condition for Auxiliary Boiler

S-1011 Auxiliary Boiler is not subject to the 5 ppm NO<sub>x</sub> limit contained in 9-7-307.6 in accordance with the limited exemption contained in 9-7-117. Condition 19356 limits NO<sub>x</sub> to 9 ppm and was in effect prior to July 30, 2008.

NESHAP Subpart DDDDD applies to this source since it meets the definition of a boiler or heater contained in 40 CFR Part 63 Section 63.7575 and is located at a major source of

hazardous air pollutants. Dow will return to being a major source of hazardous air pollutants upon issuance of the renewed Title V permit.

**Table IV - CY**

Table IV-CY source specific Applicable Requirements for Components has been revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Revised Regulation 8, Rule 18	Organic Compounds – Equipment Leaks
Added SIP Regulation 8, Rule 18	Organic Compounds – Equipment Leaks
Revised Regulation 8, Rule 28	Organic Compounds – Episodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants
Added SIP Regulation 8, Rule 28	Organic Compounds – Episodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants

**Table IV - CZ**

Table IV-CZ was deleted due to equipment shutdown.

**Table IV–DA**

Table IV-DA source specific Applicable Requirements for sources that are subject to Subpart H NESHAP for Equipment Leaks has been revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Revised list of sources with fugitive components that are subject to Subpart H fugitive monitoring requirements.	National Emissions Standard for Organic Hazardous Air Pollutants for Equipment Leaks.

**Table IV–DB**

Table IV-DB source specific Applicable Requirements for S-446 Sym-Tet Fugitive Components which are subject to the Subpart I NESHAP for Equipment Leaks has been revised as shown below.

Action	Title/Description
Revised 40 CFR Part 63 Subpart I	National Emission Standard for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks

**Table IV–TBD**

Table IV-TBD source specific Applicable Requirements for sources subject to the Subpart Kb NSPS for Volatile Organic Liquid Storage Vessels has been added to the draft permit.

Action	Title/Description
Added 40 CFR Part 63 Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels)

**Table IV–TBD**

Table IV-TBD source specific Applicable Requirements for sources subject to the Subpart NNNNN NESHAP for Hydrochloric Acid Production has been added to the draft permit.

Action	Title/Description
Added 40 CFR Part 63 Subpart NNNNN	National Emission Standard for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks

**Table IV–TBD**

Table IV-TBD source specific Applicable Requirements for sources subject to the Subpart MMM NESHAP for Pesticide Active Ingredient Production has been added to the draft permit.

Action	Title/Description
Added 40 CFR Part 63 Subpart MMM	National Emission Standards for Hazardous Air Pollutants for Pesticide Active Ingredient Production

**Table IV–TBD**

Table IV-TBD source specific Applicable Requirements for sources subject to the Subpart EEEE NESHAP for Organic Liquids Distribution has been added to the draft permit.

Action	Title/Description
Added 40 CFR Part 63 Subpart EEEE	National Emission Standards for Hazardous Air Pollutants for Organic Liquids Distribution

**Table IV–TBD**

Table IV-TBD source specific Applicable Requirements for sources subject to the Subpart EEE NESHAP for Hazardous Waste Combustors has been added to the draft permit.

Action	Title/Description
Added 40 CFR Part 63 Subpart EEE	National Emission Standards for Hazardous Air Pollutants for Hazardous Waste Combustors

**Table IV–TBD**

Table IV-TBD source specific Applicable Requirements for sources subject to the Subpart FFFF NESHAP for Miscellaneous Organic Chemical Manufacturing has been added to the draft permit.

Action	Title/Description
Added 40 CFR Part 63 Subpart FFFF	National Emission Standards for Hazardous Air Pollutants for Miscellaneous Organic Chemical Manufacturing

**Table IV–TBD**

Table IV-TBD source specific Applicable Requirements for sources subject to the Subpart ZZZZ NESHAP for Stationary Reciprocating Internal Combustion Engines has been added to the draft permit.

Action	Title/Description
Added 40 CFR Part 63 Subpart ZZZZ	National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines

## **V. Schedule of Compliance**

A schedule of compliance is required in all Title V permits pursuant to BAAQMD Regulation 2-6-409.10, which provides that a major facility review permit shall contain the following information and provisions:

- 409.10 A schedule of compliance containing the following elements:*
- 10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;*
  - 10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and*
  - 10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.”*

Since the District has not determined that the facility is out of compliance with any applicable requirement, the schedule of compliance for this permit contains only Sections 2-6-409.10.1 and 2-6-409.10.2.

## **VI. Permit Conditions**

Each permit condition is identified with a unique numerical identifier, up to five digits. The Title V permit contains all permit conditions for the permitted sources listed in Section II. During the Title V permit development, the District reviewed the existing permit conditions, deleted the obsolete conditions, and, as appropriate, revised the conditions for consistency, clarity, and enforceability.

When necessary to meet Title V requirements, additional monitoring, recordkeeping, or reporting has been added to the permit. All changes to existing permit conditions due to the Title V review are clearly shown in “strike-out/underline” format in the proposed permit. When the permit is issued, all “strike-out” language will be deleted; all “underline” language will be retained, subject to consideration of comments received.

The existing permit conditions are derived from previously issued District Authorities to Construct (A/C) or Permits to Operate (P/O). Permit conditions may also be imposed or revised as part of the annual review of the facility by the District pursuant to California Health and Safety Code (H&SC) § 42301(e), through a variance pursuant to H&SC § 42350 *et seq.*, an order of abatement pursuant to H&SC § 42450 *et seq.*, or as an administrative revision initiated by District staff. After issuance of the Title V permit, permit conditions will be revised using the procedures in Regulation 2, Rule 6, Major Facility Review.

The District has reviewed and, where appropriate, revised or added new limits on sources so as to help ensure compliance with District rules addressing preconstruction review. The applicability of preconstruction review depends on whether there is a “modified source” as defined in District Regulation 2-1-234. Whether there is a modified source depends in part on whether there has been an “increase” in “emission level.” Regulation 2-1-234 defines what will be considered an emissions level increase, and takes a somewhat different approach depending on whether a source has previously permitted by the District.

Sources that were modified or constructed since the District began issuing new source review permits will have permits that contain throughput limits or emission limits, and these limits are reflected in the Title V permit. These limits have previously undergone District review, and are considered to be the legally binding “emission level” for purposes of Sections 2-1-234.1 and 2-1-234.2. By contrast, for older sources that have never been through preconstruction review (commonly referred to as “grandfathered” sources), an “increase” in “emission level” is addressed in Section 2-1-234.3. A grandfathered source is not subject to preconstruction review unless its emission level increases above the highest of either: 1) the design capacity of the source, 2) the capacity listed in a permit to operate, or 3) highest capacity demonstrated prior to March 2000. However, if the throughput capacity of a grandfathered source is limited by upstream or downstream equipment (i.e., is “bottlenecked”), then the relaxing of that limitation (“debottlenecking”) is considered a modification.

Conditions have been deleted due to the following:

- Redundancy in recordkeeping requirements.
- Redundancy in other conditions, regulations and rules.
- The condition has been superseded by other regulations and rules.
- The equipment has been taken out of service or is exempt.
- The event has already occurred (i.e. initial or start-up source tests).
- The condition is obsolete or no regulatory basis could be determined.

The regulatory basis is listed following each condition. The regulatory basis may be a rule or regulation. The District is also using the following terms for regulatory basis:

- BACT: This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
- Cumulative Increase: This term is used for a condition, imposed by the APCO, which limits a source's operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.
- Offsets: This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
- PSD: This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit issued pursuant to Regulation 2, Rule 2.
- TRMP: This term is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District's Toxic Risk Management Policy.

In researching the regulatory basis for several of the existing permit conditions for Dow, it was discovered that a number of significant permit applications are missing from District files. Without this original documentation of the operation, including the description of the process, operating practices, and the engineering evaluation, in some cases the bases for these conditions cannot be determined with complete certainty. The District is currently installing an electronic document management system, so if these application files have merely been incorrectly filed, they may be available for review in the future. However, at this time, the citation of basis for these conditions has been designated as Regulation 2-1-403, which provides the District general authority to impose permit conditions.

Also, Regulation 2-1-403 has been cited with an underlying emission standard for conditions imposed to assure compliance with an underlying standard, if the conditions are specifically tailored to the operation of a source, rather than contained in the emission standard itself. The underlying emission standard is the true basis for the permit condition, as the condition would not exist if the standard did not apply. However, the condition is the emission limit expressed in a manner that is more enforceable as a practical matter, based on the actual operation of the source.

Additional monitoring has been added, where appropriate, to assure compliance with the applicable requirements.



Changes to the permit:

Condition #503 was revised in accordance with application 25041.

Condition #1359 was removed as source S-464 product dryer shutdown (A15133).  
Condition #1785 was revised to remove S-531 and S-532 which have been shutdown.

Condition #2039 was revised to add latest application number to reflect the installation A-205, R-503 Carbon Monoxide Scrubber with additional minor text revisions (A18563).

Condition #2213 was revised to reflect that A-121 has been shutdown.

Condition #3500 added for S-584 Drumming Station to be abated by A-139 Venturi Scrubber.

Condition #3712 removed due to equipment shutdown.

Condition #4002 removed due to equipment shutdown.

Condition #4780 revised in accordance with applications 14456 and 25436.

Condition #4945 revised from Regulation 6 to Regulation 6, Rule 1.

Condition #5147 revised to add Regulation 2, Rule 5 instead of TRMP.

Condition #5180 removed due to equipment shutdown.

Condition #5377 deleted due to equipment shutdown.

Condition #5384 added for A-167 chlorinated pyridine truck loading equipment.

Condition #5385 revised to include Regulation 6, Rule 1.

Condition #5722 revised to include Regulation 2, Rule 5.

Condition #6074 was deleted for S-450 & S-451 HCl Storage Tanks. These tanks no longer store HCl and only store sodium hydroxide and are exempt from permit requirements.

Condition #7775 revised to include Regulation 6, Rule 1. Storage Tanks S-644 and S-645 do not store 36% by weight HCl (< 30% by weight HCl).

Condition #8894 revised to include Regulation 2, Rule 5 along with a request from the facility to revise the condition language to reflect that A-184 carbon beds are not used to abate A-648 or the exhaust from A-182. A-182 is now exhausted to S-336 Thermal Oxidizer at all times of operation.

Condition #11054 revised in accordance with Application 23595.

Condition #11276 revised in accordance with Applications 14909 and 21975. This condition also had A-150 removed and references to styrene loading removed from part 3. The facility does not load styrene anymore. Latex plant has been shutdown.

Condition #13335 removed due to equipment shutdown.

Condition #14098 was deleted and was replaced by Condition 20666.

Condition #14354 was revised in accordance with Application 23934.

Condition #14722 was deleted due to equipment shutdown.

Condition #15732 removed due to equipment shutdown.

Condition #15932 was revised to include Regulation 2, Rule 5.

Condition #15944 was revised to include Regulation 6, Rule 1.

Condition #16610 was deleted due to equipment shutdown.

Condition #16612 was revised to include Regulation 2, Rule 5.

Condition #17683 was deleted since this source is no longer owned by The Dow Chemical Company.

Condition #17878 was deleted due to equipment shutdown.

Condition #17985 was revised as requested by the facility to make condition text clearer by adding owner/operator format and other minor changes.

Condition #18128 was deleted due to equipment shutdown.

Condition #18317 was deleted and replaced with a ATCM standard condition #22850.

Condition #19356 was added to reflect the transfer of S-1011 auxilliary boiler from Calpine Gilroy back to Dow.

Condition #19724 was revised to reflect that four diesel engines were removed from the condition.

Condition #20301 was deleted since this source is no longer owned by The Dow Chemical Company.

Condition #20302 was deleted since this source is no longer owned by The Dow Chemical Company.

Condition #20303 was deleted since this source is no longer owned by The Dow Chemical Company.

Condition #20666 standard permit conditions were added in accordance with Application 19565 and standard language was added to part 2 of the condition.

Condition #20826 was revised to include Regulation 6, Rule 1 requirements.

Condition #21059 was revised due to the shutdown of S-209, S-222, S-345.

Condition #21060 was deleted due to a new version of Regulation 8, Rule 10 being adopted.

Condition #22850 was added for S-711 diesel engine to meet Regulation 9, Rule 8 and ATCM requirements.

Condition #23250 was added in accordance with Application 15133.

Condition #24289 was added under a permit application to limit gasoline throughput at S-174.

Condition #24763 which regulates S-718 Nitrapyrin plant has been added in accordance with Applications #21858, #24429, and #25438.

Condition #24779 which regulates S-483 Carbon Tetrachloride Loading was added in accordance with Application #21795.

Condition #25675 was added for S-707 diesel fire pump and S-708 diesel fire pump to meet Regulation 9, Rule 8 and ATCM requirements.

## **VII. Applicable Limits and Compliance Monitoring Requirements**

This section of the permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation for each monitoring requirement, frequency of monitoring, and type of monitoring. The applicable requirements for monitoring are completely contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit. Table VII B through D were combined with Table VII-A for the gas turbines and heat recovery steam generators since all of these sources are identical with similar applicable requirements and exhaust through a common stack.

The federal enforceability of all Table VII's were updated.

Table VII-A Applicable Limits and Monitoring Requirements for the facility was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations were updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations were updated.	Storage of Organic Liquids
Regulation 8, Rule 10 citations were updated.	Process Vessel Deprssurization
Regulation 8, Rule 10 SIP citations were updated.	Process Vessel Deprssurization

Table VII-B Applicable Limits and Monitoring Requirements for S-4 HCl Rail Tank Car Loading were revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 citations were updated.	Particulate Matter – General Requirements
Regulation 6 SIP citations were updated.	Particulate Matter – General Requirements
Note added that S-4 is subject to Subpart NNNNN (HCl MACT).	40 CFR Part 63 Subpart NNNNN – Hydrochloric Acid Production

Table VII-C Applicable Limits and Monitoring Requirements for S-5 Terminalized Products were revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Table Heading revised.	Styrene no longer loaded at this source. A-150 has been shutdown. DCP unloading is abated by A-144.
Note added that S-5 is subject to Subpart EEEE.	40 CFR Part 63 Subpart EEEE – Organic Liquids Distribution

Subpart EEEE applies to S-5 at the locations where materials that are regulated by the standard are being handled. The pumps, valves, and sampling connections that operate in organic liquid service for at least 300 hour per year under Subpart EEEE located at S-5, 720 Terminalized Products are subject to the fugitive monitoring provisions of 40 CFR Part 63, Subpart H - National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks. Please note that equipment leaks subject to Subpart EEEE refer to Subpart H only applies to valves and pumps (not connectors). These monitoring requirements are contained in Table VII-CQ.

Table VII-E was revised to show that S-482 has been permanently shutdown.

Table VII-F Applicable Limits and Monitoring Requirements for S-25 Latex Tank was deleted since this source has been permanently shutdown.

Table VII-G Applicable Limits and Monitoring Requirements for the S-27 Terminalized Products and S-30 Tank were revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids
Removed NSPS Subpart Kb detailed citations.	40 CFR Part 60 Subpart Kb – Standards of Performance for Volatile Organic Storage Vessels
Note added that S-27 and S-30 are subject to NSPS Subpart Kb.	40 CFR Part 60 Subpart Kb – Standards of Performance for Volatile Organic Storage Vessels

Table VII-H Applicable Limits and Monitoring Requirements for tanks storing liquids with a vapor pressure less than 0.5 psia were revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Table heading was revised to note that these tanks store liquids with a vapor pressure less than 0.5 psia.	
Table heading was revised to remove S-222 and S-345, since these tanks have been permanently shutdown.	
Note added that these tanks are subject to Subpart EEEE.	40 CFR Part 63 Subpart EEEE – Organic Liquids Distribution

Table VII-I Applicable Limits and Monitoring Requirements for various tanks were revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids

Table VII-J Applicable Limits and Monitoring Requirements for S-40 HCl tank were revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 citations were	Particulate Matter – General Requirements

Action	Title/Description
updated.	
Regulation 6 SIP citations were updated.	Particulate Matter – General Requirements

Table VII-K Applicable Limits and Monitoring Requirements for the S-44 N-Serve Plant were revised as shown below.

Action	Title/Description
Regulation 6, Rule 1 citations were updated.	Particulate Matter – General Requirements
Regulation 6 SIP citations were updated.	Particulate Matter – General Requirements
Regulation 8, Rule 10 citations were updated.	Process Vessel Depressurization
Regulation 8, Rule 10 SIP citations were updated.	Process Vessel Depressurization
Note added that process vessels T-70 and T-74 located at S-44 are subject to Subpart EEEE.	40 CFR Part 63 Subpart EEEE – Organic Liquids Distribution

Table VII-TBD Applicable Limits and Monitoring Requirements were added for S-48 and S-49 N-Serve tanks as shown below.

Action	Title/Description
Added Regulation 8-5-307 citation and associated monitoring.	Storage of Organic Liquids
Added Regulation 8-5-307 SIP citation and associated monitoring.	Storage of Organic Liquids
Added condition 5148, part 1 efficiency and part 3 monitoring requirements.	

Table VII-L Applicable Limits and Monitoring Requirements were added for S-55 N-Serve tank and S-408 tank as shown below.

Action	Title/Description
Added Regulation 8-5-307 citation and associated monitoring.	Storage of Organic Liquids
Added Regulation 8-5-307 SIP citation and associated monitoring.	Storage of Organic Liquids

Table VII-M Applicable Limits and Monitoring Requirements were added for S-135 through S-139 as shown below. S-140 no longer stores HCl.

Action	Title/Description
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Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Note added that S-135 through S-139 are subject to Subpart NNNNN.	40 CFR Part 63 Subpart NNNNN – Hydrochloric Acid Production

Table VII-TBD Applicable Limits and Monitoring Requirements were revised for S-161 Maintenance Exhaust Area M-1, S-170 Maintenance Exhaust Area M-4, and S-172 Maintenance Exhaust Area M-5 as shown below:

Action	Title/Description
Added Regulation 8, Rule 19 monitoring requirements.	

Table VII-N Applicable Limits and Monitoring Requirements for S-174 Gasoline Dispensing Facility were added as shown below:

Action	Title/Description
Revised monitoring requirements for Regulation 8, Rule 7.	
Deleted VOC Condition 14098 Part 1 requirements (replaced by Condition 20666).	20,000 gallons per rolling 12-month period.

Table VII-O for S-176 through S-179 cooling towers was revised as shown below.

Action	Title/Description
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements

Table VII-P was deleted due to sources being shutdown.

Table VII-Q was deleted due to sources being shutdown.

Table VII-R was deleted due to sources being shutdown.

Table VII-S was deleted due to sources being shutdown.

Table VII-T Applicable Limits and Monitoring Requirements were revised for S-286 Railcar Purgings Facility as shown below.

Action	Title/Description
Regulation 6, Rule 1 requirements were	Particulate Matter – General Requirements

updated.	
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Added condition 20826 part 1 and part 2 requirements.	Corrective action if visible emissions are detected.

Table VII-TBD Applicable Limits and Monitoring Requirements for S-302 Dowicil Train 1 and S-303 Dowicil Train 2 was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Added condition 14438 part 6 and part 7 requirements.	1233 lb per day of methylene chloride

Table VII-U Applicable Limits and Compliance Monitoring Requirements for S-308 Fumigants Cylinder Paint Booth was deleted since this source is no longer owned by The Dow Chemical Company.

Table VII-V Applicable Limits and Compliance Monitoring Requirements for S-311 Fumigants Gas Cylinder Handling Area C-9 and S-312 Fumigants Cylinder Valve Removal Area Dow C-8 was deleted since this source is no longer owned by The Dow Chemical Company.

Table VII-V Applicable Limits and Compliance Monitoring Requirements for S-314 Fumigants Paint Booth F-4 was deleted since this source is no longer owned by The Dow Chemical Company.

Table VII-X Applicable Limits and Compliance Monitoring Requirements for S-323 Dryer, S-324 Dryer, and S-535 Portable Dryer was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Removed monitoring requirement citation of condition 2039, part 6.	Part 6 has been deleted from condition text.

Table VII-Y Applicable Limits and Compliance Monitoring Requirements for S-336 Manufacturing Service Thermal Oxidizer was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Added note that S-336 is subject to Subpart EEE.	40 CFR Part 63 Subpart EEE – Hazardous Waste Combustor

Table VII-Z Applicable Limits and Compliance Monitoring Requirements for S-389 Sym-Tet Thermal Oxidizer was revised as shown below.



<b>Action</b>	<b>Title/Description</b>
Revised Table heading to show new abatement device A-205 Carbon Monoxide Scrubber.	
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Added note that S-389 is subject to Subpart EEE.	40 CFR Part 63 Subpart EEE – Hazardous Waste Combustor

Table VII-AA Applicable Limits and Compliance Monitoring Requirements for A-400 (S-400) Thermal Oxidizer R-901 was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements

Table VII-AB Applicable Limits and Compliance Monitoring Requirements for S-402 HCl Storage Tank was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements

Table VII-AD was deleted due to equipment being shutdown.

Table VII-AE Applicable Limits and Monitoring Requirements for S-431 Carbon Tetrachloride Pressure Vessel and S-432 Carbon Tetrachloride Pressure Vessel was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids

Table VII-AF Applicable Limits and Compliance Monitoring Requirements for S-434 Manufacturing Services Facility was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Regulation 8, Rule 10 requirements were updated, and SIP Regulation 8, Rule 10 requirements were updated.	Process Vessel Depressurization
Condition 17985 applies to S-434 since S-712 has started operation. S-712 is no longer owned by The Dow Chemical Company.	
Added note that Subpart NNNNN applies to S-434.	40 CFR Part 63 Subpart NNNNN – Hydrochloric Acid Production

Table VII-AG Applicable Limits and Compliance Monitoring Requirements for S-444 U-183 Dowtherm Heater was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Regulation 9, Rule 7 requirements were updated, SIP Regulation 9, Rule 7 requirements were updated.	

Table VII-AH Applicable Limits and Compliance Monitoring Requirements for S-446 Sym-Tet Plant was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Regulation 8, Rule 10 requirements were updated, and SIP Regulation 8, Rule 10 requirements were updated.	Process Vessel Depressurization
Removed references to condition 17985	Does not apply to S-446.

Table VII-AI was deleted due to equipment being shutdown.

Table VII-AJ was deleted due to equipment being shutdown.

Table VII-AK Applicable Limits and Monitoring Requirements for S-458 T-80 Pressure Tank was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids

Table VII-AL Applicable Limits and Compliance Monitoring Requirements for S-460 U-83 Dowtherm Heater was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Regulation 9, Rule 7 requirements were updated, SIP Regulation 9, Rule 7 requirements were updated.	

Table VII-AM Applicable Limits and Compliance Monitoring Requirements for S-461 Plant 663 R-401 Reactor, S-462 Plant 663 R-402 Reactor, and S-463 Plant 663 F-403 Separator was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Added note that Subpart MMM applies S-461, S-462, and S-463.	40 CFR Part 63 Subpart MMM – Pesticide Active Ingredient Production

Table VII-AN Applicable Limits and Compliance Monitoring Requirements for S-465 (formerly for S-464) was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements

Table VII-AO Applicable Limits and Compliance Monitoring Requirements for S-474 Plant 421 Verdict Reactor was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Added note that S-474 will be subject to Subpart FFFF upon issuance of the Title V renewal.	40 CFR Part 63 Subpart FFFF – Miscellaneous Organic Chemical Manufacturing

Table VII-TBD Applicable Limits and Compliance Monitoring Requirements for S-482 Carbon Tetrachloride Rail Car Loading was added as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 6 requirements and associated monitoring per condition 6859 and condition 11276 at the abatement device.	Terminals and Bulk Plants

Table VII-TBD Applicable Limits and Compliance Monitoring Requirements for S-483 Carbon Tetrachloride Rail Car Loading was added as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Regulation 8, Rule 6 requirements and associated monitoring per condition 6859 and condition 2039 at the abatement device.	Terminals and Bulk Plants

Table VII-AP was deleted due to equipment being shutdown.

Table VII-AQ Applicable Limits and Monitoring Requirements for S-492 T-403 Pressure Tank was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids

Table VII-AR Applicable Limits and Monitoring Requirements for S-496 T-241 Pressure Tank was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids

Table VII-AS Applicable Limits and Monitoring Requirements for S-504 Chlorinolysis Train 1 was revised as shown below.

Action	Title/Description
References to A-121 were removed since this abatement device has been shutdown.	
Corrected monitoring requirement citations for condition 2213.	

Table VII-AT Applicable Limits and Monitoring Requirements for S-505 Chlorinolysis Train 2 was revised as shown below.

Action	Title/Description
References to A-121 were removed since this abatement device has been shutdown.	
Corrected monitoring requirement citations for condition 2213.	

Table VII-AU Applicable Limits and Monitoring Requirements for S-506 T-404 has been deleted since this tank has been permanently shutdown.

Table VII-AV was deleted due to equipment being shutdown.

Table VII-AW Applicable Limits and Monitoring Requirements for S-519 Chlorinated Pyridine Storage Tank T-502A Pressure Tank or abated by S-389 and S-520 Chlorinated Pyridine Storage Tank T-501B Pressure Tank or abated by S-389 was revised as shown below.

Action	Title/Description
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids

Table VII-AY Applicable Limits and Monitoring Requirements for S-530 T-902 HCl Storage Tank was revised as shown below.

Action	Title/Description
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements

Table VII-AZ was deleted due to equipment being shutdown.

Table VII-BA Applicable Limits and Monitoring Requirements for S-576 T-122 HCl Storage Tank was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Added note that Subpart NNNNN applies to S-576.	40 CFR Part 63 Subpart NNNNN – Hydrochloric Acid Production

Table VII-BB Applicable Limits and Monitoring Requirements for Specialty Chemicals Storage Tanks S-580 through S-583 was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids

Table VII-BC was deleted due to equipment being shutdown.

Table VII-BD was deleted due to equipment being shutdown.

Table VII-BE was deleted due to equipment being shutdown.

Table VII-BF Applicable Limits and Monitoring Requirements for S-593, Plant 640 Section 1, Abated by A-146, NMP Scrubber and A-147, Water Scrubber S-594, Plant 640 Section 2, Abated by A-147, Water Scrubber S-595, Plant 640 Section 3, Abated by A-149, Water Scrubber S-596, Plant 640 Section 4, Abated by A-147, Water Scrubber and A-148, Water Scrubber Facility were added as shown below:

<b>Action</b>	<b>Title/Description</b>
VOC Condition 4708 Part 2 has been added.	4-amino-3,5 dichloro-2,6 diflouro pyridine from A-147 & A-149 □ 0.02 pounds/day
NH3 Condition 4708 Part 3 has been added.	NH3 emissions from MEI Plant 640

Table VII-TBD Applicable Limits and Monitoring Requirements for S-607 Pressure Tank T-1904 was added to the permit as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids

Table VII-BH was deleted due to equipment being shutdown.

Table VII-BI Applicable Limits and Monitoring Requirements for S-620 HCl Truck Loading Operation was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Added note that Subpart NNNNN applies to S-620.	40 CFR Part 63 Subpart NNNNN – Hydrochloric Acid Production

Table VII-TBD Applicable Limits and Monitoring Requirements for S-625 T-601 Perc Expansion Tank was added to the permit as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids
Added Condition 21059 part 1 and part 2	Records of Vapor Pressure

Table VII-BJ Applicable Limits and Monitoring Requirements for S-631 Portable Resin Dryer D-203C was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Removed condition 5336 part 1 from table.	Abatement requirement not a limit with monitoring.

Table VII-BL was deleted due to equipment being shutdown.

Table VII-BM Applicable Limits and Monitoring Requirements for S-641 Groundwater Treatment Plant Decant Tank was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids

Table VII-BN Applicable Limits and Monitoring Requirements for Hydrochloric Acid Storage Tanks S-644 T-34A and S-645 T-34B was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements

Table VII-BO Applicable Limits and Monitoring Requirements for S-646 36% Truck Loading Operation was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Added note that Subpart NNNNN applies to S-646.	40 CFR Part 63 Subpart NNNNN – Hydrochloric Acid Production

Table VII-BP Applicable Limits and Monitoring Requirements for S-647 Catalytic Hydrogen Chloride Plant was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Removed references and condition parts that applied to carbon beds.	Carbon beds no longer used to abate S-647 and S-648. S-336 is used to abate these sources.
Added note that Subpart NNNNN applies to S-646.	40 CFR Part 63 Subpart NNNNN – Hydrochloric Acid Production

Table VII-BQ Applicable Limits and Monitoring Requirements for S-648 Hydrogen Chloride Adsorber was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Removed references and condition parts that applied to carbon beds.	Carbon beds no longer used to abate S-647 and S-648. S-336 is used to abate these sources.
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Added note that Subpart NNNNN applies to S-646.	40 CFR Part 63 Subpart NNNNN – Hydrochloric Acid Production

Table VII-BR Applicable Limits and Monitoring Requirements for S-649 36% Hydrogen Chloride Acid Storage Tank was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Added note that Subpart NNNNN applies to S-646.	40 CFR Part 63 Subpart NNNNN – Hydrochloric Acid Production

Table VII-BS Applicable Limits and Monitoring Requirements for 36% Hydrogen Chloride Acid Storage Tanks S-650 through S-652 was revised as shown below.



<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Added note that Subpart NNNNN applies to S-646.	40 CFR Part 63 Subpart NNNNN – Hydrochloric Acid Production

Table VII-BT Applicable Limits and Monitoring Requirements for S-654 Abrasive Blasting Operation was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements

Table VII-BU Applicable Limits and Monitoring Requirements for Storage Tanks S-662 T-243, S-663 T-242, S-664 T-244 was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids
Added condition 14438 part 6 to the table.	Limit of 1233 lb/day of Methylene Chloride sent to S-389 Sym-Tet Thermal Oxidizer.

Table VII-BV was deleted due to equipment being shutdown.

Table VII-BW Applicable Limits and Monitoring Requirements for S-680 Pressure Tank was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids
Added note that Subpart EEEE applies to S-680.	40 CFR Part 63 Subpart EEEE-Organic Liquids Distribution

Table VII-BY was deleted due to equipment being shutdown.

Table VII-BZ was deleted due to equipment being shutdown.

Table VII-CA was deleted due to equipment being shutdown.

Table VII-CB Applicable Limits and Monitoring Requirements for S-693 Distillation System was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Updated Regulation 8, Rule 10 requirements and SIP Regulation 8, Rule 10 requirements.	Process Vessel Depressurization
Added note that Subpart FFFF will apply to S-693 upon issuance of the Title V renewal.	40 CFR Part 63 Subpart FFFF – Miscellaneous Organic Chemical Manufacturing

Table VII-CC Applicable Limits and Monitoring Requirements for S-694 Reaction/HCl absorption System was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Updated Regulation 8, Rule 10 requirements and SIP Regulation 8, Rule 10 requirements.	Process Vessel Depressurization
Added note that Subpart FFFF will apply to S-694 upon issuance of the Title V renewal.	40 CFR Part 63 Subpart FFFF – Miscellaneous Organic Chemical Manufacturing

Table VII-CD Applicable Limits and Monitoring Requirements for S-695 Pressure Tank was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids

Table VII-CE Applicable Limits and Monitoring Requirements for S-696 T-585 Pressure Tank was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids

Table VII-CH Applicable Limits and Monitoring Requirements for S-701, T-12 Pressure Tank or vented to S-336 Manufacturing Services Thermal Oxidizer was revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 8, Rule 5 citations updated.	Storage of Organic Liquids
Regulation 8, Rule 5 SIP citations updated.	Storage of Organic Liquids
Added condition 16612 part 1 and part 3	Condition 16612 part 1 limits the

<b>Action</b>	<b>Title/Description</b>
requirements.	throughput at S-701 to 100,000 gallons in any consecutive 12-month period and part 3 requires recordkeeping.

Table VII-CI was deleted due to equipment being shutdown.

Table VII-CJ Applicable Limits and Monitoring Requirements for S-705 Shot Blast Unit has been delted since this source is no longer owned by The Dow Chemical Company.

Table VII-CK Applicable Limits and Monitoring Requirements were for S-706 FPI Standby Generator as shown below. Please note S-706 supports the fire suppression system at the facility.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Updated Regulation 9, Rule 8 requirements	Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines
Added Diesel Air Toxics Control Measure (ATCM) requirements for an engine that supports the fire suppression system.	Air Resources Board Air Toxics Control Measure (Title 17 California Code of Regulations, section 93115.6(a))
Added condition 22850 maintenance and reliability hour limits.	ATCM Condition
Removed condition 18317 requirements since this condition has been replaced with condition 22850.	Condition 18317 did not agree with ATCM requirements.

Table VII-CL Applicable Limits and Monitoring Requirements were for S-707 Diesel Backup Generator P1A, S-708 Diesel Backup Generator P1B, S-711 Diesel Engine Backup Generator 223 as shown below. Please note S-707 and S-708 are part of the fire suppression system at the facility.

<b>Action</b>	<b>Title/Description</b>
S-710 has been removed since the engine is exempt per 2-1-114.2.1.	
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Updated Regulation 9, Rule 8 requirements	Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines

Added Diesel Air Toxics Control Measure (ATCM) requirements for an engine that supports the fire suppression system.	Air Resources Board Air Toxics Control Measure (Title 17 California Code of Regulations, section 93115.6(a))
Added condition 22675 maintenance and reliability hour limits.	ATCM Condition
Added condition 22850 maintenance and reliability hours limits for S-711.	ATCM Condition
Removed condition 19724 requirements since this condition has been replaced with condition 22850 and 22675.	Condition 19724 did not agree with ATCM requirements.

Table VII-CM Applicable Limits and Monitoring Requirements for S-709 IC Engine Backup Generator were revised as shown below.

<b>Action</b>	<b>Title/Description</b>
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Updated Regulation 9, Rule 8 requirements	Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines
Updated condition 19724 requirements since this condition has been revised to make it consistent with Regulation 9, Rule 8 requirements.	

Table VII-CN Applicable Limits and Monitoring Requirements for S-712 Sulfuryl Fluoride Plant has been deleted since this source is no longer owned by The Dow Chemical Company.

Table VII-TBD has been added to the permit for S-718 Nitrapyrin plant as shown below.

<b>Action</b>	<b>Title/Description</b>
Added condition 24763 part 6 and part 7 requirements for fugitive emissions from this process unit.	

Table VII-TBD Applicable Limits and Monitoring Requirements has been added to the permit for S-1011 Auxiliary Boiler as shown below.

<b>Action</b>	<b>Title/Description</b>
Added Subpart Db NOx limits and associated monitoring.	40 CFR Part 60 Subpart Db-Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
Regulation 6, Rule 1 requirements were updated.	Particulate Matter – General Requirements
Regulation 6 SIP requirements were updated.	Particulate Matter – General Requirements
Added Regulation 9, Rule 1 requirements for SO2 emissions.	Sulfur Dioxide
Added Regulation 9, Rule 7 requirements and SIP Regulation 9, Rule 7 requirements.	Nitrogen Oxides and Carbon Monoxide from Industrial, and Commercial Boilers, Steam Generators, and Process Heaters
Condition 19536 monitoring requirements were added.	NOx, CO, POC, NH3, PM10

Table VII-CO Applicable Limits and Monitoring Requirements Components was updated as shown below.

<b>Action</b>	<b>Title/Description</b>
Updated Regulation 8, Rule 18 monitoring requirements and SIP Regulation 8, Rule 18 monitoring requirements.	Equipment Leaks
Updated Regulation 8, Rule 28 monitoring requirements and SIP Regulation 8, Rule 28 monitoring requirements.	Episodic Releases From Pressure Relief Devices at Petroleum Refineries and Chemical Plants

Table VII-CP was deleted due to equipment being shutdown.

Table VII-CQ was revised to document the fugitive coponents that are subject to the fugitive monitoring requirements of 40 CFR Part 63 Subpart H—National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks. The Latex plant has been shutdown and there are no pumps in monomer service at the facility.

Table VII-TBD was added to document the monitoring associated with 40 CFR Part 60 Subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels).

Table VII-TBD was added to document the monitoring associated with Subpart NNNNN (NESHAP for Hydrogen Chloride Manufacturing).

Table VII-TBD was added to document the monitoring associated with Subpart MMM (NESHAP for Pesticide Active Ingredient Production PAI).

Table VII-TBD was added to document the monitoring associated with Subpart EEEE (NESHAP for Organic Liquid Distribution).

Table VII-TBD was added to document the monitoring associated with 40 CFR Part 63 Subpart EEE (NESHAP for Hazardous Waste Combustors).

Table VII-TBD was added to document the monitoring associated with 40 CFR Part 63 Subpart FFFF (NESHAP for Miscellaneous Organic Chemical Manufacturing). The detailed requirements will be added to the Title V permit at a future date.

Table VII-TBD was added to document the monitoring associated with 40 CFR Part 63 Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines).

Table VII-TBD was added to document the monitoring associated with 40 CFR Part 63 Subpart DDDDD (NESHAP for Boilers and Process Heaters).

**Additional Monitoring Determinations**

The tables below contain only the limits for which there is no monitoring or potentially inadequate monitoring in the applicable requirements. The District has examined the monitoring for other limits and has determined that monitoring is adequate to provide a reasonable assurance of compliance.

Monitoring decisions are typically the result of a balancing of several different factors including: 1) the likelihood of a violation given the characteristics of normal operation, 2) degree of variability in the operation and in the control device, if there is one, 3) the potential severity of impact of an undetected violation, 4) the technical feasibility and probative value of indicator monitoring, 5) the economic feasibility of indicator monitoring, and 6) whether there is some other factor, such as a different regulatory restriction applicable to the same operation, that also provides some assurance of compliance with the limit in question.

**NOx Sources**

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-336, MS Thermal Oxidizer	Cond 6859, Pt 3	8.6 lbs/day as NO2	Source test once every five years

**NOx Discussion:**

**S-336:** This Thermal Oxidizer does not burn the nitrogen-containing waste products as is done at S-389, so the permit conditions for this source do not contain the stringent NOx emission limits and source testing requirements as in the permit for S-389. Exceedance of the daily NOx limit is not expected, as emissions are typically well below this limit. The most recent test conducted in December of 2014 had NOx emissions at 5.48 lb/day based on 24 hours of operation. The NOx emissions are well within the permit limit and

the District considers monitoring NOx emissions from S-336 once every five years to be adequate monitoring.

**SO<sub>2</sub> Sources**

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-336, MS Thermal Oxidizer S-389, ST Thermal Oxidizer	BAAQMD 9-1-301  BAAQMD 9-1-304	Ground level concentrations of SO <sub>2</sub> ≤ 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours Fuel Sulfur < 0.5% by weight	None
A-400 (S-400), Thermal Oxidizer R-901 S-444, Dowtherm Heater S-460, Dowtherm Heater	BAAQMD 9-1-301  BAAQMD 9-1-302	Ground level concentrations of SO <sub>2</sub> ≤ 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours SO <sub>2</sub> < 300 ppm, dry	None
S-706, Diesel Engine for FPI Standby Generator S-707, Diesel Engine Backup Generator P1A S-708, Diesel Engine Backup Generator P1B S-711, Diesel Engine Backup Generator 223	BAAQMD 9-1-301  BAAQMD 9-1-304	Ground level concentrations of SO <sub>2</sub> ≤ 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours Fuel Sulfur < 0.5% by weight	None
S-709, IC Engine Backup Generator 461	BAAQMD 9-1-301	Ground level concentrations of SO <sub>2</sub> ≤ 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours	None
S-1011, Auxiliary Boiler	BAAQMD 9-1-301  BAAQMD 9-1-302	Ground level concentrations of SO <sub>2</sub> ≤ 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours SO <sub>2</sub> < 300 ppm (dry)	None

**SO2 Discussion:**

**S-336, S-389, A-400 (S-400), S-444, S-460, S-1011:** All combustion sources burning gaseous fuels are subject to the SO2 emission limitations in District Regulation 9, Rule 1 (ground-level concentration and emission point concentration). In EPA's June 24, 1999 agreement with CAPCOA and ARB, "Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP," EPA has agreed that natural-gas-fired combustion sources do not need additional monitoring to verify compliance with Regulation 9, Rule 1, since violations of the regulation are unlikely. The Dowtherm Heaters burn only natural gas. The Thermal Oxidizers also burn chlorinated compounds in addition to natural gas, but these materials do not contain sulfur. Therefore, no monitoring is necessary for Sections 9-1-301, 9-1-302, and 9-1-304 for these sources.

**S-706, S-707, S-708, S-710, S-711:** These emergency generators are used sporadically, only as a backup source of power during electrical curtailments. CARB diesel has a maximum sulfur content of 15 ppm and these sources are not a significant source of sulfur dioxide. Due to the periodic and restricted nature of their use, area monitoring to demonstrate compliance with the ground level SO<sub>2</sub> is not required.

**S-709:** This emergency generator is fueled on propane, which contains low levels of sulfur. Therefore, the unit does not generate significant SO2 emissions, and no monitoring is necessary to demonstrate compliance with the sulfur dioxide limits in Regulation 9, Rule 1.

PM Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-4, HCl Rail Tank Car Loading S-434, Manufacturing Services Facility	BAAQMD 6-1-301	Ringelmann 1.0	No new monitoring (Existing caustic and temperature monitoring)
S-40, Water Treatment HCl Storage T-24 S-135 through S-139, HCl Storage Tanks S-402, HCl Storage Tank S-530, HCl Storage Tank S-644, Hydrochloric Acid Storage Tank T-34A S-645, Hydrochloric Acid Storage Tank T-34B S-646, HCl Tank Truck Loading	BAAQMD 6-1-301 BAAQMD 6-1-310 BAAQMD 6-1-311  SIP 6-301 SIP 6-310 SIP 6-311	Ringelmann 1.0 0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr Ringelmann 1.0 0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr	None



### PM Sources

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-44, N-Serve® Plant S-446, Sym-Tet Plant	BAAQMD 6-1-301 BAAQMD 6-1-310 BAAQMD 6-1-311  SIP 6-301 SIP 6-310 SIP 6-311	Ringelmann 1.0 0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr Ringelmann 1.0 0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr	A-88/A-89: None
S-176, Chloralkali Cooling Tower S-177, Chloralkali Cooling Tower S-178, Chloralkali Cooling Tower S-179, Chloralkali Cooling Tower	BAAQMD 6-1-301 BAAQMD 6-1-310 BAAQMD 6-1-311  SIP 6-301 SIP 6-310 SIP 6-311	Ringelmann 1.0 0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr Ringelmann 1.0 0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr	None
S-286, Railcar Purging Facility S-620, HCl Truck Loading	BAAQMD 6-1-301  BAAQMD 6-1-310 BAAQMD 6-1-311  SIP 6-301  SIP 6-310 SIP 6-311	Ringelmann 1.0  0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr Ringelmann 1.0  0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr	Daily check for visible emissions if loading None None  Daily check for visible emissions if loading None None
S-336, MS Thermal Oxidizer S-389, ST Thermal Oxidizer	BAAQMD 6-1-301 BAAQMD 6-1-310 BAAQMD 6-1-311  SIP 6-301 SIP 6-310 SIP 6-311	Ringelmann 1.0 0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr Ringelmann 1.0 0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr	None
A-400 (S-400), Thermal Oxidizer, R-901	BAAQMD 6-1-301 BAAQMD 6-1-310 SIP 6-301 SIP 6-310	Ringelmann 1.0 0.15 gr/dscf Ringelmann 1.0 0.15 gr/dscf	None

PM Sources

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-444, Dowtherm Heater S-460, Dowtherm Heater	BAAQMD 6-1-301 BAAQMD 6-1-310 SIP 6-301 SIP 6-310	Ringelmann 1.0 0.15 gr/dscf Ringelmann 1.0 0.15 gr/dscf	None
S-461, Plant 663 R-401 Reactor S-462, Plant 663 R-402 Reactor S-463, Plant 663 F-403 Separator	BAAQMD 6-1-301  BAAQMD 6-1-310 BAAQMD 6-1-311  SIP 6-301  SIP 6-310 SIP 6-311	Ringelmann 1.0  0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr Ringelmann 1.0  0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr	Daily check for visible emissions if operating None None  Daily check for visible emissions if operating None None
S-465, Product Dryer	BAAQMD 6-1-301  BAAQMD 6-1-310 BAAQMD 6-1-311  SIP 6-301  SIP 6-310 SIP 6-311	Ringelmann 1.0  0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr Ringelmann 1.0  0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr	Weekly Pressure Drop Monitoring/None None None  Weekly Pressure Drop Monitoring/None None None
S-474, Plant 421 Verdict S-476, Plant 421 Trifluoro	BAAQMD 6-1-301  BAAQMD 6-1-310 BAAQMD 6-1-311  SIP 6-301  SIP 6-310 SIP 6-311	Ringelmann 1.0  0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr Ringelmann 1.0  0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr	Daily check for visible emissions if loading None None  Daily check for visible emissions if loading None None

PM Sources

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-576, HCl Storage Tank	BAAQMD 6-1-301 BAAQMD 6-1-310 BAAQMD 6-1-311  SIP 6-301 SIP 6-310 SIP 6-311	Ringelmann 1.0 0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr  Ringelmann 1.0 0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr	No new monitoring (Existing caustic monitoring)
S-648, Hydrogen Chloride Absorber E-277 S-649, Hydrogen Chloride Acid Storage Tank, V-277	BAAQMD 6-1-301 BAAQMD 6-1-310 BAAQMD 6-1-311  SIP 6-301 SIP 6-310 SIP 6-311	Ringelmann 1.0 0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr  Ringelmann 1.0 0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr	None
S-650, Hydrogen Chloride Acid Storage Tank, V-280A S-651, Hydrogen Chloride Acid Storage Tank, V-280B S-652, Hydrogen Chloride Acid Storage Tank, V-280C	BAAQMD 6-1-301 BAAQMD 6-1-310 BAAQMD 6-1-311  SIP 6-301 SIP 6-310 SIP 6-311	Ringelmann 1.0 0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr  Ringelmann 1.0 0.15 gr/dscf 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr	None
S-654, Abrasive Blasting	BAAQMD 6-1-301 BAAQMD 6-1-311  SIP 6-301 SIP 6-311  BAAQMD 12-4-301 BAAQMD 12-4-302 SIP 12-4-301 BAAQMD 12-4-305.1, 12-4-305.2	Ringelmann 1.0 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr  Ringelmann 1.0 4.10P <sup>0.67</sup> lb/hr, where P is process weight, ton/hr  Ringelmann 1.0 Ringelmann 2.0 Ringelmann 1.0 1% weight #70 US Standard Sieve material/ 1.8% weight 5 micron or smaller material	Inspection of Screens None  Inspection of Screens None  None None None Use of certified abrasives only
S-693, Distillation System	BAAQMD 6-1-301	Ringleman 1.0	None, Source abated by two liquid scrubbers A-194 X-600 Venturi, A-195 B-615 Scrubber

### PM Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-706, FPI Standby Generator S-707, Diesel Engine Backup Generator S-708, Diesel Engine Backup Generator S-709, LPG Engine Backup Generator S-711, Diesel Engine Backup Generator	BAAQMD 6-1-303 BAAQMD 6-1-310 SIP 6-303 SIP 6-310	Ringelmann 2.0 0.15 gr/dscf Ringelmann 2.0 0.15 gr/dscf	None
S-1011, Auxiliary Boiler	BAAQMD 6-1-301 BAAQMD 6-1-310 SIP 6-301 SIP 6-310 Condition #19356 part 8	Ringelmann 1.0 0.15 gr/dscf Ringelmann 1.0 0.15 gr/dscf Ringelmann 1.0	None

#### **PM Discussion:**

This facility has had no history of visible emission or particulate nuisance violations. Regulation 6-1-305 prohibits nuisance fallout on property offsite. As the section is measured offsite, there is no manner for Dow or any facility to ‘monitor’ compliance with this standard, except to comply with and monitor compliance with the other Regulation 6, Rule 1 standards for opacity and applicable emission rates. Therefore, Regulation 6-1-305 was not included in any tables in Section VII of the permit.

Many of the following sources subject to Regulation 6, Rule 1 requirements are subject due to potential emissions of hydrochloric acid, as particulate matter - acid mist. Dow has indicated that the acid emissions from these sources is *acid vapor*, and not acid particulate for the following reasons:

- **Mist Formation by Mechanical Means:** HCl-water mists could be generated mechanically at very high vapor flow rates in a two-phase system. The velocity necessary for this to occur is over 70 fps (Chemical Engineers Handbook, 5th Ed pp5-42). *None of the HCl systems at Dow are operated at this high flowrate and therefore are not expected to produce acid mists mechanically.*
- **Mist Formation by Reaction:** Mist could possibly be produced by chemical reaction of concentrated acid vapor coming into contact with moisture in the atmosphere. For example, the vapor space in a tank containing 36% hydrochloric acid at 30 degrees C would contain 188 mmHg acid and only 6.1 mmHg water (Perry’s Chemical Engineering Handbook). This is essentially an anhydrous acid vapor. If this were vented to atmosphere (breathing or working losses), the acid would contact water in the outside air, react with the water, and could produce a fog. *None of the concentrated HCl streams at Dow are vented directly to the atmosphere and are therefore not expected to produce acid mists by reaction.*

- **Mist Formation by Supersaturation:** In absorption processes, aerosols can be formed by condensation in a supersaturated gas. Saturation is defined as the partial pressure of the condensing components divided by the equilibrium partial pressure of the condensing components. Supersaturation indicates a saturation value greater than 1.0 and must reach a critical value (2.5-3.5 for HCl-water system) before molecules can form stable clusters, or nuclei. If the rate of heat transfer in an HCl-water absorber is excessive in comparison to the rate of mass transfer then a supersaturated vapor could form. This is more likely to occur in concentrated HCl-water systems and where the temperature of the HCl is significantly different than the temperature of the aqueous solvent. *The temperatures of the HCl gas streams at Dow are not significantly different than the temperature of the absorbent water and are therefore not expected to produce acid mists by supersaturation.*

The District has no physical source test data to demonstrate how much, if any, of the acid emissions are particulate, as opposed to acid vapor. Also, there are no emission factors in EPA's AP42 Compilation of Air Pollution Emission Factors, or guidance in the proposed HCl MACT, that could be used to estimate acid mist emissions. Under these circumstances, District policy is to make the most conservative assumption regarding emissions, that which will result in evaluation of the maximum potential emissions. Therefore, as in previous NSR evaluations, the cases below assume all acid emissions are emitted as particulate.

**S-4, S-434:** These operations are subject to the BAAQMD Regulation 6, Rule 1 visible emission standard due to potential particulate emissions from acid mist, HCl. The operations are abated at a scrubbing system or a thermal oxidizer followed by a scrubbing system. HCl is readily neutralized, therefore, no acid mist emissions, including visible emissions, are expected from the scrubbers. Although not opacity monitoring, the existing monitoring of caustic concentration or temperature has been deemed adequate surrogate monitoring by ensuring complete neutralization of HCl, the only contributor to visible emissions.

**HCl Storage Tanks S-40, S-135 through S-139, S-402, S-449, S-530, and S-644 through S-646, HCl Storage Tanks and Loading:** These tanks and the tank loading operation are subject to BAAQMD Regulation 6, Rule 1 visible and emission standards due to potential emissions from acid mist. All of these tanks and loading operations are abated by caustic scrubbers and particulate emissions after abatement are expected to be well below regulatory limits. The emissions of acid vapor/mists are well controlled from these tanks and loading operation and periodic monitoring of these sources for particulate and visible emissions is not required.

S-646 is the truck loading station for the HCl in the tanks S-644 and S-645. The loading operation is vapor-balanced back to the tanks, through A-180, therefore the loading is not expected to have any emissions to the atmosphere. Therefore, no monitoring has been required for these sources.

**S-44, S-446:** These plants are subject to BAAQMD Regulation 6, Rule 1 visible and emission standards due to potential particulate emissions from acid mist, HCl. The primary abatement for these operations is a thermal oxidizer followed by a scrubbing system, with a backup scrubbing system when the oxidizer is down for maintenance. Particulate monitoring for the primary abatement system has been addressed under S-389. When abated by the backup scrubbers A-88 or A-89, no monitoring has been required due to the low level of particulate emissions after the abatement devices.

**S-176 through S-179:** These sources are subject to BAAQMD Regulation 6, Rule 1 visible and emission standards. Maximum particulate emissions from these four cooling towers were calculated during the processing of the initial Title V permit. The emissions were based upon the cooling tower water circulation rates and exhaust airflow rates supplied by Dow, and the emission factors were from EPA AP-42 Compilation of Air Pollution Emission Factors. The maximum PM10 outlet grain loading at each tower was calculated to be 0.005 grains per dry standard cubic feet of exhaust, which is only 3% of the limit of 0.15 grains per dry standard cubic feet in BAAQMD Regulation 6, Rule 1. The maximum hourly emission rate from each source was less than 4 lbs/hour, which is less than 10% of the 40 lbs/hour limit in BAAQMD Regulation 6, Rule 1. Because of the conservative nature of these calculations and the large margin of compliance between the maximum emissions and the limits in Regulation 6, Rule 1, periodic monitoring of these sources for particulate and visible emissions is not required.

**S-286, S-620:** These operations are subject to BAAQMD Regulation 6, Rule 1 visible and emission standards due to potential particulate emissions from acid mist, HCl. Railcar purging, S-286, is performed within a building, and the exhaust flowrates from S-286 and S-620 are quite low, so the operation of these sources is not expected to generate particulate emissions. No calculations have been included for Regulation 6-1-310 due to the fact that the vents from the process have associated flowrates that are too low to measure under source test conditions. Further, each of the operations is abated by a scrubbing system, so any acid emissions produced would be neutralized. Therefore, no visible or particulate emissions are expected. However, since the operation of the scrubbers is not monitored in any other form, periodic monitoring in the form of a daily visual emissions check was added to the permit conditions (20826 part 1).

**S-336, S-389:** These operations are subject to BAAQMD Regulation 6, Rule 1 visible and emission standards due to particulate emissions consisting of natural gas combustion (primary fuel), combustion products due to incineration of waste streams, and potential acid mist emissions, HCl. The majority of the acid in the exhaust streams from these sources is captured through a series of absorbers and scrubbers. These two oxidizers are source tested on an ongoing basis. The particulate emissions from these sources are typically less than 10% of the Regulation 6, Rule 1 emission limits on outlet grain loading and process weight rate. Both oxidizers have high operating temperature requirements to assure complete combustion and are equipped with continuous temperature monitors to track this. Due to this large margin of compliance and the monitoring currently in place, additional periodic monitoring of these sources for visible and particulate emissions is not required.

**A-400 (S-400):** This abatement device is subject to the visible and emission standards in Regulation 6, Rule 1. Only gaseous fuels are combusted at A-400. Visible emissions are normally not associated with combustion of gaseous fuels, as supported by EPA's June 24, 1999 agreement with CAPCOA and ARB titled "Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP." Therefore no additional monitoring is required.

**S-444, S-460, S-1011:** These sources burn natural gas exclusively and are subject to the visible and outlet grain loading limits in Regulation 6, Rule 1. Visible emissions and exceedances of particulate standards are normally not associated with combustion of gaseous fuels. Per the EPA's June 24, 1999 agreement with CAPCOA and ARB titled "Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP" and EPA's July 2001 agreement with CAPCOA and ARB entitled "CAPCOA/CARB/EPA Region IX Recommended Periodic Monitoring for Generally Applicable Grain Loading Standards in the SIP: Combustion Sources: Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP," no monitoring is required to assure compliance with these limits for these sources.

**S-461, S-462, S-463:** These sources are subject to the visible and particulate emission standards in Regulation 6, Rule 1. Lontrel, an insoluble organic acid, is produced at these sources by reaction of a chlorinated pyridine with aqueous sulfuric acid. The reaction produces HCl as a byproduct. Lontrel remains in solution throughout the processing at these sources, so particulate emissions from product loss are not expected here. Particulate emissions due are possible due to acid mist. However, the acid emissions are abated with an acid absorber and tails tower, A-96, which has an efficiency of greater than 99% by weight. (This operation is subject to the PAI MACT, which requires 94% control.) The maximum potential particulate emissions calculated in the Statement of Basis for the initial Title V permit for S-461 and S-462 were much less than the limits in Regulation 6-1-310 and 6-1-311, approximately 4% and 0.001% respectively. Due to this large margin of compliance, no monitoring is necessary for these limits.

Any particulate emissions from S-463 would be due to displacement of the vapor during filling from S-462. The solution in S-463 is sulfuric acid of up to 35% strength. The concentration of sulfuric acid in the displaced vapor can be calculated from the vapor pressure of sulfuric acid above the residual solution divided by the total vapor pressure. However, sulfuric acid almost completely dissociates in water, so the corresponding vapor pressure is essentially zero. Therefore, the particulate emissions from this source are insignificant.

**S-465:** This source is subject to the visible and particulate emission standards in Regulation 6, Rule 1. This product dryer is abated by a bag filter, A-95, followed by a chilled condenser and liquid ring vacuum pump, A-114 and is located inside a building. Due to the operation of the abatement devices and the fact that any particulate emissions would occur within a building, no monitoring for visible emissions has been added. Particulate emissions are well controlled from this source and no opacity or particulate monitoring has been required.

**S-474, S-476:** These operations are subject to BAAQMD Regulation 6, Rule 1 visible and emission standards due to potential particulate emissions from acid mist, HCl. S-474 is abated by two organic scrubbers in series, A-98 and A-99, followed by S-694 HCl Absorption System which is followed by A-195 B-615 Packed Bed Scrubber. S-476 is abated by an A-97 B-201 Organic Scrubber followed by a A-100 B-230 Packed Bed Scrubber. HCl emissions and particulate emissions are well controlled from these sources and no opacity or particulate emissions monitoring has been required.

**S-576:** This HCl tank is abated by a series of scrubbers. The final scrubber already operates under permit conditions specifying a minimum caustic concentration with daily monitoring. HCl is readily neutralized, therefore, no acid mist emissions, including visible emissions, are expected from the scrubbers. The existing monitoring of caustic concentration has been deemed adequate surrogate monitoring for Regulation 6, Rule 1 requirements by ensuring complete neutralization of HCl, the only contributor to visible emissions. The emissions of acid mist and particulates are well controlled from this source and no additional opacity or particulate monitoring is being required.

**S-648, S-649:** These sources are subject to the visible and emission standards in Regulation 6, Rule 1. The potential particulate emissions from the source are from HCl, acid mist. The sources are vented to two packed bed scrubbers in series, A-181 and A-182, followed by abatement at carbon beds, S-184 or the Manufacturing Services Thermal Oxidizer, S-336. When the emissions are routed from A-182 to S-336, they are further abated by the series of scrubbers following the thermal oxidizer before being emitted to the atmosphere. Monitoring under this mode of operation has already been addressed under S-336. Emissions for when the sources are vented from the scrubbers to the carbon beds are also well controlled for acid mist and particulate and no monitoring has been deemed necessary for the visible or emission limits in Regulation 6, Rule 1.

**S-650, S-651, S-652:** These sources are subject to the visible and emission standards in Regulation 6, Rule 1. The potential particulate emissions from the source are from HCl, acid mist. These sources are loaded from the check tank S-649 and vapor balanced back to this tank. Therefore, there are no expected emissions to the atmosphere from these three tanks. No monitoring is required for these tanks.

**S-654:** The source covers both confined and unconfined blasting. The confined blasting, occurs inside a building and is abated by containment screens with a rated abatement efficiency of 95%. This is a passive abatement system with no fan or exhaust to the outside. The operation is subject to the visible and emission limits of Regulation 6, Rule 1, which only apply outside of the building. No visible emissions or exceedances of the particulate process weight standard are expected as long as the containment screens are properly maintained. Periodic monitoring in the form of weekly inspections to ensure the integrity of the screens has been added to the permit conditions.

The unconfined blasting permitted under this source is subject to the generally applicable visual emission standards and the abrasive standards in BAAQMD Regulation 12-4-305.1 and 12-4-305.2. The abrasive standards are derived from the CARB test method for certifying abrasives, so all certified abrasives have already been determined to meet



these standards. A permit condition allowing only used of certified abrasives for unconfined blasting has been added to the permit to ensure compliance with these standards. This restriction was also deemed BACT during the original NSR permit evaluation, and should have been an express condition of the permit.

The visual emission standards for unconfined blasting are usually listed as generally applicable requirements in the Title V permits, since unconfined blasting occurs at all facilities and is usually not a permitted source. Since unconfined blasting is an infrequent operation and treated as a generally applicable requirement, no formal visual emission checks have been deemed necessary.

**S-693:** This source is abated by two caustic scrubbers and visible emissions have not historically been an issue at the exhaust point. The caustic recirculation rate of each scrubber is monitored on a weekly basis. No opacity monitoring has been required at this source.

**S-706 through S-711:** S-709 burns propane exclusively. Visible emissions and exceedances of particulate standards are normally not associated with combustion of gaseous fuels. Therefore, per the EPA's June 24, 1999 agreement with CAPCOA and ARB titled "Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP" and EPA's July 2001 agreement with CAPCOA and ARB entitled "CAPCOA/CARB/EPA Region IX Recommended Periodic Monitoring for Generally Applicable Grain Loading Standards in the SIP: Combustion Sources: Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP," no monitoring is required to assure compliance with these limits.

The remaining generators are diesel-fuelled. The emissions calculated for the Statement of Basis for the original Title V permit showed that all of the diesel engines comply with the grain loading standard in Regulation 6, Rule 1. Due to the periodic and restricted nature of their use (for backup power in case of emergencies only), no monitoring has been deemed necessary for the visible and particulate emission standards.

### VOC Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-5, 720 Terminalized Products S-7, 725 Block Truck Loading S-482, Carbon Tetrachloride Rail Car Loading	BAAQMD 8-6-305, 306 and/or Cond 11276, Pt 2	Vapor tight, leak free, good working order	Prior to loading, confirm vapor return line has a vacuum and the connection to tank truck or railcar is leak tight
S-6, 725 Terminalized Products	Cond 11276, Pt 2	Vapor tight, leak free, good working order	Prior to loading, confirm vapor return line has a vacuum and the connection to tank truck or railcar is leak tight

### VOC Sources

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
S-44, N-Serve® Plant S-446, Sym-Tet Plant	BAAQMD 8-2-301	≤ 15 lbs/day and ≤ 300 ppm total carbon, dry	When abated by A-88/A-89: None
S-161, Maintenance Paint Booth M-1	BAAQMD 8-19-302, 8-19-320	< 2.8 pounds/gallon, excluding water, clean-up solvent <0.42 lb./gal	Recordkeeping
S-170, Maintenance Paint Booth M-4	BAAQMD 8-19-320	< 2.8 pounds/gallon, excluding water	Recordkeeping
S-174, Gasoline Dispensing Facility	BAAQMD 8-7- 301.10	98% or highest CARB vapor recovery rate	Equipment Specification for New or Modified Equipment
S-229, Latex Plant Tank Car Unloading	BAAQMD 8-6-302.1 8-6-302.2 8-6-304 BAAQMD 8-6-305, 306	< 0.35 lb/1000 gallons loaded < 0.35 lb/1000 gallons loaded < 0.17 lb/1000 gallons loaded Vapor tight, leak free, good working order	Prior to loading, confirm vapor balance system is properly connected.
S-325, Dock Flush Tank	BAAQMD 8-19-302, 8-19-320	< 2.8 pounds/gallon, excluding water, clean-up solvent <0.42 lb./gal	Recordkeeping
S-336, MS Thermal Oxidizer S-389, ST Thermal Oxidizer	BAAQMD Regulation 8-2-301 Cond 6859, Part 4 Cond 2039, Part 5	≤ 15 lbs/day and ≤ 300 ppm total carbon, dry 99.99% destruction efficiency	No new monitoring (existing temperature monitoring)
A-400, Experimental Thermal Oxidizer	BAAQMD Regulation 8-2-301	≤ 15 lbs/day and ≤ 300 ppm total carbon, dry	Temperature Monitor
S-474, Plant 421 Verdict S-476, Plant 421 Trifluoru	BAAQMD Regulation 8-2-301	≤ 15 lbs/day and ≤ 300 ppm total carbon, dry	None
S-489, Latex Still B-100	Cond 16610, Pt 4	346 lbs styrene/day from A-42	None
S-504, Chlorinolysis Train 1	BAAQMD Regulation 8-2-301 Cond 2213, Pt 4	≤ 15 lbs/day and ≤ 300 ppm total carbon, dry 15.75 lbs/hour before abatement	A-400 (S-400): Temperature monitor Measurement and calculation of maximum feed rate
S-505, Chlorinolysis Train 2	BAAQMD Regulation 8-2-301 Cond 2213, Pt 5	≤ 15 lbs/day and ≤ 300 ppm total carbon, dry 1.5 lbs/hour before abatement	A-400 (S-400): Temperature monitor None
S-519, Chlorinated Pyridine Storage Tank, T-502A S-520, Chlorinated Pyridine Storage Tank, T-501B	BAAQMD Regulation 8-5-307 SIP 8-5-307 Condition 1748, Part 2	Gas tight/No detectable emissions	None

### VOC Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-580, Specialty Chemicals Storage Tank T-3A S-581, Specialty Chemicals Storage Tank T-3B S-582, Specialty Chemicals Storage Tank T-215 S-583, Specialty Chemicals Storage Tank T-200	BAAQMD Regulation 8-6-304	< 0.17 lb/1000 gallons loaded	None
S-593, Plant 640 Section 1 S-594, Plant 640 Section 2 S-595, Plant 640 Section 3 S-596, Plant 640 Section 4	BAAQMD Regulation 8-2-301 Cond 4780, Pt 1	15 lbs/day and 300 ppm total carbon, dry 8 lbs/day	Source test once per permit term
S-680, Pressure Tank T-440 S-701, T-12 at Manufacturing Services	BAAQMD Regulation 8-6-304	< 0.17 lb/1000 gallons loaded	None
S-681, Truck Transfer	BAAQMD 8-6-302.1 8-6-302.2 8-6-304 8-6-305, 306	< 0.35 lb/1000 gallons loaded < 0.35 lb/1000 gallons loaded < 0.17 lb/1000 gallons loaded Vapor tight, leak free, good working order	Leak check prior to loading
S-697, ISO Container Loading Operation	Cond 15932, Pt 11	Vapor balance required	Prior to loading, confirm vapor return line is properly connected

**VOC Discussion:**

**S-5, S-6, S-7, S-482, S-609, S-681, S-697:** These loading operations are subject to leak tight provisions. Monitoring has been added which requires checking for proper operation of the vapor return line and all connectors prior to loading.

**S-44, S-446:** The continuous vent stream from N-Serve® (S-44) and Symtet (S-446) is commingled and is sent to S-389, the primary abatement system. The abatement efficiency of S-389 is tracked through a minimum temperature requirement and a continuous temperature monitor. When S-389 is down for maintenance, the vents are directed to the process recovery system (PRS) and then to the abatement devices A-88 or A-89. The PRS is designed and operated to achieve greater than 99.9% removal of organic compounds, therefore the organic content in the vent stream flowing to A-88 and A-89 is very low. This occurs only 21 days a year, on average. After abatement, the total carbon emissions estimated in the initial Title V permit statement of basis through A-88 or A-89 are <0.1 lb/day, which is less than 1% of the 15 lbs carbon/day limit in Regulation 8 Rule 2. Due to the large margin of compliance, no monitoring is necessary for either A-88 or A-89.

**S-174:** 8-7-301.10 is a equipment specification for a new or modified Phase I system and no ongoing testing is required to demonstrate compliance with this standard. S-174 is required to perform static pressure testing on an annual basis to ensure the Phase I vapor recovery equipment is leak free and vapor tight in accordance with 8-7-301.6. S-174 also is tested every three year to demonstrate the leak rate at the drop tube/drain valve meets regulation 8-7-503.2.

**S-229:** This tank car unloading operation is vapor-balanced. Further, it is equipped with dripless fittings at both the vapor and liquid connections to the railcar and a nitrogen purge is used to clear the unloading fittings before removal from the railcar. The fitting and nitrogen purge are expected to reduce loading emissions to well below the leak standards in Regulation 8-6-302.1, 302.2, 304, 305, and 306. A condition requiring a leak check before unloading has been added as monitoring for this source.

**S-336, S-389:** These sources are currently subject to monitoring requirements for VOC emissions. The minimum VOC destruction efficiency achieved by these thermal oxidizers is specified by permit condition to be at least 99.99%. Compliance with this destruction efficiency is currently monitored through minimum operating temperatures of 1745 and 1830 degrees F respectively, measured by continuous temperature monitors.

Compliance with the destruction efficiency requirements was demonstrated by source testing during Trial Burns for the RCRA permitting process and by testing conducted to demonstrate compliance with Subpart EEE requirements. The units were both tested in 2014.

**A-400 (S-400):** This abatement device is equipped with a temperature monitor. Permit condition 2213 requires temperature monitoring and a minimum temperature of 800 degrees C. This source was tested at a first pass temperature of 706 degrees C and demonstrated a destruction efficiency of 99%. The minimum required temperature in the permit condition 2213 is higher than that during the initial source test. The destruction efficiency required to meet the Regulation 8, Rule 2 emission limit is only 64% from original permit evaluation. The destruction efficiency required to meet Regulation 8-5-306 is 95% (A-400 abates tank S-372). The minimum temperature requirement and monitoring will assure compliance with 8-2-301 and 8-5-306. In addition, CAM Condition #TBD part 13 requires the facility to measure the destruction efficiency using a District approved method by mid 2016 and every five years thereafter.

**S-474, S-476:** The VOC emissions from these sources are very small, less than 1 lb/day according to calculation contained in the statement of basis for the original Title V permit. These calculations were based upon the partial pressure of the organic compound (halogenated pyridine) and assumed the liquid phase is in equilibrium with the vapor stream. The maximum emissions from S-474 are less than 4% of the 15 lbs carbon/day in Regulation 8-2, and this estimate is conservative as the emissions are vented through two additional water scrubbers prior to exhausting to the atmosphere. The maximum emissions from S-476 are less than 1% of the 15 lbs carbon/day in Regulation 8-2. Therefore, due to the large margin of compliance between the maximum expected emissions and the emission limit, monitoring is not required for these sources.

**S-504, S-505:** These sources are subject to the emission limit in Regulation 8, Rule 2, as well as hourly emission limits by permit condition. They are abated by A-400 (S-400), Thermal Oxidizer R-901, before abatement at an absorber and a scrubber. A-400 is equipped with a temperature monitor, and the requirement to continuously monitor temperature for A-400 has been formalized in the permit conditions. A-400 will also be required to demonstrate that it meet the 64% abatement efficiency by mid 2016 and every five years thereafter (CAM Condition #TBD part 13). In addition, periodic monitoring is required for S-504. This monitoring requires measurement of the VOC content for each batch of water processed and calculation of a corresponding treatment rate which will assure compliance with the hourly permit condition limit. The maximum potential emissions S-505 are less than 6% of the hourly permit condition limit, therefore no additional monitoring has been required (see Appendices).

**S-519, S-520:** These tanks are subject to the gas tight requirements in Regulation 8-5-307. Normally tanks subject to this condition are monitored through Regulation 8-18 requirements, but these tanks are exempt from the monitoring in Regulation 8-18 due to containing waste material with a boiling point higher than limited exemption qualification of 302 degreesF. No monitoring is being required for this limit.

**S-580 through S-583:** These tanks are subject to the leak limit in Regulation 8-6-304 during loading from railcars. They are equipped with a vapor balance system. The District's Source Test staff has indicated that vapor balance systems reliably meet the emission rate of 0.17 lbs/1000 gallons loaded for materials with a Reid vapor pressure under 10 psi, therefore no monitoring is being required for this limit.

**S-593 through S-596:** There is no current monitoring required for the daily VOC emission limits in Regulation 8, Rule 2 and the permit conditions for these sources. The emissions are limited by condition 4780 part 1 to less than 8 lbs/day POC averaged over a 30-day period, compared to the 15 lbs/day limit in Rule 8-2. Periodic monitoring in the form of a source test once/permit term has been added for these sources. The test results at these sources have always been well below 15 lb/day.

**S-680, S-701:** The tanks S-680 and S-701 are subject to the loading leak limit in Regulation 8-6-304. S-701 normally vents to S-336, Thermal Oxidizer, which achieves an abatement efficiency of 99.99% by weight and operates with a continuous temperature monitor. When S-336 is not operating, the vent valve for S-701 automatically closes and the vessel operates as a pressure tank. S-680 is operated as a pressure tank at all times. For these two tanks, no monitoring is being required for the standard in Regulation 8-6-304, since pressure tanks are operated to have no emissions to the atmosphere. The pressure relief devices are monitored on a semiannual basis in accordance with 8-5-403 to demonstrate compliance with 8-5-307.3.

## **VIII. Test Methods**

This section of the permit lists test methods that are associated with standards in District or other rules. It is included only for reference. In most cases, the test methods in the

rules are source test methods that can be used to determine compliance but are not required on an ongoing basis. They are not applicable requirements.

If a rule or permit condition requires ongoing testing, the requirement will also appear in Section IV of the permit.

#### **IX. Permit Shield**

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in a major facility review permit explaining that specific federally enforceable regulations and standards do not apply to a source or group of sources, or (2) A provision in a major facility review permit explaining that specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting are subsumed because other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits.

The second type of permit shield is allowed by EPA's White Paper 2 for Improved Implementation of the Part 70 Operating Permits Program. The District uses the second type of permit shield for all streamlining of monitoring, recordkeeping, and reporting requirements in Title V permits. The District's program does not allow other types of streamlining in Title V permits.

This facility has neither type of permit shield.

#### **D. Alternate Operating Scenarios**

No alternate operating scenario has been requested for this facility.

## **APPENDIX A**

### **GLOSSARY**

**AB2588**

Assembly Bill 2588, Air Toxics “Hot Spots” Information and Assessment Act of 1987 – directs the California Air Resources Board and the Air Quality Management District to collect information from industry on emissions of potentially toxic air pollutants and to inform the public about such emissions and their impact on public health.

**ACT**

Federal Clean Air Act

**alkene**

A class of unsaturated aliphatic hydrocarbons having one or more double bonds.

**amine**

A class of organic compounds of nitrogen.

**APCO**

Air Pollution Control Officer

**ARB**

Air Resources Board

**BAAQMD**

Bay Area Air Quality Management District

**BACT**

Best Available Control Technology

**BARCT**

Best Available Retrofit Control Technology

**Basis**

The underlying authority that allows the District to impose requirements.

**C2**

An Organic chemical compound with two carbon atoms

**C5**

An Organic chemical compound with five carbon atoms

**C6**

An Organic chemical compound with six carbon atoms

**CAA**

The federal Clean Air Act

**CAAQS**

California Ambient Air Quality Standards



**CAPCOA**

California Air Pollution Control Officers Association

**CEM**

A "continuous emission monitor" is a monitoring device that provides a continuous direct measurement of some pollutant (e.g. NO<sub>x</sub> concentration) in an exhaust stream.

**CEQA**

California Environmental Quality Act

**CFR**

The Code of Federal Regulations. 40 CFR contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

**Chlorinated heterocyclic**

A closed ring compound in which one or more of the atoms in the ring is a chlorine atom.

**Cl<sub>2</sub>**

chlorine

**CO**

Carbon Monoxide

**CO<sub>2</sub>**

Carbon Dioxide

**Cumulative Increase**

The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Cumulative increase is used to determine whether threshold-based requirements are triggered.

**District**

The Bay Area Air Quality Management District

**Dowanol®**

A terminalized product, not produced at this facility.

**Dowicil®**

A preservative and antimicrobial produced at this facility.

**Dowtherm**

A heat transfer fluid.

**dscf**

Dry Standard Cubic Feet

**E 6, E 9, E 12**

Very large or very small number values are commonly expressed in a form called scientific notation, which consists of a decimal part multiplied by 10 raised to some power. For example, 4.53 E 6 equals  $(4.53) \times (10^6) = (4.53) \times (10 \times 10 \times 10 \times 10 \times 10 \times 10) = 4,530,000$ . Scientific notation is used to express large or small numbers without writing out long strings of zeros.

**EFRT**

An "external floating roof tank" minimizes VOC emissions with a roof with floats on the surface of the liquid, thus preventing the formation of a VOC-rich vapor space above the liquid surface as the level in the tank drops. If such a vapor space were allowed to form, it would be expelled when the tank was re-filled. On an EFRT, the floating roof is not enclosed by a second, fixed tank roof, and is thus described as an "external" roof.

**ester**

An organic compound corresponding in structure to a salt.

**EPA**

The federal Environmental Protection Agency.

**Excluded**

Not subject to any District regulations.

**Federally Enforceable, FE**

All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60 (NSPS), Part 61 (NESHAPs), Part 63 (MACT), and Part 72 (Permits Regulation, Acid Rain), including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

**FP**

Filterable Particulate as measured by BAAQMD Method ST-15, Particulate.

**FR**

Federal Register

**FRT**

Floating Roof Tank (see EFRT and IFRT)

**GDF**

Gasoline Dispensing Facility

**GLM**

Ground Level Monitor

**grains**

1/7000 of a pound

**H<sub>2</sub>S**

Hydrogen Sulfide

**Halogenated heterocycle**

A closed ring compound in which one or more of the atoms on the ring is a halogen atom.

**HAP**

Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by 40 CFR Part 63.

**HCl**

Hydrogen chloride, hydrochloric acid.

**HCl MACT**

40 CFR Part 63, Subpart NNNNN

**HF**

Hydrogen fluoride, hydrofluoric acid.

**Hg**

Mercury

**HHV**

Higher Heating Value. The quantity of heat evolved as determined by a calorimeter where the combustion products are cooled to 60F and all water vapor is condensed to liquid.

**IFRT**

An "internal floating roof tank" minimizes VOC emissions with a roof with floats on the surface of the liquid, thus preventing the formation of a VOC-rich vapor space above the liquid surface as the level in the tank drops. If such a vapor space were allowed to form, it would be expelled when the tank was re-filled. On an IFRT, the floating roof is enclosed by a second, fixed tank roof, and thus is described as an "internal" roof.

**LHV**

Lower Heating Value. Similar to the higher heating value (see HHV) except that the water produced by the combustion is not condensed but retained as vapor at 60F.

**KCl**

Potassium chloride

**KF**

Potassium fluoride

**KOH**

Potassium hydroxide

**Latex MACT**

40 CFR Part 63, Subpart U

**Lontrel**

A solid herbicide produced at this facility, an organic acid.

**Lorsban**

A terminalized product, not produced at this facility.

**Major Facility**

A facility with potential emissions of: (1) at least 100 tons per year of regulated air pollutants, (2) at least 10 tons per year of any single hazardous air pollutant, and/or (3) at least 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as determined by the EPA administrator.

**MCA**

Methyl chloroacetate

**MEI**

Methyl ester intermediate

**MFR**

Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Federal Clean Air Act and implemented by District Regulation 2, Rule 6.

**MOP**

The District's Manual of Procedures.

**MSDS**

Material Safety Data Sheet

**NA**

Not Applicable

**NAAQS**

National Ambient Air Quality Standards

**NESHAPS**

National Emission Standards for Hazardous Air Pollutants. See in 40 CFR Parts 61 and 63.

**NMHC**

Non-methane Hydrocarbons (Same as NMOC)

**NMOC**

Non-methane Organic Compounds (Same as NMHC)

**NMP**

N-methyl pyrrolidone

**NO<sub>x</sub>**

Oxides of nitrogen.

**N-Serve®**

An agricultural product produced at this facility.

**NSPS**

Standards of Performance for New Stationary Sources. Federal standards for emissions from new stationary sources. Mandated by Title I, Section 111 of the Federal Clean Air Act, and implemented by 40 CFR Part 60 and District Regulation 10.

**NSR**

New Source Review. A federal program for pre-construction review and permitting of new and modified sources of pollutants for which criteria have been established in accordance with Section 108 of the Federal Clean Air Act. Mandated by Title I of the Federal Clean Air Act and implemented by 40 CFR Parts 51 and 52 and District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

**O<sub>2</sub>**

The chemical name for naturally-occurring oxygen gas.

**Offset Requirement**

A New Source Review requirement to provide federally enforceable emission offsets for the emissions from a new or modified source. Applies to emissions of POC, NO<sub>x</sub>, PM<sub>10</sub>, and SO<sub>2</sub>.

**PAI MACT**

40 CFR Part 63, Subpart MMM

**Perc**

Perchloroethylene

**Phase II Acid Rain Facility**

A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 40 CFR 72 from Titles IV and V of the Clean Air Act.

**Picoline**

A methyl pyridine, an aromatic compound containing a nitrogen atom within the ring and an attached methyl group.

**POC**

Precursor Organic Compounds

**PM**

Particulate Matter

**PM10**

Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns

**PRD**

Pressure Relief Device

**PSD**

Prevention of Significant Deterioration. A federal program for permitting new and modified sources of those air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

**RCRA**

Resource Conservation and Recovery Act, 40 CFR Part 266, Subpart H.

**RMP**

Risk Management Plan

**SB Latex/Rubber**

Styrene-butadiene latex/rubber, produced at this facility.

**SCR**

A "selective catalytic reduction" unit is an abatement device that reduces NOx concentrations in the exhaust stream of a combustion device. SCRs utilize a catalyst, which operates at a specific temperature range, and injected ammonia to promote the conversion of NOx compounds to nitrogen gas.

**SIP**

State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

**SO2**

Sulfur dioxide

**SO2F2**

Sulfuryl fluoride

**SO3**

Sulfur trioxide

**Sym-Tet**

Symmetrical tetrachloropyridine, an aromatic compound containing a nitrogen atom within the ring and 4 attached chlorine atoms

**TCA**

Trichloroethane

**TCE**

Trichloroethylene

**THC**

Total Hydrocarbons (NMHC + Methane)

**therm**

100,000 British Thermal Unit

**Title V**

Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

**TOC**

Total Organic Compounds (NMOC + Methane, Same as THC)

**TRE**

Total Resource Effectiveness

**TRMP**

Toxic Risk Management Plan

**TSP**

Total Suspended Particulate

**TRS**

"Total reduced sulfur" is a measure of the amount of sulfur-containing compounds in a gas stream, typically a fuel gas stream, including, but not limited to, hydrogen sulfide. The TRS content of a fuel gas determines the concentration of SO2 that will be present in the combusted fuel gas, since sulfur compounds are converted to SO2 by the combustion process.

**TVP**

True Vapor Pressure

**Vikane®**

Dow trade name for sulfuryl fluoride, a fumigant formerly produced at this facility.

**VOC**

Volatile Organic Compounds



**Units of Measure:**

bhp	=	brake-horsepower
btu	=	British Thermal Unit
C	=	degrees Celcius
cfm	=	cubic feet per minute
F	=	degrees Fahrenheit
f <sup>3</sup>	=	cubic feet
g	=	gram
gal	=	gallon
gpm	=	gallons per minute
gr	=	grain
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inch
max	=	maximum
M	=	thousand
m <sup>2</sup>	=	square meter
Mg	=	mega-gram, one thousand grams
µg	=	micro-gram, one millionth of a gram
min	=	minute
mm	=	millimeter
MM	=	million
MMbtu	=	million btu
MMcf	=	million cubic feet
mm Hg	=	millimeters of Mercury (pressure)
MW	=	megawatts
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scfm	=	standard cubic feet per minute
yr	=	year

**Symbols:**

<	=	less than
>	=	greater than
≤	=	less than or equal to
≥	=	greater than or equal to

**APPENDIX B**

**DOW CHEMICAL LETTER DATED 11/22/13**



November 22, 2013

RECEIVED

The Dow Chemical Company  
P.O. Box 1398  
Pittsburg, California 94565  
USA

CERTIFIED MAIL  
7013 0600 0000 2392 2621

2013 NOV 25 AM 11:15

BAY AREA AIR QUALITY  
MANAGEMENT DISTRICT

Brian Lusher  
Permit Services  
Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco, California 94109

Subject: The Dow Chemical Company Requests to Designate the Pittsburg, California Facility  
as a Major Source of Hazardous Air Pollutants

Dear Mr. Lusher:

The Dow Chemical Company (Dow) requests that the Pittsburg, California facility be designated  
as a Major source of hazardous air pollutants (HAPs).

On May 7, 2008, the District approved Condition No. 24004 that establish the federally  
enforceable permit terms that ensure Dow's Pittsburg, California facility is classified as a Minor  
source of Hazardous Air Pollutants under District Regulation 2, Rule 6, Major Facility Review.  
Although emissions of total HAPs remain below 25 tons per year and emissions of any single  
HAP remains below 10 tons per year, Dow has elected to designate the Pittsburg facility as a  
Major source of HAPs.

It is my understanding the District will designate the Dow Pittsburg facility a Major source at the  
time of issuance of the approved renewed Title V permit. Once designated as a Major source,  
The Dow Pittsburg facility will comply with all applicable NESHAP MACTs following the  
compliance schedule required under each specific MACT rule.

Please call me at (925) 432-5525 if you have any questions regarding the above request.

Sincerely,

Marvin Louie  
Environmental Specialist

**APPENDIX C**

**40 CFR PART 64 COMPLIANCE ASSURANCE MONITORING  
APPLICABILITY DETERMINATION**

PLANTS	Sources w/ Unabated Emissions > Major Source Threshold for HAPs?	Sources with Unabated Emissions > Major Source Threshold for Criteria Pollutants?	Pollutant of Concern	Source Number	Source Description	Abatement Device Number	Abatement Device Description <sup>a</sup>	Applicable NSPS or NESHAPs (CAM Plan requirements are not applicable to sources or pollutants subject to NSPS or NESHAPs published after 1990).	Other Federally Enforceable Limits?	CAM Applicable/CAM Plan Required? (Yes/No).
Maintenance	No	No								
Manufacturing Services	Yes	No								
	Yes	No	HCl	S-135	HCl Storage Tank T-606A	A-18	Packed bed scrubber	S-135, S-136, S-137, S-138, and S-139 (chlorination tanks) are subject to 40 CFR 63 Subpart NNNNN, NESHAP for Hydrochloric Acid Production (4/17/2003).	No	<b>No.</b> Pollutant of concern is HCl, chlorination tanks and packed bed scrubber control systems are subject to 40 CFR 63 Subpart NNNNN, NESHAP for Hydrochloric Acid Production (4/17/2003), therefore CAM Plan requirements are not applicable. Source has no non-MACT emission limits for HCl.
	Yes	No	HCl	S-136	HCl Storage Tank T-606B	A-18	Packed bed scrubber			
	Yes	No	HCl	S-137	HCl Storage Tank T-606C	A-18	Packed bed scrubber			
	Yes	No	HCl	S-138	HCl Storage Tank T-606D	A-18	Packed bed scrubber			
	Yes	No	HCl	S-139	HCl Storage Tank T-606E	A-18	Packed bed scrubber			
	Yes	No	Carbon Tetrachloride	S-151	T-614 Terminalized Products	S-336/S-389	Thermal Oxidizer	S-336 and S-339 (thermal oxidizers, also referred to as halogen acid production furnaces) are subject to 40 CFR 63, Subpart EEE - National Emission Standards for Hazardous Air Pollutants (NESHAP) from Hazardous Waste Combustors (9/30/1999).	Thermal oxidizers are subject to 99.99% DRE in BAAQMD Permit Condition C6859 Part 4 (S-336), and C2039 Part 5 (S-389)	<b>Yes.</b> Pollutants of concern are HAPs. S-336 and S-339 (thermal oxidizers) are subject to 99.99% DRE requirement in BAAQMD Permit Conditions.
	Yes	No	Carbon Tetrachloride	S-633	Water Treatment Carbon Beds Regeneration	S-336/S-389	Thermal Oxidizer			
	Yes	No	Perchloroethylene	S-633	Water Treatment Carbon Beds Regeneration	S-336/S-389	Thermal Oxidizer			
	No	Yes	POC	S-434	Carbon Tetrachloride Purification System	S-336	Thermal Oxidizer	S-336 (thermal oxidizer, also referred to as a halogen acid production furnace) is subject to 40 CFR 63, Subpart EEE - National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors (9/30/1999).	Source (S-434) is subject to BAAQMD Regulation 8-2-301, and thermal oxidizer (S-336) is subject to 99.99% DRE in BAAQMD Permit Condition C6859, Part 4.	<b>Yes.</b> Pollutant of concern is POC. Source (S-434) is subject to BAAQMD Regulation 8-2-301, and S-336 (thermal oxidizer) is subject to 99.99% DRE requirement in BAAQMD Permit Conditions.
	Yes	No	HCl	S-434	HCl Absorption System	A-87/A-85 and A-199 or S-336	A-87 and A85 (Acid absorbers) and A-199 (Caustic Scrubber) or S-336 (Thermal Oxidizer) as backup	S-434 (HCl absorption system) is subject to 40 CFR 63 Subpart NNNNN, NESHAP for Hydrochloric Acid Production (4/17/2003).	No	<b>No.</b> Pollutant of concern is HCl, S-434 (HCl absorption system) is subject to 40 CFR 63 Subpart NNNNN, NESHAP for Hydrochloric Acid Production (4/17/2003), therefore CAM Plan requirements are not applicable to this source. Source has no non-MACT emission limits for HCl.
Lontrel	No	No								<b>No.</b> Unabated emissions are less than applicable major source thresholds.
N-Serve - Emissions Reported with Sym Tet (Chloropyridines)	No	No								<b>No.</b> Unabated emissions are less than applicable major source thresholds.
Sym Tet (Chloropyridines)	Yes	Yes								
	Yes	No	Carbon tetrachloride	S-446	Sym Tet	S-389 or A-88/A-89	S-389: Sym Tet Thermal Oxidizer or A-88: B-106 Sym-Tet Scrubber A-89: X-3 Emergency Venturi.	S-446 (SymTet Plant) is subject to 40 CFR Part 63, Subpart FFFF - National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing (11/10/03). S-389 (Thermal	Thermal oxidizer is subject to 99.99% DRE in BAAQMD Permit Condition C2039, Part 5 (S-389).	<b>Yes.</b> Pollutants of concern are HAPs. S-389 (thermal oxidizer) is subject to 99.99% DRE in BAAQMD Permit Conditions. When S-389 is not available,

PLANTS	Sources w/ Unabated Emissions > Major Source Threshold for HAPs?	Sources with Unabated Emissions > Major Source Threshold for Criteria Pollutants?	Pollutant of Concern	Source Number	Source Description	Abatement Device Number	Abatement Device Description <sup>a</sup>	Applicable NSPS or NESHAPs (CAM Plan requirements are not applicable to sources or pollutants subject to NSPS or NESHAPs published after 1990).	Other Federally Enforceable Limits?	CAM Applicable/CAM Plan Required? (Yes/No).
	Yes	No	Hexachloroethane	S-446	Sym Tet	S-389 or A-88/A-89	S-389: Sym Tet Thermal Oxidizer or A-88: B-106 Sym-Tet Scrubber A-89: X-3 Emergency Venturi.	Oxidizer, also referred to as a halogen acid production furnace) is subject to 40 CFR 63, Subpart EEE - National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors (9/30/99).		process is routed to the Pressure Swing Absorption (PSA) system and A-88 and A-89 prior to discharge to atmosphere. There are no emission limits on the PSA and scrubber abatement train and CAM does not apply.
	No	No	Perchloroethylene	S-446	Sym Tet	S-389 or A-88/A-89	S-389: Sym Tet Thermal Oxidizer or A-88: B-106 Sym-Tet Scrubber A-89: X-3 Emergency Venturi.			
	No	No	POC	S-446	Sym Tet	S-389 or A-88/A-89	S-389: Sym Tet Thermal Oxidizer or A-88: B-106 Sym-Tet Scrubber A-89: X-3 Emergency Venturi			
<b>Nitrapyrin</b>	No	No								<b>No.</b> Unabated emissions are less than applicable major source thresholds.
<b>MEI</b>	No	No								<b>No.</b> Unabated emissions are less than applicable major source thresholds.
<b>Dowicil</b>	Yes	No								
	Yes	No	Methylene Chloride	S-302	Dowicil Train 1	A-192, then S-336 or S-389	S-302 and S-303 (Dowicil Trains 1 & 2) are abated by: A-192: Vent vapor recovery system (Inherent Process Equipment), S-336: Manufacturing Services Thermal Oxidizer, S-389: Sym-Tet Thermal Oxidizer	S-302 and S-303 (Dowicil Trains 1 & 2) are subject to 40 CFR Part 63, Subpart FFFF - National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing (11/10/03). S-336 and S-389 (thermal oxidizers, also referred to as halogen acid production furnaces) are subject to 40 CFR 63, Subpart EEE - National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors (9/30/99).	Thermal oxidizers are subject to 99.99% DRE in BAAQMD Permit Condition C6859 Part 4 (S-336), and C2039 Part 5 (S-389).	<b>Yes.</b> Pollutant of concern is methylene chloride. S-336 and S-339 (thermal oxidizers) are subject to 99.99% DRE requirement in BAAQMD Permit Conditions.
	Yes	No	Methylene Chloride	S-303	Dowicil Train 2					
	Yes	No	Methylene Chloride	S-322	D-203A/B Portable Dryers					
	Yes	No	Methylene Chloride	S-631	D-203C Portable Dryer	S-336 or S-389		S-336 and S-389 (thermal oxidizers, also referred to as halogen acid production furnaces) are subject to 40 CFR 63, Subpart EEE - National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors (9/30/99).		
<b>AFTF</b>	Yes	No								
	Yes	No	HCl	S-693	AFTF Purification System	A-194 and A-195	A-194 venturi scrubber system (X-600), A-195 packed bed scrubber using alkaline solutions (B-615)	S-693 and S-694 (AFTF purification system and HCl absorption system) are subject to 40 CFR Part 63, Subpart FFFF - National Emission Standards for Hazardous Air	No	<b>No.</b> Pollutants of concern are HCl and HF. Sources S-693 and S-694 (AFTF distillation system and HCl absorption system) are subject to

PLANTS	Sources w/ Unabated Emissions > Major Source Threshold for HAPs?	Sources with Unabated Emissions > Major Source Threshold for Criteria Pollutants?	Pollutant of Concern	Source Number	Source Description	Abatement Device Number	Abatement Device Description <sup>a</sup>	Applicable NSPS or NESHAPs (CAM Plan requirements are not applicable to sources or pollutants subject to NSPS or NESHAPs published after 1990).	Other Federally Enforceable Limits?	CAM Applicable/CAM Plan Required? (Yes/No).
	Yes	No	HF	S-693	AFTF Purification System	A-194 and A-195	A-194 venturi scrubber system (X-600), A-195 packed bed scrubber using alkaline solutions (B-615)	Pollutants: Miscellaneous Organic Chemical Manufacturing (11/10/03). No non-MACT emission limits for HCl or HF.		40 CFR Part 63, Subpart FFFF - National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing (11/10/03); sources have no non-MACT emission limits for HCl or HF.
	Yes	No	HCl	S-694	Reaction/HCl Absorption System (Inherent Process Equipment)	A-195	Packed bed scrubber using alkaline solutions (B-615)			
	No	No	POC	S-693	AFTF Purification System	A-194 and A-195	A-194 venturi scrubber system (X-600), A-195 packed bed scrubber using alkaline solutions (B-615)			<b>No.</b> Unabated emissions of POC are less than applicable major source thresholds.
<b>Catacid</b>	Yes	Yes								
	No	No	Carbon Tetrachloride, and POC (as carbon tetrachloride)	S-431/S-432	D-260A/D-260B Carbon Tetrachloride Pressure Vessels	S-336	S-336 (Thermal Oxidizer)	S-336 (thermal oxidizer, also referred to as a halogen acid production furnace) is subject to 40 CFR 63, Subpart EEE - National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors (9/30/99).	Pressure Vessels should not release emissions under standard operating conditions	<b>No.</b> Unabated emissions are less than applicable major source thresholds.
	Yes	No	HCl	S-647	Catalytic Hydrogen Chloride Plant	S-648: A-181/A-182 Packed Bed Columns to A-184 (Carbon Beds) or S-336	Water Scrubbers; ME 290 A/B Carbon Beds or Thermal Oxidizer	S-647 (Catacid Plant) is subject to 40 CFR 63 Subpart NNNNN, NESHAP for Hydrochloric Acid Production (4/17/2003).	Source (S-647) with packed bed columns (A-181 and A-182), and abatement device A-184 (carbon beds), is subject to BAAQMD Permit Condition C8894, Part 13 (730 lb HCl in 12 months). Discussed potential revision of this requirement with Brian Lusher, BAAQMD. Plant is not currently operating; if operated, emissions must be abated by S-336. Carbon beds only used temporarily as backup if needed during plant shutdown.	<b>No.</b> Based on current permit conditions, CAM is Applicable to A-181 and A-182 Packed Bed Columns and A-184 Carbon Beds. However, the Catacid Plant is not currently operating. If operated, HCl emissions from Catacid Plant must be abated to S-336, which is subject to 40 CFR 63 Subpart NNNNN. CAM Plan would only be required if any non-MACT emission limits for HCl are applicable.
<b>Terminals</b>	Yes	No								
	Yes	No	HCl	S-620	HCl Truck Loading Operation	A-165	HCl Truck Loading Scrubber System	S-620 (HCl Truck Loading Operation) is subject to 40 CFR 63 Subpart NNNNN, NESHAP for Hydrochloric Acid Production.	No	<b>No.</b> HCl is the pollutant of concern. S-620 (HCl Truck Loading Operation) is subject to 40 CFR 63 Subpart NNNNN, NESHAP for Hydrochloric Acid Production, therefore CAM Plan requirements are not applicable. Source has no non-MACT emission limits for HCl.
<b>Chlorinolysis</b>	Yes	Yes								
	Yes	No	Chloroform	S-504, S-505	Chlorinolysis Train 1 & 2	A-400	R-901 Thermal Oxidizer	No applicable NESHAPs or NSPS	Thermal oxidizer (A-400 R-901) is subject to 64% DRE in BAAQMD Permit Condition C2213, Part 8.	<b>Yes.</b> Pollutant of concern is chloroform. A-400 (thermal oxidizer) is subject to 64% DRE requirement in BAAQMD Permit Conditions.

PLANTS	Sources w/ Unabated Emissions > Major Source Threshold for HAPs?	Sources with Unabated Emissions > Major Source Threshold for Criteria Pollutants?	Pollutant of Concern	Source Number	Source Description	Abatement Device Number	Abatement Device Description <sup>a</sup>	Applicable NSPS or NESHAPs (CAM Plan requirements are not applicable to sources or pollutants subject to NSPS or NESHAPs published after 1990).	Other Federally Enforceable Limits?	CAM Applicable/CAM Plan Required? (Yes/No).
	No	Yes	CO	S-504, S-505	Chlorinolysis Train 1 & 2	A-400	R-901 Thermal Oxidizer		No Federally Enforceable Limit for CO	<b>No.</b> CO is the pollutant of concern; source is not subject to any Federally Enforceable Limit for CO.
<b>Trifluoro</b>	Yes	No								
	Yes	No	HF	S-474	Trifluoro Reactor (Plant 421)	A-98, A-99, and S-694	A-98 Reactor Vent Scrubber, A-99 Scrubber, and Reaction/HCl Absorption System	S-474 (Plant 421) is subject to 40 CFR Part 63, Subpart FFFF. National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing. (11/10/03)		<b>No.</b> Pollutants of concern are HCl and HF. Source (S-474) is subject to 40 CFR Part 63, Subpart FFFF. National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing. (11/10/03); sources have no non-MACT emission limits for HCl or HF.
	Yes	No	HCl	S-474	Trifluoro Reactor (Plant 421)	A-98, A-99, and S-694	A-98 Reactor Vent Scrubber, A-99 Scrubber, and Reaction/HCl Absorption System			
<b>2,3 Penta</b>	No	No		Part of S-464	Sym Tet	A-168	A-168 B-609 Emergency Backup Scrubber			<b>No.</b> Unabated emissions are less than applicable major source thresholds.
<b>Combustion - Diesel Fuel and Natural Gas</b>	No	Yes								
	No	Yes	NOx	S-1011		A-1011	SCR (Selective Catalytic Reduction)	The Auxiliary Boiler (S-1011) is subject to 40 CFR 60 Subpart Db, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (6/13/07).	Source (S-1011) is subject to BAAQMD Permit Condition C19356, Part 13, NOx limited to 6 tons in any consecutive 12-month period.	<b>No.</b> Source (S-1011) is equipped with CEM for NOx; CAM requirements do not apply.

<sup>a</sup> For sources abated by the thermal oxidizers (S-336, S-389, A-400), the thermal oxidizer abatement system includes the scrubbers and acid absorbers required to treat oxidizer emissions when the thermal oxidizer is operated.



## **APPENDIX D**

### **CAM PLANS**

A.1a. THERMAL OXIDIZERS (Halogen Acid Furnace) FOR POC AND HAPS CONTROL  
S-336 (Manufacturing Services Halogen Acid Furnace (MS HAF))  
COMPLIANCE ASSURANCE MONITORING PLAN

I. Background

A. Emissions Unit

Description:	Manufacturing Services: S-151, S-633, S-434; Dowicil: S-302, S-303, S-322, S-631
Identification:	Stack No. P-260
Stack designation:	Thermal oxidizer (HAF)
APC Plant ID No.	S-336
Facility:	Dow Chemical Pittsburg, CA, USA

B. Applicable Regulation, Emission Limit, and Monitoring Requirements

Regulation No.:	Permit
Regulated pollutants (PSEU):	POC, Carbon Tetrachloride, Perchloroethylene, Methylene Chloride
Emission limit:	99.99 percent destruction and removal efficiency (DRE)
Monitoring requirements in permit:	Continuously monitor chamber temperature

C. Control Technology: Thermal oxidizer

II. Monitoring Approach

The key elements of the monitoring approach, including the indicators to be monitored, indicator ranges, and performance criteria are presented in Table A.1a-1. Listed indicator is monitored continuously as an hourly rolling average (HRA) and recorded at least once every 15 minutes.

III. Data Availability [NOTE 1]

The minimum data availability for each semiannual reporting period, defined as the number of hours for which monitoring data are available divided by the number of hours during which the process operated (times 100) will be:

Chamber temperature:	90 percent
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TABLE A.1a-1. MONITORING APPROACH	Indicator No. 1
I. Indicator	Chamber temperature
Measurement Approach	The chamber temperature is monitored with a thermocouple, type R.
II. Indicator Range	Greater than 952 C (1745 F) at all times that halogenated liquids and/or organic gases are being processed.
QIP Threshold	Based on BAAQMD review of semi-annual reports, QIP thresholds may be assigned by BAAQMD if needed.
III. Performance Criteria	The thermocouple sensor is installed in the incinerator chamber as an integral part of the thermal oxidizer design. The sensor measures temperatures from 0 to 1600 C. The standard tolerance is $\pm 4$ C.
A. Data Representativeness	The recorder range is 0 to 1600 C.
B. Verification of Operational Status	Not Applicable
C. QA/QC Practices and Criteria	Accuracy of the thermocouple will be verified either by ice and hot oil bath, or replacement with a new thermocouple. This validation will be conducted at least once annually. The acceptance criterion is $\pm 4$ C for the ice and hot oil bath calibration.
D. Monitoring Frequency and Data Collection Procedure	The chamber temperature is measured continuously as an hourly rolling average using a thermocouple, and recorded at least once every 15 minutes.
	15-second measurements are used to generate one-minute averages and the one-minute average data are used to generate hourly rolling averages.

### MONITORING APPROACH JUSTIFICATION

#### I. Background

The Dow Chemical Company (Dow) owns and operates a chemical manufacturing facility located at 901 Loveridge Road in Pittsburg, California. Dow currently manufactures agricultural products and intermediates, Dowicil<sup>®</sup> antimicrobials for use in paints and cosmetics, and hydrochloric acid. The equipment utilized at the site includes reactors, storage tanks, combustion devices, loading and unloading facilities, pumps, valves, and flanges. Emissions from most of the

equipment are collected and controlled using abatement equipment such as vapor recovery systems, scrubbers, absorbers or thermal destruction devices. Emissions from Manufacturing Services and Dowicil<sup>®</sup>, as well as other emissions sources, are vented to a thermal oxidizer (halogen acid furnace).

Manufacturing Services emissions sources include water treatment systems, a carbon tetrachloride purification system, and tanks. Emitted criteria pollutants include PM and POC. Emitted HAPs include carbon tetrachloride, hydrochloric acid, and perchloroethylene.

Dowicil<sup>®</sup> is a solid (powder) preservative and antimicrobial used in hand lotions and other products, produced by reaction of a solid amine and dichloropropene in methylene chloride. There are no byproducts from this reaction. Methylene chloride is the primary compound emitted from the Dowicil<sup>®</sup> plant.

## II. Rationale for Selection of Performance Indicators

The incinerator chamber temperature was selected because it is indicative of the thermal destruction and removal efficiency (DRE) in thermal oxidizer (halogen acid furnace). If the chamber temperature decreases significantly, complete combustion may not occur. The combustion chamber temperature is the primary indicator of compliant operation in combustion units such as a halogen acid furnace (thermal oxidizer).

It has been shown that the control efficiency achieved by a thermal oxidizer (halogen acid furnace) is a function of its operating temperature, or combustion outlet temperature. By maintaining the operating temperature at or above a minimum, destruction removal efficiency at least 99.99% is expected to be achieved.

## III. Rationale for Selection of Indicator Ranges

For combustion chamber temperature, the selected indicator range is “greater than or equal to 952 C (1745 F) at all times.” For S-336 Thermal Oxidizer, an excursion is the same as an exceedance; defined as any monitored combustion chamber temperature below 952 C (1745 F) while the unit is processing liquid and/or organic gas feed streams. When the combustion chamber temperature approaches the 952 C (1745 F), an alarm is activated and corrective action initiated. The process computer is programmed to evaluate the occurrence to determine the action required to correct the situation and make the required changes to keep the unit in compliance. If the temperature is less than 952 C (1745 F), all liquid and organic gas feeds to the combustion chamber are shut off.

All exceedances/excursions will be documented and reported in the semi-annual report. Based on BAAQMD review of the semi-annual reports, QIP thresholds may be assigned by BAAQMD if needed.

The air pollution control permits issued by the Bay Area Air Quality Management District (BAAQMD) specifies that the thermal oxidizer must operate with a minimum combustion chamber temperature of 952 C (1745 F) when processing gaseous vents or liquid waste. A thermal oxidizer is expected to achieve 99.99 percent or greater DRE at this temperature. The permit requirement is 99.99 percent DRE. The thermal oxidizer employs a

temperature controller that maintains the desired chamber temperature by using natural gas as a supplemental fuel; the temperature controller is set to maintain a temperature of at least 952 C (1745 F).

Review of historical monitoring data since 1992 indicates that 952 C (1745 F) can be maintained on a routine basis with no excursions. The historical monitoring data for temperature indicate that normal loading to the thermal oxidizer will result in chamber temperatures greater than 952 C (1745 F). Typical operating range for temperature has been 1050-1150 C.

Performance tests confirm acceptable performance of the thermal oxidizer; the thermal oxidizer achieved the required DRE of 99.99 percent. During the performance test, the thermal oxidizer was operating with a temperature of at least 952 C (1745 F), (in the range of 980 to 1200 C). The higher temperatures during the performance test occurred because the facility was operated near the maximum process vent and liquid feed rate with higher VOC loadings to challenge the thermal oxidizer with maximum VOC loading. During the performance tests the thermal oxidizer demonstrated DRE of at 99.99% or greater at temperatures close to 952 C.

The most recent performance tests of the thermal oxidizer (HAF unit) were conducted in 2014. During the performance tests, the chamber temperature was measured continuously and recorded as an hourly rolling average. The facility's operating permit requires 99.99 percent DRE from the thermal oxidizer. During the performance tests, the thermal oxidizer achieved a DRE of greater than 99.99 percent for chemicals and all runs.

NOTE 1: Submittal of proposed data availability is optional.

A.1a. THERMAL OXIDIZERS (Halogen Acid Furnace) FOR POC AND HAPS CONTROL  
S-389 (Symtet Halogen Acid Furnace (ST HAF))  
COMPLIANCE ASSURANCE MONITORING PLAN

I. Background

A. Emissions Unit

Description:	Manufacturing Services: S-151, S-633; Dowicil: S-302, S-303, S-322, S-631; Symtet: S-446
Identification:	Stack No. P-1, P-8
Stack designation:	Thermal oxidizer (HAF)
APC Plant ID No.	S-389
Facility:	Dow Chemical Pittsburg, CA, USA

B. Applicable Regulation, Emission Limit, and Monitoring Requirements

Regulation No.:	Permit
Regulated pollutants (PSEU):	POC, Carbon Tetrachloride, Perchloroethylene, Methylene Chloride, Hexachloroethane
Emission limit:	99.99 percent destruction and removal efficiency (DRE)
Monitoring requirements in permit:	Continuously monitor chamber temperature

C. Control Technology: Thermal oxidizer

II. Monitoring Approach

The key elements of the monitoring approach, including the indicators to be monitored, indicator ranges, and performance criteria are presented in Table A.1a-1. Listed indicator is monitored continuously as an hourly rolling average (HRA) and recorded at least once every 15 minutes.

III. Data Availability [NOTE 1]

The minimum data availability for each semiannual reporting period, defined as the number of hours for which monitoring data are available divided by the number of hours during which the process operated (times 100) will be:

Chamber temperature:	90 percent
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TABLE A.1a-1. MONITORING APPROACH	Indicator No. 1
I. Indicator	Chamber temperature
Measurement Approach	The chamber temperature is monitored with a thermocouple, type R.
II. Indicator Range	Greater than 1000 C (1830 F) at all times that halogenated liquids and/or organic gases are being processed.
QIP Threshold	Based on BAAQMD review of semi-annual reports, QIP thresholds may be assigned by BAAQMD if needed.
III. Performance Criteria	The thermocouple sensor is installed in the incinerator chamber as an integral part of the thermal oxidizer design. The sensor measures temperatures from 0 to 1600 C. The standard tolerance is $\pm 4$ C.
A. Data Representativeness	The recorder range is 0 to 1600 C.
B. Verification of Operational Status	Not Applicable
C. QA/QC Practices and Criteria	Accuracy of the thermocouple will be verified either by ice and hot oil bath, or replacement with a new thermocouple. This validation will be conducted at least once annually. The acceptance criterion is $\pm 4$ C for the ice and hot oil bath calibration.
D. Monitoring Frequency and Data Collection Procedure	The chamber temperature is measured continuously as an hourly rolling average using a thermocouple, and recorded at least once every 15 minutes.
	15-second measurements are used to generate one-minute averages and the one-minute average data are used to generate hourly rolling averages.

### MONITORING APPROACH JUSTIFICATION

#### I. Background

The Dow Chemical Company (Dow) owns and operates a chemical manufacturing facility located at 901 Loveridge Road in Pittsburg, California. Dow currently manufactures agricultural products and intermediates, Dowicil<sup>®</sup> antimicrobials for use in paints and cosmetics, and hydrochloric acid. The equipment utilized at the site includes reactors, storage tanks, combustion devices, loading and unloading facilities, pumps, valves, and flanges. Emissions from most of the

equipment are collected and controlled using abatement equipment such as vapor recovery systems, scrubbers, absorbers or thermal destruction devices. Emissions from Manufacturing Services, Symtet and Dowicil<sup>®</sup>, as well as other emissions sources, are vented to a thermal oxidizer (halogen acid furnace).

Manufacturing Services emissions sources include water treatment systems, a carbon tetrachloride purification system, and tanks. Emitted criteria pollutants include PM and POC. Emitted HAPs include carbon tetrachloride, hydrochloric acid, and perchloroethylene.

Symtet is an intermediate chlorinated compound used in the production of agricultural chemicals. Emitted criteria pollutants include POC. Emitted HAPs include carbon tetrachloride, hexachloroethane, and perchloroethylene.

Dowicil<sup>®</sup> is a solid (powder) preservative and antimicrobial used in hand lotions and other products, produced by reaction of a solid amine and dichloropropene in methylene chloride. There are no byproducts from this reaction. Methylene chloride is the primary compound emitted from the Dowicil<sup>®</sup> plant.

## II. Rationale for Selection of Performance Indicators

The incinerator chamber temperature was selected because it is indicative of the thermal destruction and removal efficiency (DRE) in thermal oxidizer (halogen acid furnace). If the chamber temperature decreases significantly, complete combustion may not occur. The combustion chamber temperature is the primary indicator of compliant operation in combustion units such as a halogen acid furnace (thermal oxidizer).

It has been shown that the control efficiency achieved by a thermal oxidizer (halogen acid furnace) is a function of its operating temperature, or combustion outlet temperature. By maintaining the operating temperature at or above a minimum, destruction removal efficiency at least 99.99% is expected to be achieved.

## III. Rationale for Selection of Indicator Ranges

For combustion chamber temperature, the selected indicator range is “greater than or equal to 1000 C (1830 F) at all times.” For S-389 Thermal Oxidizer, an excursion is the same as an exceedance; defined as any monitored combustion chamber temperature below 1000 C (1830 F) while the unit is processing liquid and/or organic gas feed streams. When the combustion chamber temperature approaches the 1000 C (1830 F), an alarm is activated and corrective action initiated. The process computer is programmed to evaluate the occurrence to determine the action required to correct the situation and make the required changes to keep the unit in compliance. If the temperature drops below 1000 C (1830 F), all liquid and organic gas feeds to the combustion chamber are shut off.

All exceedances/excursions will be documented and reported in the semi-annual report. Based on BAAQMD review of the semi-annual reports, QIP thresholds may be assigned by BAAQMD if needed.



The air pollution control permits issued by the Bay Area Air Quality Management District (BAAQMD) specifies that the thermal oxidizer must operate with a minimum combustion chamber temperature of 1000 C (1830 F) when processing gaseous vents or liquid waste. A thermal oxidizer is expected to achieve 99.99 percent or greater DRE at this temperature. The permit requirement is 99.99 percent DRE. The thermal oxidizer employs a temperature controller that maintains the desired chamber temperature by using natural gas as a supplemental fuel; the temperature controller is set to maintain a temperature of at least 1000 C (1830 F).

Review of historical monitoring data since 1992 indicates that 1000 C (1830 F) can be maintained on a routine basis with no excursions. The historical monitoring data for temperature indicate that normal loading to the thermal oxidizer will result in chamber temperatures greater than 1000 C (1830 F). Typical operating range for temperature has been 1100-1250 C.

Performance tests confirm acceptable performance of the thermal oxidizer; the thermal oxidizer achieved the required DRE of 99.99 percent. During the performance test, the thermal oxidizer was operating with a temperature of at least 1000 C (1830 F), (in the range of 1012 to 1321 C). The higher temperatures during the performance test occurred because the facility was operated near the maximum process vent and liquid feed rate with higher VOC loadings to challenge the thermal oxidizer with maximum VOC loading. During the performance tests the thermal oxidizer demonstrated DRE of at 99.99% or greater at temperatures close to 1000 C.

The most recent performance tests of the thermal oxidizer (HAF unit) were conducted in 2014. During the performance tests, the chamber temperature was measured continuously and recorded as an hourly rolling average. The facility's operating permit requires 99.99 percent DRE from the thermal oxidizer. During the performance tests, the thermal oxidizer achieved a DRE of greater than 99.99 percent for chemicals and all runs.

NOTE 1: Submittal of proposed data availability is optional.

A.1a. THERMAL OXIDIZER FOR HAP CONTROL  
A-400 (S-400) Thermal Oxidizer, R-901  
COMPLIANCE ASSURANCE MONITORING PLAN

I. Background

A. Emissions Unit

Description:	Chlorinolysis: S-504 & S-505
Identification:	Stack No. P-164
Stack designation:	Thermal oxidizer
APC Plant ID No.	A-400 (S-400)
Facility:	Dow Chemical Pittsburg, CA, USA

B. Applicable Regulation, Emission Limit, and Monitoring Requirements

Regulation No.:	Permit
Regulated pollutants (PSEU):	Chloroform
Emission limit:	64 percent destruction and removal efficiency (DRE)
Monitoring requirements in permit:	Continuously monitor chamber temperature

C. Control Technology: Thermal oxidizer

II. Monitoring Approach

The key elements of the monitoring approach, including the indicators to be monitored, indicator ranges, and performance criteria are presented in Table A.1a-1. Listed indicator is monitored continuously and recorded at least once every 15 minutes.

III. Data Availability [NOTE 1]

The minimum data availability for each semiannual reporting period, defined as the number of hours for which monitoring data are available divided by the number of hours during which the process operated (times 100) will be:

Chamber temperature:	90 percent
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TABLE A.1a-1. MONITORING APPROACH	Indicator No. 1
I. Indicator	Chamber temperature
Measurement Approach	The chamber temperature is monitored with a thermocouple, type K.
II. Indicator Range	Greater than 800 C (1472 F) at all times that organic gases are being processed.
QIP Threshold	Based on BAAQMD review of semi-annual reports, QIP thresholds may be assigned by BAAQMD if needed.
III. Performance Criteria	The thermocouple sensor is installed in the incinerator chamber as an integral part of the thermal oxidizer design. The sensor measures temperatures from 0 to 1200 C. The standard tolerance is $\pm 9$ C. The recorder range is 0 to 1200 C.
A. Data Representativeness	
B. Verification of Operational Status	Not Applicable
C. QA/QC Practices and Criteria	Accuracy of the thermocouple will be verified either by ice and hot oil bath, or replacement with a new thermocouple. This validation will be conducted at least once annually. The acceptance criterion is $\pm 9$ C for the ice and hot oil bath calibration.
D. Monitoring Frequency and Data Collection Procedure	The chamber temperature is measured continuously using a thermocouple, and recorded at least once every 15 minutes.

### MONITORING APPROACH JUSTIFICATION

#### I. Background

The Dow Chemical Company (Dow) owns and operates a chemical manufacturing facility located at 901 Loveridge Road in Pittsburg, California. Dow currently manufactures agricultural products and intermediates, Dowicil<sup>®</sup> antimicrobials for use in paints and cosmetics, and hydrochloric acid. The equipment utilized at the site includes reactors, storage tanks, combustion devices, loading and unloading facilities, pumps, valves, and flanges. Emissions from most of the equipment are collected and controlled using abatement equipment such as vapor recovery systems, scrubbers, absorbers or thermal destruction devices. Emissions from Chlorinolysis, are vented to a thermal oxidizer (R-901).

Emitted criteria pollutants emitted include carbon monoxide (CO) and chloroform.

## II. Rationale for Selection of Performance Indicators

The incinerator chamber temperature was selected because it is indicative of the thermal destruction and removal efficiency (DRE) in a thermal oxidizer. If the chamber temperature decreases significantly, complete combustion may not occur. The combustion chamber temperature is the primary indicator of compliant operation in combustion units such as a thermal oxidizer.

It has been shown that the control efficiency achieved by a thermal oxidizer is a function of its operating temperature, or combustion outlet temperature. By maintaining the operating temperature at or above a minimum, destruction removal efficiency at least 64% is expected to be achieved.

## III. Rationale for Selection of Indicator Ranges

For combustion chamber temperature, the selected indicator range is greater than or equal to 800 C (1472 F) at all times, except during “Allowable Temperature Excursions” as defined in District PTO Condition 2213 Part 10. An allowable temperature excursion is one of the following:

1. A temperature excursion no exceeding 20 degrees F; or
2. A temperature excursion for a period or periods which when combined are less than or equal to 15 minutes in any hour; or
3. A temperature excursion for a period or periods which when combined are more than 15 minutes in an hour, provided that all three of the following criteria are met.
  - a. The excursion does not exceed 50 degrees F;
  - b. The duration of the excursion does not exceed 24 hours; and
  - c. The total number of such excursions does not exceed 12 per calendar year or any consecutive 12 month period. Two or more excursions greater than 15 minutes in duration occurring in the same 24-hour period shall be counted as one excursion toward the 12 excursion limit.
4. A temperature excursion refers only to temperatures below the limit.

All excursions will be documented and reported in the semi-annual report. Based on BAAQMD review of the semi-annual reports, QIP thresholds may be assigned by BAAQMD if needed.

The air pollution control permits issued by the Bay Area Air Quality Management District (BAAQMD) specifies that A-400 thermal oxidizer must operate with a minimum combustion chamber temperature of 800 C (1472 F) when organic gases are being processed. The thermal oxidizer is expected to achieve 64 percent or greater DRE at this temperature. The permit requirement is 64 percent DRE. The thermal oxidizer employs a temperature controller that maintains the desired chamber temperature by using natural gas as fuel; the temperature controller is set to maintain a temperature of at least 800 C (1472 F).

Review of historical monitoring data indicates that 800 C (1472 F) can be maintained on a routine basis with no excursions. The historical monitoring data for temperature indicate that normal loading to the thermal oxidizer will result in chamber temperatures greater than 800 C (1472 F). Typical operating range for temperature has been >800-900 C.

NOTE 1: Submittal of proposed data availability is optional.

**APPENDIX E**  
**ENGINEERING EVALUATIONS**

# Engineering Evaluation Report

Dow Chemical Company, P#31

901 Loveridge Road, Pittsburg

Application #14456

## Background

Dow Chemical has applied to modify the existing Methyl Ester Intermediate (MEI) Plant to increase the production capacity, as well as to modernize the equipment. The MEI Plant, also known as Plant 640, produces an organic intermediate. This intermediate is further processed in Europe to produce Fluroxypyr, which is a broad-leaf weed herbicide registered under the name Starane<sup>®</sup>. Starane<sup>®</sup> is used to protect crops like wheat, barley, rye, corn, sugar cane, citrus, and onions, and is also used extensively in forestry management.

Plant 640 was permitted as a batch operation under Application 4128, submitted to the District in 1989. The application was revised in March, 1990 and the Authority to Construct was issued in November, 1990. The plant started up operation in mid-1992 and currently produces approximately of MEI per year. The MEI Plant consists of reactors, storage tanks, distillation columns, centrifuges, pumps, and associated piping. Dow elected to have the plant permitted as 4 sources, S-593, S-594, S-595, and S-596, (Plant 640, Sections 1 through 4) with each of the process units attributed to a source based on the manner in which the emissions are abated. The MEI operations are abated at one or more of the scrubbers A-146, A-147, A-148, and A-149 prior to venting to the atmosphere through stack P-242 or P-243. The plant produces MEI through a series of halogen exchange reactions and separation/purification steps. The reactants to the process include a fully halogenated heterocycle, potassium fluoride, aqueous ammonia, potassium hydroxide, and methyl chloroacetate with n-methyl pyrrolidone. Emissions resulting from this operation include water, nitrogen, ammonia, methyl chloride, methyl chloroacetate, n-methyl pyrrolidone, methanol, and other organic toxic air contaminants.

The proposed modifications to Plant 640 are planned to occur in 2 phases. Construction of the first phase is targeted to begin in early 2007, expected to be completed by the end of 2007, and will increase the MEI production capacity to approximately per year. The increase in capacity will be achieved by reducing batch times. The second phase of construction is expected to commence in early 2008 and would immediately follow or overlap the first phase, ultimately bringing the MEI production rates to approximately per year. These modifications will convert certain unit operations in S-594 and S-596 of Plant 640 from batch mode to continuous operation. None of the proposed modifications in Phase I or Phase II of the project will alter the basic chemistry of the existing process or the type of emissions generated.

To offset the increase in emissions caused by the proposed increase in production capacity, Dow has also proposed to abate the scrubbed emissions at one of the halogen acid furnaces (HAF), S-366 and S-389. This is a significant control improvement since the HAF units, subject to the federal Boiler and Industrial Furnace requirements, are tightly regulated and required to meet a very high destruction efficiency of 99.99% by weight, minimum. If both of the HAF units are unavailable for vent control, the emissions from the MEI Plant will be vented to a new backup activated carbon system. The net effect of the proposed project will therefore be an overall reduction in emissions.

The proposed modifications will affect exempt sources at the facility and the following permitted sources:  
**S-593, Plant 640, Section 1, abated by A-146, Packed Bed NMP Scrubber B-3000 and A-147, Packed Bed Water Scrubber B-3210, in series**  
**S-594, Plant 640, Section 2, abated by A-147, Packed Bed Water Scrubber B-3210**  
**S-595, Plant 640, Section 3, abated by A-149, Packed Bed Water Scrubber B-1303; to also be abated by A-147 under this project**

**S-596, Plant 640, Section 4, abated by A-148, Packed Bed Water Scrubber B-3200/B-3201 and A-147, Packed Bed Water Scrubber B-3210, in series**

**S-604, Truck Loading Facility, abated by A-147, Packed Bed Scrubber B-3210**

**S-607, Storage Tank T-1904, abated by A-147, Packed Bed Scrubber B-3210**

*The following exempt sources will also be affected by the proposed project. The project will not change their exempt status. They have been listed only for informational purposes:*

**S-188, T-641 Storage Tank, exempt**

**S-192, T-646A Material Handling, exempt**

**S-193, T-646B Material Handling, exempt**

**S-606, Storage Tank T-602 Plant 640, exempt**

The proposed modifications include routing the MEI Plant emissions to one of the existing halogen acid furnaces, if available, prior to release to the atmosphere. If neither of the halogen acid furnaces is available for abatement, the MEI Plant emissions will be abated at a new backup Carbon Adsorber prior to venting to the atmosphere:

**S-336, Manufacturing Services HAF**

**S-389, Sym-Tet HAF**

**A-205, Backup Carbon Adsorber ME-3220**

### Process Description

The reactants to the MEI production process include a fully halogenated heterocycle (FHC), potassium fluoride (KF), aqueous ammonia (NH<sub>3</sub>), aqueous potassium hydroxide (KOH), and methyl chloroacetate (MCA). is used as a in the reaction. The reaction involves a series of halogen exchange reactions to replace chlorine atoms on the FHC with fluorine atoms, and in the final process step to add an amine molecule through a reaction with ammonia. The reaction produces a methyl ester intermediate (MEI), as well as a byproduct, a pyridine tar waste, and a wastewater stream contaminated with organic material (mostly methanol), all shipped offsite. Emissions include water, nitrogen, ammonia, methyl chloride, MCA, NMP, methanol, and other organic toxic air contaminants. Nitrogen is pulled into vessels at the MEI Plant during the emptying of a batch to minimize vacuum and is emitted during when the vessels are filled for the next batch.

**S-593, Plant 640 Section 1 abated by A-146, Packed Bed NMP Scrubber B-3000 and A-147, Packed Bed Water Scrubber B-3210, in series**

Unit Type	Process Unit ID	Description	Exempt?	Status
Reactors				
Columns				(i) *
Centrifuges			Y - §2-1-103.3	Replacing Replacing
Tanks				* *



Unit Type	Process Unit ID	Description	Exempt?	Status
				Replacing
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	Replacing
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	New
			Y - §2-1-123.3.2	New
			Y - §2-1-123.3.2	
			Y - §2-1-123.3.2	
			<u>Y - §2-1-123.3.2</u>	New
			<u>Y - §2-1-123.3.2</u>	
			Y - §2-1-123.3.2	

\*Units temporarily out of service; may be put back into service in the future.

Section 1 operations are categorized together as they all vent to A-146, a Packed Bed NMP Scrubber, and are then vented to A-147, a Packed Bed Water Scrubber, prior to release to the atmosphere. The operations in this section are (1) , (2) and (3) .

1.

2.

The proposed modifications to the include replacement of

is a new exempt tank proposed for installation under this project, which will act as a

will be stored in a new exempt tank

Replacing the existing exempt tank, with a larger exempt tank is proposed under this project.

where it is loaded into rail cars at S-5 for offsite delivery. The aqueous can also be loaded directly from to the terminal loading station, but is not normally loaded in this manner.

Installation of a new exempt storage tank, is proposed

3.

Dow has proposed replacement of with a under this project.

new exempt tank, Installation of a is proposed.

and transferred offsite for delivery to Europe for the final processing step and formulation.

***Emissions from this section, S-593, consist of organic compounds and are abated in series by A-146 (B-3000), followed by A-147 (B-3210). A-146 is a counter-current packed bed column in which process vapors are contacted with NMP scrubbing fluid. Organics are transferred from the vent stream into the NMP. Periodically, the NMP is recycled back into the NMP Recovery process. The gases leaving A-146 are vented to A-147 for further treatment. Both abatement devices will remain unchanged from the existing configuration.***

**S-594, Plant 640 Section 2, abated by A-147, Packed Bed Water Scrubber B-3210**

Unit Type	Process Unit ID	Description	Exempt?	Status
Reactors				
Columns				New Modified
Tanks				

Unit Type	Process Unit ID	Description	Exempt?	Status
				New
				New
				New
				New Service, prev S-596

**S-606, Storage Tank T-602 Plant 640 (exempt)**

Section 2 operations are grouped together since they all vent directly to A-147, a Packed Bed Water Scrubber B-3210, and will continue to vent to A-147 after modification. Section 2 operations consist primarily of (1) (2) and (3)

1. is processed to separate for recycle, water for recycle, and

The processing includes the steps of

2. *and the low vapor pressure pyridine tar waste is stored at exempt tank and loaded at exempt to be shipped offsite for disposal.*

existing so the Under the new operational mode, the will simply change service from

The separated water will be recycled within the plant, and the recovered

3.

recycled. Water is removed from this process and recycled. The existing system will be converted under this project from batch mode to continuous operation to allow increased operating rates with the same equipment. This conversion will include replacement of the

**S-595, Plant 640 Section 3, abated by A-149, Packed Bed Water Scrubber B-1303; to also be abated by A-147 as part of the proposed MEI plant modifications**

Unit Type	Process Unit ID	Description	Exempt?	Status
Reactors				New
Columns				New
Tanks				New New

All of the operations in Section 3 of Plant 640 vent to the ammonia scrubber A-149 (B-1303). This abatement equipment will not be affected by the proposed modifications to Plant 640. The operations in Section 3 consist of

and some of the water is then distilled out.

will reduce the time in , allowing more batches to be completed each day. This

The emissions from this section consist of volatile organic compounds, like the other sections of Plant 640, but also include ammonia. The R-1250 system will be abated by A-149

Since there is no ammonia in R-1250 at this point, there is no need for continued abatement at A-149. However there is ammonia so the vessel will be abated by A-147 during the portion of a batch.

**S-596, Plant 640 Section 4, abated by A-148, Packed Bed Water Scrubber B-3200/B-3201 and A-147, Packed Bed Water Scrubber B-3210, in series**

Unit Type	Process Unit ID	Description	Exempt?	Status
Reactors				Modified
Columns				Renumbered previously
Tanks				Renumbered previously  Changed Service to S-594

**S-604, Truck Loading Facility Plant 640, abated by A-157, Vapor Balance System**

**S-607, Storage Tank T-1904 Plant 640, abated by A-147, Packed Bed Scrubber B-3210**

All of the operations in Section 4 of Plant 640 vent to the water scrubber A-148 (B-3200/3201). The vent gases from A-148 are for a second stage of scrubbing at A-147. This abatement train will remain unchanged under the proposed Plant 640 modifications. The operations at Section 4 of Plant 640 consist of the [redacted] and the [redacted]

[redacted] the mixture is transferred to [redacted] for storage.

[redacted] removes volatile organic compound (VOC) and toxic air contaminants (TAC), such as [redacted]

This condensed process wastewater is collected in [redacted] and pumped to S-607. The emissions from S-607 are abated by one of the MEI scrubbers, so the emissions from this source are included in the overall emission limit that applies to the combined emissions from the MEI Plant, even though the source is permitted separately. From S-607, the wastewater is loaded into trucks at S-604 and shipped offsite.

The R-280 system will be converted from batch to continuous operation to allow increased processing rates with the same equipment. This will result in a large reduction in vent flows from this unit operation to abatement and will result in reduction of emissions. Other changes include changing the identification number of T-1711 and other equipment currently used with R-280 to T-290; using a currently out-of-service distillation column B-1701 and associated equipment with R-280; renaming B-1701 as B-280; and

changing T-4400 from \_\_\_\_\_, as discussed in the operations of Plant 640, Section 2 above.

**S-336, Manufacturing Services HAF**

**S-389, Sym-Tet HAF**

**A-205, ME-3220 Carbon Adsorber**

Currently, Plant 640 vents to the atmosphere from two emission points – P-242, which follows A-147 and P-243, following A-149. As part of Phase I of the project, Dow has proposed to combine these vent streams and direct the already abated emissions to an additional control device prior to release to the atmosphere. To do so, Dow will install a new vent gas accumulator vessel \_\_\_\_\_ to collect the compressed vent gases from A-147 and A-149. The new accumulation system provides surge capacity and will even out vent flow peaks arising from the numerous batch processing steps in Plant 640, providing a consistent, steady flow to the downstream abatement devices. The system will include a surge vessel, a compressor with cooler to compress the vent gas (reducing the storage volume), a knockout pot to remove condensed water, and controlled venting instrumentation to provide steady outflow. Dow has indicated that this will result in a large reduction in vent flows from this unit operation to abatement and is therefore a reduction in air emissions. However, no credit is being requested for this reduction at this time. The emissions from T-3220 will either be abated at one of the halogen acid furnaces, S-336 or S-389, or if both were unavailable, then the emissions would be abated at the new backup carbon adsorption system A-205 (ME-3220).

**Emission Calculations**

There are 4 types of emissions associated with this project:

- Transport emissions, which include diesel combustion emissions from deliveries to the site and shipment from the site by truck and rail.
- Unloading/loading emissions from the unloading of materials delivered to the site and materials loaded at the site for transport offsite.
- Organic fugitive emissions from components such as valves, pump seals, and flanges.
- Emissions from the final atmospheric vents from the MEI Plant.

**Transport and Loading/Unloading Emissions**

**S-602, Tank Truck Loading Facility Plant 640 (exempt)**

**S-604, Truck Loading Facility Plant 640, abated by A-157, Vapor Balance System**

**S-607, Storage Tank T-1904 Plant 640, abated by A-147, Packed Bed Scrubber B-3210**

As defined in Section 2-1-213, the transport emissions, except for motor vehicle (truck) emissions, are attributed to the loading and unloading racks:

*“ ... In addition, facilities that include cargo loading or unloading from cargo carriers other than motor vehicles shall include the cargo carriers as part of the source which receives or loads the cargo. Accordingly, all emissions from such carriers while operating in the District, or within California Coastal Waters adjacent to the District, shall be included as part of the source emissions.”*

As there will be an increase in the delivery of reactants and offsite transport of the product and other materials, the non-motor vehicle transport emission increases must be reviewed to determine whether any of the transport and loading emission increases should be attributed to the loading or unloading sources.

\_\_\_\_\_ and \_\_\_\_\_ are delivered to the site by truck and unloaded at S-602 into \_\_\_\_\_ at S-595 and \_\_\_\_\_ at S-596, respectively. These tanks are vapor balanced back to the MEI process and vent gases are treated at the MEI abatement systems. The truck transport emissions are not included in the emission inventory per Section 2-1-213 above, therefore no emission increase is charged to the proposed project for transport of these reactants.

The \_\_\_\_\_ is delivered to the MEI Plant by pipeline from another production process onsite. The material is stored at the originating plant until needed at the MEI process, so storage capacity for this material will not change. In addition, production of this material will not change even though MEI production capacity will increase. The material that is not currently utilized for MEI production is shipped offsite for further processing. The proposed MEI modifications will allow more of the heterocycle to be processed onsite. The proposed modifications therefore do not cause any change to the process that produces the \_\_\_\_\_ onsite (and no additional shipments of reactants to that process) and result in a reduction of offsite \_\_\_\_\_ shipments. Therefore, there is no increase in transport emissions associated with increased onsite use of the \_\_\_\_\_.

The reactants \_\_\_\_\_ are delivered to the facility via railcar, with occasional truck receipts in the event of rail interruptions. The materials are unloaded from railcars (or trucks) at S-603.

\_\_\_\_\_ is delivered by pipeline to the exempt storage tank, \_\_\_\_\_ at S-593 for use in the MEI process. The \_\_\_\_\_ is delivered to the exempt storage tank, \_\_\_\_\_ for use in the MEI process. \_\_\_\_\_ is transferred to exempt storage tank \_\_\_\_\_ at S-593 for use in the MEI process. All tanks are vapor balanced back to the MEI process and vent gases are treated at the MEI abatement systems. All of these compounds are exempt materials per Sections 2-1-123.2 (contain less than 1% VOC by weight) or 2-1-123.3.2 (high boiling point compound), therefore the unloading, handling, and storage of these materials do not require District permits. Emissions from exempt operations are not included in the plant emission inventory. Therefore, there is no increase in emissions charged to the proposed project for the transport of these exempt materials.

Regarding emissions caused by loading and transport of the product, byproduct, and waste materials for offsite shipment, the pyridine tar waste and byproduct are exempt materials per Section 2-1-123.2 (contain less than 1% VOC by weight). The exempt tar waste and process wastewater are loaded into trucks at S-602 and S-604, respectively. The exempt byproduct is loaded into railcars at S-5. The product MEI is a non-volatile solid and does not result in emissions, therefore the loading of this material is also not subject to District permit requirements. As discussed above, the emissions associated with exempt operations are not included in the plant emission inventory. The emission increases from the transport of process wastewater by trucks (motor vehicles) is excluded from the emission inventory per Section 2-1-213. The process wastewater is not an exempt material, however the emissions from storage of this material are vented to the MEI Plant abatement system and emitted through the MEI process vents, and are therefore included in the current emission limit for the plant. The loading operation is vapor balanced back to the storage tank, so these emissions are also abated by the MEI Plant abatement system and included in the MEI vents. The existing emission limit that applies to the MEI vents has been fully offset and is not being increased under this project, so there is no emission increase to be assessed for storage of additional process wastewater. Fugitive leaks from the loading operation have been deemed negligible since Kamvalok quick connect couplings are used in conjunction with the vapor balance system.

Dow has also indicated that the proposed project will not require any increases in storage capacity for reactants, raw materials, or byproducts. Additional shipments of materials will be required, however no additional train deliveries will be made. The additional material delivered or removed from the site by rail will occur through use of additional railcars to the existing shipments. As all truck transport emissions are excluded from the emission inventory and any increases in railcar shipments occur due to materials exempt from District permit requirements, no emission increases from transport or loading have been assessed for the proposed MEI project.

### **MEI Plant Fugitive Leaks**

Fugitive emissions occur due to leaks at components such as valves, connectors, pumps, compressors, pressure relief devices, sampling ports, etc. The fugitive emission rate calculated for the existing MEI Plant under Application #4128 was 20.2 pounds of POC/day and 0.35 pounds of ammonia/day, based on the SOCFI “non-leaker” emission factors. The non-leaker factors are appropriate for use and are

conservative emission estimates due to the virtual absence of leaks detected in their ongoing fugitive emission monitoring program and due to the fact that the facility employs fugitive emission controls such as magnetic drive sealess pumps and/or double mechanical seal pumps, rupture disks or O-rings on pressure relief valves.

The increase in fugitive leak emissions from this modification have been calculated based on the measured average fugitive leak rate data from the existing monitoring program for the MEI Plant and the estimated increase in the number of components in organic service

. The estimated number of components has been provided by Dow from the planned piping and instrument diagrams, and increased by 20% for a worst-case estimate. The increase in fugitive emissions associated with the proposed project is 37 lbs of POC/year. A final component count will be provided after construction to confirm the fugitive emissions will not exceed 3.7 tons per year (the sum of the fugitive emissions charged to the existing plant components and the fugitive emissions from the proposed modifications).

### **MEI Plant Process Vents – Emissions to the Atmosphere**

Currently, the MEI Plant vents to the atmosphere through two emission points – stack P-242, which follows A-147 and stack P-243, which follows A-149. The emissions from this process were originally assessed based on a maximum processing rate of \_\_\_\_\_, using process modeling software, mass balance, and operating experience from a similar production plant located overseas. After startup, actual emissions were measured during source testing performed in 1994 and demonstrated compliance with the existing process vent emission limit of 8 lbs/day as well as the additional ammonia and pyridine limits. The emission factors used to assess emissions from this proposed project were developed from the 1994 source test data. Since the proposed project will not change the basic chemical processes that occur in the process, the source test data is still appropriate for evaluation of post-project emissions. The project modifications will only reduce batch times (Phase I) and eventually convert the certain unit operations to continuous mode (Phase II). As the basic reactions in the process will not change, the types of emissions and proportions of emission rates will remain the same. The modification may actually reduce emissions due to the lower vent flows from process vessels associated with a continuous process (steady state).

The vent emissions from A-147 were measured at P-242 during operation of the MEI Plant on 4 different days in February 1994. The source test for A-147/P-242 included sampling for specific organic compounds and identified several unexpected compounds which were determined to be present as impurities in the raw materials used in MEI production. The emissions from A-147/P-242 were found to include methyl chloride and similar compounds, 4-amino-3,5-dichloro-2,6 difluoropyridine, and ammonia, as expected, as well as unexpected chloroform, trichloroethylene and similar compounds, and 1,1,1,2-tetrachloroethane (TCE). The highest emissions from these test dates have been converted to a mass emission factor per pound of product produced, except for the compounds which are produced and emitted due to the \_\_\_\_\_ contamination of \_\_\_\_\_, one of the reactants. For those contaminant-based compounds, the emission factor has been calculated as pounds per pound of contaminant, \_\_\_\_\_, and reduced to 40% of the values measured during the source test to account for the reduced contaminant levels. At the time of the 1994 testing, the specification for \_\_\_\_\_ allowed up to 0.5% by weight. To reduce emissions created from this contaminant, Dow has tightened the \_\_\_\_\_ specifications to allow no more than 0.2% \_\_\_\_\_ by weight. Therefore, the emissions caused by \_\_\_\_\_ contamination have been reduced to  $0.002/0.005 = 40\%$  of the emissions measured in 1994.

The vent emissions from A-149 were measured at P-243 on 3 different days in February and March 1994 and detected emissions of methyl chloride and similar compounds, 4-amino-3,5-dichloro-2,6 difluoropyridine, and ammonia, as well as tetrachloroethylene and similar compounds, and carbon tetrachloride. The emissions measured during source testing for the A-149 vent stream have been converted to a mass emission factor per batch, as these emissions occur from S-595 during the batch reaction at this source.



**Post-project Emissions Exiting A-147**

Compound	EF (lbs/lbs MEI)	EF (lbs/lbs TCE)	MEI (lbs/day)	TCE (lbs/day)	Emissions (lbs/day)
Total POC					11.444
Ammonia					0.0056

**Post-project Emissions Exiting A-149**

Compound	EF (lbs/batch)	Production (batches/day)	Emissions (lbs/day)
Total POC			1.859
Ammonia			0.00025

**Post-project Emissions in Combined Vent from A-147 & A-149**

Compound	A-147 (lbs/day)	A-149 (lbs/day)	Combined Emissions (lbs/day)
Total POC	11.444	1.859	13.303
Ammonia	0.0056	0.00025	0.00585

Dow has proposed to collect, compress, and store the vent gases from the existing A-147 and A-149 at a new surge vessel, T-3220. The gases from the surge vessel will be abated at the average rate of influent vent gas flowrate. The primary abatement will be at one of the thermal oxidizers/halogen acid furnaces, S-336 or S-389. If both are unavailable, then abatement will occur at the new backup carbon adsorption system A-205 (ME-3220).

The HAF units are subject to the Resource Conservation and Recovery Act (RCRA) Boiler and Industrial Furnace (BIF) Rule, 40 CFR Part 266, Subpart H, administered by the Department of Toxic Substance Control. Under this regulation, the HAF units are required to meet a very high destruction efficiency of 99.99% by weight, minimum, for halogenated organic compounds. Certifications of compliance with this standard are required every 3 years, and the minimum destruction efficiency is confirmed through BIF trial burns.

The proposed increase in MEI production capacity will result in increased vent gas volumes, but the proposed abatement at either the thermal oxidizers or carbon adsorber will reduce the emissions. The HAF units will further reduce the MEI vent POC emissions by 99.99% over the current abatement achieved at the MEI scrubbers. The backup carbon adsorber is expected to achieve a 99% reduction with

fresh carbon and a minimum of 90% by weight, just before the carbon is changed out. Use of the backup carbon adsorber is expected to occur no more than 1,440 hours (60 days) per year, during the annual maintenance shutdowns of the HAF units and when liquids are being combusted at S-336. Worst-case POC emissions have based on a minimum 90% abatement efficiency for 60 days per year and the minimum 99.99% abatement efficiency for the remainder of the year:

Abated Post-project POC Emissions from MEI Plant  
 $13.303 \text{ lbs/day}[(1-90/100)(60 \text{ days/yr}) + (1-99.99/100)(305 \text{ days/yr})] = 80.2 \text{ lbs/yr}$

The emissions from the MEI Plant after the proposed expansion and modifications have been summarized below. The fugitive emissions are unabated. The vent emissions have been credited with the lowest proposed abatement efficiency 90% for the A-205 carbon adsorption unit, which will only occur just before carbon changeout, for a maximum of 60 days/year. Actual expected emissions from the plant when abated at A-205 are expected to be much lower as the carbon efficiency will range between 99% and 90%. For the remainder of the year, an abatement efficiency of 99.99% has been used in the calculation of abated vent emissions.

**Post-project Abated Emissions from the MEI Plant**

Pollutant	Annual Emissions, lb/yr	Annual Emissions, tpy	Average Daily Emissions, lb/day
Fugitive emissions, POC	7410	3.705	20.3
Process Vent emissions, POC	80.2	0.0401	0.22
<b>Total POC</b>	<b>7490.2</b>	<b>3.745</b>	<b>20.52</b>

The MEI Plant process vents are currently permitted to emit 8 lbs POC/day (for 365 days/year), and the combined process vent and fugitive emissions of 5.146 tons of POC/year were fully offset when the MEI Plant was initially permitted. Therefore, the post-project emissions summarized above do not constitute any increase in criteria pollutant emissions from the MEI Plant.

**Cumulative Increase**

The cumulative increases for all facilities in the District were reset in 1991. All of the POC emissions at Dow have been fully offset either by contemporaneous reductions or through use of banked emission credits. Therefore, Dow’s current cumulative increase for POC emissions is zero. The net affect of the proposed MEI project will be a reduction in emissions, therefore there is no increase to add to the cumulative increase for this facility.

Pollutant	Current, tpy	Project, tpy	New, tpy
POC	0	0	0

**Compliance Determination**

**District Regulation 1, "General Provisions and Definitions"**

District Regulation 1, Section 301 prohibits all sources from causing public nuisance. This source is not expected to be a source of public nuisance for either odor or emissions as the finished product is in a solid, non-volatile form. In addition, the physical construction of the plant modifications will not required groundbreaking and is not expected to cause public nuisance due to this fact and the distance between the facility and the nearest residences.

**Public Notice Requirements, Regulation 2, Rule 1**

The Waters Bill Public Notification requirements, contained in District Regulation 2, Rule 1, Section 412, are triggered for new or modified sources that will cause an increase in toxic air contaminant emissions within 1,000 feet of a K-12 school. Per the Data Form P-101B completed and certified by the applicant, this facility is not located within 1,000 feet of a school. The District’s database confirms that there is no

school within 1 mile of the facility, therefore Waters Bill Public Notification requirements are not triggered.

**California Environmental Quality Act (CEQA) Requirements, Regulation 2, Rule 1**  
*As specified in District Regulation 2, Rule 1, Section 310, applications for all new and modified sources are subject to the requirements of the California Environmental Quality Act (CEQA), unless the project is ministerial or exempt, as defined in Sections 2-1-311 and 2-1-312, respectively. The District's Permit Handbook defines the specific procedures, fixed standards, and objective measurements used in the evaluation of approval or denial of ministerial projects. The MEI Plant is a unique process and not covered by one of the source categories in the District's Permit Handbook, therefore this project is not ministerial. In addition, the proposed MEI Plant modifications do not meet the definitions of exempt projects in Section 2-1-312, since the project includes both physical modification of equipment and will increase the production capacity of the plant.*

This project is therefore subject to review under CEQA. The City of Pittsburg acted as Lead Agency for this review and published an Initial Study on February 28, 2007 with a Notice of Intent to adopt a Negative Declaration for the project. The Negative Declaration indicates that the project will have no significant effect on the environment, as defined by CEQA. This decision considered possible impacts to aesthetics, agricultural, biological, cultural, and mineral resources, geology/soils/seismicity, hazardous materials, water quality, land use, noise, population and public services, transportation and traffic, utilities, and air quality. The findings included no impacts or less than significant impacts in all areas considered.

The City of Pittsburg received one comment letter on the published Initial Study, and the Pittsburg Planning Commission held a public meeting on March 27, 2007 to consider the draft Negative Declaration in connection with its Design Review of the project. The Negative Declaration was reviewed by the Pittsburg Planning Commission on March 27, 2007 and unanimously adopted. The resolution adopting the Negative Declaration was certified and deemed effective on March 27, 2007, indicating that the project will have no significant effect on the environment and satisfying the CEQA requirements.

**Best Available Control Technology (BACT), Emission Offsets, and Prevention of Significant Deterioration (PSD) Requirements, Regulation 2, Rule 2**  
*Per Regulation 2, Rule 2, Section 301, BACT requirements are triggered if maximum emissions from a new or modified source are 10 pounds per highest day or more. Section 2-2-206 specifically excludes cargo carriers from BACT requirements, therefore the rail and truck transport emissions are not subject to BACT. Only the MEI Plant itself is potentially subject to BACT requirements. However, the overall daily and annual emissions from this plant will be reduced as a result of the proposed changes, and the plant has elected to maintain the existing emissions limits at this time. As there is no increase in emissions of regulated air pollutants due to the proposed project and no change to the permitted and offset emissions from the MEI Plant, BACT is not triggered.*

The offset requirements for precursor organic compounds and nitrogen oxides are found in Regulation 2, Rule 2, Section 302. POC and NOx emission offsets are required for emissions from new or modified sources at a facility which emits or will be permitted to emit 10 tons per year or more. All of the POC emissions at Dow have been fully offset. The proposed MEI project will result in a net decrease in actual POC emissions from the affected sources and no change in the permitted emissions from the MEI process, therefore there are no additional POC emissions to be offset. POC offsets are therefore not required. No increase in NOx emissions have been charged to this project as the only NOx emissions would result from transport by motor vehicle or rail transport of exempt materials. The emissions from motor vehicles are excluded from District regulation by Regulation 1-110 and emissions resulting from

handling of exempt materials are exempt from permitting requirements, including offset requirements. Therefore, NOx emission offsets are not required.

*The PM10 and SO2 offset requirements are specified in Section 2-2-303, however there are no increases in PM10 or SO2 emissions due to this project, except due to transport. As discussed above, the transport emissions are excluded from consideration in this project. Therefore, the PM10 and SO2 offset requirements do not apply.*

Prevention of Significant Deterioration (PSD) requirements are defined in Sections 2-2-304 and apply to new major facilities and major modifications at a major facility. There is no increase in emissions associated with this project, therefore it is not a major modification and PSD does not apply.

**Health Risk Assessment Requirements, Regulation 2, Rule 5**

*The District’s regulation concerning toxic air contaminant emissions is codified in Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants. All toxic air contaminant (TAC) emissions from new and modified sources are subject to risk assessment review, if emissions of any individual TAC exceed either the acute or chronic emission thresholds defined in Table 2-5-1.*

*There are 2 sources of emissions due to this project – emissions from the MEI Plant, including both the fugitive emissions from leaks in piping components and the final emission points, and the transport emissions from the trucks and railcars delivering products to and removing products from the facility. The truck transport emissions are specifically excluded from District regulation under Section 1-110.1, Exclusions:*

*“District Regulations shall not apply to the following: Engines used to propel motor vehicles, as defined in the Vehicle Code of the State of California.” and are therefore not subject to Regulation 2, Rule 5. Increases in emissions due to transport of reactants or products by railcar have not been charged to the loading/unloading operation at the site, as the materials being transported by railcar are exempt from District permit requirements (see the discussion in the Emission Calculations section above).*

*The actual TAC emissions from the MEI Plant (including ammonia, chloroform, trichloroethylene, tetrachloroethane, carbon tetrachloride) will be reduced by the proposed project to the levels indicated in the table below, which are less than the levels currently emitted and allowed by the existing permit. The abated emissions have been calculated based on 90% reduction of organics at the carbon unit for 60 days per year and 99.99% reduction of organic emissions at the HAF units for the remainder of the year. The ammonia emissions have been reduced by 99.99% for the period vented to the HAF units only; the carbon unit achieves no reduction of ammonia.*

**Post-project Reduced Emissions of Existing TACs**

Compound	Combined Emissions from A-147/A-149 (lbs/day)	Abated HAF Emissions (lbs/hour)	Abated C Ads Emissions (lbs/hour)	Fugitive Leak Emissions (lbs/hr)	Abated Emissions (lbs/yr)
Chloroform	0.352	1.47E-6	0.00147	--	2.1
Trichloroethylene	3.696	0.00002	0.0154	--	22.3
TCE	0.343	1.43E-6	0.00143	--	2.1
Carbon tetrachloride	1.652	0.00001	0.00688	--	10
Ammonia	0.00585	2.44E-8	0.000244	0.00006	0.35

*The secondary pollutant, hydrogen chloride, which is also a TAC, is formed due to combustion of chlorinated compounds at the HAF units. The hydrogen chloride (HCl) formed in this combustion is mostly recovered in the absorber and caustic scrubbing systems following the HAF units, S-336 and S-389, which have been demonstrated to achieve 99.98% and 99.99% recovery, respectively. The abated HCl emissions below are based on 99.98% abatement.*

**New Post-project TAC Emissions**

	<b>Emissions from A-147 &amp; A-149 (lbs/day)</b>	<b>Abated Emissions, Average (lbs/hour)</b>	<b>Abated Emissions (lbs/yr)</b>	<b>Acute Trigger Level (lbs/hour)</b>	<b>Chronic Trigger Level (lbs/yr)</b>
Hydrogen Chloride	10.3	0.00009	0.788	4.6	350

*As there is no increase in emissions of the organic TACs listed above nor in ammonia emissions and since the emissions of HCl as a secondary pollutant from the proposed abatement of the MEI vent emissions at the HAF units will be less than the acute and chronic trigger levels in Table 2-5-1 of Regulation 2, Rule 5, this project does not trigger review under Regulation 2, Rule 5.*

*Note that when the initial permit was issued for the MEI Plant in 1990, the permit conditions included a list of toxic air contaminants which were reviewed in the Risk Screening Analysis performed at that time. Part 5 of the condition specifies that if any additional toxic compounds were identified in the source test performed after startup, then a revised Risk Screening Analysis or other information showing that the additional compounds are less toxic than methyl chloroacetate must be submitted. The source test did identify several unexpected TACs which were determined to be present as impurities in the raw materials used in the MEI process. A revised risk analysis was submitted for the additional compounds - chloroform, trichloroethylene, tetrachloroethane, carbon tetrachloride, and perchloroethylene. The analysis showed the additional compounds to be less toxic than methyl chloroacetate for acute effects and the additional risk from these compounds was less 1 in a million for lifetime exposure. This level was at the time and is still currently deemed less than significant, therefore, the additional compounds will be added to the list of reviewed TAC compounds in the permit conditions.*

**Major Facility Review, Regulation 2, Rule 6**

*This facility is a major facility, as it is currently subject to the requirements of 40 CFR Part 70, codified in District Regulation 2, Rule 6. As a major facility, this facility was required to obtain a Title V Federal Operating Permit. The District issued the initial Title V permit to this facility on December 1, 2003. The permit was reopened and reissued on October 28, 2004 and a minor permit revision was issued on October 3, 2005. The proposed MEI Project if approved will constitute a significant revision to the Title V permit, and the revision will be processed under a separate action after action is taken on this application.*

**District Regulation 3, "Fees"**

District Regulation 3 specifies the fees required for applications requesting Authorities to Construct, Permits to Operate, and also the operating permit fees. The applicant has paid the fees required under Regulation 3.

**District Regulation 7, "Odorous Substances"**

District Regulation 7 places limits on odorous substances and compounds. Section 7-303 limits emissions of ammonia to no more than 2500 ppm. Source S-595 is a source of ammonia emissions, however it is abated by the Ammonia Scrubber, A-149, and is currently limited to an ammonia concentration of no

more than 200 ppm. There is no increase in ammonia emissions associated with the proposed project and actual emissions will be reduced, therefore continued compliance with this emission limit is expected.

**District Regulation 8, Rule 1, "Organic Compounds – General Provisions"**

**District Regulation 8, Rule 2, "Organic Compounds – Miscellaneous Operations"**

*District Regulation 8, Rule 2 applies operations which are sources of precursor organic compound emissions and which are not subject to any other rule in Regulation 8. The MEI Plant is currently subject to the emission limitations in Section 8-2-301. However as part of the proposed modifications, Dow will be routing the emissions from the MEI Plant to one of the existing Thermal Oxidizers, S-336 or S-389, operated at this site. If both of the oxidizers are unavailable, the emissions would be routed to a backup Carbon Adsorber, A-205. Due to this proposed abatement, the post-project MEI Plant will no longer be subject to Section 8-2-301 per the exemption in Regulation 8, Rule 1, Section 110.3. This section exempts operations which would otherwise be subject to Regulation 8, Rules 2 or 4, from Regulation 8 if the organic compounds from the operations are reduced by at least 85% by weight and at least 90% by weight if the abatement occurs through incineration.*

The Thermal Oxidizers achieve a minimum abatement efficiency of 99.99% by weight. This efficiency is required by the Boiler and Industrial Furnace (BIF) permits, and the units are tested periodically to demonstrate compliance with this requirement. The backup carbon adsorption system is expected to meet a 99% control efficiency with fresh carbon and will be monitored to ensure a minimum of 90% control. It will consist of a portable carbon unit containing a minimum of 1,800 lbs of carbon up to 5,500 lbs of carbon. Loading calculations have shown that the highest expected organic concentrations, the life of the minimum sized carbon bed is 96 hours. Therefore, after 96 hours of use, daily monitoring will be performed when the carbon unit is used to ensure a minimum of 90% control. The carbon will be changed out at the point that the outlet VOC content reaches 10% of the inlet concentration or at 96 hours of use. As the post-project emissions from the MEI Plant will be abated by 90% by weight or more, the MEI Plant will be exempt from Regulation 8 per Section 8-1-110.3 after the MEI Plant Phase I modifications are complete.

**District Regulation 8, Rule 9, "Organic Compounds – Vacuum Producing Systems"**

**District Regulation 8, Rule 10, "Organic Compounds – Process Vessel Depressurization"**

*District Regulation 8, Rules 9 and 10 regulate precursor organic compounds and organic compounds from vacuum systems and depressurization and opening of process vessels. Both regulations apply to the Dow Pittsburg facility. Rule 8-9 requires that non-condensable precursor organic emissions from vacuum systems must be controlled through incineration or contained and treated in another manner which prevents their emission to the atmosphere. A few of the MEI process units are operated under vacuum and are therefore subject to this rule. The MEI process vents are currently abated by one or more scrubbers, and after implementation of this project, will also be further abated at one of the HAF units or at an additional scrubber. The existing and proposed additional control strategies meet the requirements of this rule.*

*A few of the MEI process vessels are operated under pressure, but the process is not currently subject to Rule 8-10, since Section 114 exempts batch process vessels from the requirements of the rule. After conversion of sections of the MEI Plant to a continuous process in Phase II of the proposed project, Rule 8-10 will apply to these sections, S-594 and S-596. At that time, both the standards regarding depressurization and opening of the process vessels will apply. The requirement in Section 8-10-301 requiring control of organic emissions through incineration or other treatment will be met through the existing and proposed abatement strategies (scrubbers and/or HAF units). Dow is expected to comply with Section 8-10-302, which allows a the maximum concentration limit of 10,000 ppm as methane to be vented to the atmosphere upon opening of a vessel, unless the provisions of Section 8-10-302.2 are met. In*

*addition, the recordkeeping, monitoring, and reporting requirements in Sections 8-10-401, 501, 502, and 503 will apply. Dow is expected to comply with these requirements.*

**District Regulation 8, Rule 18, "Organic Compounds – Equipment Leaks"**

**District Regulation 8, Rule 22, "Organic Compounds – Valves and Flanges at Chemical Plants"**

**District Regulation 8, Rule 28, "Organic Compounds – Episodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants"**

*The Dow facility as a whole is subject to the equipment leak inspection, monitoring, recordkeeping, and reporting requirements in Regulation 8, Rules 18 and 22, and the reporting requirements in Regulation 8, Rule 28. The fugitive emission inspection and monitoring program will continue to apply to the MEI Plant after implementation of the proposed modifications. Continued compliance with this plan and these regulations is expected.*

#### **40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS)**

*District Regulation 10 includes by reference the federal New Source Performance Standards (NSPS), 40 CFR Part 60. There are several New Source Performance Standards that regulate the following:*

- *Volatile Organic Compound Emissions from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes is regulated under Subpart III.*
- *Volatile Organic Compound Emissions from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations is regulated under Subpart NNN.*
- *Volatile Organic Compound Emissions from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes is regulated under Subpart RRR. Subparts III, NNN, and RRR each apply to affected facilities that produce any of the chemicals listed in §60.617, §60.667, and §60.707 respectively, as a product, co-product, by-product, or intermediate. Neither the product MEI or by-product, , are listed in §60.617, §60.667, or §60.707, therefore these subparts do not apply to the MEI Plant. The MEI process is not subject to any of the New Source Performance Standards in 40 CFR Part 60 and is not subject to District Regulation 10.*

#### **40 CFR Part 61, National Emission Standards for Hazardous Air Pollutants (NESHAPs)**

*There is a National Emission Standard for Equipment Leaks, 40 CFR Part 61, Subpart V. This subpart applies to sources intended of operation in volatile hazardous air pollutant (VHAP) service. "In VHAP service" is defined as*

*"... a piece of equipment that either contains or contacts a fluid (liquid or gas) that is at least 10% by weight a volatile hazardous air pollutant as determined according to the provisions of §61.245(d)."*

*Volatile hazardous air pollutant is defined as "a substance regulated under this part for which a standard for equipment leaks of the substance has been proposed and promulgated." Benzene and vinyl chloride are VHAPs. Since the MEI Plant does not process benzene or vinyl chloride, Subpart V does not apply.*

#### **40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories/Maximum Achievable Control Technology (MACT) Standards**



**Subpart A, National Emission Standards for Hazardous Air Pollutants – General Provisions  
Subpart FFFF, National Emission Standards for Hazardous Air Pollutants – Miscellaneous  
Organic Chemical Manufacturing National Emission Standard for Hazardous Air Pollutants  
(MON)**

*This rule was promulgated by EPA on November 10, 2003, and established emission standards for miscellaneous organic chemical manufacturing process units located at major sources of hazardous air pollutants. A miscellaneous organic chemical manufacturing process unit is defined as:*

*“... all equipment which collectively function to produce a product or isolated intermediate that are materials described in §63.2435(b). ...”*

*The materials in §63.2435(b) include:*

- *An organic chemical(s) classified using the 1987 version of SIC code 282, ,283, 284, 285, 286, 287, 289, or 386*
- *An organic chemical(s) classified using the 1997 version of the NAICS code 325*
- *Quaternary ammonium compounds and ammonium sulfate produced with caprolactam*
- *Hydrazine*

*MEI is an organic intermediate which is further processed at another location into an herbicide and the production of MEI falls under SIC Industrial Group 2879, Agricultural Chemicals, Not Elsewhere Classified includes:*

*“Establishments primarily engaged in the formulation and preparation of ready-to-use agricultural and household pest control chemicals, including insecticides, fungicides, and herbicides, from technical chemicals or concentrates; and the production of concentrates which require further processing before use as agricultural pesticides. ...”*

*Therefore since the MEI Plant is used to produce a material classified under SIC code 287 and since the plant processes, uses, or generates one of the organic HAP listed in section 112(b) of the Clean Air Act (methylene chloride and methanol), the MEI Plant is subject to this regulation.*

*EPA extended the compliance deadline for this rule to May 10, 2008. Dow has until this compliance date to formally declare a plan to comply with the requirements of this rule. The compliance plan and specific list of applicable sections will be added to the Title V permit in a separate action after the compliance deadline. With the Title V permit modification for the proposed MEI project, this regulation will be added to the permit as a future effective requirement.*

**40 CFR Part 70, State Operating Permit Programs (Title V)**

*This facility is a major facility, as it is currently subject to the requirements of 40 CFR Part 70. As a major facility, this facility is subject to the federal permit requirements of 40 CFR Part 70. The requirements of this program have been codified in District Regulation 2, Rule 6. See the discussion of Rule 2-6 above.*

**Permit Conditions**

*The existing MEI Plant is subject to Permit Condition #4780. A number of changes have been made to the permit conditions, as indicated below in ~~strikeout~~/underline format. Terms that apply only to sources exempt from District permit requirements have been removed, as exempt sources are not subject to permit requirements and therefore not subject to permit*



*conditions. Review of the original permit for the MEI Plant has confirmed that the existing permit condition limiting daily POC emissions to 8 lbs/day was imposed to ensure that annual emissions from the plant do not exceed level of annual emissions assessed and for which offsets were provided. The basis for these types of conditions is cited as “cumulative increase” as the emissions and emission increases for new or modified permitted sources are added to the cumulative increase for the facility. A daily limit is more stringent than necessary to ensure compliance with an annual emission level, therefore the existing emission limit has been clarified to reflect that the existing emission limit is not a highest day limit, but an average daily limit. The condition text has been updated to the current standard format.*

*In addition, future effective conditions have been added to reflect the addition abatement proposed under this project. A future effective condition has been added to the conditions requiring a source test upon startup of Phase II of the proposed modifications to the MEI Plant and ongoing monthly monitoring of compliance with this limit thereafter. Amendments have been made to the existing abatement requirements to reflect the the proposed additional abatement at one of the HAF units or the backup carbon system. These new abatement requirements will be effective upon startup of Phase I of the proposed modifications. Also, the additional TAC emissions that were reported after initial startup of the MEI plant (see discussion under Health Risk Assessment Requirements above) were added to the list of compounds reviewed per the District’s toxic risk program. A final component count will be required when construction is complete to ensure that the emissions from fugitive leaks do not exceed the assessed levels.*

**Permit Condition #4780**

Applications 4128, 16468, 8894, [14456](#)

**Permit Conditions for Sources:**

S-593, Plant 640, Section 1, ~~including: R-101, R-201, R-1;~~

S-594, Plant 640, Section 2

S-595, Plant 640, Section 3

S-596, Plant 640, Section 4, ~~including: B-1701, R-280;~~

S-604, Truck Loading Facility Plant 640; ~~and~~

~~S-606, T-602 Plant 640 (exempt)~~

S-607, T-1904 Plant 640 ~~and~~

~~S-618, Cooling Tower (exempt)~~

Abated by:

A-146, Packed Bed NMP Scrubber B-3000

A-147, B-3210 Packed Bed Water Scrubber

A-148, Packed Bed Water Scrubber B-3200/B-3201

A-149, B-1303 Packed Bed Water Scrubber:

A-205, ME-3220 Backup Carbon Adsorber

S-336, Manufacturing Services Halogen Acid Furnace

S-389, Sym-Tet Halogen Acid Furnace

1. The owner/operator shall ensure that combined Emissions of precursor organic compounds to the atmosphere from the MEI Plant 640 (S-593, S-594, S-595, and S-596) A-147 Scrubber (P-242) and the A-149 Scrubber (P-243) combined do shall not exceed 8 pounds on any per day, averaged over each calendar month.  
(Basis: Cumulative Increase)

\*2. ~~The owner/operator shall ensure that combined Emissions of 4-amino-3,5 dichloro-2,6 difluoro pyridine to the atmosphere from the MEI Plant 640 A-147 Scrubber (P-242) and the A-149 Scrubber (P-243) combined do~~shall not exceed 0.02 pounds on any day.  
(Basis: TRMP)

\*3. ~~The owner/operator shall ensure that combined Emissions of ammonia to the atmosphere from the MEI Plant 640A-147 Scrubber (P-242) and the A-149 Scrubber (P-243) combined, do~~shall not exceed 0.02 pounds on any day; and ~~that the exhaust concentration does not exceed 200 ppm. the exhaust concentration of ammonia from either P-242 or P-243 shall not exceed 200 ppm at stack exit conditions.~~  
(Basis: TRMP)

4. Deleted.

\*5. If ~~the any~~ source test conducted for this plant identifies the emission of any ~~material compound~~ not identified in the below listing, then the ~~applicant-owner/operator~~ shall submit a either a revised Risk Screening Analysis or sufficient information to indicate that ~~emissions of the new material compound are~~ less ~~toxic~~ than ~~the applicable trigger levels listed in Regulation 2, Rule 5, Table 2-5-1~~Methyl Chloroacetate:

- Methyl Chloroacetate (MCA)
- 4-amino-3,5 dichloro-2,6 difluoro pyridine
- N-Methyl Pyrrolidone (NMP)
- Methyl Chloride
- Methanol
- Ethylene Glycol
- Fully Halogenated Heterocycle (FHC)
- Ammonia
- Potassium Chloride
- Potassium Hydroxide
- Chloroform
- Trichloroethylene
- 1,1,1,2-Tetrachloroethane
- Perchloroethylene
- Carbon Tetrachloride

(Basis: ~~TRMP~~BAAQMD Regulation 2, Rule 5)

6. ~~The owner/operator shall ensure that~~ there ~~shall be~~ no detectable organic emissions from Tank Truck Loading at source S-604. "Detectable emissions" for the purpose of this permit condition is defined as 100 ppm organic as methane measured 1 cm from the source using an FID, OVA, or equivalent monitoring device.  
(Basis: Cumulative Increase, TRMP)

7. Deleted.

8. Deleted.

9. ~~Deleted. The S-618 Cooling Tower shall circulate a maximum of 6200 gpm water and shall not exceed 2500 ppm (wt) Total Dissolved Solids, nor emit more than 1 lb/day (wt) Volatile Organic Compounds as defined in District Reg 1-236. Cooling water shall be~~

~~tested on a monthly basis for the first 6 months of operation, then quarterly afterwards, in order to confirm compliance with this condition.  
(Basis: BAAQMD Regulation 6-301, Cumulative Increase)~~

10. Deleted.

11. ~~The owner/operator shall ensure that~~ total rail car shipments ~~at for the MEI Plant 640 (S-593, S-594, S-595, and S-596) combined shall do~~ not exceed ~~210-330~~ cars per ~~year consecutive 12-month period.~~  
(Basis: Cumulative Increase)

\*12. ~~The owner/operator shall ensure that proposed modification to MEI Plant 640 (S-593, S-594, S-595, and S-596) shall does~~ not ~~result cause in~~ any detectable off-property odors as defined in District Regulation 7. The owner/operator of Plant 640 shall take immediate measures to eliminate any suspected or identified odorous emissions to the satisfaction of the APCO.  
(Basis: BAAQMD Regulation 7-301)

\*13. ~~The owner/operator shall ensure that A~~all materials handled at Tank Truck Loading source S-604 ~~shall not be are not~~ spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation to the atmosphere.  
(Basis: TRMP)

14. ~~The owner/operator shall ensure that the MEI Plant 640 (S-593, S-594, S-595, and S-596) product (herbicide intermediate) shall only be is~~ loaded ~~only~~ in solid form, with sufficient moisture present to prevent visible emissions and odors from occurring at the loading site.  
(Basis: TRMP, Cumulative Increase)

15. Deleted.

16. To demonstrate compliance with these conditions, the owner/operator of S-593, S-594, S-595, S-596, and S-604, and S-618 shall maintain the following appropriate records in order to confirm compliance with Parts #9, 11, and 18:-  
a. The number of railcar shipments received for materials to be used at the MEI Plant 640 and offsite railcar shipments from the MEI Plant 640, totaled each month for the previous 12-month period;  
b. Records indicating whether the emissions from A-147 and A-149 are abated at S-336, S-389, or A-205;  
c. Records of the number of hours that the emissions from A-147 and/or A-149 are vented to A-205, summed each month for the previous 12-month period;  
d. A summary of the hours of A-205 use since last carbon changeout. After 96 hours of use on a carbon bed, record of carbon changeout or daily records of the monitored inlet and outlet organic compound concentrations for A-205 for each day of use until carbon changeout;  
e. Records of all source tests performed to demonstrate compliance with Part 1 and the POC emission factor derived from the source test to be used for compliance calculations until the subsequent source test;  
f. Monthly POC emission calculations to demonstrate compliance with Part 1. These records shall be kept on file for a minimum of five years and shall be made available to District personnel upon request.  
(Basis: Cumulative Increase, ~~BAAQMD Regulation 6-301~~, BAAQMD Regulation 2-6-501)

~~16-17.~~ The owner/operator shall ensure that the A-147 Scrubber (P-242) shall abate S-593, S-594, S-596, S-606, and S-607 at all times each source is operating. , and The owner/operator shall ensure that the A-149 Scrubber (P243) shall abate S-595 at all times S-595 is operating/generating ammonia emissions.

(Basis: Cumulative Increase, ~~BAAQMD Regulation 8, Rule 2)~~

18. To demonstrate compliance with the emission limit in Part 1 ~~and with Regulation 8-2-301,~~ the owner/operator shall perform a District-approved source test to measure the combined POC emissions from A-147 and A-149 no later than 60 days from the startup of the Phase II modifications to the MEI Plant 640 and at least once every 5 years thereafter. The owner/operator shall obtain approval of all source test procedures from the District's Source Test Section prior to conducting any tests and shall notify the Manager of the District's Source Test Section, in writing, of the source test protocols and the projected test dates at least seven (7) days prior to the test, ~~to provide the District staff the option of observing the testing.~~ Within ~~45-60~~ days of test completion, a comprehensive report of the test results shall be submitted to the Manager of the District's Source Test Section for review and disposition.

(Basis: Cumulative Increase, ~~Regulation 8-2-301~~)

19. The following abatement requirements will become effective upon startup of the Phase I modifications to the MEI Plant 640: The owner/operator shall ensure that S-595 is abated by A-147 whenever S-595 is operating and not being abated at A-149. The owner/operator shall ensure that the emissions from A-147 and A-149 are further abated at either S-336 or S-389, unless both units are not operating. If both S-336 and S-389 are unavailable, the emissions from A-147 and A-149 shall be abated at the Backup Carbon Adsorber, A-205.

(Basis: Cumulative Increase)

20. Beginning with the startup source test required by Part 18 above, the owner/operator shall derive a POC emission factor from each source test for use in calculation of POC emissions to the atmosphere from the MEI Plant 640 to demonstrate compliance with Part 1. This emission factor shall be used to calculate POC emissions on a monthly basis until the next source test is performed and a new emission factor is derived. The POC emissions to the atmosphere from the MEI Plant 640 shall be calculated as the combined emissions from A-147 and A-149, reduced by:

a. 99.99% by weight for the periods that the A-147/A-149 vents were directed to S-336 or S-389 or

b. 90% by weight for the periods that the A-147/A-149 vents were directed to A-205.

(Basis: Cumulative Increase)

21. The owner/operator shall ensure than the A-205 Backup Carbon Adsorber is equipped with at least 1800 lbs of activated carbon.

(Basis: BAAQMD Regulation 2-1-301)

22. The owner/operator shall ensure that use of A-205 to abate the emissions from A-147 and A-149 does not exceed 1,440 hours in any consecutive 12-month period.

(Basis: Cumulative Increase)

23. The owner/operator shall ensure than the A-205 Backup Carbon Adsorber reduces inlet POC emissions by at least 90% by weight. Compliance with this abatement efficiency shall be monitored by tracking hours of use of each carbon bed. After 96 hours of use, the owner/operator may either changeout the carbon bed or monitor abatement efficiency each day A-205 is in use by measuring both the inlet and the outlet organic compound

concentrations. The owner/operator must install fresh carbon in A-205 when the outlet organic concentration reaches 10% of the inlet concentration. During the carbon changeout, if S-593, S-594, S-595, or S-596 is operating, the emissions from A-147 and A-149 must be abated at the in-line spare carbon bed or at S-336 or S-389.  
(Basis: Cumulative Increase)

24. The owner/operator shall provide a final valve, flange, pump, and other component count for the modified MEI Plant 640 (S-593, S-594, S596, and S-597) within 45 days of Phase II startup. This submittal shall also include revised fugitive emission calculations for the MEI Plant 640 based on the final component count.  
(Basis: Cumulative Increase)

### **Recommendations**

*I recommend issuing conditional Authorities to Construct to the following sources and abatement devices:*

**S-593, Plant 640, Section 1, abated by A-146, Packed Bed NMP Scrubber B-3000 and A-147, Packed Bed Water Scrubber B-3210, in series**

**S-594, Plant 640, Section 2, abated by A-147, Packed Bed Water Scrubber B-3210**

**S-595, Plant 640, Section 3, abated by A-149, Packed Bed Water Scrubber B-1303; modified to also be abated by A-147, Packed Bed Water Scrubber B-3210**

**S-596, Plant 640, Section 4, abated by A-148, Packed Bed Water Scrubber B-3200/B-3201 and A-147, Packed Bed Water Scrubber B-3210, in series**

**A-147 and A-149 modified to be further abated by one of the following:**

**S-336, Manufacturing Services HAF,**

**S-389, Sym-Tet HAF, or**

**A-205, ME-3220 Carbon Adsorber**

**S-604, Truck Loading Facility**

**S-607, Storage Tank T-1904**

\_\_\_\_\_  
Tamiko Endow  
Air Quality Engineer

\_\_\_\_\_  
Date

## **Engineering Evaluation Report**

Dow Chemical Company, P#31  
901 Loveridge Road, Pittsburg  
Application #14668

### **Background**

Dow Chemical has applied to replace two process vessels (T-7 and B-9), which are permitted as part of the Manufacturing Services Facility, S-434. Both vessels are being replaced due to age and will be replaced with identically-sized vessels. The replacement will not affect the process throughput or system capacity.

- Vessel T-7 is used to blend carbon tetrachloride with process recycle streams prior to distillation. It is being replaced with an identically sized horizontal pressure vessel, and the new vessel will continue to be vented to the Manufacturing Services Thermal Oxidizer, S-336.
- Vessel B-9 is used to absorb hydrogen chloride vapor into water to produce hydrochloric acid. The replacement vessel dimensions and capacity are identical to the current vessel, and the replacement will continue to be vented to the caustic scrubber, A-199.

### **S-434, Manufacturing Services Facility**

#### **Emission Calculations**

As the two process vessels will be replaced with vessels of identical size, will continue to be abated in the same manner as the current vessels, and the number of piping components will not change, there is no change in emissions associated with these replacements.

#### **Cumulative Increase**

As there is no change in emissions associated with the replacement of these two process vessels, there will be no change to the cumulative increase associated with this application.

#### **Compliance Determination**

**Regulation 6, “Particulate Matter and Visible Emissions”**

**Regulation 8, Rule 2, “Organic Compounds – Miscellaneous Operations”**

**Regulation 8, Rule 10 “Organic Compounds – Process Vessel Depressurization”**

S-434, Manufacturing Services Facility is subject to Regulation 6 due to potential emissions of acid mist and is subject to Regulation 8, Rules 2 and 10 due to emissions of organic compounds. To meet the emission limits in Regulation 6 and Regulation 8, the source is currently abated through one of three scenarios – the first includes abatement at two hydrochloric acid absorbers in series (A-87 and A-85), followed by an additional scrubber (A-199); the second is abatement at the Manufacturing Services Thermal Oxidizer (S-336); and the third is abatement at the Manufacturing Services Scrubber only (A-199). Dow has not requested any change to the abatement options due to replacement of the two process vessels, so continued compliance with these regulations is expected.

#### **Public Notice Requirements**

The public notification requirements of Regulation 2-1-412 apply to modifications which result in an increase in toxic air contaminant or hazardous air contaminant emission at facilities within 1,000 feet of the boundary of a K-12 school. There is no increase in toxic air contaminant emissions associated with this application, therefore the public notice requirements do not apply.

### **Toxic Risk Assessment**

The District's regulation concerning toxic air contaminants is codified in Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants. There is no change in emissions due to these replacements, including emissions of toxic air contaminants, therefore, a Health Risk Screening Analysis is not triggered.

### **PSD, NSPS, NESHAPS**

PSD does not apply to this source. There is no New Source Performance Standard that applies to this source, however it is subject to 40 CFR Part 63, Subpart NNNNN, National Emission Standards for Hazardous Air Pollutants – Hydrochloric Acid Production. The compliance dates for this federal regulation occur this year and Dow will be performing source testing to demonstrate compliance with the emission standards in this regulation. The source testing is scheduled to occur within the next 2 months. The results of the compliance testing and the specific compliance options that Dow elects will be documented and included in the Title V permit for this facility after they have been established.

### **CEQA**

This project is exempt from CEQA review, per Sections 2-1-312.6 and 312.7:

*“Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.”*

and

*“Permit applications for the replacement or reconstruction of existing sources or facilities where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced.”*

In this case, the replacement of two process vessels (constituting a portion of S-434) involves no expansion of use beyond that currently permitted for S-434, will involve no change in emissions, and the two new vessels will have exactly the same purpose and capacity as the replaced vessels.

### **BACT, Emission Offsets**

BACT requirements are triggered if maximum potential emissions from a new or modified source are 10 lbs/day or more. As the replacement of these 2 process vessels will not result in any increase in emissions, the replacement does not constitute a modification of S-434, therefore BACT requirements do not apply.

Emission offsets are required for new or modified sources at a facility meeting the requirements in Regulation 2, Rule 2 for each type of pollutant. Since the process vessel replacement does not constitute a modification of S-434, the offset requirements do not apply.

### **Permit Conditions**

This source S-434 is currently subject to the abatement requirements contained in the existing Permit Condition #17985 below and will be subject to the throughput limit issued under Application #6290 for permitting of the new Sulfuryl Fluoride Plant once the Sulfuryl Fluoride Plant is put into service (expected to occur within the next 2 years). No changes to the condition are proposed due to replacement of the two process vessels under this application.

### **Permit Condition #17985**

Applications 2160, 11591, 16468

For S-4, Central Rail Loading Rack, Acid, TC-1:

For S-434, Manufacturing Services Facility:

For S-576, HCL Storage Tank, T-122:

For A-85, B-102 Absorber;

A-87, HCl Absorber/Heat Exchanger H-109;

A-199, Caustic Scrubber;

S-336, Manufacturing Services Thermal Oxidizer

1. The HCL Rail Car Loading Operations (S-4) shall be abated by either the S-336 Thermal Oxidizer, or by the A-199 Caustic Scrubber, during all times that hydrochloric acid is being loaded.  
(Basis: BAAQMD Regulation 6-310 and BAAQMD Regulation 7-300/BAAQMD Regulation 2-1-403)
2. Emissions from the S-434 Manufacturing Services Facility shall be abated by either the Manufacturing Services Thermal Oxidizer (S-336) or the Acid Absorbers (A-87 and A-85) and A-199 Caustic Scrubber in series or the Caustic Scrubber (A-199).  
(Basis: BAAQMD Regulation 6-310 and BAAQMD Regulation 7-300/BAAQMD Regulation 2-1-403)
3. The Hydrochloric Acid Storage Tank T-122 (S-576) shall be abated by the properly operating Acid Absorbers (A-87 and A-85) and the Caustic Scrubber (A-199), in series, at all times that S-576 is operating.  
(Basis: BAAQMD Regulation 6-310 and BAAQMD Regulation 7-300/BAAQMD Regulation 2-1-403)
4. There shall be no detectable leaks in Storage Tank T-122 (S-576) or the piping to abatement devices A-87, A-85, and A-199.  
(Basis: BAAQMD Regulation 6-310 and BAAQMD Regulation 7-300/BAAQMD Regulation 2-1-403)
5. S-576 shall be blocked in, with no detectable emissions, whenever A-87, A-85, or A-199 is out of service.  
(Basis: BAAQMD Regulation 6-310 and BAAQMD Regulation 7-300/BAAQMD Regulation 2-1-403)
6. The caustic concentration in the A-199 Caustic Scrubber shall not drop below 1% by weight of sodium hydroxide (NaOH).  
(Basis: BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)
7. The caustic solution in the A-199 Caustic Scrubber shall be tested at least once per calendar day to determine pH and weight percent of NaOH concentration.  
(Basis: BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)
8. The Permit Holder shall maintain daily records of all test results from Part 7 above. All records shall be retained on site for a minimum of five years from the date of entry and shall be made available to District personnel upon request.  
(Basis: BAAQMD Regulation 2-6-501, BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)

Future condition:

9. The total amount of hydrochloric acid produced at the S-434 Manufacturing Services Facility shall not exceed 108,300 tons of hydrochloric acid (calculated as 36% HCl) during any consecutive 12 month period. In order to demonstrate compliance with this part, the Permit Holder shall maintain monthly records of the total amount of 36% HCl produced at S-434. These records shall be kept onsite or made available for District staff upon request for a minimum of five years from the entry date.



(Basis: Cumulative Increase, Toxic Risk Management Policy, BAAQMD Regulation 2-6-501)

**Recommendations**

I recommend waiving the Authority to Construct and issuing a Permit to Operate for:

**Replacement of 2 process vessels at S-434, Manufacturing Services Facility**

\_\_\_\_\_  
Tamiko Endow  
Air Quality Engineer

\_\_\_\_\_  
Date

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 14909**

## **BACKGROUND**

Dow Chemical Company (Dow) is changing the location of DCP Unloading from an existing loading area located near DCP Storage Tanks (S-580, S-581, S-582, and S-583) to a product loading area (S-5). During DCP unloading at the existing location the rail car or tank truck used to fill tanks S-580, S-581, S-582, and S-583 is in a location that blocks access to areas of the facility. The rail car and/or tank truck is in the way of vehicle traffic at the existing DCP unloading area.

The current DCP unloading area is not identified as an existing source. There is a requirement on Condition No. 3195 for the DCP tanks that requires the use of a vapor balance during all tank filling operations.

Per the applicant there will be no increase in DCP throughput due to moving the DCP loading area from the existing location to the product loading area at S-5.

DCP has a true vapor pressure of 0.413 psia @ 61°F. The average ambient temperature in Pittsburgh is 61°F, and the average storage temperature of the liquid at the site is assumed to be 61°F. The true vapor pressure of 1-3 dichloropropene at 25°C is between 0.658 psia and 0.832 psia. The vapor pressure of the material is greater than 0.5 psia, and this makes the dichloropropene unloading operation subject to the requirements of Regulation 8 Rule 6.

The District has never estimated the fugitive emissions from the existing DCP unloading area. These emissions were never thought to be significant based on the vapor pressure of DCP and the fact that the unloading of DCP was abated by a vapor balance system (A-140). The DCP unloading operations proposed to be conducted at S-5 would also be abated by the vapor balance system (A-140).

S-5 is approximately 1,400 feet away from the existing DCP unloading area. In order to maintain fugitive emissions at the same or below the current levels, Dow is installing a 2" welded stainless steel pipe from S-5 to the DCP tanks to carry liquid DCP. Dow is also installing a 2" welded stainless steel pipe from S-5 to the DCP tanks to act as the the vapor balance during DCP loading operations at S-5. The number of valves and flanges will remain at or below existing counts.

This application will require a change of permit conditions for the following equipment:

### **S-5, 720 Terminalized Products**

S-5 is regulated by Condition No. 11276. Item 3 of this condition will have text added that states that all DCP unloading operations at S-5 shall be abated by a vapor balance (A-140). The modified condition text and the final condition in the Conditions section of this evaluation.

## EMISSIONS SUMMARY

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

### Plant Cumulative Increase: (tons/year)

Pollutant	Existing	New	Total
POC	0.102	0.000	0.102

### Toxic Risk Screening:

DCP does not have a Toxic Air Contaminant Trigger Level under Regulation 2 Rule 5. There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

## STATEMENT OF COMPLIANCE

The owner/operator of S-5 shall comply with the revised Permit Condition No. 11276.

The facility will still be required to maintain compliance with the applicable requirements of Regulation 8 Rule 6 Terminals and Bulk Plants. The true vapor pressure of 1-3 dichloropropene at 25°C is between 0.658 psia and 0.832 psia. The vapor pressure of the material is greater than 0.5 psia, and this makes the dichloropropene unloading operation subject to the requirements of Regulation 8 Rule 6. This standards under this rule require a vapor loss control system or a vapor balance for loading and unloading of materials with a vapor pressure of at least 1.5 psia. Even though dichloropropene does not have a vapor pressure of at least 1.5 psia, the use of a vapor balance system (A-140) during DCP unloading operations meets the standards of this rule for higher vapor pressure materials.

The facility will still be required to maintain compliance with the applicable requirements of Regulation 8-18 Equipment Leaks. The installation of welded stainless steel lines for the DCP liquid line and the vapor balance should reduce leaks associated with DCP unloading.

The requirements of Regulation 8 Rule 22 do not apply to this facility (8-22-115).

The project is exempt from CEQA in accordance with Regulation 2-1-312.6 which states:

Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

### *Best Available Control Technology:*

This application does not trigger BACT.

**Offsets:** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

**PSD, NSPS, and NESHAPS do not apply.**

## PERMIT CONDITIONS

Changes to Condition No. 11276 in Strikethrough/Underline format.

COND# 11276 -----

Applications 31263, 4451, 12387, 16468  
For S-5, 720 Terminalized Products:  
For S-6, 725 Terminalized Products:  
For S-7, 725 Block Truck Loading:  
For S-27, Terminalized Product Storage, T-605A:  
For S-29, Terminalized Products, T-608A:  
For S-30, Material Flow Tank, T-608B:  
For S-31, Terminalized Products, T-609:  
For S-33, Terminalized Products, T-727:  
For S-35, Terminalized Products, T-773:  
For S-151, Terminalized Products, T-614:  
For S-153, Terminalized Products, T-604:  
For S-482, Carbon Tetrachloride Rail Car Loading:  
A-140, Vapor Balance System for 1,3-Dichloropropene Unloading  
A-150, Vapor Balance System for Styrene Tank Truck Loading  
A-151, Vapor Balance System for Styrene Loading Via Railcar  
S-336, Manufacturing Services Thermal Oxidizer  
S-389, Sym-Tet Thermal Oxidizer R-501

1. The following sources shall be abated by a Thermal Oxidizer (either S-336 or S-389) whenever non-exempt materials (materials with vapor pressure of 0.5 psia or greater) are being loaded or stored. The S-336 Thermal Oxidizer shall be the primary abatement device for these sources with S-389 acting as a backup abatement device.

S-5	S-27	S-31	S-151	S-482
S-6	S-29	S-33	S-153	
S-7	S-30	S-35		

(Basis: BAAQMD Regulation 8-5-306, BAAQMD Regulation 8 - 6-302, BAAQMD Regulation 8-6-304)

2. All of the sources listed in Part #1 shall have vapor tight connections to S-336 and S-389 with no detectable organic emissions.

(Basis: BAAQMD Regulation 8-5-306, BAAQMD Regulation 8-6-306)

- \*3. The Vapor Balance System for styrene tank truck loading (A-150) shall be properly maintained and operated and shall abate S-5 during any styrene loading operation. The Vapor Balance System for 1,3-dichloropropene (DCP) tank truck or railcar unloading (A-140) shall be properly maintained and operated and shall abate S-5 during any DCP unloading operation. (Basis: ~~Voluntary Limit~~ Cumulative Increase)
- \*4. The Vapor Balance System for Dowanol PM tank truck loading (A-153) shall be properly maintained and operated and shall abate S-6 during any Dowanol PM loading operation.  
(Basis: Voluntary Limit)
- 5. During all loading of non-exempt products at S-5, S- 6, S-7, and S-482, the operator shall confirm that the vapor return line is registering vacuum before connecting the line. The operator shall also verify that there is a leak tight connection to the tank truck or railcar.  
(Basis: BAAQMD Regulation 8-6-306)
- 6. The owner/operator shall maintain records for all non-exempt product loading events, including the date, verification of vacuum, and leak tight connection to the tank truck or railcar. These records shall be retained on site for a minimum of five years from the date of entry and made available to District personnel upon request.  
(Basis: BAAQMD Regulation 2-1-403, BAAQMD Regulation 2-6-501, BAAQMD Regulation 8-6-306, BAAQMD Regulation 8-6-501.2)

Modified Permit Condition No. 11276.

COND# 11276 .....

Applications 31263, 4451, 12387, 16468  
For S-5, 720 Terminalized Products:  
For S-6, 725 Terminalized Products:  
For S-7, 725 Block Truck Loading:  
For S-27, Terminalized Product Storage, T-605A:  
For S-29, Terminalized Products, T-608A:  
For S-30, Material Flow Tank, T-608B:  
For S-31, Terminalized Products, T-609:  
For S-33, Terminalized Products, T-727:  
For S-35, Terminalized Products, T-773:  
For S-151, Terminalized Products, T-614:  
For S-153, Terminalized Products, T-604:  
For S-482, Carbon Tetrachloride Rail Car Loading:  
A-140, Vapor Balance System for 1,3-Dichloropropene Unloading  
A-150, Vapor Balance System for Styrene Tank Truck Loading  
A-151, Vapor Balance System for Styrene Loading Via Railcar  
S-336, Manufacturing Services Thermal Oxidizer  
S-389, Sym-Tet Thermal Oxidizer R-501

1. The following sources shall be abated by a Thermal Oxidizer (either S-336 or S-389) whenever non-exempt materials (materials with vapor pressure of 0.5 psia or greater) are being loaded or stored. The S-336 Thermal Oxidizer shall be the primary abatement device for these sources with S-389 acting as a backup abatement device.

S-5	S-27	S-31	S-151	S-482
S-6	S-29	S-33	S-153	
S-7	S-30	S-35		

(Basis: BAAQMD Regulation 8-5-306, BAAQMD Regulation 8 - 6-302, BAAQMD Regulation 8-6-304)

2. All of the sources listed in Part #1 shall have vapor tight connections to S-336 and S-389 with no detectable organic emissions.

(Basis: BAAQMD Regulation 8-5-306, BAAQMD Regulation 8-6-306)

- \*3. The Vapor Balance System for styrene tanktruck loading (A-150) shall be properly maintained and operated and shall abate S-5 during any styrene loading operation. The Vapor Balance System for 1,3-dichloropropene (DCP) tank truck or railcar unloading (A-140) shall be properly maintained and operated and shall abate S-5 during any DCP unloading operation. (Basis: Cumulative Increase)

- \*4. The Vapor Balance System for Dowanol PM tank truck loading (A-153) shall be properly maintained and operated and shall abate S-6 during any Dowanol PM loading operation.

(Basis: Voluntary Limit)

5. During all loading of non-exempt products at S-5, S- 6, S-7, and S-482, the operator shall confirm that the vapor return line is registering vacuum before connecting the line. The operator shall also verify that there is a leak tight connection to the tank truck or railcar.

(Basis: BAAQMD Regulation 8-6-306)

6. The owner/operator shall maintain records for all non-exempt product loading events, including the date, verification of vacuum, and leak tight connection to the tank truck or railcar. These records shall be retained on site for a minimum of five years from the date of entry and made available to District personnel upon request.

(Basis: BAAQMD Regulation 2-1-403, BAAQMD Regulation 2-6-501, BAAQMD Regulation 8-6-306, BAAQMD Regulation 8-6-501.2)

## RECOMMENDATION

Issue a Change in Permit Condition for Condition No. 11276. The following sources are subject to Condition No. 11276:

**S-5, 720 Terminalized Products:**

**S-6, 725 Terminalized Products:**

**S-7, 725 Block Truck Loading:**

**S-27, Terminalized Product Storage, T-605A:**

**S-29, Terminalized Products, T-608A:**

**S-30, Material Flow Tank, T-608B:**

**S-31, Terminalized Products, T-609:**

**S-33, Terminalized Products, T-727:**

**S-35, Terminalized Products, T-773:**

**S-151, Terminalized Products, T-614:**

**S-153, Terminalized Products, T-604:**

**S-482, Carbon Tetrachloride Rail Car Loading:**

## EXEMPTIONS

None.

By: \_\_\_\_\_

Brian Lusher  
Air Quality Engineer II

Date: \_\_\_\_\_

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 15133**

## **BACKGROUND**

Dow Chemical Company (Dow) is replacing S-464, Plant 663, D-413 Dryer with a New Unit. Dow considers the dryer replacement to be like for like. The dimensions and maximum throughput of the units are the same. The existing dryer S-464 is abated by a bag filter (A-95) and a vacuum system with condenser (A-114). The new dryer S-465 will also be abated by A-95 and A-114. The emissions from the new dryer will be the same as for the old dryer. The emission factor used to estimate emissions for this application is more refined than the original permit emissions estimate for this source. Emission Calculations are documented below.

Regulation 2-1-232.4 requires the District to consider the new dryer (S-465) as a New Source.

**2-1-232 New Source:** Any source that meets at least one of the following criteria, except sources which lose a permit exemption or exclusion in accordance with Regulation 2-1-424, shall be considered a new source:

232.1 Any source constructed or proposed to be constructed after March 7, 1979 but which never had a valid District authority to construct or permit to operate.

232.2 Any source which was not in operation for a period of one year or more and did not hold a valid District permit to operate during this period of nonoperation, occurring after March 7, 1979.

232.3 Any relocation of an existing source to a non-contiguous property, except for a portable source.

232.4 Any replacement of a source, including an identical replacement of a source, occurring after March 7, 1979, regardless of when the original source was constructed.

232.5 Any replacement of an identifiable source within a group of sources permitted together under a single source number for the purpose of District permitting convenience.

232.6 "Rebricking" of a glass furnace where changes to the furnace design result in a change in heat generation or absorption.

*(Adopted May 17, 2000)*

The new dryer will dry out an organic solid that is \_\_\_\_\_ at a centrifuge and sent as a cake to the unit. The dryer operates as \_\_\_\_\_. The unit operates at a temperature of \_\_\_\_\_ °F. The vapor pressure of the product at the dryer operating temperature is less than  $1 \times 10^{-4}$  psia. The boiling point of the product is greater than 500°F.

Based on the low vapor pressure and high boiling point emissions of organics are expected to be negligible. Fugitive emissions are also expected to be negligible.



**EMISSIONS SUMMARY**

The new dryer is a source of PM-10 emissions. The emissions of other criteria pollutants are negligible based on the material properties of the product being dried. The vapor pressure of the product at the dryer operating temperature is less than  $1 \times 10^{-4}$  psia. The boiling point of the product is greater than 500°F. Fugitive emissions are also thought to be negligible based on these material properties.

The new dryer does not burn fuel. It is a \_\_\_\_\_ exchanger.

***Annual Emissions:***

Particulate emissions are based on an emission factor for Rotary Dryers from AP-42 (Table 8.12-3, 7/93). The uncontrolled total particulate emission factor for rotary soda ash dryers is 50 lb/ton of product. This is an extremely conservative estimate of unabated particulate emissions from S-465. The soda ash dryers have a constant flow of air through the dryer that will entrain particulate from the product. S-465 is a \_\_\_\_\_ dryer that only has a \_\_\_\_\_ into the dryer. The particulate emissions from \_\_\_\_\_ dryer should be much lower than for a typical rotary dryer. As a conservative estimate the 50 lb particulate/ton of product will be used to estimate PM-10 emissions from S-465.

**PM-10**

Dryer Max Throughput:      lb Product/hr,      ton/hr

Unabated PM-10 lb/yr =      ton/hr x 8760 hr/yr x 50 lb/ton =      lb/yr unabated

Dryer is abated by bag filter (A-95) with a particulate removal efficiency of 99.9% per vendor specification. The new dryer is also abated by a downstream vacuum pump and condenser (A-114). Previous emission calculations have assumed a particulate removal efficiency of 90% for this system. This assumption does not seem to be conservative since the particles exiting the baghouse will be in the submicron range. The particulate removal efficiency of A-114 will be assumed to be 50% for emission calculations.

Abated PM-10 from bag filter lb/yr =      lb/yr (1-0.999) =      lb/yr,      ton/yr

Abated PM-10 from A-114 lb/yr =      lb/yr (1-0.5) =      lb/yr,      ton/yr

**Maximum Daily Emissions:**

Dryer Max Throughput:        lb Product/hr,        ton/hr

Unabated PM-10 lb/day =        ton/hr x 24 hr/day x 50 lb/ton =        lb/day unabated

Dryer is abated by bag filter (A-95) with a particulate removal efficiency of 99.9% per vendor specification. The new dryer is also abated by a downstream vacuum pump and condenser (A-114). Previous emission calculations have assumed a particulate removal efficiency of 90% for this system. This assumption does not seem to be conservative since the particles exiting the baghouse will be in the submicron range. The particulate removal efficiency of A-114 will be assumed to be 50% for emission calculations.

Abated PM-10 after bag filter lb/day =        lb/day (1-0.999) =        lb/day

Abated PM-10 after A-114 lb/day =        lb/day (1-0.5) =        lb/day

**Plant Cumulative Increase: (tons/year)**

The shutdown of S-464 and the startup of S-465 will result in no net increase in emissions. Therefore, the new Plant Cumulative Increase will be 0.000 Tons/year for PM-10.

Pollutant	Existing	New	Total
PM-10	1.619	0.000	1.619

**Toxic Risk Screening:**

There are no known emissions of Toxic Air Contaminants from the new dryer. The emissions of Toxic Air Contaminants do not exceed any Toxic Air Contaminant Trigger Level under Regulation 2 Rule 5. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

**STATEMENT OF COMPLIANCE**

The owner/operator of S-465 shall comply with Reg. 6 (Particulate Matter and Visible Emissions Standards). The applicable requirements of Regulation 6 include the following sections:

- 6-301 Ringleman Number 1 Limitation
- 6-305 Visible Particles
- 6-310 Particulate Weight Limitation
- 6-311 General Operations
- 6-401 Appearance of Emissions

S-465 is abated by a bag filter with a particulate removal efficiency of 99.9% (per vendor specification) and should be able to comply with all applicable provisions of Regulation 6.

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

***Best Available Control Technology:***

This application does not trigger BACT for any pollutant. The particulate emissions from the new dryer S-465 are abated by A-95 (bag filter) and A-114 (vacuum system with condenser). The unabated particulate emissions do not exceed 10 lb/day.

***Offsets***

**2-2-303 Offset Requirement, PM<sub>10</sub> and Sulfur Dioxide, NSR:** Except as provided by Section 2-2-421, before the APCO may issue an authority to construct or a permit to operate for a new or modified source, of PM<sub>10</sub> or sulfur dioxide located at a Major Facility, which will result in a cumulative increase minus any contemporaneous emission reduction credits at the facility, for that pollutant, in excess of 1.0 ton per year since April 5, 1991, emission offsets shall be provided, for the emission from the new or modified source and any pre-existing cumulative increase, minus any onsite contemporaneous emission reduction credits determined in accordance with Section 2-2-605, at a 1.0:1.0 ratio or at a ratio, approved by the APCO, in accordance with subsection 2-2-303.1.

303.1 Emission reduction credits of nitrogen oxides and/or sulfur dioxide may be used to offset increased emissions of PM<sub>10</sub> at offset ratios determined by the APCO to result in a net air quality benefit. This determination shall be made Bay Area Air Quality Management District June 15, 2005  
2-2-12

after a case-by-case analysis that includes adequate modeling, public notice and opportunity for public comment, and EPA concurrence.

A facility which emits less than 100 tons of any pollutant, subject to this section, may voluntarily provide emission offsets for all, or any portion, of their cumulative increase, at the ratio required above.

*(Amended 11/20/91; 6/15/94; 5/17/00)*

Dow Chemical Company is not a major source for PM-10. The net emissions from the shutdown of S-464 and the startup of S-465 are zero. Offsets are not required for this application.

**PSD, NSPS, and NESHAPS do not apply.**

## PERMIT CONDITIONS

### Condition for S-464 Existing Dryer

COND# 1359 -----

Modified Application 16468  
For S-464, Product Dryer  
A-95, F-413 Bag Filter  
A-114, Vacuum System:

1. A-95, the F-413 Bag Filter, and A-114, the Vacuum System, shall be operating whenever S-464 is operating.  
(Basis: Cumulative Increase; BAAQMD Regulation 6)

### Condition for S-465 New Product Dryer

COND# 23250 -----

Application 15133  
For S-465, Product Dryer  
A-95, F-413 Bag Filter  
A-114, C-414 Vacuum System with condensor:

1. The owner/operator shall only operate S-465 when the unit is abated by the bag filter (A-95) and the vacuum system and condenser (A-114).  
(Basis: Cumulative Increase; Regulation 6)
2. The owner/operator shall equip the bag filter (A-95) with a device for measuring the pressure differential across the bag filter. The owner/operator shall check on a quarterly basis that the lines to the pressure differential measurement device are not plugged.  
(Basis: Regulation 6-301, 6-310, 6-311, 2-1-403)
3. The owner/operator shall inspect the bag filter (A-95) on a weekly basis to ensure proper operation. The following items shall be checked:
  - a. The pressure differential across the bag filter shall be checked weekly while the system is in a drying cycle and under vacuum. This pressure differential shall be recorded in a log. The maximum pressure differential across the bag filter shall not exceed 400 mm Hg absolute.
  - b. The material collected by the bag filter shall be removed in a timely manner to maintain compliance with 3(a) above.
  - c. The bag filter cleaning system shall be

maintained and operated at sufficient intervals to maintain compliance with 3(a) above.

(Basis: Regulation 2-1-403)

4. In order to demonstrate compliance with the above permit conditions, the following records shall be maintained in a District approved log. These records shall be kept on site and made available for District inspection for a period of at least five years from the date on which a record is made.

- a. Records of all inspections (including differential pressure readings) and all maintenance work including bag replacement for the bag filter. Records of each inspection shall consist of a log containing the date of inspection and the initials of the personnel that inspects the bag filter.

(Basis: Regulation 1-441)

## **RECOMMENDATION**

Issue an Authority to Construct to Dow Chemical Company for the following:

**S-465 Product Dryer, Plant 663, D-413**

## **EXEMPTIONS**

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Lusher  
Air Quality Engineer II

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 15723**

**BACKGROUND**

Dow Chemical Company (Dow) has applied for an Authority to Construct for an alteration of Abatement Device A-86 a falling film hydrochloric acid absorber abating S-336, the Manufacturing Services Thermal Oxidizer. A-86 consists of two vessels in parallel, B-14A and B-14B. Each vessel is approximately 28.36 feet long with an internal diameter of 21.25 inches. The vessels are carbon steel with graphite tubes. The vessels will be replaced sequentially, Dow expects to replace B14-B vessel in 2007, and B14-A in 2008. The vessels are being replaced with identical absorber units (that are being built to original specifications).

**EMISSIONS SUMMARY**

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

**Plant Cumulative Increase: (tons/year)**

<b>Pollutant</b>	<b>Existing</b>	<b>New</b>	<b>Total</b>
POC	0.000	0.000	0.000

**Toxic Risk Screening:**

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

**STATEMENT OF COMPLIANCE**

The owner/operator of S-336 Manufacturing Services Thermal Oxidizer shall continue to comply with Permit Conditions No. 1785, 2501, 5336, 5722, 6859, 7775, 8894, 11276, 14722, 16610, 16612, 17971, 17985.

S-336 is also expected to maintain compliance with the applicable requirements of Regulation 1, Regulation 6, Regulation 8-2, Regulation 9-1.

The project is exempt from CEQA in accordance with Regulation 2-1-310 since it is an alteration of an abatement device and is not a new or modified source requiring an Authority to Construct. Regulation 2, Rule 1-310 states:

**2-1-310 Applicability of CEQA:** Except for permit applications which will be reviewed as ministerial projects under Section 2-1-311 or which are exempt from CEQA pursuant to Section 2-1-312, all proposed new and modified sources for which an authority to construct must be obtained from the District shall be reviewed in accordance with the requirements of CEQA.

310.1 For those District permit applications which must be reviewed in accordance with the requirements of CEQA, the District will not normally be a Lead Agency under CEQA. Rather, pursuant to CEQA, the Lead Agency will normally be an agency with general governmental powers, such as a city or county, rather than a special purpose agency such as the District.

310.2 The issuance of an authority to construct and of a permit to operate for the same new or modified source or stationary source are considered to be parts of the same project for the purposes of CEQA.

310.3 The APCO shall not authorize, on an interim basis or otherwise, the installation or operation of any proposed new or modified source, the permitting of which is subject to the requirements of CEQA, until all of the requirements of CEQA have been satisfied.

*(Adopted 7/17/91; Amended 10/21/92)*

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

***Best Available Control Technology:***

This application does not trigger BACT.

***Offsets:*** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NO<sub>x</sub>. Based on the emission calculations above, offsets are not required for this application.

**PSD, NSPS, and NESHAPS do not apply.**

**PERMIT CONDITIONS**

This application does not require modifying permit conditions.

**RECOMMENDATION**

Approve the alteration of the following equipment:

**A-86 B-14 A & B**  
**Vapor Recovery**  
**train: ,S336,A-336,/,A21,**

**EXEMPTIONS**

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Lusher  
Air Quality Engineer II



**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 16041**

## **BACKGROUND**

On October 4, 2006 The Dow Chemical Company (Dow) requested an extension of the compliance date for the Pittsburgh Terminal Styrene Tank (T-734, S-25) from the requirements of 40 CFR Part 63 Subpart EEEE (Organic Liquids Distribution, non Gasoline).

S-25 uses a vapor balance system that is permitted by the District and would have met the requirements of Section 63.2346(a)(4). However, Dow could not obtain written certification from the reloading or cleaning facility indicating that this facility would also comply with Section 63.2346(a)(4)(vii)(A). The District granted an extension of the compliance extension request to allow Dow time to evaluate options to meet the requirements of 40 CFR Part 63 Subpart EEEE.

This application has been submitted by Dow to alter S-25, remove another styrene day tank from service S-209, and replace the styrene delivery piping and pumps to the Styrene plant in order to meet the regulatory requirements in 40 CFR Part 63 Subpart EEEE.

At the present time styrene is pumped from the styrene storage tank S-25 to a day tank S-209 and from the day tank the styrene is pumped into the latex plant. After the proposed alteration styrene will be pumped from S-25 directly to the latex plant. An existing pump at S-25 will be used as a tank recirculation pump. A new pump will be installed at S-25 to pump styrene to the latex plant. An old pump will be removed at S-209 and there will be no increase in fugitive components for the project.

A new piping run will be installed from S-25 to the latex plant. The new pipe run will be slightly shorter than the existing piping runs. The new piping will be welded stainless steel from the new pump at S-25 to where the piping run ties into the monomer header at the latex plant. All new fugitive components will be subject to Regulation 8 Rule 18 requirements. The count of fugitive components will be reduced for all types except pumps which the post project count will be equal to the pre project count.

This application qualifies for accelerated permitting since: uncontrolled emissions are less than 10 lb/day, no emissions exceed trigger levels in Table 2-5-1, project is not located within a thousand feet from a school, alteration of existing sources does not result in an increase of emissions, and the applicable fees were paid to process the application.

The District has never estimated the fugitive emissions from the existing styrene unloading area. These emissions were never thought to be significant based on the vapor pressure of styrene and the fact that the unloading of styrene was abated by a vapor balance system (A-151). The vapor pressure of styrene is 0.09 psia and is less than 0.5 psia which is the threshold for a low vapor pressure organic liquid per Reg 8, Rule 6.

## EMISSIONS SUMMARY

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

### Plant Cumulative Increase: (tons/year)

Pollutant	Existing	New	Total
POC	0.000	0.000	0.000

### Toxic Risk Screening:

Styrene does have a Toxic Air Contaminant Trigger Level under Regulation 2 Rule 5. The acute trigger level for styrene is 46 lb/hr, and the chronic trigger level is 35,000 lb/yr. There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

## STATEMENT OF COMPLIANCE

The owner/operator of S-25 shall continue to comply with the Permit Condition No. 5377.

The facility will still be required to maintain compliance with the applicable requirements of Regulation 8 Rule 6 Terminals and Bulk Plants. The true vapor pressure of styrene at 25°C is 0.09 psia. The vapor pressure of the material is less than 0.5 psia, and this does not make the unloading operation subject to the requirements of Regulation 8 Rule 6. These standards under this rule require a vapor loss control system or a vapor balance for loading and unloading of materials with a vapor pressure of at least 1.5 psia. Even though styrene does not have a vapor pressure of at least 1.5 psia, the use of a vapor balance system (A-151) during styrene unloading operations meets the standards of this rule for higher vapor pressure materials.

The facility will still be required to maintain compliance with the applicable requirements of Regulation 8-18 Equipment Leaks. The installation of welded stainless steel lines for the styrene liquid line and the vapor balance should reduce leaks associated with styrene handling.

The requirements of Regulation 8 Rule 22 do not apply to this facility (8-22-115).

The project is exempt from CEQA in accordance with Regulation 2-1-312.6 which states:

Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

**Best Available Control Technology:**

This application does not trigger BACT.

**Offsets:** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

**PSD, NSPS, and NESHAPS do not apply.**

**PERMIT CONDITIONS**

Existing Condition for S-25

COND# 5377 -----

A/N 4451  
For S-25, Material Flow Tank, T-734:  
Conditions for A-151

- \*1. The Vapor Balance System for styrene tank loading via rail car (A-151) shall be properly maintained and operated and shall abate S-25 during any styrene tank loading operation.  
(Basis: Voluntary Limit)
- 2. A-151, Vapor Balance System shall be properly maintained and operated and shall abate S-25 during loading of any organic liquids with vapor pressure greater than 0.5 psia.  
(Basis: BAAQMD Regulation 8-5-301)

Existing Condition for S-209 (to remain in affect until S-209 is shutdown)

COND# 21059 -----

Application 16468  
S-28, T-605B Material Flow  
S-36, N-Serve Plant Storage  
S-45, T-1 N-Serve  
S-56, T-31 N-Serve  
S-57, T-32 N-Serve  
S-61, T-780 N-Serve  
S-62, T-781 N-Serve  
S-63, T-782 N-Serve  
S-209, T-1 Latex Plant  
S-222, Latex Plant - Hydroxyethyl Acrylate Storage, T-112  
S-345, T-1 Vikane Plant - Storage Tank  
S-346, T-241  
S-372, T-20 Block 560 Storage Tank

S-382, N-Serve Unit Storage T-783  
S-383, Petroleum Hydrocarbon Distillate Tank  
S-407, T-728 N-Serve Formulation Tank  
S-447, T-774  
S-466, Plant 663 T-408A Intermediate Product Storage  
S-467, Plant 663 T-408B Intermediate Product Storage  
S-498, Sym Tet T-102 Storage Tank  
S-625, T-610 Perc Expansion Tank

1. The following tanks may not store any liquid containing organic compounds with a vapor pressure greater than 0.5 psia: S-28, S-36, S-45, S-56, S-57, S-61, S-62, S-63, S - 209, S-222, S-345, S-346, S-372, S-382, S-383, S-407, S-447, S-466, S-467, S-498, S-625  
(Basis: BAAQMD Regulation 2-1-301)
2. The owner/operator shall maintain records of the type, throughput, and vapor pressure of liquids stored. These records shall be kept on site for a minimum of five years from the date of entry and shall be made available to District personnel upon request.  
(Basis: BAAQMD Regulation 2-1-403, BAAQMD Regulation 2-6-501)

Revised Condition after the Removal of S-209

COND# 21059 -----

Application 16468  
S-28, T-605B Material Flow  
S-36, N-Serve Plant Storage  
S-45, T-1 N-Serve  
S-56, T-31 N-Serve  
S-57, T-32 N-Serve  
S-61, T-780 N-Serve  
S-62, T-781 N-Serve  
S-63, T-782 N-Serve  
~~S-209, T-1 Latex Plant~~  
S-222, Latex Plant - Hydroxyethyl Acrylate Storage, T-112  
S-345, T-1 Vikane Plant - Storage Tank  
S-346, T-241  
S-372, T-20 Block 560 Storage Tank  
S-382, N-Serve Unit Storage T-783  
S-383, Petroleum Hydrocarbon Distillate Tank  
S-407, T-728 N-Serve Formulation Tank  
S-447, T-774  
S-466, Plant 663 T-408A Intermediate Product Storage  
S-467, Plant 663 T-408B Intermediate Product Storage  
S-498, Sym Tet T-102 Storage Tank  
S-625, T-610 Perc Expansion Tank

1. The following tanks may not store any liquid containing organic compounds with a vapor pressure greater than 0.5 psia: S-28, S-36, S-45, S-56, S-57, S-61, S-62, S-63, &

- ~~209~~, S-222, S-345, S-346, S-372, S-382, S-383, S-407,  
S-447, S-466, S-467, S-498, S-625  
(Basis: BAAQMD Regulation 2-1-301)

2. The owner/operator shall maintain records of the type, throughput, and vapor pressure of liquids stored. These records shall be kept on site for a minimum of five years from the date of entry and shall be made available to District personnel upon request.  
(Basis: BAAQMD Regulation 2-1-403, BAAQMD Regulation 2-6-501)

## RECOMMENDATION

I recommend approving the alteration of S-25 including the installation of a new styrene pump, utilizing the existing pump as a recirculation pump, and installing new piping to the latex plant. After the completion of this project S-209 will no longer be in service and may be archived. A pump will also be shutdown at S-209 and piping runs to the latex plant will be removed. Condition 21509 will need to be modified as shown above when S-209 is removed.

## EXEMPTIONS

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Lusher  
Air Quality Engineer II

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 16335**

**BACKGROUND**

Dow Chemical Company (Dow) has applied for an Authority to Construct for an alteration of S-44 N-Serve plant chemical reactor, and S-446 Sym-Tet plant chemical reactor. Dow plans to replace four vapor scrubber process vessels T-90, T-91, T-94, and T-96, which are part of sources S-44 and S-446.

T-90 is a two-compartment vessel that stores sodium hydroxide process solution used in two venture scrubbers that process a vapor stream from S-44 and S-446. T-91 stores sodium hydroxide process solution for a process scrubber that abates tank T-90 and for a packed tower B-91 that processes vapor from Tank T-91 itself. T-94 is a decanter for the condensate from the pressure swing absorber vacuum pump and vents back to the pressure swing absorber vessels. T-96 receives liquid from T-94 and returns this process solution back to the pressure swing absorber as seal water for the pressure swing absorber liquid ring vacuum pumps. All of these vessels vent back to the process, the process air emissions are abated by existing abatement device A-89 that is a venturi scrubber at the N-Serve/Sym-Tet plant.

The process vessels are being replaced with identical reactors (that are being built to original specifications). Tank T-90 is 16 feet in diameter with a height of 12 feet. Tank T-91 is 16 feet in diameter with a height of 12 feet. Tank T-94 is 4 feet in diameter with a height of 9.75 feet. Tank T-96 is 5.54 feet in diameter with a height of 8.58 feet.

**EMISSIONS SUMMARY**

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

**Plant Cumulative Increase: (tons/year)**

<b>Pollutant</b>	<b>Existing</b>	<b>New</b>	<b>Total</b>
POC	0.000	0.000	0.000

**Toxic Risk Screening:**

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

## STATEMENT OF COMPLIANCE

The owner/operator of S-44 and S-446 shall continue to comply with Permit Conditions No. 5385 and 21060.

S-44 and S-446 are also expected to maintain compliance with the applicable requirements of Regulation 1, Regulation 6, Regulation 8-2, Regulation 9-1.

The project is exempt from CEQA in accordance with Regulation 2-1-310 since it is an alteration of an existing source and is not a new or modified source requiring an Authority to Construct. Regulation 2, Rule 1-310 states:

**2-1-310 Applicability of CEQA:** Except for permit applications which will be reviewed as ministerial projects under Section 2-1-311 or which are exempt from CEQA pursuant to Section 2-1-312, all proposed new and modified sources for which an authority to Construct must be obtained from the District shall be reviewed in accordance with the requirements of CEQA.

310.1 For those District permit applications which must be reviewed in accordance with the requirements of CEQA, the District will not normally be a Lead Agency under CEQA. Rather, pursuant to CEQA, the Lead Agency will normally be an agency with general governmental powers, such as a city or county, rather than a special purpose agency such as the District.

310.2 The issuance of an authority to construct and of a permit to operate for the same new or modified source or stationary source are considered to be parts of the same project for the purposes of CEQA.

310.3 The APCO shall not authorize, on an interim basis or otherwise, the installation or operation of any proposed new or modified source, the permitting of which is subject to the requirements of CEQA, until all of the requirements of CEQA have been satisfied.

*(Adopted 7/17/91; Amended 10/21/92)*

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

### ***Best Available Control Technology:***

This application does not trigger BACT.

**Offsets:** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

**PSD, NSPS, and NESHAPS do not apply to this specific permit application.**

## PERMIT CONDITIONS

This application does not require modifying permit conditions.

## RECOMMENDATION

Approve the alteration of the following equipment:

S-44 N-Serve Plant

CHEM> Chemical reactor, greater than 1000 gallons

S-446 Sym-Tet Plant

CHEM> Chemical reactor, greater than 1000 gallons, 7 days/wk

The specific alteration shall be the replacement of process vessels T-90, T-91, T-94, and T-96 with identical vessels that will not affect the air emissions from S-44 or S-446.

## EXEMPTIONS

None.

By: \_\_\_\_\_

Brian Lusher  
Air Quality Engineer II

Date: \_\_\_\_\_



**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Road  
Pittsburg, CA 94565  
Plant Number 31  
Application Number 16877**

## **BACKGROUND**

Dow Chemical Company has submitted an application for an Authority to Construct for the replacement of three of four existing reactors at the existing Source S-446 (Sym-Tet plant). Three 500-gallon reactors will be replaced with a larger 1,500-gallon reactor.

The three existing reactors (R-600A, 600C, and 600D) are in series with an existing 1,000-gallon reactor (R-600E). The new existing single replacement reactor (R600F) will have a capacity of 1,500 gallons and be in series with the existing 1,000-gallon reactor. The annual throughput of this plant will not increase. The single reactor will have fewer component parts and process connectors than the three existing reactors have in service.

### **Existing configuration**

Sym-Tet Plant S-446

Four reactors (R-600A, 600C, 600D) with three reactors with each have 500 gallon capacity and a fourth reactor having 1000 gallon capacity, with all vapors vented to either S-389 process unit or to abatement devices, A-88/A89 or to an emergency abatement device A-168, B-609 (Emergency Packed Bed Tower Caustic Scrubber).

### **Proposed Process modification**

Sym-Tet S-Plant, S-446

Existing reactor R-600E (1000 gallon capacity) and a new reactor R-600F (1,500 gallon capacity) that replaces three smaller existing reactors in series with vapors venting to S-389 or A-88/A-89 or A-168 (Emergency Backup Caustic Packed Tower Scrubber) or existing downstream process units

The handling of the vapors stream from reactors will not change. Vapor streams to downstream process units in S-446 will be abated by S-389 or by A-88/89 when S-389 is not in service. A-168 will continue to serve as an emergency abatement device for the Sym-Tet plant.

## **EMISSIONS SUMMARY**

There is no increase in emissions (fugitive or from a large single reactor emission point) associated from the proposed configuration. The annual throughput remains the same.

**Plant Cumulative Increase (tons/year)**

There is no emissions increase associated with this application since there are no increases in annual throughput and no increase in fugitive emission points.

Pollutant	Existing	New	Total
POC	0.00	0.00	0.00

**Toxic Risk Screening**

It is expected that there are no increase in toxic air contaminant emissions associated with the proposed modification. This application does not require a Risk Screening Analysis under Regulation 2, Rule 5.

**STATEMENT OF COMPLIANCE**

Dow Chemical will continue to comply with Permit Condition Numbers 5385 and 21060.

Source S-446 are expected to maintain compliance and meet all emission limits with the applicable requirements of Regulation 1, Regulation 6, Regulation 8-2 and Regulation 9-1.

The project is exempt from CEQA in accordance with Regulation 2-1-312, **Other Categories of Exempt Projects:** In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.

- 312.1 Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.
  
- 312.7 Permit applications for the replacement or reconstruction of existing sources or facilities where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced.
  
- 312.11 Permit applications for a proposed new or modified source or sources or for process changes which will satisfy the “No Net Emission Increase” provisions of District Regulation 2, Rule 2, and for which there is no possibility that the

project may have any significant environmental effect in connection with any environmental media or resources other than air quality. Examples of such projects include, but are not necessarily limited to, the following:

- 11.1 Projects at an existing stationary source for which there will be no net increase in the emissions of air contaminants from the stationary source and for which there will be no other significant environmental effect;
- 11.2 A proposed new source or stationary source for which full offsets are provided in accordance with Regulation 2, Rule 2, and for which there will be no other significant environmental effect;
- 11.4 Projects satisfying the "no net emission increase" provisions of District Regulation 2, Rule 2 for which there will be some increase in the emissions of any toxic air contaminant, but for which the District staff's preliminary health risk screening analysis shows that a formal health risk assessment is not required, and for which there will be no other significant environmental effect.

The project is not located within 1000 feet from any school and is not subject to the public notification requirements of Regulation 2-1-412.

### **Best Available Control Technology (BACT)**

This project does not trigger BACT because there are no expected emission increases from this project.

Offset: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/year of POC or NOx. There is no emissions increase associated with this application, therefore offsets are not required for this project.

PSD, NSPS, and NESHAPs do not apply to this specific project.

### **PERMIT CONDITIONS**

The Sym-Tet plant will still be subject to the following conditions.

COND# 5385 -----

Applications 5926, 8548  
For S-446, Sym-Tet Plant:  
Conditions for A-168, B-609 Emergency Backup Caustic  
Scrubber:

1. The Emergency Backup Caustic Scrubber B-609 (A-168) shall be properly operated and properly maintained and shall abate S-446 during all times that the reactor and stripping systems in the 2,3 penta section of the Sym-Tet Plant (S-446) are operating.  
(Basis: BAAQMD Regulation 6, BAAQMD Regulation 8-2-

301/BAAQMD 2-1-403)

COND# 21060 -----

Application 16468

Facility-wide Condition applying to process vessels subject to Regulation 8, Rule 10

1. Effective 60 days after the issuance of the Major Facility Review Permit: Until Regulation 8, Rule 10 is revised to include compliance monitoring measures for chemical plants, the operator shall maintain records of the following for each process unit turnaround:
  - a. The date of unit shutdown and/or depressurizing;
  - b. The approximate process vessel hydrocarbon concentration when the organic emissions were first discharged to the atmosphere; and
  - c. The approximate quantity of total precursor organic compounds emitted into the atmosphere.

These records shall be kept on site for a minimum of five years from the date of entry and shall be made available to District personnel upon request.

(Basis: BAAQMD Regulation 2-6-501, BAAQMD Regulation 8 - 10-301)

**RECOMMENDATION**

It is recommended that the District approve the replacement of three reactors with a larger 1500-gallon capacity reactor. The specific change will replace three process vessels, R-600A, R-600C and R-600D with a larger reactor with equal capacity.

S-446, Sym-Tet Plant

Existing reactor R-600E (1000 gallon capacity) remain in place and three existing reactors will be replaced with a new reactor, R-600F (having a 1,500 gallon capacity) and vapors venting to S-389 or A-88/A-89 or A-168 (Emergency Backup Caustic Packed Tower Scrubber) or existing downstream process units.

**EXEMPTIONS**

None

By: \_\_\_\_\_

Date \_\_\_\_\_

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 16988**

**BACKGROUND**

Dow Chemical Company (Dow) has applied for an Authority to Construct for an alteration of Abatement Device A-85 acid absorber (packed bed scrubber). This fiberglass scrubber absorbs anhydrous HCl from the vapor phase into the water to produce 36% aqueous HCL. A-85 abates S-434 and S-576 and is downstream of A-87. The exhaust of A-85 is sent to A-199 and is eventually discharged at P-95.

The existing A-85 fiberglass scrubber is being replaced by an identical unit since the flange on the existing scrubber is damaged. The altered A-85 is identical to the existing scrubber. There is no change in process parameters or emissions due to the installation of this altered scrubber A-85. The work is scheduled to be completed some time in March of 2008.

**EMISSIONS SUMMARY**

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

**Plant Cumulative Increase: (tons/year)**

<b>Pollutant</b>	<b>Existing</b>	<b>New</b>	<b>Total</b>
POC	0.000	0.000	0.000

**Toxic Risk Screening:**

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

**STATEMENT OF COMPLIANCE**

The owner/operator of S-434 Manufacturing Services Facility shall continue to comply with Permit Conditions No. 17985 and No. 21060.

The owner/operator of S-576 36% HCL Storage Tank shall continue to comply with Condition No. 17985.

The project is exempt from CEQA in accordance with Regulation 2-1-310 since it is an alteration of an abatement device and is not a new or modified source requiring an Authority to Construct. Regulation 2, Rule 1-310 states:

**2-1-310 Applicability of CEQA:** Except for permit applications which will be reviewed as ministerial projects under Section 2-1-311 or which are exempt from CEQA pursuant to Section 2-1-312, all proposed new and modified sources for which an authority to construct must be obtained from the District shall be reviewed in accordance with the requirements of CEQA.

310.1 For those District permit applications which must be reviewed in accordance with the requirements of CEQA, the District will not normally be a Lead Agency under CEQA. Rather, pursuant to CEQA, the Lead Agency will normally be an agency with general governmental powers, such as a city or county, rather than a special purpose agency such as the District.

310.2 The issuance of an authority to construct and of a permit to operate for the same new or modified source or stationary source are considered to be parts of the same project for the purposes of CEQA.

310.3 The APCO shall not authorize, on an interim basis or otherwise, the installation or operation of any proposed new or modified source, the permitting of which is subject to the requirements of CEQA, until all of the requirements of CEQA have been satisfied.

*(Adopted 7/17/91; Amended 10/21/92)*

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

***Best Available Control Technology:***

This application does not trigger BACT.

***Offsets:*** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

***PSD, NSPS, and NESHAPS do not apply.***

**PERMIT CONDITIONS**

This application does not require modifying permit conditions.

**RECOMMENDATION**

Approve the alteration of the following equipment:

**A-85 B-102 Absorber  
Packed Bed Scrubber  
train: ,A87,/,A199,**

**EXEMPTIONS**

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Lusher  
Air Quality Engineer II

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 17600**

**BACKGROUND**

Dow Chemical Company (Dow) has applied for an Authority to Construct for an alteration of S-449 Hydrochloric Acid Storage Tank vent. The vent is currently abated by Absorbers A-90 and A-91 exhausted to P-188. Dow plants to route the exhaust from S-449 to A-101 Falling Film Absorber and A-102 Scrubber which is exhausted to P-199.

Dow is rerouting the tank exhaust from S-449 since the Vikane plant has been shutdown. Dow has requested that sources S-454 Vikane Plant, S-345 Perchloroethylene Storage Tank be archived. Dow also requests that A-197, A-46, A-90 and A-91 associated with S-454 also be archived.

**EMISSIONS SUMMARY**

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

**Plant Cumulative Increase: (tons/year)**

<b>Pollutant</b>	<b>Existing</b>	<b>New</b>	<b>Total</b>
POC	0.000	0.000	0.000

**Toxic Risk Screening:**

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

**STATEMENT OF COMPLIANCE**

The owner/operator of S-449 Hydrochloric Acid Storage Tank shall continue to comply with Permit Conditions No. 18128.

The project is exempt from CEQA in accordance with Regulation 2-1-312.11.1 since it is an alteration of S-449 exhaust to A-101 and A-102 and is not a new or modified source requiring an Authority to Construct. In addition, there is no emissions increase associated with this project.

**2-1-312 Other Categories of Exempt Projects:** In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-



312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.

312.1 Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.

312.2 Permit applications to install air pollution control or abatement equipment.

312.3 Permit applications for projects undertaken for the sole purpose of bringing an existing facility into compliance with newly adopted regulatory requirements of the District or of any other local, state or federal agency.

312.4 Permit applications submitted by existing sources or facilities pursuant to a loss of a previously valid exemption from the District's permitting requirements.

312.5 Permit applications submitted pursuant to the requirements of an order for abatement issued by the District's Hearing Board or of a judicial enforcement order.

312.6 Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.

312.7 Permit applications for the replacement or reconstruction of existing sources or facilities where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced.

Bay Area Air Quality Management District July 19, 2006  
2-1-24

312.8 Permit applications for cogeneration facilities which meet the criteria of Section 15329 of the State CEQA Guidelines.

312.9 Any other project which is exempt from CEQA review pursuant to the State CEQA Guidelines.

312.10 Applications to deposit emission reductions in the emissions bank pursuant to Regulation 2, Rule 4 or Regulation 2, Rule 9.

312.11 Permit applications for a proposed new or modified source or sources or for process changes which will satisfy the "No Net Emission Increase" provisions of District Regulation 2, Rule 2, and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. Examples of such projects include, but are not necessarily limited to, the following:

11.1 Projects at an existing stationary source for which there will be no net increase in the emissions of air contaminants from the stationary source and for which there will be no other significant environmental effect;

11.2 A proposed new source or stationary source for which full offsets are

provided in accordance with Regulation 2, Rule 2, and for which there will be no other significant environmental effect;

11.3 A proposed new source or stationary source at a small facility for which full offsets are provided from a small facility bank established by the APCO pursuant to Regulation 2-4-414, and for which there will be no other significant environmental effect;

11.4 Projects satisfying the "no net emission increase" provisions of District Regulation 2, Rule 2 for which there will be some increase in the emissions of any toxic air contaminant, but for which the District staff's health risk screening analysis shows that the project will not result in a cancer risk (as defined in Regulation 2-5-206) greater than 1.0 in a million (10<sup>-6</sup>) and will not result in a chronic hazard index (as defined in Regulation 2-5-208) greater than 0.20, and for which there will be no other significant environmental effect.

(Adopted 7/17/91; Amended 5/17/00; 12/21/04; 6/15/05)

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

***Best Available Control Technology:***

This application does not trigger BACT.

***Offsets:*** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

**PSD, NSPS, and NESHAPS do not apply.**

**PERMIT CONDITIONS**

Existing condition No. 18128 which applies to S-449.

COND# 18128 -----

Applications 30453, 681, 6955, 19565, 2047, 7475, 16468, 8894

Conditions for the Vikane Plant including:

S-454, Vikane Plant;

S-449, Hydrochloric Acid Storage Tank, T-30;

S-268, Fumigants Closed Press. Storage Tank T-4 (exempt);

S-269, Fumigants Closed Press. Storage Tank T-5 (exempt);

A-90, H-30 Acid Absorber;

A-91, B-30 Absorber;

A-46, B-7 Caustic Scrubber; and

A-197, B-4 Caustic Scrubber

1. Abated particulate emissions, including emissions of hydrochloric acid, hydrofluoric acid, and sulfuryl

- fluoride, from S-454 (P-127 and P-128 combined) shall not exceed 718.8 pounds and sulfur dioxide emissions from S-454 shall not exceed 10.4 pounds in any consecutive 12-month period.  
(Basis: Cumulative Increase)
2. Abated particulate emissions, including emissions of hydrochloric acid, hydrofluoric acid, and sulfur dioxide, from S-454 (P-127 and P-128 combined) shall not exceed 2.5 pounds and sulfur dioxide emissions from S-454 shall not exceed 0.04 pounds in any day.  
(Basis: BAAQMD Regulation 2-1-301)
  3. Abated hydrochloric acid emissions from S-449 (P-188) shall not exceed 68 pounds in any consecutive 12-month period.  
(Basis: Cumulative Increase)
  4. Abated hydrochloric acid emissions from S-449 (P-188) shall not exceed 0.3 pounds in any day.  
(Basis: BAAQMD Regulation 2-1-301)
  5. Emissions from the S-454 Vikane Plant shall be vented to the A-90 Acid Absorber and A-91 Acid Absorber (in series) during all hours of operation, except as described below in Part 6.  
(Basis: Cumulative Increase, Toxic Risk Management Policy, and BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)
  6. Emissions from S-454 shall be vented to either
    - a. the A-46 Caustic Scrubber, or
    - b. the A-197 Caustic Scrubber, or
    - c. the S-434 Manufacturing Services Facility and A-199 Manufacturing Services Scrubber B-12 in series, or
    - d. the A-87 HCl Absorber H-109 and A-85 Absorber B-102 and A-199 in series,during any time that emissions are not vented to A-90 and A-91. Emissions from S-454 may be vented to any of the abatement trains above during start-up or shut-down of the reactors, during maintenance, or during upset conditions.  
(Basis: Cumulative Increase, Toxic Risk Management Policy, and BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)
  7. Emissions from the S-449 Hydrochloric Acid Storage Tank shall be vented to the A-91 Acid Absorber, whenever S-449 is storing hydrochloric acid.  
(Basis: Cumulative Increase, Toxic Risk Management Policy, and BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)
  8. The A-90 and A-91 Acid Adsorbers shall achieve a combined removal efficiency of 99.99 percent by weight

of the hydrogen chloride (HCl) emissions vented to A-90, or A-91 shall emit no more than 0.068 pounds/hour (477 grains/hour) of HCl (including all HCl from any hydrochloric acid mist emissions).

(Basis: Cumulative Increase, Toxic Risk Management Policy, and BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)

9. The Permit Holder shall demonstrate compliance with Part 8 by maintaining the bottom temperature of B-30 (A-91) to no greater than 80 degrees C. In no event shall the average temperature exceed 80 degrees C during any consecutive 24-hour period. The Permit Holder shall measure the temperature at the bottom of B-30 and calculate a rolling 24-hour average temperature each hour to demonstrate compliance with this requirement.

(Basis: Cumulative Increase, Toxic Risk Management Policy, and BAAQMD Regulation 6-310/BAAQMD Regulation 2-1-403)

10. The A-46 and A-197 Caustic Scrubbers shall each achieve either the minimum removal efficiencies (percent by weight) or maximum emission rates identified in subparts a.-d. below.

a. For hydrogen chloride and hydrochloric acid mist, A-46 and A-197 shall each achieve either 99 percent control by weight or shall each emit no more than 0.0023 pounds/hour of HCl.

b. For hydrogen fluoride and hydrofluoric acid mist, A-46 and A-197 shall each achieve either 97 percent control by weight or shall each emit no more than 0.59 pounds/hour of HF.

c. For all other acid gases and acid mists, A-46 and A-197 shall each achieve either 99 percent control by weight or shall each emit no more than 0.025 pounds/hour of acid gas.

d. For sulfur dioxide, A-46 and A-197 shall each achieve either 99 percent control by weight or shall each emit no more than 0.61 pounds/hour of SO<sub>2</sub>.

(Basis: Cumulative Increase, Toxic Risk Management Policy, BAAQMD Regulation 6-310, and BAAQMD Regulation 9-1-302)

11. The Permit Holder shall demonstrate compliance with Part 10 above by using a caustic scrubbing solution in A-46 and A-197 with a minimum hydroxide (OH<sup>-</sup>) concentration of 2 percent by weight from either sodium hydroxide (NaOH) or potassium hydroxide (KOH). To demonstrate compliance with this requirement, the Permit Holder shall collect a sample of scrubbing solution used at A-46 and A-197 once per day and shall analyze the sample for pH and weight percent of NaOH or KOH.

(Basis: Cumulative Increase, Toxic Risk Management Policy, BAAQMD Regulation 6-310, and BAAQMD Regulation 9-1-302)

12. In order to demonstrate compliance with Parts 1-11 above, the Permit Holder shall maintain the following records:
  - a. Daily records of operating time for the Vikane Plant (S-454).
  - b. Hourly records of the temperature at the bottom of B30 (A-91) and the rolling 24 hour averages.
  - c. Daily records of the pH and hydroxide concentration in the scrubbing solution for the A-46/A-197 Caustic Scrubbers.
  - d. Daily records of the amount of Vikane produced at S-454, totaled each month.
  - e. Monthly records of the throughput rate for hydrochloric acid (expressed as 36% HCl) at S-449.
  - f. Monthly and daily records of particulate emissions (HCl, HF, and sulfuryl fluoride) and SO2 emissions from S-454 for the previous 12-month period.
  - g. Monthly and daily records of hydrochloric acid emissions from S-449 for the previous 12-month period.

These records shall be kept on site for a minimum of five years from the date of entry and shall be made available to District personnel upon request.

(Basis: Cumulative Increase, TRMP, BAAQMD Regulation 2-6-501, BAAQMD Regulation 6-310, and BAAQMD Regulation 9-1-302)

Revised Condition No. 18128 (S-449 now routed to A-101 and A-102, Vikane Plant Shutdown).

COND# 18128 -----

Applications 17600

S-449, Hydrochloric Acid Storage Tank, T-30;

1. The owner/operator of S-449 (P-188) shall ensure abated hydrochloric acid emissions shall not exceed 68 pounds in any consecutive 12-month period.  
(Basis: Cumulative Increase)
2. The owner/operator of S-449 (P-188) shall ensure abated hydrochloric acid emissions shall not exceed 0.3 pounds in any day.  
(Basis: BAAQMD Regulation 2-1-301)
3. The owner operator of S-449 Hydrochloric Acid Storage Tank shall ensure the tank exhaust is vented to the A-101 Falling Film Absorber and A-102 Acid Scrubber, whenever S-449 is storing hydrochloric acid. (Basis: Cumulative Increase, Regulation 2, Rule 5, and Regulation 6-310/Regulation 2-1-403)
4. In order to demonstrate compliance with Parts 1-11 above, the owner/operator shall maintain the following records:
  - a. Monthly records of the throughput rate for

- hydrochloric acid (expressed as 36% HCl) at S-449.
- b. Monthly and daily records of hydrochloric acid emissions from S-449 for the previous 12-month period.

These records shall be kept on site for a minimum of five years from the date of entry and shall be made available to District personnel upon request.

(Basis: Cumulative Increase, TRMP, BAAQMD Regulation 2-6-501, BAAQMD Regulation 6-310, and BAAQMD Regulation 9-1-302)

## **RECOMMENDATION**

Approve the alteration of the following equipment:

S-449 Hydrochloric Acid Tank exhaust routed to A-101 Falling Film Absorber and A-102 Scrubber which is exhausted to P-199.

Approve the revision of Condition No. 18128 to reflect the rerouting of the tank exhaust from S-449 and the shutdown of the Vikane Plant (S-454).

## **EXEMPTIONS**

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Lusher  
Air Quality Engineer II

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburg, CA 94565  
Plant No. 31  
Application No. 17940**

## **BACKGROUND**

Dow Chemical Company (Dow) has applied for a Change of Conditions for their Pittsburg facility. Dow proposes adding a plant wide condition that would limit emissions of Hazardous Air Pollutants (HAP per the Clean Air Act) from the facility to less than 10 tons/year of any single HAP and less than 25 tons/year of aggregate HAP. The 10/25 ton thresholds define a major source of HAP under the clean air act.

The new plant wide condition would make the facility a minor source of HAP under the Clean Air Act. The facility plans to submit quarterly emissions estimates to demonstrate compliance with the new permit limit. All emissions estimates would need to be prepared using District approved methodology.

The facility hired a consultant to prepare actual HAP emissions estimates for 2004, 2005, and 2006. The emissions estimates were based on previously prepared emission calculations for the facility which are documented in onsite binders. Each emission calculation has been documented and based on District review appeared to use a conservative methodology to estimate emissions.

Dow has also agreed to make the permit limit less than the 10/25 ton/year major source thresholds. Dow will limit HAP emissions to less than 9 tons/year for any single HAP and 23 tons/year for aggregate HAP.

Total HAP emissions were 14 tons/year in 2004, 11 tons/year in 2005, and 16 tons/year in 2006. Dow also multiplied the fugitive estimate by 1.5 to ensure that fugitive emissions would not cause the facility to exceed the new permit limits in the future.

The emissions estimates indicate that methylene chloride from S-302 Fungicides Product Dryer and Collector Tank and S-303 Fungicide Product Dryer and Collector had total emissions of 9,890 lb/year in 2006. The emissions estimates also indicate that Fugitive emissions of carbon tetrachloride were 5330.97 lb/year in 2004. These two HAPs had the largest annual emissions from the facility during 2004, 2005, and 2006. The emissions of any single HAP did not approach the 10 tons/year major source threshold or the proposed 9 ton/year permit limit.

## **EMISSIONS SUMMARY**

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

**Plant Cumulative Increase: (tons/year)**

<b>Pollutant</b>	<b>Existing</b>	<b>New</b>	<b>Total</b>
POC	0.000	0.000	0.000

**Toxic Risk Screening:**

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

**STATEMENT OF COMPLIANCE**

The owner/operator of Dow Chemical plant in Pittsburg, CA shall continue to comply with all air Permit Conditions.

This application is exempt from CEQA per 2-1-312.1.

**2-1-312 Other Categories of Exempt Projects:** In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.

312.1 Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.

312.2 Permit applications to install air pollution control or abatement equipment.

312.3 Permit applications for projects undertaken for the sole purpose of bringing an existing facility into compliance with newly adopted regulatory requirements of the District or of any other local, state or federal agency.

312.4 Permit applications submitted by existing sources or facilities pursuant to a loss of a previously valid exemption from the District's permitting requirements.

312.5 Permit applications submitted pursuant to the requirements of an order for abatement issued by the District's Hearing Board or of a judicial enforcement order.

312.6 Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.

312.7 Permit applications for the replacement or reconstruction of existing sources or facilities where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced.

Bay Area Air Quality Management District July 19, 2006  
2-1-24

312.8 Permit applications for cogeneration facilities which meet the criteria of Section 15329 of the State CEQA Guidelines.



312.9 Any other project which is exempt from CEQA review pursuant to the State CEQA Guidelines.

312.10 Applications to deposit emission reductions in the emissions bank pursuant to Regulation 2, Rule 4 or Regulation 2, Rule 9.

312.11 Permit applications for a proposed new or modified source or sources or for process changes which will satisfy the "No Net Emission Increase" provisions of District Regulation 2, Rule 2, and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. Examples of such projects include, but are not necessarily limited to, the following:

11.1 Projects at an existing stationary source for which there will be no net increase in the emissions of air contaminants from the stationary source and for which there will be no other significant environmental effect;

11.2 A proposed new source or stationary source for which full offsets are provided in accordance with Regulation 2, Rule 2, and for which there will be no other significant environmental effect;

11.3 A proposed new source or stationary source at a small facility for which full offsets are provided from a small facility bank established by the APCO pursuant to Regulation 2-4-414, and for which there will be no other significant environmental effect;

11.4 Projects satisfying the "no net emission increase" provisions of District Regulation 2, Rule 2 for which there will be some increase in the emissions of any toxic air contaminant, but for which the District staff's health risk screening analysis shows that the project will not result in a cancer risk (as defined in Regulation 2-5-206) greater than 1.0 in a million ( $10^{-6}$ ) and will not result in a chronic hazard index (as defined in Regulation 2-5-208) greater than 0.20, and for which there will be no other significant environmental effect.

*(Adopted 7/17/91; Amended 5/17/00; 12/21/04; 6/15/05)*

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

***Best Available Control Technology:***

This application does not trigger BACT.

***Offsets:*** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

**PSD, NSPS, and NESHAPS do not apply.**

## PERMIT CONDITIONS

Dow Chemical, Plant #31,

The following conditions establish the federally enforceable permit terms that ensure this plant is classified as a Minor source of Hazardous Air Pollutants under District Regulation 2, Rule 6, Major Facility Review. All applications submitted by the applicant and all modifications to the plant's equipment after issuance of the minor HAP permit must be evaluated to ensure that the facility will not exceed the HAP minor general limits below, and that sufficient monitoring, recordkeeping, and reporting requirements are imposed to ensure enforceability of the limits.

Any revision to a condition establishing this plant's status as a HAP Minor Facility or any new permit term that would limit emissions of a new or modified source for the purpose of maintaining the facility as a HAP minor, must undergo the procedures pursuant to Regulation 2, Rule 6, section 423. The basis for the HAP minor conditions is an emission limit for a single hazardous air pollutant of less than 9 tons per year, and an emission limit for a combination of hazardous air pollutants of less than 23 tons per year.

1. The owner/operator of Dow Chemical Pittsburg facility shall not emit more than 9 tons of any single hazardous air pollutant (HAP) or 23 tons of any combination of HAPs in any consecutive 12-month period. (basis: Clean Air Act, Section 112, District Regulation 2, Rule 6)
2. The owner/operator of Dow Chemical Pittsburg facility shall maintain quarterly emission estimates to demonstrate compliance with this condition. The owner/operator shall prepare all emission estimates using District approved calculations. Emission estimates for each calendar quarter shall be prepared by the owner/operator of Dow Chemical Pittsburgh facility within 30 days from the end of the calendar quarter. Emission estimates shall be submitted to the District upon request. The owner/operator shall notify the District immediately if emission estimates indicate Part 1 of this condition has been exceeded during any consecutive 12 month period.

**RECOMMENDATION**

Approve the change of conditions for the Dow Chemical Pittsburg CA facility.

**EXEMPTIONS**

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Lusher  
Air Quality Engineer II

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 18563**

**BACKGROUND**

Dow Chemical Company (Dow) has applied for an Authority to Construct for an Oxidation Catalyst (A-205) to abate S-389 Halogenated Acid Furnace: Sym-Tet Thermal Oxidizer, R-501, Incinerator - Single Chamber, 3MM BTU/hr max, Multifuel.

S-389 is currently abated by A-94 Acid Absorber, A-74 Caustic Scrubber, A-75 Particulate Scrubber, two Carbon Beds in parallel (A-76, A-80), and A-77 Non-Selective Catalytic Reduction.

A-205 Oxidation Catalyst would be installed after A-77 and just prior to the stream being exhausted to atmosphere.

S-389 has a bypass stack that bypasses the two Carbon Beds in parallel (A-76, A-80), A-77 Non Selective Catalytic Reduction and the new A-205 Oxidation Catalyst. This bypass is used when the Non Selective Catalytic Reduction unit is undergoing periodic maintenance. The NOx emissions are limited to 6,194 lb/year in Part 10 of Condition 2039.

**EMISSIONS SUMMARY**

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

**Toxic Risk Screening:**

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

**STATEMENT OF COMPLIANCE**

The owner/operator of S-389 shall continue to comply with the applicable portions of Permit Conditions No. 1748, 1785, 2039, 5722, 11276, 14438, 14722, 16610 and 24004.

S-389 is also expected to maintain compliance with the applicable requirements of Regulation 1, Regulation 6, and Regulation 8-2, and Regulation 9-1. S-389 is also expected to remain in compliance with 40 CFR Part 63 Subpart EEE requirements (Hazardous Waste Combustor MACT), and other 40 CFR Part 63 requirements as applicable.

The project is exempt from CEQA in accordance with Regulation 2-1-312.2 since it is the installation of a new abatement device on an existing source. Regulation 2, Rule 1-312 states:

**2-1-312 Other Categories of Exempt Projects:** In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express

terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.

312.1 Applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.

312.2 Permit applications to install air pollution control or abatement equipment.

312.3 Permit applications for projects undertaken for the sole purpose of bringing an existing facility into compliance with newly adopted regulatory requirements of the District or of any other local, state or federal agency.

312.4 Permit applications submitted by existing sources or facilities pursuant to a loss of a previously valid exemption from the District's permitting requirements.

312.5 Permit applications submitted pursuant to the requirements of an order for abatement issued by the District's Hearing Board or of a judicial enforcement order.

312.6 Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.

312.7 Permit applications for the replacement or reconstruction of existing sources or facilities where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced.

Bay Area Air Quality Management District July 19, 2006

2-1-24

312.8 Permit applications for cogeneration facilities which meet the criteria of Section 15329 of the State CEQA Guidelines.

312.9 Any other project which is exempt from CEQA review pursuant to the State CEQA Guidelines.

312.10 Applications to deposit emission reductions in the emissions bank pursuant to Regulation 2, Rule 4 or Regulation 2, Rule 9.

312.11 Permit applications for a proposed new or modified source or sources or for process changes which will satisfy the "No Net Emission Increase" provisions of District Regulation 2, Rule 2, and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. Examples of such projects include, but are not necessarily limited to, the following:

11.1 Projects at an existing stationary source for which there will be no net increase in the emissions of air contaminants from the stationary source and for which there will be no other significant environmental effect;

11.2 A proposed new source or stationary source for which full offsets are provided in accordance with Regulation 2, Rule 2, and for which there will be no other significant environmental effect;

11.3 A proposed new source or stationary source at a small facility for which full offsets are provided from a small facility bank established by the APCO pursuant to Regulation 2-4-414, and for which there will be no other significant environmental effect;

11.4 Projects satisfying the "no net emission increase" provisions of District

Regulation 2, Rule 2 for which there will be some increase in the emissions of any toxic air contaminant, but for which the District staff's health risk screening analysis shows that the project will not result in a cancer risk (as defined in Regulation 2-5-206) greater than 1.0 in a million ( $10^{-6}$ ) and will not result in a chronic hazard index (as defined in Regulation 2-5-208) greater than 0.20, and for which there will be no other significant environmental effect.

*(Adopted 7/17/91; Amended 5/17/00; 12/21/04; 6/15/05)*

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

***Best Available Control Technology:***

This application does not trigger BACT.

***Offsets:*** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

**PSD, and NSPS do not apply to this specific permit application. NESHAPs 40 CFR 63 requirements still apply to S-389. Adding A-205 Oxidation Catalyst is not expected to change the compliance status of S-389 with any applicable 40 CFR Part 63 requirements.**

## PERMIT CONDITIONS

COND# 2039 -----

Applications 26939, 726, 12387, 16468, 18563  
For S-389, Sym-Tet Thermal Oxidizer, R-501:  
A-74, B-502 Caustic Scrubber  
A-75, X-505 Particulate Scrubber  
A-76, B-503A Carbon Adsorber  
A-77, R-502 Nonselective Catalytic Reduction Unit  
A-80, B-503B Carbon Adsorber  
A-94, B-501 Acid Absorber  
A-205, R-503 Carbon Monoxide Scrubber

1. The S-389 Sym-Tet Thermal Oxidizer, R-501 combustion chamber shall operate at a minimum of 1000 degrees C (1830 degrees F) at all times that chlorinated liquids and/or gases are being burned.  
(Basis: Cumulative Increase, BACT)
2. S-389 shall operate with a minimum gas residence time of 0.9 seconds in the combustion chamber at all times that chlorinated liquids and/or gases are being burned.  
(Basis: Cumulative Increase, BACT)
3. S-389 shall be abated by A-94 Acid Absorber and A-74 Caustic Scrubber at all times that S-389 is operating. S-389 shall be abated by A-75 Particulate Scrubber at all times that S-389 is burning chlorinated hydrocarbon liquid.  
(Basis: Cumulative Increase, BACT, BAAQMD Regulation 6)
4. Carbon Monoxide (CO) emissions from S-389 shall not exceed 250 ppm at 3% oxygen (~~upstream of all abatement equipment~~).  
(Basis: Cumulative Increase, BACT)
5. S-389 shall achieve a minimum organic Destruction Removal Efficiency of 99.99% (wt) for each POHC in the feed at all times.  
(Basis: Cumulative Increase)
6. Deleted.
7. Annual average liquid feed throughput for S-389 shall not exceed 45.1 gal/hr.  
(Basis: Cumulative Increase)
8. Maximum daily liquid feed throughput for S-389 shall not exceed 70 gal/hr.  
(Basis: Cumulative Increase, BACT)

9. The owner/operator of S-389 shall conduct a District approved source test every 6 months demonstrate compliance with the CO limit in Part 4 and to determine NOx emission rates in each of the following operating modes (each liquid feed mode shall be tested at the nominal rate of 18-22 gallons/hour and at the maximum achievable rate, which shall not exceed 70 gallons/hour; all vent feed modes shall be tested at maximum venting rates): a. Reactor startup on methane firing only, no NSCR (A-77) abatement. b. Process vents and methane feed, no NSCR (A-77) abatement. c. Process vents, chlorinated hydrocarbon liquid, and methane feed, no NSCR (A-77) abatement. d. Process vents, chlorinated hydrocarbon liquid, and methane feed with NSCR (A-77) abatement. e. Process vents and methane feed with NSCR (A-77) abatement.

The owner/operator shall notify the Manager of the District's Source Test Section at least seven (7) days prior to the test, to provide the District staff the option of observing the testing.

(Basis: Cumulative Increase, BACT)

10. NOx emissions from S-389 shall not exceed 6194 pounds/yr. The owner operator of S-389 shall submit the source test results for CO and a total NOx emission calculation based on the source test data from Part #9. The results of this source test and the corresponding emission calculations shall be summarized in a District approved format and submitted to the District's Engineering Division within 30 days of source test completion.

(Basis: Cumulative Increase, BACT)

11. Carbon Adsorbers B-503 A and B (A-76 and A-80), and Oxidation Catalyst (A-205) shall operate at all times that the R-502 NSCR Unit (A-77) is operating except during 30 minute startup periods and 30 minute shutdown periods.

(Basis: Cumulative Increase, BACT)

12. Deleted.

13. The owner/operator of S-389 shall install District approved continuous monitors and recorders to measure the following: a. Chlorinated hydrocarbon liquid feed rate. b. S-389 O2 emission rate. c. S-389 combustion chamber temperature. d. A-77 NSCR Unit bypassing incidents and duration.

(Basis: Cumulative Increase, BACT)



14. The stack height of the NSCR Unit A-77 Main Stack (P-1) shall be at least 45 ft above grade. The stack height of the A-77 Bypass Stack (P-8) shall be at least 35 ft above grade. (Basis: TRMP)
15. The owner/operator of S-389 shall maintain appropriate records to determine compliance with all Permit Conditions. These records shall be kept for a minimum of five years from the date of last entry and shall be made available to District personnel upon request. (Basis: Cumulative Increase, BACT, BAAQMD Regulation 2-6-501)

**RECOMMENDATION**

Approve the Authority to Construct of the following equipment:

A-205 Oxidation Catalyst

**EXEMPTIONS**

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Lusher  
Air Quality Engineer II

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 18690**

**BACKGROUND**

Dow Chemical Company (Dow) has applied for an Authority to Construct for an alteration of S-434 Manufacturing Services Facility. Dow plans on replacing process vessel T-9 with a new process vessel of similar size.

The existing T-9 (part of S-434) is a rubber lined steel vessel rated for 75 psig and 150 deg. F service. The new T-9 will be a fiberglass reinforced plastic that is rated for 15 psig and 140 deg. F service. The materials are being changed due to corrosion of the existing process vessel. Pressure relief devices will remain set at 15 psig. The existing tank volume was 3,252 gallons and the new tank volume will be 2,974 gallons.

T-9 vents to A-87 HCL Absorber/Heat Exchanger which is followed by A-199 Packed Bed Scrubber. There is no emissions increase associated with changing out process vessel T-9.

**EMISSIONS SUMMARY**

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

**Plant Cumulative Increase: (tons/year)**

<b>Pollutant</b>	<b>Existing</b>	<b>New</b>	<b>Total</b>
POC	0.000	0.000	0.000

**Toxic Risk Screening:**

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

## STATEMENT OF COMPLIANCE

The owner/operator of S-434 shall continue to comply with Permit Conditions No. 17985, 21060 and 24004.

S-434 are also expected to maintain compliance with the applicable requirements of Regulation 1, Regulation 6, and Regulation 8-2, and Regulation 8-10. S-434 is also expected to remain in compliance with 40 CFR 63 Subpart NNNNN requirements (NESHAPs for Hydrochloric Acid Production).

The project is exempt from CEQA in accordance with Regulation 2-1-310 since it is an alteration of an existing source and is not a new or modified source requiring an Authority to Construct. Regulation 2, Rule 1-310 states:

**2-1-310 Applicability of CEQA:** Except for permit applications which will be reviewed as ministerial projects under Section 2-1-311 or which are exempt from CEQA pursuant to Section 2-1-312, all proposed new and modified sources for which an authority to Construct must be obtained from the District shall be reviewed in accordance with the requirements of CEQA.

310.1 For those District permit applications which must be reviewed in accordance with the requirements of CEQA, the District will not normally be a Lead Agency under CEQA. Rather, pursuant to CEQA, the Lead Agency will normally be an agency with general governmental powers, such as a city or county, rather than a special purpose agency such as the District.

310.2 The issuance of an authority to construct and of a permit to operate for the same new or modified source or stationary source are considered to be parts of the same project for the purposes of CEQA.

310.3 The APCO shall not authorize, on an interim basis or otherwise, the installation or operation of any proposed new or modified source, the permitting of which is subject to the requirements of CEQA, until all of the requirements of CEQA have been satisfied.

*(Adopted 7/17/91; Amended 10/21/92)*

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

### ***Best Available Control Technology:***

This application does not trigger BACT.

***Offsets:*** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

**PSD, and NSPS do not apply to this specific permit application. NESHAPs 40 CFR 63 Subpart NNNNN requirements still apply to S-434. Replacing process vessel T-9 is not expected to change the compliance status of S-434 with Subpart NNNNN requirements.**

**PERMIT CONDITIONS**

This application does not require modifying permit conditions.

**RECOMMENDATION**

Approve the alteration of the following equipment:

Replacement of process vessel T-9 at S-434.

434 Manufacturing Services Facility  
CHEM> Distillation, Fully halogenated hydrocarbons, 7 days/wk  
G7037211 /,A336,A87,A199,

**EXEMPTIONS**

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Lusher  
Air Quality Engineer II

**Evaluation Report  
A/N 19565  
G# 6131 (Plant 31, Source 174)  
Dow Chemical, 901 Loveridge Rd., Pittsburg**

**Background**

Dow Chemical has applied for an A/C to remove the Phase II equipment from their existing gasoline dispensing facility under the low throughput exemption of Section 8-7-112.5. No other work is proposed under this application.

Dow Chemical currently operates a 10,000 gallon underground gasoline tank with two EW A4005 gasoline nozzles equipped with OPW EVR two-point Phase I and balance Phase II vapor recovery equipment. This equipment is permitted as Source 174 at Plant 31 and is subject to condition #14098, which limits annual gasoline throughput to 940,000 gallons per year and #20666 for the OPW EVR Phase I system.

Dow Chemical is proposing to replace the vapor recovery nozzle and hose with conventional (i.e., non-vapor recovery) models and cap off the vapor return piping. All other equipment will remain unchanged. Once this project is completed, Dow will be exempt from Phase II vapor recovery requirements. They will not be subject to the April 1, 2009 for installing EVR-certified Phase II vapor recovery equipment.

**Emissions**

The fleet refueled at this facility consists primarily of non-ORVR equipped vehicles. Removing the Phase II vapor recovery will result in an emissions increase.

Dow was originally assigned the 940,000 gal/yr limit under A/N 487. Actual reported throughput at the time was 20,400 gal/yr, and no offsets were provided for the increase. Accordingly, 20,400 gal/yr will be used as the baseline for calculating emission increases from this source.

Emission factors from the CAPCOA Industry-Wide Risk Assessment:

Phase I w/vent valves:	9.3# VOC/Mgal
Phase I, Phase II, vent valves	1.27 #VOC/Mgal

The baseline emissions for this source are based on 20,400 gal/yr with Phase I and Phase II controls. Dow has requested a condition of 20,000 gal/yr upon removal of the Phase II equipment. This will result in the following emissions increase:

$$(20 \text{ Mgal/yr}) (9.3 \text{ \#/Mgal}) - (20.4 \text{ Mgal/yr}) (1.27 \text{ \#/Mgal}) \\ = \underline{160 \text{ \# VOC/yr increase}}$$

### **New Source Review**

The emissions increase from this project is less than 10 # VOC/day. Per Section 2-2-301, BACT is not required for this project.

Dow has a cumulative increase > 35 tpy POC. Per Section 2-2-302, they are required to provide emissions offsets for any increase at a 1.15:1 ratio.

Required offsets: (160 # VOC) (1.15) = 184 # VOC offsets

In a letter dated February 27, 2009, USS POSCO authorized the District to deduct 0.092 tons (184#) of POC emission reduction credits from Banking Certificate #946.

### **Statement of Compliance**

Dow has submitted data demonstrating that this storage tank was installed prior to March 4, 1987, agreed to accept a condition limiting throughput to less than 60,000 gal/yr, and accept conditions on their A/C to remove the Phase II vapor recovery equipment to the APCO's satisfaction. This satisfies the requirements of Section 8-7-112.7.

### **Permit Conditions**

*Authority to Construct Conditions:*

#### **Cond #24279**

1. All vapor-recovery nozzles, breakaways and hoses shall removed and replaced with conventional (non-vapor recovery) equivalents.
2. Vapor adaptors shall be removed from all dispensers.
3. All vapor recovery piping (including internal dispenser piping) shall be either removed or capped with NPT galvanized pipe.
4. Within ten(10) days of start-up, a Leak Test shall be performed on the tanks in accordance with the District's Manual of Procedures Source Test Procedure ST-30. If the tank size is 500 gallons or less, the test shall be performed on an empty tank.
5. The applicant shall notify Source Test by email at [gdfnotice@baaqmd.gov](mailto:gdfnotice@baaqmd.gov) or by FAX at (510) 758-3087, at least 48 hours prior to any testing required for permitting. Test results for all performance tests shall be submitted in a District-approved format within thirty days of testing. Start-up tests results submitted to the District must include the application number and the GDF number. (For annual test results submitted to the District, enter "Annual" in lieu of the application number.) Test results may be submitted by email ([gdfresults@baaqmd.gov](mailto:gdfresults@baaqmd.gov)), FAX (510) 758-3087) or mail (BAAQMD Source Test Section, Attention Hiroshi Doi, 939 Ellis Street, San Francisco CA 94109).

*Permit to Operate Conditions*

COND# 24289 -----

This facility's annual gasoline throughput shall not exceed 20,000 gallons in any consecutive 12 month period. (Basis: Voluntary Limit)

COND# 20666 -----

1. The OPW EVR Phase I Vapor Recovery System, including all associated plumbing and components, shall be operated and maintained in accordance with the most recent version of California Air Resources Board (CARB) Executive Order VR-102. Section 41954(f) of the California Health and Safety Code prohibits the sale, offering for sale, or installation of any vapor control system unless the system has been certified by the state board. (District Regulation 8-7-301.2)
2. The owner or operator shall conduct and pass a Rotatable Adaptor Torque Test (CARB Test Procedure TP201.1B) and either a Drop Tube/Drain Valve Assembly Leak Test (TP201.1C) or, if operating drop tube overflow prevention devices ("flapper valves"), a Drop Tube Overflow Prevention Device and Spill Container Drain Valve Leak Test (TP201.1D) at least once in each 36- month period. Measured leak rates of each component shall not exceed the levels specified in VR-102. Results shall be submitted to BAAQMD within 15 days of the test date in a District-approved format. (District Regulation 8-7-301.2)

**Title V Permit Revisions**

This plant has a Title V permit. This project will require a minor revision of the Title V permit. The BAAQMD plant engineer for Chevron has been advised of the need for amendments to the Title V permit.

Proposed revisions to the Title V permit are attached.

**Recommendation**

All fees have been paid. Recommend that an A/C be issued for the above project.

By \_\_\_\_\_ date \_\_\_\_\_

Scott Owen  
Supervising AQ Engineer

**Table IV-P  
Source-specific Applicable Requirements  
S-174, Gasoline Dispensing Facility**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
<b>BAAQMD Regulation 8, Rule 7</b>	<b>Organic Compounds – Gasoline Dispensing Facilities (11/6/2002)</b>		
8-7-301	Phase I Requirements	Y	
8-7-303	Topping Off	Y	
8-7-304	Certification Requirements	Y	
8-7-308	Operating Practices	Y	
8-7-315	Pressure Vacuum Valve Requirements, Underground Tanks	Y	
8-7-407	Periodic Testing Requirements	Y	
8-7-408	Periodic Testing Notification and Submission Requirements	Y	
8-7-502	Right of Access	Y	
8-7-503	Recordkeeping Requirements	Y	
<b>BAAQMD Condition # 24289</b>			
Part 1	Maximum Annual Gasoline Throughput (TRMP)	N	

**Table VII-N  
Applicable Limits and Compliance Monitoring Requirements  
S-174, Gasoline Dispensing Facility**

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
VOC	BAAQMD Regulation 8-7-301.10	Y		98% or highest CARB vapor recovery rate	None	N	N/A
VOC	Condition 24289, Part 1	N		20,000 gallons/12 months	BAAQMD 8-7-503.1	P-M	Records
VOC	Condition #20666, Part 2	Y		Average Static Torque to not exceed 108 pound-inch measured per CARB TP-201.1B	CARB Executive Order VR-102	P 3A	N/A
VOC	Condition #20666, Part 2	Y		Drop Tube Overfill Prevention Device Leak Rate not to exceed 0.17 CFH measured per CARB TP201.1D	CARB Executive Order VR-102	P 3A	N/A
VOC	BAAQMD Regulation 8-7-301.13	Y		Comply with vapor tightness by passing a test per District Source Test Procedure ST-30 or CARB TP-201.3			



**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 20156**

**BACKGROUND**

Dow Chemical Company (Dow) has applied for an Authority to Construct for an alteration of A-192 Dowicil Solvent Recovery System. Dow plans on replacing process vessel T-220 with a new process vessel of similar size. The existing tank is stainless steel the new tank will be carbon steel. The existing tank has a length of 6' and an internal diameter of 4' with a capacity of 690 gallons. The new tank will have the same capacity and interior dimensions, but will be ½" thick.

There will be no change in operations due to the installation of the new tank. Material is transferred from a distillation column B-200 to T-220. T-220 vents to the solvent recovery system and the liquids are transferred to S-336 the thermal oxidizer in the Manufacturing Services facility.

**EMISSIONS SUMMARY**

There is no increase in emissions (fugitive or from a defined emission point) associated with this application.

**Plant Cumulative Increase: (tons/year)**

<b>Pollutant</b>	<b>Existing</b>	<b>New</b>	<b>Total</b>
POC	0.000	0.000	0.000

**Toxic Risk Screening:**

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

**STATEMENT OF COMPLIANCE**

The owner/operator of A-192 shall continue to comply with Permit Condition No. 14438. A-192 abates S-302 Dowicil Train 1, S-303 Dowicil Train 2, and three Storage Tanks S-662, S-663, and S-664.

The project is exempt from CEQA in accordance with Regulation 2-1-310 since it is an alteration of an abatement device and is not a new or modified source requiring an Authority to Construct. Regulation 2, Rule 1-310 states:

**2-1-310 Applicability of CEQA:** Except for permit applications which will be reviewed as ministerial projects under Section 2-1-311 or which are exempt from CEQA pursuant to Section 2-1-312, all proposed new and modified sources for which an authority to construct must be obtained from the District shall be reviewed in accordance with the

requirements of CEQA.

310.1 For those District permit applications which must be reviewed in accordance with the requirements of CEQA, the District will not normally be a Lead Agency under CEQA. Rather, pursuant to CEQA, the Lead Agency will normally be an agency with general governmental powers, such as a city or county, rather than a special purpose agency such as the District.

310.2 The issuance of an authority to construct and of a permit to operate for the same new or modified source or stationary source are considered to be parts of the same project for the purposes of CEQA.

310.3 The APCO shall not authorize, on an interim basis or otherwise, the installation or operation of any proposed new or modified source, the permitting of which is subject to the requirements of CEQA, until all of the requirements of CEQA have been satisfied.

*(Adopted 7/17/91; Amended 10/21/92)*

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

***Best Available Control Technology:***

This application does not trigger BACT.

***Offsets:*** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

**PSD, NSPS and NESHAPs do not apply to this specific permit application.**

**PERMIT CONDITIONS**

This application does not require modifying permit conditions.

**RECOMMENDATION**

Approve the alteration of the following equipment:

Replacement of process vessel T-220 at A-192.

192 Vent Recovery System  
Compression/Refrigeration Vapor Recovery  
train: ,S302,S303,S662,S663,S664,/,A389,P218,

**EXEMPTIONS**

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Lusher  
Air Quality Engineer II

**Addendum to Engineering Evaluation  
November 15, 2010  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburg, CA 94565  
Plant No. 31  
Application No. 21795**

Dow Chemical Company revised the fugitive component count for the project as shown below. This document is an addendum to the engineering evaluation originally prepared for the project.

The Dow Chemical Company has applied for an Authority to Construct for a new carbon tetrachloride loading rack. The equipment has the following description:

**S-483 Carbon Tetrachloride Rail Car Loading Rack**

The new loading rack will be abated by a vapor balance system that sends the collected emissions to either the Symtet Halogen Acid Furnace S-389 or the Manufacturing Services Halgen Acid Furnace S-336. Dow also has an existing S-482 Carbon Tetrachloride Rail Car Loading rack.

The fugitive component counts for the project are contained in the following Table.

<b>Component</b>	<b>Original Project Estimate</b>	<b>Final Project Estimate</b>
Valves	5	7
Connections (Flanges)	14	20

Dow is installing BACT components for the fugitive components in use at the carbon tetrachloride loading rack. The District originally estimated emissions of carbon tetrachloride assuming two leaking connectors at 998.973 lb/year. This emissions value corresponded to a cancer risk of 1.5 in a million. Dow agreed to limit the project risk to one in a million. The corresponding fugitive limit was 669.35 lb/year

The total carbon tetrachloride emissions for the project are  $670 \text{ lb/year} + 3.59 \text{ lb/year} = 673.59 \text{ lb/year}$ . The corresponding fugitive emissions of carbon tetrachloride would be limited to 669.35 lb/year ( $670 \text{ lb/year} - 0.353 \text{ lb/year} - 0.3 \text{ lb/year}$ ). The fugitive emissions estimate demonstrates compliance with this limit when the number of leaking connectors is reduced from two to one. The fugitive emissions estimate for the project with the revised component counts would be reduced to 528.14 lb/year assuming one leaking connector. The permit limit will be set at 669.35 lb/year for the fugitive emissions to allow for some compliance margin.

For the carbon tetrachloride loading rack the final fugitives emissions estimate assuming one leaking connector with the final component counts was calculated as follows.

Dow Chemical Company Plant No. 31  
 Application No. 21795  
 BAAQMD Corrected Fugitives, November 2010

Basis	% of Year	Valves	Connectors	Leaker	Valve EF (lb/year)	Connector EF (lb/year)	Leaker EF (lb/year)	Emissions (lb/year)
Loading filled with liquid	6	7	20	0	2.0736	2.916	NA	4.37
Filled when not loading	94	4	10	1	2.0736	2.916	517.668	521.82
Empty when not loading	94	3	10	0	0.20736	0.1458	NA	1.96
Total								528.14

Dow data for maximum leaking connector is 517.668 lb/year from the Manufacturing Services Plant Block 520.

Dow and BAAQMD agreed that the final permit limit should be developed assuming a maximum leak rate for one leaking connectors at 1 x 517.668 lb/year = 517.668 lb/year. This approach will ensure that Dow will meet the permit limit in the future, offsets provided will be adequate, and that the health risk screening analysis will be conservative.

### Sample Calculation

$$\text{POC lb/year} = (\% \text{ of year operated}) \times (\text{component specific emission factor}) \times (\# \text{ of connectors})$$

The revised fugitive component count does not change any of the analysis contained in the engineering evaluation. The revised component count has been incorporated into Condition No. 24779 Part 1.

### PERMIT CONDITIONS

COND# 24779 -----

Plant 31  
 S-483 Carbon Tetrachloride Loading

1. Within 30 days of District's issuance of the Permit to Operate for S-483, the Owner/Operator shall provide the District's Engineering Division with a final count of all fugitive components and each component's unique permanent identification codes in this project. The owner/operator has been permitted to install the following fugitive components that shall be required to meet current District BACT guidelines at the time of installation:

7 valves in organic service;  
 20 connectors in organic service;

[Basis: Cumulative Increase, offsets, Regulation 2-5]

2. The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any valves installed at S-483 in organic service unless the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18. [Basis: Regulation 8 Rule 18]
3. The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any flanges and/or connectors installed at S-483 in organic service unless

the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18.

[Basis: Regulation 8 Rule 18]

4. The Owner/Operator shall conduct inspections of fugitive components installed at S-483 in organic service in accordance with the frequency below:

Valves: Quarterly

Connectors (Not Flanges): Biannual

Flanges: Biannual

[Basis: Cumulative Increase, Regulation 8 Rule 18, Regulation 2 Rule 5]

5. The Owner/Operator shall not exceed 0.335 tons of POC emissions per consecutive 12 month period measured as C1 from for all fugitive components installed at S-483 in organic service. Compliance with this provision shall be verified quarterly using methods described in part 6.

[Basis: Cumulative Increase, offsets]

6. If all of the fugitive components installed at S-483 in organic service are leaking at a rate less than 5000 ppm of TOC (measured as C1) in any calendar quarter, no further verification and no submittal of the results shall be required. If any of the fugitive components installed at S-483 in organic service are leaking at a rate equal to or greater than 5,000 ppm of TOC (measured as C1) in any calendar quarter, the owner/operator shall conduct an annual emissions estimate in order to demonstrate compliance with part 5 and shall submit the results to the district within 30 days of the annual emissions calculation. For any calendar quarter in which one or more of these components is leaking at a rate equal to or greater than 10,000 ppm of TOC (measured as C1), the Owner/Operator shall calculate and submit a report of fugitive emissions from all S-483 fugitive components in organic service utilizing District approved methods for the consecutive 12 month period ending with the current quarter. This calculation shall continue each quarter until there is not a quarter containing a pegged leaker. For leaking components the owner/operator shall use a District approved calculation method and LeakDAS. The Owner/Operator shall include emissions estimates from all S-483 fugitive components in organic service regardless of the component Rule 8-18 repair status in order to demonstrate compliance with part 5.

[Basis: Cumulative Increase, Offsets]

7. The Owner/Operator shall keep a District-approved monthly log of fugitive component counts at S-483, each component's unique permanent identification codes,

monitoring results, and any annual emissions estimates required per part 6 for at least five years from date of entry. The log shall be retained on site and made available to district staff upon request. [Basis: offsets, recordkeeping]

**RECOMMENDATION**

Reissue an Authority to Construct for the following equipment:

**S-483 Carbon Tetrachloride Rail Car Loading Rack**

**EXEMPTIONS**

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Lusher  
Senior Air Quality Engineer

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 21858**

**BACKGROUND**

Dow Chemical Company (Dow) has applied for an Authority to Construct a Nitrapyrin Formulation Plant. The plant will be constructed on the old latex plant site and will utilize equipment from the former latex plant, which was shutdown in 2009. The latex plant operated from 1956 to 2009. Nitrapyrin nitrogen stabilizer is a commercial agricultural product that optimizes the yield potential of corn crops by ensuring nitrogen is available in the root zone during key stages of corn growth when used with liquid fertilizer or manure.

The Nitrapyrin plant consists of the following equipment:

Source	Dow Number	Description	Size (gals)	Exempt
S-718		Nitrapyrin Formulation Plant		Not Exempt
S-719 (exempt)	D-121 A	Aromatic 200 Pressure Tank	35,900	2-1-123.3.2
	Tote	Drapex	Unknown	2-1-123.3.6
	Isotainer	N-Serve TG	Unknown	2-1-103
S-720	T-310	Organic Mix	9,000	2-1-103
S-721 (exempt)	D-110A	PAPI Storage Pressure Tank	7,900	2-1-123.3.2
	T-751, Tote	Proxel	375	2-1-103
S-722 (exempt)	T-8	Tergitol S-15	5,900	2-1-123.3.6
S-723 (exempt)	T-9	Tergitol S-15	5,900	2-1-123.3.6
	Tote	Antifoam	Unknown	2-1-103
S-724 (exempt)	T-15	Propylene Glycol Storage	7,800	2-1-123.3.2
S-725	V-250	Aqueous Mix	2,900	2-1-103
S-726	T-112	Emulsion Storage	8,800	2-1-103
S-727	T-11	Gel Phase Mix	1,500	2-1-103
S-728	T-20	Ethylene Diamine Storage Pressure Tank	8,200	Not Exempt
S-729	V-100	Encapsulation Vessel	8,200	2-1-103
S-730	T-569	Nitrapyrin Formulation Storage	80,000	2-1-103
S-731	T-570	Nitrapyrin Formulation Storage	80,000	2-1-103

Two sources are not considered exempt from District permitting requirements: S-718 Nitrapyrin Formulation Plant and S-728 Ethylene Diamine Storage Pressure Tank. The emissions from S-718 are fugitive POC emissions from leaks in various components. The emissions of Ethylene Diamine from S-728 are considered to be negligible due to the fairly low vapor pressure of the material, 0.207 psia, and the fact that the tank is a pressure tank that is vapor balanced when loaded. There are no normal breathing and working losses associated with this tank. All of the remaining tanks associated with the project are exempt as identified above. The emissions of air toxics (naphthalene) from all of the exempt tanks were included in the health risk screen to ensure conservative results.

Dow Figure 2-3, Project Component Flow Chart, for the Nitrapyrin Formulation Project shows the material flow through the Nitrapyrin plant.

### EMISSIONS SUMMARY

The primary emissions from the Nitrapyrin plant are the fugitive emissions from leaking components. The fugitive emissions are POC with a fraction of naphthalene.

The emissions from the Nitrapyrin plant are expected to be low due to the properties of the materials being handled at the plant.

The table below shows the organic chemicals in use at the plant and the vapor pressures in psia.

Chemical	Vapor Pressure (psia)
N-Serve TG	0.012
Aromatic 200	0.0008
Drapex	0.002
PAPI	0.0000002
Proxel	8.4 E-09
Tergitol	0.000193
Geroxon	Solid
Kraftsperser	Solid
Antifoam 100	0.019
Propylene Glycol	0.005
Avicel	Solid
Kelzan	Solid
Ethyl Diamine	0.207
Encapsulated Nitrapyrin	Negligible

The fugitive component counts for the project are contained in the following Table.

Component	Project Estimate	Project Estimate with 20% Contingency
Valves	367	440
Connections (Flanges)	936	1123
Pumps	17	20
Pressure Relief Devices	11	13
Agitators	6	7



Dow is installing BACT components for the majority of fugitive components in use at the Nitrapyrin plant. The components that do not meet District BACT requirements are identified below.

7 to 10 - Rising Stem Valves

1 - Single Mechanical Seal Pump for Propylene Glycol Offloading

1 - Single Mechanical Seal Pump for Aromatic 200 Offloading

5 - Pressure Relief Devices

Dow has requested that the fugitive emissions from the Nitrapyrin plant be limited below the POC BACT trigger level of 10 lb per day. The District has estimated the maximum fugitive emissions from the project using the following calculation:

POC Permit Limit lb/year = 9.9 lb POC/day (Below BACT trigger) x 180 days/year (Typical Service) = 1782 lb/year POC, 0.891 ton/year POC

Napthalene Permit Limit = 1782 lb POC/year x 0.14 lb Napthalene/lb POC = 249.48 lb/year of Napthalene

The Nitrapyrin plant plans to be in production at two different times during the year for two months at a time. Some of the fugitive components will be in service all year long. The remaining fugitive components will be in service for 180 days per year. Dow will purge some of the chemical lines in between production runs when the plant is idle. Dow intends to continue to monitor purged fugitive components since some chemical residue may remain in the chemical lines.

Dow provided the District detailed fugitive emissions data for another plant within Dow in order to estimate fugitive emissions from the Nitrapyrin project. Average data was taken from the Symtet (Chlorpyridines) Plant Block 660. This plant handles higher vapor pressure materials (perchloroethylene, carbon tetrachloride) than the Nitrapyrin facility. Using average emissions data from this facility and assuming no pegged leakers the POC emissions were estimated by the District to be 703 lb/year (See attachment 1 for detailed calculations.)

The 703 lb POC per year estimate is extremely conservative since the Nitrapyrin plant does not handle materials with vapor pressures as high as carbon tetrachloride (1.76 psia) or perchloroethylene (0.27 psia). Only one chemical in use at the Nitrapyrin plant has a comparable vapor pressure and that is ethyl diamine (0.207 psia). In addition, the Nitrapyrin plant will operate at lower temperatures and pressures than the Symtet plant.

The District is confident that as long as there are no pegged leakers at the Nitrapyrin plant that emissions should remain below the 10 lb/day BACT trigger level. Assuming the plant only had fugitive components in service for 150 days, the normal emissions per day would be 703 lb/year x 1/150 days = 4.69 lb/day. The facility plans to be in production for 120 days and the fugitive lines would be in service several weeks before and after each production run. The District estimates a minimum of 150 days in service for all fugitive components. The District believes the lines would really be in service for 180 days per year, but is using 150 days per year to be conservative.

The District estimates that a pegged leaker (TOC reading greater than 10,000 ppm) would have the following emission rates for each component.

<b>Component</b>	<b>Emissions POC (lb/day)</b>
Valves	3.39
Flange	5.03
Connectors	1.59
Pumps	4.71
Pressure Relief Devices	4.34

Notes: Per CAPCOA Correlation Equations

Dow would still be able to meet the 10 lb/day limit with one pegged leaker. The worst case would be normal emissions of 4.69 lb/day added to 5.03 lb/day for a total of 9.72 lb/day of POC.

In order to ensure that the Nitrapyrin plant never exceeds the 10 lb per day BACT trigger level for POC, the District will impose permit conditions requiring Dow to demonstrate compliance with the 9.9 lb/day permit limit if a leak greater than 5,000 ppm is found at the Nitrapyrin plant. Dow would be subject to enforcement action if the 9.9 lb/day POC limit was ever exceeded.

The Nitrapyrin Plant will also emit small amounts of particulate matter which have been estimated by Dow using the following equation:

Dow estimates the Particulate Matter emissions using the following equation:

$$\text{PM}_{10}/\text{PM}_{2.5} \text{ lb/year} = 161.05 \text{ tons/year of solids} \times 0.061 \text{ lb Particulate/ton} = 9.82 \text{ lb/year}$$

Emission Factor for PM from EPA AP-42 Table 9.9.1-1 for Grain Handling (3/03).

The Table below shows the project POC emissions and includes emissions from exempt sources.

**Plant Cumulative Increase: (tons/year)**

<b>Pollutant</b>	<b>Existing</b>	<b>New</b>	<b>Total</b>
POC	1.908	0.891	2.799
PM	1.619	0.005	1.624

Please note the cumulative increase shown above is for Applications since 1991.

Dow will be submitting additional offsets for some applications processed since 1991 that were offset at a ratio of 1.00 to 1.00 for POC. These applications should have been offset at a ratio of 1.15 to 1.00 for POC. In addition, Dow had not yet surrendered the offsets for Application No. 19565 which had POC emissions of 0.08 tons/year and requires 0.092 tons/year of offsets.

The table below summarizes the additional offsets Dow will provide the District under this application.

<b>Application</b>	<b>Increase (ton/year)</b>	<b>Contemporaneous Reductions (tons/year)</b>	<b>Offsets Provided (tons/year)</b>	<b>Additional Offsets Required (tons/year)</b>
1850	0.032		0.032	0.0048
3249	0.022		0.022	0.0033
6290	0.576	0.576		
12025	0.102		0.117	
19565	0.080		0.092	
8824	0.070		0.070	0.0105
9962	0.160	0.008	0.152	0.0228
12515	0.190	0.190		
17265	0.001	0.001		
18105	0.057	0.057		
18750	0.538		0.538	0.0807
19565	0.080			0.080
Total				0.202

The total offsets that will be surrendered by Dow will equal 0.891 tons/year for this application added to the 0.202 tons/year from the Table above which will bring the total POC offsets to 1.093 tons/year.

**Toxic Risk Screening:**

Napthalene emissions from the project are estimated at 252.97 lb/year from all sources including exempt tanks. The trigger level for naphthalene is 3.2 lb/year per Regulation 2, Rule 5. This application required a Risk Screening Analysis under Regulation 2 Rule 5.

The maximum cancer risk estimated for the project was 0.31 in a million and the maximum chronic hazard index was 0.0011 (See Memorandum dated September 7, 2010 from Jane Lundquist.) These results are in accordance with the requirements of Regulation 2, Rule 5, Section 301 for a source not installing TBACT (cancer risk less than one in a million with a chronic hazard index less than 0.2.)

**STATEMENT OF COMPLIANCE**

The owner/operator of S-718 and S-728 shall comply with Permit Condition No. 24763.

S-718 will be required to meet the requirements of District Regulation 8, Rule 18 Equipment Leaks. Dow is expected to comply with the requirements of Regulation 8, Rule 18.

S-728 will be required to meet the requirements of District Regulation 8, Rule 5 Storage of Organic Liquids. S-728 is expected to comply with the requirements of Regulation 8, Rule 5.

The project will require a minor revision to the Title V permit that will be processed with the Title V renewal Application No. 18262. The project meets the requirements for a minor revision since it is not considered a significant revision under 2-6-226.

- 2-6-226 Significant Permit Revision:** Any revision to a federally enforceable condition contained in a major facility review permit that can be defined as follows:
- 226.1 The incorporation of a change considered a major modification under 40 CFR Parts 51 (NSR) or 52 (PSD);
  - 226.2 The incorporation of a change considered a modification under 40 CFR Parts 60 (NSPS), 61 (NESHAPS), or Section 112 of the Clean Air Act (HAP);
  - 226.3 Any significant change or relaxation of any applicable monitoring, reporting or recordkeeping condition;
  - 226.4 The establishment of or change to a permit term or condition allowing a facility to avoid an applicable requirement, including:
    - 4.1 a federally enforceable emission limit assumed in order to avoid classification as a modification under any provision of Title I of the federal Clean Air Act, or
    - 4.2 an alternative hazardous air pollutant emission limit pursuant to Section 112(i)(5) of the Clean Air Act;
  - 226.5 The establishment of or change to a case-by-case determination of any emission limit or other standard;
  - 226.6 The establishment of or change to a facility-specific determination for ambient impacts, visibility analysis, or increment analysis on portable sources; or
  - 226.7 The incorporation of any requirement promulgated by the U. S. EPA under the authority of the Clean Air Act provided that three or more years remain on the permit term. (Amended 10/20/99)

The project is not a major modification under NSR or PSD. The project is not considered a modification under an NSPS, since no NSPS applies to the project (See NSPS discussion below.) The NESHAPs general provisions under 63.41 do not have a definition for modification. The NESHAPs discuss reconstruction of a major source of HAPs. The facility has current actual emissions below the major source thresholds and permit condition No. 24004 that limits these emissions. The project will not change the facility status when compared to major source thresholds for HAP and therefore should not be considered a modification under the NESHAPs. In addition, the project is not subject to any MACT requirements. The project does not change or relax existing monitoring, reporting, or recordkeeping requirements. The project does not involve a change to a permit term or condition allowing a facility to avoid an applicable requirements. The project does not establish or change a case by case determination of any emission limit or standard which may apply if a project increases emissions above the major source thresholds for HAP. The project does not involve changes described in 2-6-226.6 or 2-6-226.7.

The project is considered to be ministerial under the District's CEQA regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emissions factors and therefore is not discretionary as defined by CEQA. (Permit Handbook Chapter 2.3, Chapter 5.3.4, Chapter 5.4)

The project is also exempt from CEQA in accordance with Regulation 2-1-312.11.4. The project will offset its POC emissions and the project satisfies the "no net emission increase" provisions of District Regulation 2, Rule 2. The project has provided CEQA related information in the permit application that demonstrates there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. This regulation states:

- 312.11 Permit applications for a proposed new or modified source or sources or for process changes which will satisfy the "No Net Emission Increase" provisions of District

Regulation 2, Rule 2, and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. Examples of such projects include, but are not necessarily limited to, the following:

11.4 Projects satisfying the "no net emission increase" provisions of District Regulation 2, Rule 2 for which there will be some increase in the emissions of any toxic air contaminant, but for which the District staff's health risk screening analysis shows that the project will not result in a cancer risk (as defined in Regulation 2-5-206) greater than 1.0 in a million ( $10^{-6}$ ) and will not result in a chronic hazard index (as defined in Regulation 2-5-208) greater than 0.20, and for which there will be no other significant environmental effect.

*(Adopted 7/17/91; Amended 5/17/00; 12/21/04; 6/15/05)*

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

***Best Available Control Technology:***

This application does not trigger BACT since emissions of POC and PM10 do not exceed 10 lb/day from any permitted source.

***Offsets:*** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emissions from the facility and the emission calculations above, offsets are required for this application. Dow is required to provide POC offsets at a ratio of 1.15 to 1.0. Dow has agreed to surrender Emission Reduction Credit No. 1172 (0.4 tons/year) and a portion of Emission Reduction Credit No. 1147 to offset 1.093 tons/year to offset this application, the cumulative increase from application No. 19565, and the 0.15 offset ratio from various applications processed since 1991. Please see the discussion under the cumulative increase section for additional details.

**NESHAPs**

Dow has a facility wide condition that limits the emissions of hazardous air pollutants from the facility.

COND# 24004 -----

Dow Chemical, Plant #31,  
The following conditions establish the federally enforceable permit terms that ensure this plant is classified as a Minor source of Hazardous Air Pollutants under District Regulation 2, Rule 6, Major Facility Review. All applications submitted by the applicant and all modifications to the plant's equipment after issuance of the minor HAP permit must be evaluated to ensure that the facility will not exceed the HAP minor general limits below, and that sufficient monitoring, recordkeeping, and reporting requirements are imposed to ensure enforceability of the limits.

Any revision to a condition establishing this plant's status as a HAP Minor Facility or any new permit term that would limit emissions of a new or modified source for the purpose

of maintaining the facility as a HAP minor, must undergo the procedures pursuant to Regulation 2, Rule 6, section 423. The basis for the HAP minor conditions is an emission limit for a single hazardous air pollutant of less than 9 tons per year, and an emission limit for a combination of hazardous air pollutants of less than 23 tons per year.

1. The owner/operator of Dow Chemical Pittsburg facility shall not emit more than 9 tons of any single hazardous air pollutant (HAP) or 23 tons of any combination of HAPs in any consecutive 12-month period. (basis: Clean Air Act, Section 112, District Regulation 2, Rule 6)
2. The owner/operator of Dow Chemical Pittsburg facility shall maintain quarterly emission estimates to demonstrate compliance with this condition. The owner/operator shall prepare all emission estimates using District approved calculations. Emission estimates for each calendar quarter shall be prepared by the owner/operator of Dow Chemical Pittsburgh facility within 30 days from the end of the calendar quarter. Emission estimates shall be submitted to the District upon request. The owner/operator shall notify the District immediately if emission estimates indicate Part 1 of this condition has been exceeded during any consecutive 12 month period.

This condition limits emissions of hazardous air pollutants below the major hazardous air pollutant thresholds for new MACT standards that have taken effect this condition was added to the District permit on May 7, 2008.

The Nitrapyrin plant could be subject to MACT standards that the facility was already subject to prior to May of 2008. Dow and the District have reviewed the MACT standards that the facility is currently subject to and has determined that only the Organic Liquid Distribution MACT (40 CFR Part 63 Subpart EEEE) may apply to the Nitrapyrin plant.

Subpart EEEE applies to each new, reconstructed, or existing operation affected source. The affected source under Subpart EEEE is the collection of activities and equipment used to distribute "organic liquids" into, out of, or within a facility that is a major source of HAP emissions.

In order to determine if the Nitrapyrin plant is subject to Subpart EEEE the District needed to determine if the plant handled any "organic liquids" as defined by the Subpart.

For the purposes of Subpart EEEE organic liquids do not include any of the following:

Gasoline, kerosene, diesel, asphalt, and heavier distillate oils and fuel oils;  
Any fuel consumed or dispensed on the plant site directly to users;  
Hazardous waste;  
Wastewater;  
Ballast water; or

Any non-crude oil liquid with an annual average vapor pressure less than 0.7 kilopascals (0.1 psia).

Under Subpart EEEE annual average true vapor pressure is the equilibrium partial pressure exerted by the total Table 1 organic HAP in the stored or organic liquid (See 63.2406 Definitions).

Napthalene and 4,4-methylenediphenyl diisocyanate are HAPs used in the Nitrapyrin plant that are in Table 1 of Subpart EEEE.

The true vapor pressure of naphthalene at 25 deg. C is 0.00556 psia.

The true vapor pressure of 4,4-methylenediphenyl diisocyanate at 25 deg. C is 1.84E-07 psia.

The annual average true vapor pressure of the total HAPs (two) in any tank in the Nitrapyrin plant will be well below 0.1 psia. Therefore, there are no organic liquids, as defined by Subpart EEEE, in use at the Nitrapyrin plant and Subpart EEEE does not apply.

Dow Pittsburg is not subject to Synthetic Organic Chemical Manufacturing Industry requirements contained in 40 CFR 63 Subpart F, Subpart G, and Subpart H. The requirements of 40 CFR 60 Subpart I apply to the Symtet manufacturing area of the Dow facility, but would not apply to the Nitrapyrin plant.

## **NSPS**

Dow and the District reviewed the NSPS regulations that apply to the facility and determined that none of the NSPS regulations apply to the Nitrapyrin plant. Specifically, Subpart Kb – Volatile Organic Liquid Storage does not apply to the Nitrapyrin plant. All of the the organic liquid storage tanks at the Nitrapyrin plant were exempt based on one of the following exemptions:

1. Vessels with a capacity less than 19,800 gallons are exempt.
2. Vessels with a capacity greater than 19,800, but less than 38,890 gallons storing a liquid with a maximum true vapor pressure which is less than 2.18 psia. Aromatic 200 Tank S-719 (D-121A) meets this exemption.
3. Vessels with a capacity greater than 39,890 gallons storing a liquid with a maximum vapor pressure less than 0.5 psia. The two large product storage tanks S-730 and S-731 meet this exemption with a product vapor pressure that is less than 0.3 psia.
4. Pressure vessels designed to operate at a pressure greater than 15 psig without emissions to the atmosphere. S-719 (D-121) Aromatic 200 tank meets this exemption.

Subpart VV does not apply to the Nitrapyrin plant since construction will commence after November 7, 2006.

Subpart VVA does not apply to the Nitrapyrin plant since this plant does not produce a chemical regulated under the synthetic organic chemical manufacturing industry (SOCMI) requirements as an intermediate or a final product.

**PSD does not apply to this specific permit application.**

## PERMIT CONDITIONS

COND# 24763 -----

Plant 31  
S-718 Nitrapyrin Plant

1. The owner/operator of the Nitrapyrin plant shall construct and operate the plant as described in Application No. 21858. The owner/operator shall submit a permit application to the District for approval, prior to any increases in capacity or throughput above levels in Application No. 21858. [Basis: 2-2-419]
2. Within 30 days of District's issuance of the Permit to Operate for Application 21858 or the completion of the Nitrapyrin Plant, the Owner/Operator shall provide the District's Engineering Division with a final count of all fugitive components and each component's unique permanent identification codes for this project. The owner/operator has been permitted to install the following fugitive components:  
  
367 valves;  
936 connections (flanges, connectors);  
17 pumps;  
13 pressure relief devices;  
7 agitators (mechanical stirrers);  
  
[Basis: Cumulative Increase, Offsets, Regulation 2-5]
3. The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any valves installed as part of the Nitrapyrin Plant in organic liquid service unless the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18. [Basis: BACT, Regulation 8 Rule 18]
4. The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any flanges and/or connectors installed as part of the Nitrapyrin Plant in organic liquid service unless the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18. [Basis: Regulation 8 Rule 18]
5. The Owner/Operator shall comply with a leak standard of 500 ppm of TOC (measured as C1) at any pumps in organic liquid service installed as part of the Nitrapyrin Plant unless the Owner/Operator



complies with the applicable minimization and repair provisions contained in Regulation 8-18.  
[Basis: Regulation 8 Rule 18, Cumulative Increase, Offsets]

6. The Owner/Operator shall conduct inspections of fugitive components installed as part of the Nitrapyrin Plant in organic liquid service in accordance with the frequency below:

Pumps: Quarterly  
Valves: Quarterly  
Connectors (Not Flanges): Biannual  
Flanges: Biannual

[Basis: 2-2-419, Regulations 8 Rule 18]

7. The Owner/Operator shall not exceed 0.891 tons of POC emissions per consecutive 12 month period measured as C1 from all fugitive components installed as part of the Nitrapyrin Plant in organic liquid service. The Owner/Operator shall not exceed 9.9 lb/day of POC measured as C1 from all fugitive components. The Owner/Operator shall demonstrate compliance with the daily emissions limit by calculating the total emissions for the quarter and dividing by the number of days in the quarter. Compliance with this provision shall be verified quarterly using methods described in part 8. The results shall be submitted to the District within 30 days of the close of each calendar quarter after the completion of the Nitrapyrin Plant or the District's issuance of the Permit to Operate for Application 21858.

[Basis: 2-2-419, Cumulative Increase, Offsets]

8. If all of the fugitive components installed as part of the Nitrapyrin Plant in organic liquid service are leaking at a rate less than 5000 ppm of TOC (measured as C1) in any calendar quarter, no further verification and no submittal of the results shall be required. If any of the fugitive components installed as part of the Nitrapyrin Plant in organic liquid service are leaking at a rate equal to or greater than 5,000 ppm of TOC (measured as C1) in any calendar quarter, the owner/operator shall estimate the annual emissions and daily emissions in order to demonstrate compliance with part 7 and shall submit the results to the district within 30 days of the emissions calculation. The Owner/Operator shall demonstrate compliance with the daily emissions limit by calculating the total emissions for the quarter and dividing by the number of days in the quarter. For any calendar quarter in which one

or more of these components is leaking at a rate equal to or greater than 10,000 ppm of TOC (measured as C1), the Owner/Operator shall calculate and submit a report of fugitive emissions from all Nitrapyrin Plant fugitive components in organic liquid service utilizing District approved methods for the consecutive 12 month period ending with this quarter. This calculation shall continue each quarter until there is not a quarter containing a pegged leaker. For leaking components the Owner/Operator shall use a District approved calculation method and LeakDAS. The Owner/Operator shall include emissions estimates from all Nitrapyrin Plant fugitive components in organic liquid service regardless of the component Rule 8-18 repair status in order to demonstrate compliance with part 7.  
[Basis: 2-2-419, Cumulative Increase, Offsets]

9. The Owner/Operator shall keep a District-approved monthly log of fugitive component counts of the Nitrapyrin Plant, each component's unique permanent identification codes, monitoring results, and any annual emissions estimates required per parts 7 and 8 for at least five years from date of entry. The log shall be retained on site and made available to district staff upon request.[Basis: Offsets, Recordkeeping]

## **RECOMMENDATION**

I recommend issuing an Authority to Construct for the following equipment:

S-718 Nitrapyrin Formulation Plant  
S-728 Ethylene Diamine Storage Pressure Tank

## EXEMPTIONS

I recommend issuing the following exemptions:

- S-719 (D-121 A) Aromatic 200 Pressure Tank, 35,900 gallons
- S-720 (T-310) Organic Mix, 9,000 gallons
- S-721 (D-110A) PAPI Storage Pressure Tank, 7,900 gallons
- S-722 (T-8) Tergitol S-15, 5,900 gallons
- S-723 (T-9) Tergitol S-15, 5,900 gallons
- S-724 (T-15) Propylene Glycol Storage, 7,800 gallons
- S-725 (V-250) Aqueous Mix, 2,900 gallons
- S-726 (T-112) Emulsion Storage, 8,800 gallons
- S-727 (T-11) Gel Phase Mix, 1,500 gallons
- S-728 (T-20) Ethylene Diamine Storage Pressure Tank, 8,200 gallons
- S-729 (V-100) Encapsulation Vessel, 8,200 gallons
- S-730 (T-569) Nitrapyrin Formulation Storage, 80,000 gallons
- S-731 (T-570) Nitrapyrin Formulation Storage, 80,000 gallons

By: \_\_\_\_\_ Date: \_\_\_\_\_

Brian Lusher  
Senior Air Quality Engineer

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 22775**

## **BACKGROUND**

Dow Chemical Company (Dow) has applied for an Authority to Construct for an alteration of the hydrogen chloride absorption systems in use at the Trifluoro (TF) and the (FTF) production processes at its Pittsburg California facility. The alteration involves removing the existing HCl absorption/abatement system and the HCl storage tank in use at the TF plant, and rerouting the anhydrous HCl from the TF plant to the reaction/HCl absorption system at the FTF plant. The alteration will not affect other equipment downstream of the reaction/HCl absorption system in the FTF process. The existing abatement systems at the FTF plant including the venturi scrubber and the caustic packed bed scrubber will provide adequate control of acid gas emissions.

The TF plant has a stream from two organic scrubbers (A-98 and A-99) that contains mainly anhydrous HCl, a small amount of HF, and small amount of organics and is currently abated by two absorbers (A-101 falling film absorber and A-102 packed column absorber). Dow intends to reroute the anhydrous HCl stream from A-98 and A-99 to the reaction/HCl absorption system S-694 at the FTF plant. The TF plant abatement devices A-101 and A-102 would then be removed from service. Additionally, S-449 HCl tank will also be removed from service.

The FTF plant S-694 consists of reactors and columns that have sufficient capacity to absorb the additional HCl stream from the TF plant. The only changes at S-694 are the installation of piping to route the anhydrous HCl from the TF plant into the reactors. The abatement devices downstream of the HCl absorption system S-694 are a venturi scrubber (A-196) followed by a caustic packed bed scrubber (A-195). The exhaust from A-195 exits to atmosphere.

HCl emissions after abatement should decrease after the project is complete since the abatement systems at the TF plant used water scrubbers and the FTF plant utilizes a caustic scrubber. Caustic scrubbers are more effective in removing HCl from an exhaust stream. The caustic scrubber A-195 should have an efficiency of 99.9%. The change in abated emissions to atmosphere at the caustic scrubber A-195 are shown below. The emissions increase at the FTF plant is well below the Regulation 2, Rule 5 acute and chronic trigger levels of 4.6 lb/hour and 350 lb/year of HCl. The point source emissions of HCl are reduced as a result of the project.

HF emissions from the TF plant are currently abated by two organic scrubbers (A-98 and A-99) and the existing TF water scrubbers. The emissions of HF are expected to remain the same after the project however the TF plant emissions will now be emitted at the FTF plant. HF emissions from the TF plant combined with the FTF plant are considered negligible and are well below a pound per year. The HF emissions from the combined TF and FTF plant will remain well below the Regulation 2, Rule 5 trigger level of 0.53 lb/hour and 540 lb/year.

Organic emissions from the TF plant are currently abated by two organic scrubbers (A-98 and A-99). TF organic emissions will remain the same after the project is completed will now be emitted at a different emissions point. Organic emissions from the TF plant are typically less than 100 lb per year. The FTF plant typically has organics emissions that are less than 50 lbs per year.

Dow will also have to install new fugitive components and remove old fugitive components as part of this project. Based on information submitted in the permit application component counts are expected to decrease after rerouting the anhydrous HCl line from the TF plant to the FTF plant. Dow intends to remove more components than are installed for the project. Therefore, fugitive HCl emissions should decrease as a result of the project.

Dow conducts area monitoring throughout the TF and FTF plant for hydrofluoric acid gas, but the sensors respond to HCl, HF, or Chlorine in the 1 to 2 ppm range. Large leaks would be picked up by the area monitoring system and fixed to minimize worker exposure and fugitive emissions.

Dow plans to shutdown the following equipment after completion of the project:

S-449 HCl Storage Tank (T-30)  
A-101 Falling Film Absorber (H-205)  
A-102 Scrubber (B-206)

## **EMISSIONS SUMMARY**

### **Point Sources**

Based on information submitted by Dow worst case emissions of HCl will be decreased at the TF plant by the following amount:

$$\text{HCl lb/hour emissions} = 450 \text{ lb/hour sent to abatement} \times ((100-90)/100) \times ((100-99.96)/100) = 0.018 \text{ lb/hour}$$

Based on information submitted by Dow worst case emissions of HCl will be increased at the FTF plant by the following amount:

$$\text{HCl lb/hour emissions} = 450 \text{ lb/hour sent to abatement} \times ((100-99)/100) \times ((100-99.9)/100) = 0.0045 \text{ lb/hour}$$

Total emissions of HCl from the FTF plant

$$\text{HCl lb/hour emissions} = 850 \text{ lb/hour sent to abatement} \times ((100-99)/100) \times ((100-99.9)/100) = 0.0085 \text{ lb/hour, } 0.204 \text{ lb/day, } 74.46 \text{ lb/year}$$

There is no net increase in HCl emissions from the defined emission points for the TF and FTF plant associated with this application.

As stated previously the HF emissions from the TF plant will remain negligible after the project. The annual emission of HF from the TF and FTF plants combined is well below a pound per year. The HF emissions from the combined TF and FTF plant will remain well below the Regulation 2, Rule 5 trigger level of 0.53 lb/hour and 540 lb/year.

As stated previously the Organics emission from the TF and FTF plant will remain the same after the project except that the TF organic emissions will now be emitted at a different emissions point. The organic emissions from the TF plant are typically less than 100 lb/year. The organic emissions from the FTF plant are typically less than 50 lb/year.

**Fugitive Sources**

Dow will remove more components from the shutdown of equipment than they will install to reroute the anhydrous HCl line from the TF line to the FTF plant.

Existing Components at the TF plant to be removed from service:

	Pump	Fittings	Flanges	Pressure Safety Valves	Valves
Anhydrous HCl	0	17	51	1	12
HCl solution	2	0	277	1	35

New welded line from TF plant to FTF plant:

	Pump	Fittings	Flanges	Pressure Safety Valves	Valves
Anhydrous HCl	0	0	21	1	8

Valves: 3 Inline, 5 Drain

There is no increase in emissions from the fugitive emission points for the TF and FTF plant associated with this application, since the number of fugitive components will decrease after the project is completed. Fugitive emissions are not expected to be greater than the Regulation 2, Rule 5 trigger levels for HCl due to the ongoing area monitoring. Large HCl leaks at the TF and FTF plants would be repaired to minimize worker exposure and minimize fugitive emissions.

**Plant Cumulative Increase: (tons/year)**

HCl emissions from point sources and fugitive emissions sources are reduced after the project when compared to existing levels. HF emissions remain negligible before the project and after the project is completed. Organics emissions remain the same pre and post project with only the location of the emissions point changing for S-474.

**Toxic Risk Screening:**

Toxic air contaminant emissions associated with this application do not exceed the acute or chronic trigger level of 4.6 lb/hour and 350 lb/year for hydrochloric acid. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

**STATEMENT OF COMPLIANCE**

The owner/operator of S-694 shall continue to comply with Permit Condition No. 15932 and 21060. No changes to these conditions are required as part of this application.

The project is exempt from CEQA in accordance with Regulation 2-1-312.6 since it is an alteration of an existing source S-694 and abatement device A-195 requiring an Authority to Construct. Regulation 2, Rule 1-312.6 states: Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.

**2-1-312 Other Categories of Exempt Projects:** In addition to ministerial projects, the following categories of projects subject to permit review by the District will be exempt from the CEQA review, either because the category is exempted by the express terms of CEQA (subsections 2-1-312.1 through 312.9) or because the project has no potential for causing a significant adverse environmental impact (subsections 2-1-312.10 and 312.11). Any permit applicant wishing to qualify under any of the specific exemptions set forth in this Section 2-1-312 must include in its permit application CEQA-related information in accordance with subsection 2-1-426.1. In addition, the CEQA-related information submitted by any permit applicant wishing to qualify under subsection 2-1-312.11 must demonstrate to the satisfaction of the APCO that the proposed project has no potential for resulting in a significant environmental effect in connection with any of the environmental media or resources listed in Section II of Appendix I of the State CEQA Guidelines.

312.6 Permit applications relating exclusively to the repair, maintenance or minor alteration of existing facilities, equipment or sources involving negligible or no expansion of use beyond that previously existing.

*(Adopted 7/17/91; Amended 5/17/00; 12/21/04; 6/15/05)*

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

***Best Available Control Technology:***

This application does not trigger BACT, because the POC emissions from each plant remain unchanged.

***Offsets:*** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emission calculations above, offsets are not required for this application.

**NSPS**

There is no NSPS that applies to S-474 or S-694.

**NESHAP**

40 CFR Part 63 Subpart NNNNN National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production does not apply to S-474 or S-694 since the HCl produced by these units is less than 30% by weight (See 40 CFR Part 63.8985).

*PSD does not apply to this specific permit application.*

**PERMIT CONDITIONS**

This application does not require modifying permit conditions. Condition No. 15932 contains the requirements for S-694 and A-195.

**RECOMMENDATION**

Approve the alteration of the following equipment:

Reroute a process vent from S-474 Chemical Reactor to S-694 Reaction/HCl Absorption System.

Change emission trains from:

S-474=>A98=>A99=>A101=>A102=>P199

To:

S-474=>A98=>A99=>S-694=>A196=>A195=>P269

**EXEMPTIONS**

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Lusher  
Senior Air Quality Engineer



**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 23595**

**BACKGROUND**

Dow Chemical Company (Dow) has applied for an Authority to Construct to modify S-444 (U-183) Dowtherm Process Heater.

S-444 U-183 Dowtherm Heater

Furnace - Other, 25MM BTU/hr max, Natural gas, Forced Draft  
C4840189 /,P259,

The source is having the burner replaced to meet Regulation 9, Rule 7 requirements. The installation of the new burner is considered a modification since the firing rate of S-444 will increase from 25 MMBtu/hour to 26.9 MMBtu/hour. Emissions of CO, POC, PM10, and SO2 will increase due to replacement of the burner and the increased firing rate.

**EMISSIONS SUMMARY**

The following emission calculations show the permit potential pre project, the 3-year baseline, and the permit potential post project.

Permit Evaluation and Statement of Basis: Site A0031, The Dow Chemical Company, 901 Loveridge Road, Pittsburg

Dow Chemical Company  
 Application No. 23595  
 BAAQMD September 2011

Permit Potential S-444 (U-183) Dowtherm Process Heater Pre project

	ppm	Firing Rate						
		lb/MMBtu	MMBtu/hr	lb/hour	lb/day	lb/year	ton/year	
NOx	30	0.0364		25	0.910	21.840	7971.6	3.986
CO	50	0.0369		25	0.923	22.140	8081.1	4.041
POC	12.8	5.39E-03		25	0.135	3.234	1180.41	0.590
PM10/PM2.5		7.45E-03		25	0.186	4.470	1631.55	0.816
SO2		0.0007		25	0.018	0.420	153.3	0.077

NOx and CO Emission Factors based on Current Permit Limits  
 POC, PM10 Emission Factors from Table 1.4-2 (AP-42 Chapter 1.4, 7/98)  
 SO2 Emission Factor based on 0.25 grains/100 scf Annual Average Sulfur Content  
 Natural Gas 1020 Btu/scf

3-Year Baseline S-444 (U-183) Dowtherm Process Heater

	ppm	Firing Rate			
		lb/MMBtu	MMBtu/year	lb/year	ton/year
NOx	22.52	0.0273	189000	5159.7	2.580
CO	6.06	0.00448	189000	846.72	0.423
POC	12.8	5.39E-03	189000	1018.71	0.509
PM10/PM2.5		7.45E-03	189000	1408.05	0.704
SO2		0.0007	189000	132.3	0.066

NOx and CO Emission Factors based on 11/11/2008 Source Test (See OS-2603)  
 POC, PM10 Emission Factors from Table 1.4-2 (AP-42 Chapter 1.4, 7/98)  
 SO2 Emission Factor based on 0.25 grains/100 scf Annual Average Sulfur Content  
 Natural Gas 1020 Btu/scf  
 Natural Gas Usage for 2008 was 2.02 E06 Therms, 2009 was 1.80 E06 Therms, and 2010 was 1.85 E06 Therms.  
 Annual Average Last Three Calendar Years 189,000 MMBtu/year.

Permit Potential S-444 (U-183) Dowtherm Process Heater Post project

	ppm	Firing Rate						Increase from Baseline ton/year	
		lb/MMBtu	MMBtu/hr	lb/hour	lb/day	lb/year	ton/year		
NOx	9	0.0109		26.9	0.293	7.037	2568.52	1.284	-1.296
CO	50	0.0369		26.9	0.993	23.823	8695.264	4.348	3.924
POC	15	0.00633		26.9	0.170	4.087	1491.627	0.746	0.236
PM10/PM2.5		7.45E-03		26.9	0.200	4.810	1755.548	0.878	0.174
SO2		0.0007		26.9	0.019	0.452	164.9508	0.082	0.016

NOx and CO based upon vendor guarantee  
 POC based upon vendor guarantee, PM10 Emission Factor from Table 1.4-2 (AP-42 Chapter 1.4, 7/98)  
 SO2 Emission Factor based on 0.25 grains/100 scf Annual Average Sulfur Content  
 Natural Gas 1020 Btu/scf

Dow Chemical Company  
 Application No. 23595  
 BAAQMD August 2011

Compound	Firing Rate (MMBtu/hour)	EF (lb/MMBtu)	Emissions (lb/hour)	Emissions (lb/year)	Acute Trigger (lb/hour)	Chronic Trigger (lb/year)
Benzene		26.9	2.06E-06	5.54E-05	4.85E-01	2.90E+00
Formaldehyde		26.9	7.35E-05	1.98E-03	1.73E+01	1.20E-01
Toluene		26.9	3.33E-06	8.96E-05	7.85E-01	8.20E+01
						1.20E+04

Emissions of NOx are reduced by the project on an annual basis. NOx emissions after the project is completed are below the 10 lb/day BACT trigger level. Emissions of CO, POC, PM10, and SO2 increase due to the project on an annual and daily basis. CO is the only pollutant exceeding the 10 lb/day BACT trigger level.

Emissions of TACs are below the acute and chronic trigger levels.

**Plant Cumulative Increase: (tons/year)**

Pollutant	Existing	New	Total
NOx	1.804	-1.296	1.804
CO	2.588	3.924	6.512
POC	3.056	0.236	3.292
PM10	1.624	0.174	1.798
SO2	0.110	0.016	0.126

The facility has provided offsets for the existing cumulative increase for NOx and POC. There is no increase in NOx associated with this application. The increase in POC of 0.236 tons/year due to this application will need to be offset by Dow in accordance with Regulation 2, Rule 2, Section 302 requirements at a 1.15 to 1 ratio. The total POC offsets required is 0.271 tons POC/year (1.15 x 0.236 tons POC/year). Dow will offset the POC emissions from this application (0.271 ton/year POC) using Emission Reduction Certificate 1172 (0.4 tons/year POC) with the balance being granted back to Dow under a new certificate number.

The permitted emissions of PM10 and SO2 are less than 100 tons/year and offsets are not required for these pollutants. The facility had a cumulative increase for CO of more than 100 tons/year before 1991. However, CO offsets are not required and no further analysis of the potential to emit for CO is necessary.

### **Toxic Risk Screening:**

Toxic air contaminant emissions associated with this application do not exceed the acute or chronic trigger levels shown above. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

### **STATEMENT OF COMPLIANCE**

The owner/operator of S-444 shall continue to comply with Permit Condition No. 11054. The changes to this permit condition is shown below in strikethrough/lineout format.

S-444 is expected to comply with Regulation 9 “Inorganic Gaseous Pollutants”, Rule 7 “Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters”. Specifically, S-444 is subject to the NO<sub>x</sub> (9 ppmv, dry at 3% O<sub>2</sub>) and CO (400 ppmv, dry at 3% O<sub>2</sub>) *final* emission limits outlined in Sections 307.5 of the above rule. S-444 is required to meet the above NO<sub>x</sub> and CO limits on January 1, 2012. The current version of Regulation 9, Rule 7 is not federally enforceable.

Dow has submitted a compliance plan to the District for all heaters and combustion sources subject to Regulation 9, Rule 7 requirements. The plan indicates Dow will be in compliance with Regulation 9, Rule 7 on a facility-wide basis.

The modification of S-444 is considered a minor revision to the Title V permit. Dow submitted application no. 23596 on 7/25/11 to incorporate this minor revision into the Title V permit. The modification of S-444 does not meet the definition of an administrative amendment under 2-6-201 and is not considered a significant revision since it does meet the definition under Regulation 2-6-226. It should be noted that S-444 will be subject to stricter monitoring after the project is completed. S-444 will now be required to source test on an annual basis instead of every three years.

### **The California Environmental Quality Act (CEQA):**

Per Section 2-1-311 of the District Rules and Regulations, a permit application for a proposed new or modified source will be classified as ministerial and will accordingly be exempt from the CEQA requirement of Section 2-1-310 if the District's engineering evaluation and basis for approval of the permit application for the project is limited to the criteria set forth in Section 2-1-428 and to the procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook. The method for determining whether a given permit application will be classified as ministerial is set forth in Section 2-1-427.

Per Section 2-1-427, if the District determines that its evaluation of the permit application is covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook, the District's evaluation of the permit application is classified as ministerial and the engineering evaluation of the permit application by the District will be limited to the use of said specific procedures, fixed standards and objective measurements. For such projects, the District will merely apply the law to the facts as presented in the permit application, and the District's decision regarding whether to issue the permit will be based only on the criteria set forth in Section 2-1-428 and in the District's Permit Handbook and BACT/TBACT Workbook.

For this permit application, the District has determined that its evaluation of S-444 is covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook Chapter 2.1 "Boilers, Steam Generators & Process Heaters". Since the District has classified this permit application as ministerial pursuant to Section 2-1-427, and as a result of its evaluation of the permit application, the District determined that all of the criteria for approval of ministerial permit applications pursuant to Section 2-1-428 have been met, and that the issuance of an Authority to Construct and Permit to Operate for the proposed project is a mandatory ministerial duty and is accordingly exempt from the CEQA requirement of Section 2-1-310. The proposed burner retrofit is also exempt from CEQA per Section 2-1-312.3.

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

***Best Available Control Technology:***

This application does trigger BACT, because the CO emissions from S-444 are increasing on a daily and annual basis and are greater than 10 lb/day.

The District BACT Workbook has the following information:

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
Best Available Control Technology (BACT) Guideline**

**Source Category**

<b>Source:</b>	<i>Heater - Refinery Process, Natural or Induced Draft</i>	<b>Revision:</b>	<b>3</b>
		<b>Document #:</b>	<b>94.1.1</b>
<b>Class:</b>	<i>5 MMBtu/hr to &lt;50 MMBtu/hr Heat Input</i>	<b>Date:</b>	<b>08/12/94</b>

**Determination**

<b>POLLUTANT</b>	<b>BACT</b> 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice	<b>TYPICAL TECHNOLOGY</b>
<b>POC</b>	1. n/d 2. n/s	1. n/d 2. Good Combustion Practice <sup>a</sup>
<b>NO<sub>x</sub></b>	1. 10 ppmv @ 3% O <sub>2</sub> Dry <sup>a,b,c,e</sup> 2. 25 ppmv @ 3% O <sub>2</sub> Dry <sup>a,b,e</sup>	1. Selective Catalytic Reduction (SCR) + Low NO <sub>x</sub> Burners <sup>a,b,c</sup> 2. Low NO <sub>x</sub> Burners; or Low NO <sub>x</sub> Burners + Selective Non-Catalytic Reduction (SNCR) <sup>a,d</sup>
<b>SO<sub>2</sub></b>	1. Natural Gas or Treated Refinery Gas Fuel w/ ≤50 ppmv Hydrogen Sulfide and ≤100 ppmv Total Reduced Sulfur <sup>a</sup> 2. Natural Gas or Treated Refinery Gas Fuel w/ ≤100 ppmv Total Reduced Sulfur <sup>a</sup>	1. Fuel Selection <sup>a</sup> 2. Fuel Selection <sup>a</sup>
<b>CO</b>	1. n/d 2. 50 ppmv @ 3% O <sub>2</sub> Dry <sup>a,f</sup>	1. n/d 2. Good Combustion Practice <sup>a</sup>
<b>PM<sub>10</sub></b>	1. n/d 2. Natural Gas or Treated Refinery Gas Fuel <sup>a,b</sup>	1. n/d 2. Fuel Selection <sup>a,b</sup>
<b>NPOC</b>	1. n/a 2. n/a	1. n/a 2. n/a

**References**

<p>a. BAAQMD                  b. BAAQMD A #30783                  c. BAAQMD A #3318                  d. BAAQMD A #8407                  e. NO<sub>x</sub> determination by BAAQMD Source Test Method ST-13A or B (average of three 30-minute sampling runs); or Continuous Emission Monitor (3-hour average); or BAAQMD approved equivalent.                  f. CO determination by BAAQMD Source Test Method ST-6 (average of three 30 minute sampling runs); or Continuous Emission Monitor (3-hour average); or BAAQMD approved equivalent.</p>
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S-444 will meet the achieved in practice CO BACT limit of 50 ppm contained in the District BACT workbook. Condition No. 11054 will limit CO to 50 ppm @3% O<sub>2</sub>. At the present time the District is not aware of any lower CO BACT limits for process heaters that are less than 50 MMBtu/hour.

*Offsets:* Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NO<sub>x</sub>. Based on the emission calculations above, offsets of 0.179 tons/year of POC are required to process this application. Dow will offset the POC emissions from this application (0.179 ton/year POC) using Emission Reduction Certificate 1172 (0.4 tons/year POC) with the balance being granted back to Dow under a new certificate number.

### **NSPS**

There is no NSPS that applies to S-444.

### **NESHAP**

The existing Title V permit has S-444 being subject to limited requirements (initial notification requirement only) under 40 CFR, Part 63, Subpart DDDDD. Subpart DDDDD was remanded and vacated on June 8, 2007. This version of Subpart DDDDD was vacated before the compliance date(s) were reached so S-444 was never subject to this regulation.

Dow accepted a facility-wide permit condition to limit HAP emissions to below major source thresholds on May 7, 2008.

Subpart DDDDD was repromulgated and the final rule was published on March 21, 2011. On May 18, 2011 the effectiveness dates in the rule were delayed by the EPA. Subpart DDDDD only applies to process heaters located at major sources of HAP. The original Subpart DDDDD was vacated and then repromulgated and since Dow is no longer a major source of HAP this Subpart does not apply to S-444.

Subpart JJJJJ applies to boilers at area sources, but not to process heaters. Subpart JJJJJ also does not apply to natural gas fired boilers (See 63.11195(e)).

**PSD does not apply to this specific permit application.**

## PERMIT CONDITIONS

COND# 11054 -----

Application 12515, 23595  
Conditions for S-444, Dowtherm Heater, U-183:

1. The Dowtherm Heater (S-444) shall burn natural gas only.  
(Basis: BACT)

2a. -This part shall apply until 1/1/2012. Except during periods of start-up or shutdown, the concentration of nitrogen oxide (NOx) emissions from S-444 shall not exceed 30 ppmvd at 3% oxygen.  
(Basis: BAAQMD Regulation 9-7-301)

2b. This part shall apply on and after 1/1/2012. Except during periods of start-up or shutdown, the concentration of nitrogen oxide (NOx) emissions from S-444 shall not exceed 9 ppmvd at 3% oxygen.  
(Basis: BAAQMD Regulation 9-7-307.5)

3. Except during periods of start-up or shutdown, the concentration of carbon monoxide (CO) emissions from S-444 shall not exceed 50 ppmvd at 3% oxygen.  
(Basis: BACT)

4. Deleted.

5. To demonstrate compliance with Part 2 above, the owner/operator shall conduct an initial source test to determine NOx and CO emissions within 3 months of installing the ultra Low NOx burner. The owner operator shall conduct a source test for NOx and CO at least once every 5 years (with test frequency being no less than 10 months and no more than 12 months from the last test date). The owner/operator shall notify the Manager of the District's Source Test Section at least seven (7) days prior to the test, to provide the District staff the option of observing the testing. Within 45 days of test completion, a comprehensive report of the test results and calculations shall be submitted to the Manager of the District's Source Test Section for review and disposition.  
(Basis: BAAQMD Regulation 9-7-307.54, 9-7-506)

6. The owner/operator of S-444 shall maintain records of each startup and shutdown event, and source test records in a District-approved log. These records shall be retained on site for a minimum of five years from the date of entry and made available to District representatives upon request.  
(Basis: BAAQMD Regulation 2-6-501, BAAQMD Regulation 9-7-307.54)



**RECOMMENDATION**

Issue a conditional Authority to Construct to Dow for the following:

S-444 U-183 Dowtherm Heater

Furnace - Other, 26.9 MM BTU/hr max, Natural gas, Forced Draft

C4840189 /,P259,

**EXEMPTIONS**

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Brian Lusher  
Senior Air Quality Engineer

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 23852**

**BACKGROUND**

Dow Chemical Company (Dow) has applied for an Authority to Construct to alter S-44 by replacing process vessel T-3 with an identical replacement process vessel.

S-44 N-Serve Plant  
CHEM> Chemical reactor, greater than 1000 gallons

Emissions from S-44 will not change due to the replacement of T-3 process vessel. T-3 process vessel does not vent directly to atmosphere. The process vent streams from equipment downstream of T-3 are eventually vented through S-389 Symtet Halogen Acid Furnace or scrubbing systems within S-44.

Fugitive emissions are expected to decrease due to a reduction of some component types in service.

	Pumps	Fittings	Flanges	Pressure Safety Valves	Valves
Pre Project	0	35	68	2	35
Post Project	2	0	71	0	26

The replacement of T-3 will add two pumps and three flanges. 35 fittings, 2 safety valves, and 9 valves will be removed from service. Dow provided fugitive emissions monitoring data from the Symtet plant. Leakage was detected from three valves, one connector, and two pressure safety valves over the last three years. No pegged leakers were observed at the Symtet plant. The District estimates that emissions will be less than 10 lb/day with one pump as a pegged leaker and one valve as a pegged leaker using the CAPCOA correlation equations (See attached spreadsheet). The installation of the two pumps and three flanges is exempt from District permit requirements in accordance with 2-1-128.21.

128.21 Modification, replacement, or addition of fugitive components (e.g. valves, flanges, pumps, compressors, relief valves, process drains) at existing permitted process units at petroleum refineries, chemical plants, bulk terminals or bulk plants, provided that the cumulative emissions from all additional components installed at a given process unit during any consecutive twelve month period do not exceed 10 lb/day, and that the components meet applicable requirements of Regulation 8 rules.

The new components meet Regulation 8, Rule 18 requirements and will be monitored by Dow in accordance with Regulation 8, Rule 18 monitoring requirements. Dow has also verified that the new components meet District BACT guidelines for new fugitive components.

### **EMISSIONS SUMMARY**

There is no emissions increase due to the replacement of T-3 at S-44 N-Serve plant. Fugitive emissions are expected to decrease due to the removal of components. The additional fugitive components being placed into service are exempt from District permit requirements as described above.

#### **Post 1991 Plant Cumulative Increase: (tons/year)**

<b>Pollutant</b>	<b>Existing</b>	<b>New</b>	<b>Total</b>
POC	3.292	0	3.292

#### **Toxic Risk Screening:**

There is no increase in toxic air contaminant emissions associated with this application. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

### **STATEMENT OF COMPLIANCE**

The owner/operator of S-44 shall continue to comply with Permit Condition No. 21060. This permit condition requires process vessels at the facility to comply with Regulation 8, Rule 10 requirements.

S-44 is expected to continue to comply with Regulation 1, Section 301 requirements to not cause a public nuisance.

S-44 is expected to continue to comply with Regulation 6, Rule 1 requirements.

S-44 is expected to continue to comply with Regulation 8, Rule 2, Section 301 requirements.

Dow is expected to operate process vessels at S-44 with Regulation 8, Rule 10 requirements.

The alteration of S-44 does not require any revisions to the Title V permit. There are no changes in equipment descriptions or permit conditions associated with this application.

#### **The California Environmental Quality Act (CEQA):**

The project is exempt from CEQA in accordance with Regulation 2-1-312.1 since it is an alteration of an existing source and it will not involve any increase in emissions.

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

***Best Available Control Technology:***

This application does not trigger BACT, because there is no emissions increase of any pollutant from S-44 due to the replacement of process vessel T-3.

***Offsets:*** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. There are no emissions increases that are required to be offset associated with this application.

**NSPS**

S-44 is not subject to 40 CFR Subpart VV or 40 CFR Subpart VVa since this plant does not produce, as intermediates or final products, any of the Synthetic Organic Chemical Manufacturing Industry chemicals as defined in 60.489. The District also reviewed other NSPS standards and found none that apply to S-44 due to the types of chemical produced.

There is no NSPS that applies to S-44.

**NESHAP**

The District reviewed NESHAPs and found that none of them apply to S-44.

**PSD does not apply to this specific permit application.**

**PERMIT CONDITIONS**

There are no permit condition revisions associated with the replacement of process vessel T-3 at S-44.

**RECOMMENDATION**

Approve the alteration of the following equipment:

Replacement of process vessel T-3 at S-44.

S-44 N-Serve Plant

CHEM> Chemical reactor, greater than 1000 gallons

**EXEMPTIONS**

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Lusher  
Senior Air Quality Engineer

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 23934**

**BACKGROUND**

Dow Chemical Company (Dow) has applied for a change of permit conditions for a carbon tetrachloride pressure storage tank S-680 and an associated truck transfer operation S-681.

S-680 T-440 Pressure Vessel Storage Tank

Pressure tank, 25K gal, White, Carbon tetrachloride, 10 ft diam

S-681 Truck Transfer

Truck, Carbon tetrachloride, Part splash, part submerged fill

Dow has requested this change in permit conditions to allow periodic inspections (every five years) or emergency repairs to be performed on S-680 (T-440) Pressure Vessel Storage Tank.

There are no emissions from S-680 during carbon tetrachloride storage. There are negligible emissions less than 2 lb/year of POC associated with the loading and unloading of carbon tetrachloride. Loading and unloading operations are abated by A-191 Vapor Balance System.

**EMISSIONS SUMMARY**

Dow estimates the increase in emissions of carbon tetrachloride at S-680 and S-681 to be 0.233 lb/day and 1.164 lb/year. These increases are considered negligible and are not an emissions increase.

**Post 1991 Plant Cumulative Increase: (tons/year)**

<b>Pollutant</b>	<b>Existing</b>	<b>New</b>	<b>Total</b>
POC	3.292	0.000	3.292

**Toxic Risk Screening:**

There is a negligible increase in toxic air contaminant emissions associated with this application. The maximum emissions increase of carbon tetrachloride is less than the carbon tetrachloride acute and chronic trigger levels of 4.2 lb/hour and 2.5 lb/year. This application does not require a Risk Screening Analysis under Regulation 2 Rule 5.

## STATEMENT OF COMPLIANCE

The owner/operator of S-680 and S-681 shall continue to comply with condition 14354. This condition limits throughput at S-680 and requires loading and unloading operations to be abated by A-191 vapor balance system. The proposed changes to condition 14354 are shown below.

S-680 is expected to continue to comply with Regulation 8, Rule 5 requirements for organic liquid storage tanks.

S-680 and S-681 is expected to continue to comply with Regulation 8, Rule 6, Section 304 requirements for deliveries to storage tanks.

The change of conditions to condition 14354 requires a minor revision to the Title V permit that will be processed with the Title V renewal Application No. 18262. The project meets the requirements for a minor revision since it is not considered a significant revision under 2-6-226.

**2-6-226 Significant Permit Revision:** Any revision to a federally enforceable condition contained in a major facility review permit that can be defined as follows:

226.1 The incorporation of a change considered a major modification under 40 CFR Parts 51 (NSR) or 52 (PSD);

226.2 The incorporation of a change considered a modification under 40 CFR Parts 60 (NSPS), 61 (NESHAPS), or Section 112 of the Clean Air Act (HAP);

226.3 Any significant change or relaxation of any applicable monitoring, reporting or recordkeeping condition;

226.4 The establishment of or change to a permit term or condition allowing a facility to avoid an applicable requirement, including:

4.1 a federally enforceable emission limit assumed in order to avoid classification as a modification under any provision of Title I of the federal Clean Air Act, or

4.2 an alternative hazardous air pollutant emission limit pursuant to Section 112(i)(5) of the Clean Air Act;

226.5 The establishment of or change to a case-by-case determination of any emission limit or other standard;

226.6 The establishment of or change to a facility-specific determination for ambient impacts, visibility analysis, or increment analysis on portable sources; or

226.7 The incorporation of any requirement promulgated by the U. S. EPA under the authority of the Clean Air Act provided that three or more years remain on the permit term. (Amended 10/20/99)

The project is not a major modification under NSR or PSD. The project is not considered a modification under an NSPS, since no NSPS applies to the project (See NSPS discussion below.) The NESHAPs general provisions under 63.41 do not have a definition for modification. The NESHAPs discuss reconstruction of a major source of HAPs. The facility has current actual emissions below the major source thresholds and permit condition No. 24004 that limits these emissions. The project will not change the facility status when compared to major source thresholds for HAP and therefore should not be considered a modification under the NESHAPs.

In addition, the project is not subject to any MACT requirements. The project does not change or relax existing monitoring, reporting, or recordkeeping requirements. The project does not involve a change to a permit term or condition allowing a facility to avoid an applicable requirements. The project does not establish or change a case by case determination of any emission limit or standard which may apply if a project increases emissions above the major source thresholds for HAP. The project does not involve changes described in 2-6-226.6 or 2-6-226.7.

**The California Environmental Quality Act (CEQA):**

The project is considered to be ministerial under the District's CEQA regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emissions factors and therefore is not discretionary as defined by CEQA. (Permit Handbook Chapter 4.0)

The project is also exempt from CEQA in accordance with Regulation 2-1-312.11.4. The project will offset its POC emissions and the project satisfies the “no net emission increase” provisions of District Regulation 2, Rule 2. The project has provided CEQA related information in the permit application that demonstrates there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. This regulation states:

312.11 Permit applications for a proposed new or modified source or sources or for process changes which will satisfy the “No Net Emission Increase” provisions of District Regulation 2, Rule 2, and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. Examples of such projects include, but are not necessarily limited to, the following:

11.4 Projects satisfying the "no net emission increase" provisions of District Regulation 2, Rule 2 for which there will be some increase in the emissions of any toxic air contaminant, but for which the District staff's health risk screening analysis shows that the project will not result in a cancer risk (as defined in Regulation 2-5-206) greater than 1.0 in a million ( $10^{-6}$ ) and will not result in a chronic hazard index (as defined in Regulation 2-5-208) greater than 0.20, and for which there will be no other significant environmental effect.

*(Adopted 7/17/91; Amended 5/17/00; 12/21/04; 6/15/05)*

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

***Best Available Control Technology:***

This application does not trigger BACT, because the increase in POC emissions is negligible and is less than 10 lb/day.

***Offsets:*** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. The POC emissions increase is negligible (less than 0.001 ton/year) and no POC offsets are required.

## NSPS

There is no NSPS that applies to S-680 or S-681.

40 CFR 60 Subpart Kb does not apply since S-680 is a pressure tank meeting the exemption requirements contained in 60.110(b). This subpart does not apply to storage vessels with a capacity greater than or equal to 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m<sup>3</sup> but less than 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure less than 15.0 kPa.

S-680 has a capacity greater than 75 m<sup>3</sup> but less than 151 m<sup>3</sup> and is storing a liquid with a maximum true vapor pressure less than 15.0 kPa. The vapor pressure for carbon tetrachloride is 11.94 KPa at 20 deg. C. The volume of S-680 is 25,000 gallons (94.6 m<sup>3</sup>).

## NESHAP

There is no NESHAP that applies to S-680 or S-681.

**PSD does not apply to this specific permit application.**

## PERMIT CONDITIONS

COND# 14354 -----

Application 16743, 16468, 23934  
Conditions for S-680, Pressure Tank, T-440  
S-681, Truck Transfer  
A-191, Carbon Tetrachloride Tank Truck Loading Vapor Return  
Line:

1. The total carbon tetrachloride throughput for S-680 shall not exceed 5,669 gallons (74,720 pounds) during any consecutive 12-month period, except during tank interior inspections or in case of an emergency repair.

(Basis: Cumulative Increase)

2. The total combined number of unloading (transfer) events at S-680 shall not exceed 5 during any calendar year.

During tank interior inspection period and in case of an emergency repair, the maximum number of transfers to empty or refill S-680 shall not exceed 5 in any one day, and the total number of transfers to empty and refill S-680 shall not exceed 20 for the event. The owner/operator shall only be allowed to perform one tank interior inspection event in a calendar year.

(Basis: Cumulative Increase)



3. The owner/operator of S-680 shall maintain records of carbon tetrachloride throughput and the date and number of loading/unloading events in a District-approved log. These records shall be retained on site for a minimum of five years from the date of entry and made available to District personnel upon request.  
(Basis: Cumulative Increase, BAAQMD Regulation 2-6-501)

Conditions for S-681, Truck Transfer:

4. S-681 Carbon Tetrachloride Tank Truck Transfer Operation shall be abated by A-191 Vapor Balance System whenever carbon tetrachloride is being transferred from S-680 Storage Tank to tank truck, or vice versa.  
(Basis: Cumulative Increase, BAAQMD Regulation 8-6-302.1)
5. During all loading/unloading events at S-681, the operator shall confirm that the vapor return line is properly connected. The operator shall also verify that there is a leak tight connection to the tank truck.  
(Basis: BAAQMD Regulation 8-6-302, BAAQMD Regulation 8-6-304, BAAQMD Regulation 8-6-305, BAAQMD Regulation 8-6-306)
6. The owner/operator shall maintain records for all Loading/unloading events, including the date, and verification of leak tight connection to the tank truck. These records shall be retained on site for a minimum of five years from the date of entry and made available to District personnel upon request.  
(Basis: BAAQMD Regulation 2-6-501, BAAQMD Regulation 8-6-302, BAAQMD Regulation 8-6-304, BAAQMD Regulation 8-6-305, BAAQMD Regulation 8-6-306)

## RECOMMENDATION

Please approve the change of conditions to condition 14354 shown above. Condition 14354 is applicable to the following sources.

S-680 T-440 Pressure Vessel Storage Tank

Pressure tank, 25K gal, White, Carbon tetrachloride, 10 ft diam

S-681 Truck Transfer

Truck, Carbon tetrachloride, Part splash, part submerged fill

## EXEMPTIONS

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Lusher  
Senior Air Quality Engineer

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 24429**

**BACKGROUND**

Dow Chemical Company (Dow) has applied for a change of conditions for the Nitrpyrin Formulation Plant. The facility is asking to increase the operations of the plant to 12 months from the 4 to 6 months (Application No. 21858). The facility is also adding fugitive component counts.

<b>Components</b>	<b>Permitted</b>	<b>Proposed</b>	<b>Increase</b>
Valves	426	512	20%
Connections (Flanges, Connectors)	1543	1852	20%
Pumps	19	21	10%
PRDs	18	18	0%
Agitators	7	7	0%

The facility is proposing to maintain the existing POC limits of 9.9 lb/day and 0.89 tons/year and the naphthalene emissions are expected to remain the same as in the previous application (21858).

The Nitrpyrin plant consists of the following equipment:

<b>Source</b>	<b>Dow Number</b>	<b>Description</b>	<b>Size (gals)</b>	<b>Exempt</b>
S-718		Nitrpyrin Formulation Plant		Not Exempt
S-719 (exempt)	D-121 A	Aromatic 200 Pressure Tank	35,900	2-1-123.3.2
	Tote	Drapex	Unknown	2-1-123.3.6
	Isotainer	N-Serve TG	Unknown	2-1-103
S-720	T-310	Organic Mix	9,000	2-1-103
S-721 (exempt)	D-110A	PAPI Storage Pressure Tank	7,900	2-1-123.3.2
	T-751, Tote	Proxel	375	2-1-103
S-722 (exempt)	T-8	Tergitol S-15	5,900	2-1-123.3.6
S-723 (exempt)	T-9	Tergitol S-15	5,900	2-1-123.3.6
	Tote	Antifoam	Unknown	2-1-103
S-724 (exempt)	T-15	Propylene Glycol Storage	7,800	2-1-123.3.2
S-725	V-250	Aqueous Mix	2,900	2-1-103

S-726	T-112	Emulsion Storage	8,800	2-1-103
S-727	T-11	Gel Phase Mix	1,500	2-1-103
S-728	T-20	Ethylene Diamine Storage Pressure Tank	8,200	Not Exempt
S-729	V-100	Encapsulation Vessel	8,200	2-1-103
S-730	T-569	Nitrapyrin Formulation Storage	80,000	2-1-103
S-731	T-570	Nitrapyrin Formulation Storage	80,000	2-1-103

Two sources are not considered exempt from District permitting requirements: S-718 Nitrapyrin Formulation Plant and S-728 Ethylene Diamine Storage Pressure Tank. The emissions from S-718 are fugitive POC emissions from leaks in various components. The emissions of Ethylene Diamine from S-728 are considered to be negligible due to the fairly low vapor pressure of the material, 0.207 psia, and the fact that the tank is a pressure tank that is vapor balanced when loaded. All of the remaining tanks associated with the project are exempt as identified above. The emissions of air toxics (naphthalene) from all of the exempt tanks were included in the health risk screen to ensure conservative results.

Dow Figure 2-3 (21858), Project Component Flow Chart, for the Nitrapyrin Formulation Project shows the material flow through the Nitrapyrin plant.

### EMISSIONS SUMMARY

The primary emissions from the Nitrapyrin plant are the fugitive emissions from leaking components. The fugitive emissions are POC with a fraction of naphthalene.

The emissions from the Nitrapyrin plant are expected to be low due to the properties of the materials being handled at the plant.

The table below shows the organic chemicals in use at the plant and the vapor pressures in psia.

Chemical	Vapor Pressure (psia)
N-Serve TG	0.012
Aromatic 200	0.0008
Drapex	0.002
PAPI	0.0000002
Proxel	8.4 E-09
Tergitol	0.000193
Geroxon	Solid
Kraftperse	Solid
Antifoam 100	0.019
Propylene Glycol	0.005
Avicel	Solid
Kelzan	Solid
Ethyl Diamine	0.207
Encapsulated Nitrapyrin	Negligible

The fugitive component counts for the project are contained in the following Table.

<b>Components</b>	<b>Permitted</b>	<b>Proposed</b>	<b>Increase</b>
Valves	426	512	20%
Connections (Flanges, Connectors)	1543	1852	20%
Pumps	19	21	10%
PRDs	18	18	0%
Agitators	7	7	0%

Dow is installing BACT components for the majority of fugitive components in use at the Nitrapyrin plant. The components that do not meet District BACT requirements are identified below.

7 to 10 - Rising Stem Valves

1 - Single Mechanical Seal Pump for Propylene Glycol Offloading

1 - Single Mechanical Seal Pump for Aromatic 200 Offloading

5 - Pressure Relief Devices

Dow has requested that the fugitive emissions from the Nitrapyrin plant continue to remain limited by condition 24763 to less than 9.9 lb/day and 0.891 tons/year.

#### **Emissions Estimation Methodology from Application #21858**

Dow has requested that the fugitive emissions from the Nitrapyrin plant be limited below the POC BACT trigger level of 10 lb per day. The District has estimated the maximum fugitive emissions from the project using the following calculation:

POC Permit Limit lb/year = 9.9 lb POC/day (Below BACT trigger) x 180 days/year (Typical Service) = 1782 lb/year POC, 0.891 ton/year POC

Napthalene Permit Limit = 1782 lb POC/year x 0.14 lb Napthalene/lb POC = 249.48 lb/year of Napthalene

The actual emissions from the plant remain really low with the 2<sup>nd</sup> Quarter emissions in 2011 at 36.12 lbs. The corresponding annual emissions are 144.5 lbs. After the increase in components it is expected that daily and annual emissions will be well below 9.9 lb/day and 0.891 tons/year.

#### **Plant Cumulative Increase: (tons/year)**

There are no emissions increases associated with this application.

#### **Toxic Risk Screening:**

There are no emissions increases associated with this application.

## STATEMENT OF COMPLIANCE

The owner/operator of S-718 and S-728 shall continue comply with Permit Condition No. 24763.

S-718 will be required to meet the requirements of District Regulation 8, Rule 18 Equipment Leaks. Dow is expected to comply with the requirements of Regulation 8, Rule 18.

S-728 will be required to meet the requirements of District Regulation 8, Rule 5 Storage of Organic Liquids. S-728 is expected to comply with the requirements of Regulation 8, Rule 5.

The project will require a minor revision to the Title V permit that will be processed with the Title V renewal Application No. 18262. The project meets the requirements for a minor revision since it is not considered a significant revision under 2-6-226.

The project is not a major modification under NSR or PSD. The project is not considered a modification under an NSPS, since no NSPS applies to the project. NESHAPs does not apply.

The project is considered to be ministerial under the District's CEQA regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emissions factors and therefore is not discretionary as defined by CEQA. (Permit Handbook Chapter 2.3, Chapter 5.3.4, Chapter 5.4)

The project is also exempt from CEQA in accordance with Regulation 2-1-312.11.4. The project will offset its POC emissions and the project satisfies the "no net emission increase" provisions of District Regulation 2, Rule 2. The project has provided CEQA related information in the permit application that demonstrates there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. This regulation states:

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

### ***Best Available Control Technology:***

There is no emissions increase associated for this application.

Offsets are not required.

NSPS does not apply (see application 21858).

PSD does not apply.

## PERMIT CONDITIONS

COND# 24763 -----

Plant 31

S-718 Nitrapyrin Plant

1. The owner/operator of the Nitrapyrin plant shall construct and operate the plant as described in Application No. 21858 and Application 24429.  
The owner/operator shall submit a permit application to the District for approval, prior to any increases in capacity or throughput above levels in Application No. 21858.  
[Basis: 2-2-419]
  
2. Within 30 days of District's issuance of the Permit to Operate for Application 21858 or the completion of the Nitrapryin Plant, the Owner/Operator shall provide the District's Engineering Division with a final count of all fugitive components and each component's unique permanent identification codes for this project. The owner/operator has been permitted to install the following fugitive components:  
  
  - ~~512367~~ valves;
  - ~~1852936~~ connections (flanges, connectors);
  - ~~2147~~ pumps;
  - ~~183~~ pressure relief devices;
  - 7 agitators (mechanical stirrers);  
[Basis: Cumulative Increase, Offsets, Regulation 2-5]
  
3. The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any valves installed as part of the Nitrapyrin Plant in organic liquid service unless the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18.  
[Basis: BACT, Regulation 8 Rule 18]
  
4. The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any flanges and/or connectors installed as part of the Nitrapyrin Plant in organic liquid service unless the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18.  
[Basis: Regulation 8 Rule 18]
  
5. The Owner/Operator shall comply with a leak standard of 500 ppm of TOC (measured as C1) at any pumps in organic liquid service installed as part of the Nitrapyrin Plant unless the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18.

[Basis: Regulation 8 Rule 18, Cumulative Increase, Offsets]

6. The Owner/Operator shall conduct inspections of fugitive components installed as part of the Nitrapyrin Plant in organic liquid service in accordance with the frequency below:

Pumps: Quarterly  
Valves: Quarterly  
Connectors (Not Flanges): Biannual  
Flanges: Biannual

[Basis: 2-2-419, Regulations 8 Rule 18]

7. The Owner/Operator shall not exceed 0.891 tons of POC emissions per consecutive 12 month period measured as C1 from all fugitive components installed as part of the Nitrapyrin Plant in organic liquid service. The Owner/Operator shall not exceed 9.9 lb/day of POC measured as C1 from all fugitive components. The Owner/Operator shall demonstrate compliance with the daily emissions limit by calculating the total emissions for the quarter and dividing by the number of days in the quarter. Compliance with this provision shall be verified quarterly using methods described in part 8. The results shall be submitted to the District within 30 days of the close of each calendar quarter after the completion of the Nitrapyrin Plant or the District's issuance of the Permit to Operate for Application 21858.

[Basis: 2-2-419, Cumulative Increase, Offsets]

8. If all of the fugitive components installed as part of the Nitrapyrin Plant in organic liquid service are leaking at a rate less than 5000 ppm of TOC (measured as C1) in any calendar quarter, no further verification and no submittal of the results shall be required. If any of the fugitive components installed as part of the Nitrapyrin Plant in organic liquid service are leaking at a rate equal to or greater than 5,000 ppm of TOC (measured as C1) in any calendar quarter, the owner/operator shall estimate the annual emissions and daily emissions in order to demonstrate compliance with part 7 and shall submit the results to the district within 30 days of the emissions calculation. The Owner/Operator shall demonstrate compliance with the daily emissions limit by calculating the total emissions for the quarter and dividing by the number of days in the quarter. For any calendar quarter in which one



or more of these components is leaking at a rate equal to or greater than 10,000 ppm of TOC (measured as C1), the Owner/Operator shall calculate and submit a report of fugitive emissions from all Nitrapyrin Plant fugitive components in organic liquid service utilizing District approved methods for the consecutive 12 month period ending with this quarter. This calculation shall continue each quarter until there is not a quarter containing a pegged leaker. For leaking components the Owner/Operator shall use a District approved calculation method and LeakDAS. The Owner/Operator shall include emissions estimates from all Nitrapyrin Plant fugitive components in organic liquid service regardless of the component Rule 8-18 repair status in order to demonstrate compliance with part 7.  
[Basis: 2-2-419, Cumulative Increase, Offsets]

9. The Owner/Operator shall keep a District-approved monthly log of fugitive component counts of the Nitrapyrin Plant, each component's unique permanent identification codes, monitoring results, and any annual emissions estimates required per parts 7 and 8 for at least five years from date of entry. The log shall be retained on site and made available to district staff upon request.[Basis: Offsets, Recordkeeping]

## **RECOMMENDATION**

I recommend issuing a change of conditions for the following equipment:

S-718 Nitrapyrin Formulation Plant  
S-728 Ethylene Diamine Storage Pressure Tank

## **EXEMPTIONS**

The following exemptions were issued under Application No. 21858:

S-719 (D-121 A) Aromatic 200 Pressure Tank, 35,900 gallons  
S-720 (T-310) Organic Mix, 9,000 gallons  
S-721 (D-110A) PAPI Storage Pressure Tank, 7,900 gallons  
S-722 (T-8) Tergitol S-15, 5,900 gallons  
S-723 (T-9) Tergitol S-15, 5,900 gallons  
S-724 (T-15) Propylene Glycol Storage, 7,800 gallons  
S-725 (V-250) Aqueous Mix, 2,900 gallons  
S-726 (T-112) Emulsion Storage, 8,800 gallons  
S-727 (T-11) Gel Phase Mix, 1,500 gallons

S-728 (T-20) Ethylene Diamine Storage Pressure Tank, 8,200 gallons

S-729 (V-100) Encapsulation Vessel, 8,200 gallons

S-730 (T-569) Nitrapyrin Formulation Storage, 80,000 gallons

S-731 (T-570) Nitrapyrin Formulation Storage, 80,000 gallons

By: \_\_\_\_\_ Date: \_\_\_\_\_

Brian Lusher

Senior Air Quality Engineer

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 25041**

**BACKGROUND**

Dow Chemical Company (Dow) has applied for an Authority to Construct to alter S-460 (U-83) Dowtherm Process Heater.

460 U-83 Dowtherm Burner

Heat Transfer Operation - Other, 25.0 MM BTU/hr maximum capacity (HHV), Natural gas fired, equipped with ultra low NOx burner, Zeeco Model GLSF 17 Free-Jet2 Zone C1740189 /,P192,

The source is having the burner replaced to meet Regulation 9, Rule 7 requirements. The installation of the new burner is not considered a modification, since the maximum firing rate of S-460 will remain at 25.0 MMBtu/hour. Dow provided documents from 1985 indicating that the maximum firing rate of this heater has been 25.0 MMBtu/hour since that time.

**EMISSIONS SUMMARY**

The new burner has an emissions guarantee of 9 ppm for NOx and 50 ppm for CO. The actual CO is expected to be less than 10 ppm. There is no emissions increase associated with this application.

**Plant Cumulative Increase: (tons/year)**

<b>Pollutant</b>	<b>Existing</b>	<b>New</b>	<b>Total</b>
NOx	1.804	0	1.804
CO	6.512	0	6.512
POC	3.133	0	3.133
PM10	2.573	0	2.573
SO2	0.131	0	0.131

### **Toxic Risk Screening:**

This application does not require a Risk Screening Analysis under Regulation 2 Rule 5 since there is no emissions increase associated with this application.

### **STATEMENT OF COMPLIANCE**

The owner/operator of S-460 shall continue to comply with Permit Condition No. 503. The changes to this permit condition is shown below in strikethrough/lineout format.

S-460 is expected to comply with Regulation 9 “Inorganic Gaseous Pollutants”, Rule 7 “Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters”. Specifically, S-460 is subject to the NO<sub>x</sub> (9 ppmv, dry at 3% O<sub>2</sub>) and CO (400 ppmv, dry at 3% O<sub>2</sub>) *final* emission limits outlined in Sections 307.5 of the above rule. S-460 is required to meet the above NO<sub>x</sub> and CO limits on January 1, 2014. The current version of Regulation 9, Rule 7 is not federally enforceable.

Dow has submitted a compliance plan to the District for all heaters and combustion sources subject to Regulation 9, Rule 7 requirements. The plan indicates Dow will be in compliance with Regulation 9, Rule 7 on a facility-wide basis.

The modification of S-460 is considered an administrative amendment to the Title V permit. Dow submitted application no. 25042 on 11/26/12 to incorporate this amendment into the Title V permit. The alteration of S-460 meets the definition of an administrative amendment under 2-6-201 since the changes are not federally enforceable. It should be noted that S-460 will be subject to stricter monitoring after the project is completed. S-460 will now be required to source test on an annual basis instead of every five years.

### **California Environmental Quality Act (CEQA):**

For this permit application, the District has determined that its evaluation of S-460 is covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook Chapter 2.1 “Boilers, Steam Generators & Process Heaters”. Since the District has classified this permit application as ministerial pursuant to Section 2-1-427, and as a result of its evaluation of the permit application, the District determined that all of the criteria for approval of ministerial permit applications pursuant to Section 2-1-428 have been met, and that the issuance of an Authority to Construct and Permit to Operate for the proposed project is a mandatory ministerial duty and is accordingly exempt from the CEQA requirement of Section 2-1-310.

### **School Notification**

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

### ***Best Available Control Technology:***

This application does not trigger BACT, because there is no emissions increase associated with this application.

*Offsets:* Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Offsets are not required for this application since there is no emissions increase associated with this application.

### **NSPS**

There is no NSPS that applies to S-460.

### **NESHAP**

The existing Title V permit has S-460 being subject to limited requirements (initial notification requirement only) under 40 CFR, Part 63, Subpart DDDDD. Subpart DDDDD was remanded and vacated on June 8, 2007. This version of Subpart DDDDD was vacated before the compliance date(s) were reached so S-444 was never subject to this regulation.

Dow accepted a facility-wide permit condition to limit HAP emissions to below major source thresholds on May 7, 2008.

Subpart DDDDD was repromulgated and the final rule was published on March 21, 2011. On May 18, 2011 the effectiveness dates in the rule were delayed by the EPA. Subpart DDDDD only applies to process heaters located at major sources of HAP. The original Subpart DDDDD was vacated and then repromulgated and since Dow is no longer a major source of HAP this Subpart does not apply to S-460.

Subpart JJJJJ applies to boilers at area sources, but not to process heaters. Subpart JJJJJ also does not apply to natural gas fired boilers (See 63.11195(e)).

**PSD does not apply to this specific permit application.**

### **PERMIT CONDITIONS**

COND# 503 -----

Applications 30711, 9487, 16468, 25041  
For S-460, Dowtherm Heater:

1. The owner/operator of S-460 shall only fire natural gas in the S-460 Heater.  
(Basis: Cumulative Increase)
2. The owner/operator of S-460 shall install and maintain a fuel gas flow meter.  
(Basis: Cumulative Increase)

- 3a. This part shall apply until 1/1/2014 or until the new ultra low NOx burner becomes operational. Except during periods of start-up or shutdown, the owner/operator of S-460 shall ensure that the concentration of nitrogen oxide (NOx) emissions from S-460 do not exceed 30 ppmvd at 3% oxygen.  
(Basis: BAAQMD Regulation 9-7-301)
- 3b. This part shall apply on and after 1/1/2014 or whenever the new ultra low NOx burner becomes operational. Except during periods of start-up or shutdown, the owner/operator of S-460 shall ensure that the concentration of nitrogen oxide (NOx) emissions from S-460 do not exceed 9 ppmvd at 3% oxygen.  
(Basis: BAAQMD Regulation 9-7-307.5)
4. Deleted.
5. Deleted.
6. Deleted.
7.  
In order to demonstrate compliance with part 3b, the owner/operator of S-460 shall conduct an initial compliance test to determine NOx and CO emissions within 90 days of operating the new ultra low NOx burner. The owner operator shall conduct a source test for NOx and CO at least once every year (with test frequency being no less than 10 months and no more than 12 months from the last test date). The owner/operator shall notify the Manager of the District's Source Test Section at least seven (7) days prior to the test, to provide the District staff the option of observing the testing. Within 45 days of test completion, a comprehensive report of the test results shall be submitted to the Manager of the District's Source Test Section for review and disposition.  
(Basis: BAAQMD Regulation 9-7-307.5)
8. The owner/operator of S-460 shall maintain monthly records of each startup event, each shutdown event, fuel usage, and the source test results. These records shall be maintained for five years and made available to District personnel upon request.  
(Basis: BAAQMD Regulation 2-6-501, BAAQMD Regulation 9-7-307.5)

## RECOMMENDATION

Issue a conditional Authority to Construct to Dow to install a new ultra low NOx burner for the following:

460 U-83 Dowtherm Burner

Heat Transfer Operation - Other, 25.0 MM BTU/hr maximum capacity (HHV), Natural gas fired, equipped with ultra low NOx burner, Zeeco Model GLSF 17 Free-Jet2 Zone C1740189 /,P192,

**EXEMPTIONS**

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Brian Lusher  
Senior Air Quality Engineer

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 25436**

**BACKGROUND**

Dow Chemical Company (Dow) has applied for an increase in throughput (change of conditions) at the MEI plant. The MEI plant consists of the following:

S-593, Plant 640, Section 1  
S-594, Plant 640, Section 2  
S-595, Plant 640, Section 3  
S-596, Plant 640, Section 4  
S-604, Truck Loading Facility Plant 640  
S-607, T-1904 Plant 640  
Abated by:  
A-146, Packed Bed NMP Scrubber B-3000  
A-147, B-3210 Packed Bed Water Scrubber  
A-148, Packed Bed Water Scrubber B-3200/B-3201  
A-149, B-1303 Packed Bed Water Scrubber  
A-206, ME-3220 Backup Carbon Adsorber  
S-336, Manufacturing Services Halogen Acid Furnace

The confidential throughput of MEI is increasing from \_\_\_\_\_ lb per year. There are no physical changes or changes in the method of operation other than the increase in permitted throughput of these sources. There is no increase above the permitted emission level for POC from the MEI plant. The POC emissions from the MEI plant were thought to be fully offset under application 4128. Recently, District staff determined that offsets were not provided in November 1990 for the project. Dow has now agreed to provide offsets to make the POC permit limits fully offset permit limits. There is a small increase in toxic air contaminant emissions associated with the increase in throughput at the MEI plant. The sources at the MEI plant are considered to be modified under Regulation 2, Rule 1, Section 234 and Regulation 2, Rule 5.

**EMISSIONS SUMMARY**

The POC emissions from the process vents are limited by condition 4780 to 8 lb/day. The fugitive emissions of Regulation 8, Rule 18 monitored components are limited to 3.7 tons/year (based on original permit application 4128). The current request to increase throughput at the MEI plant will not increase POC above the permitted level which will now be a fully offset permit limit under condition 25671.



The throughput increase will increase TAC emissions at the process vents at the MEI plant. The MEI plant also emits toxic air contaminants from fugitive components and all toxic air contaminant emissions were considered in the Health Risk Screening Analysis prepared for this application.

After the throughput increase at the MEI plant, the secondary emissions of HCl from S-336 halogen acid furnace could increase. The health risk screening analysis prepared under the previous application to modify the MEI plant (A14456) had these emissions estimated at 0.0022 lb/day and 0.788 lb/year. The current HRSA was based on an overly conservative value that was incorrect. The secondary HCl emissions were modeled at 107 lb/year. The correct value is 0.42 lb/year of secondary HCl.

Please see the attached emission calculations.

The facility has estimated the emissions increase due to increasing the number of rail cars allowed under condition 4780 from 330 to 345. The emissions estimate is contained in attachment 5 in the letter addressing incompleteness items from Dow to the District dated July 19, 2013. The emissions increase from the increase in rail cars is shown below:

NOx	20.83 lb/year, 0.010 tons/year
CO	2.61 lb/year, 0.001 tons/year
POC	0.62 lb/year, 0.0003 tons/year
PM10	0.42 lb/year, 0.0002 tons/year
SOx	1.44 lb/year, 0.0007 tons/year

The facility has estimated the emissions increase from the increase in tank truck trips from 230 to 256. The emissions estimate is contained in attachment 7 in the letter addressing incompleteness items from Dow to the District dated July 19, 2013. The emissions increase from tank trucks is shown below:

NOx	68 lb/year, 0.034 tons/year
CO	11.2 lb/year, 0.00056 tons/year
POC	2.4 lb/year, 0.0012 tons/year
PM10	0.42 lb/year, 0.0012 tons/year
SOx	0.1 lb/year, 0.000 tons/year

**Post 1991 Plant Cumulative Increase: (tons/year)**

The emissions of rail are included in the definition of facility per 2-2-213. The emissions of trucks (on road vehicles) are not included.

The MEI plant POC emissions are not increasing above permitted levels established under application 4128. POC emissions from the MEI plant are now considered to be fully offset permit limits.

<b>Pollutant</b>	<b>New</b>
NO <sub>x</sub>	0.010
CO	0.001
POC	0.0003
PM10	0.0002
SO <sub>x</sub>	0.0007

**Toxic Risk Screening:**

The sources at the MEI plant are considered modified sources of toxic air contaminants under Regulation 2, Rule 5 due the increase in toxic air contaminant emissions. A health risk screening analysis was prepared to determine if the proposed increase in throughput at the MEI plant meets Regulation 2, Rule 5 requirements. The emission estimates used to prepare the risk screen were based on post project emission estimates. The maximum hourly emissions were used to determine acute impacts. The annual emission rates were not adjusted using the procedure in 2-5-601 and 602. The annual results are considered conservative.

The emissions of 1,1,1,2-tetrachloroethane and carbon tetrachloride are 4.21 lb per year and 3.57 per year which exceed the annual trigger level of 1.9 lb per year and 2.5 lb per year. A health risk screen was prepared by Jane Lundquist of the Toxics Section. The results are summarized in a memorandum dated November 13, 2013. The maximum cancer risk was 0.05 in a million, the acute hazard index and chronic hazard index were 0.0009 and 0.002, respectively.

**STATEMENT OF COMPLIANCE**

**Regulation 8, Rule 2**

S-593, S-594, S-595, and S-596 is expected to continue to comply with Regulation 8, Rule 2 requirements. Section 8-2-301 prohibits miscellaneous operations from emitting more than 15 lb per day and containing a concentration of more than 300 ppm total carbon on a dry basis.

**Regulation 8, Rule 5**

S-607 (T1904) is expected to continue to comply with Regulation 8, Rule 5, Section 303 requirements.

**Regulation 8, Rule 6**

The owner/operator of S-604 is expected to continue to comply with with Regulation 8, Rule 6, Section 301 requirements and Section 307 requirements.

**Regulation 8, Regulation 18**

The owner/operator of the MEI plant sources is expected to continue to comply with Regulation 8, Rule 18. The District is imposing condition 25671 to ensure that the requirements of 8-18 are met. Please see the permit conditions section below for additional discussion.

**The California Environmental Quality Act (CEQA):**

The project is also exempt from CEQA in accordance with Regulation 2-1-312.11.4. The project will remain below permitted levels for POC from the MEI plant and the project satisfies the “no net emission increase” provisions of District Regulation 2, Rule 2. The project has provided CEQA related information in the permit application that demonstrates there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. This regulation states:

312.11 Permit applications for a proposed new or modified source or sources or for process changes which will satisfy the “No Net Emission Increase” provisions of District Regulation 2, Rule 2, and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. Examples of such projects include, but are not necessarily limited to, the following:  
11.4 Projects satisfying the "no net emission increase" provisions of District Regulation 2, Rule 2 for which there will be some increase in the emissions of any toxic air contaminant, but for which the District staff's health risk screening analysis shows that the project will not result in a cancer risk (as defined in Regulation 2-5-206) greater than 1.0 in a million ( $10^{-6}$ ) and will not result in a chronic hazard index (as defined in Regulation 2-5-208) greater than 0.20, and for which there will be no other significant environmental effect.  
(Adopted 7/17/91; Amended 5/17/00; 12/21/04; 6/15/05)

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

***Best Available Control Technology:***

There is no increase in POC emissions from the MEI plant sources above permitted levels. The increase in cargo carrier emissions (rail, trucks) is not subject to BACT requirements per 2-2-206.

***Offsets:*** In accordance with 2-2-302 and 303, offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx or over 100 tons/yr of PM10 or SOx. There is a 0.010 ton/year increase of NOx from the increased rail emissions associated with this project.

The POC emissions from the MEI plant were thought to be fully offset under application 4128. Recently, District staff determined that offsets were not provided in November 1990 for the project. Dow has now agreed to provide offsets to make the POC permit limits fully offset permit limits. Application 4128 estimated POC emissions at 5.146 tons of POC per year.

District staff has revised this value slightly based on the permit limit of 8 lb of POC per day from the process vents and the 3.7 tons of POC per year from fugitive emissions. The total POC emissions that need to be offset from the MEI plant POC emissions are 5.160 tons per year.

Dow has elected to provide POC offsets to offset POC and NO<sub>x</sub> associated with this application. The increases must be offset at a ratio of 1.15 to 1. Dow has elected to defer offsetting the combined NO<sub>x</sub> and POC emissions of 5.946 ton/year (1.15 to 1) under Regulation 2, Rule 2, Section 421. Dow plans to surrender Emission Reduction Credit 1280 which has a balance of 12.827 tons of POC which is adequate to offset the emissions from this application and the MEI plant sources.

### **NSPS**

There are no NSPSs applicable to this project.

### **NESHAP**

There are no NESHAPs applicable to this project.

### **PSD**

PSD does not apply to this specific permit application.

### **PERMIT CONDITIONS**

The MEI plant is subject to condition 4780. The changes to this condition are shown in strikethrough/lineout format.

The District is also imposing a condition on the fugitive components at the MEI plant that corresponds to the emissions estimated during the original permitting. The fugitive component emissions were estimated at 3.7 tons/year of POC under application 4128 (Issuance November, 1990). The emissions estimated under application 4128 were 5.146 tons/year of POC. The permitted emissions include 8 lb POC/day from the MEI process vents (condition 4780, part 1). Application 14456 (Issuance 2007) approved of the last MEI plant expansion and POC emissions remained at the original permitted levels.

The MEI sources are considered to be modified sources under 2-1-234.2 due to an increase in toxic air contaminant emissions. The fugitive emissions associated with the MEI plant were estimated under application 4128, but no permit limit was ever imposed to ensure that this value would not be exceeded. The District is now imposing a permit limit to ensure that emissions from the MEI plant remain below permitted levels. District staff and the facility believe that the 3.7 ton per year POC limit is conservative based on the materials processed at the MEI plant and based on the data from the components that are monitored under Regulation 8, Rule 18. District staff and the facility also believe that all components regulated by Regulation 8-18 (including inaccessible components) probably have emissions that are below 3.7 tons/year of POC.

Condition 25671 will limit fugitive emissions from accessible Regulation 8-18 components (including those that are not required to be monitored under Regulation 8-18) to less than 3.7 tons/year of POC. Emissions from inaccessible components will be addressed by having the facility provide counts of these components within 6 months of approval of the throughput increase at the MEI plant. Condition 25671 may need to be revised in the future to address emissions from all Regulation 8-18 regulated components including accessible and inaccessible components.

COND# 4780-----

Applications 4128, 16468, 8894, 14456, [25436](#)  
Permit Conditions for Sources  
S-593, Plant 640, Section 1  
S-594, Plant 640, Section 2  
S-595, Plant 640, Section 3  
S-596, Plant 640, Section 4  
S-604, Truck Loading Facility Plant 640 S-607, T-1904 Plant  
640 Abated by:  
A-146, Packed Bed NMP Scrubber B-3000  
A-147, B-3210 Packed Bed Water Scrubber  
A-148, Packed Bed Water Scrubber B-3200/B-3201  
A-149, B-1303 Packed Bed Water Scrubber  
A-206, ME-3220 Backup Carbon Adsorber  
S-336, Manufacturing Services Halogen Acid Furnace  
~~S-389, Sym-Tet Halogen Acid Furnace~~

1. The owner/operator shall ensure that the combined emissions of precursor organic compounds (POC) to the atmosphere from the MEI Plant 640 (S-593, S-594, S-595, S-596) do not exceed 8 pounds per day, averaged over each calendar month.  
(Basis: Cumulative Increase)
- \*2. The owner/operator shall ensure that the combined emissions of 4-amino-3,5 dichloro-2,6 difluoro pyridine to the atmosphere from the MEI Plant 640 do not exceed 0.02 pounds on any day. (Basis: [Regulation 2, Rule 5TRMP](#))
- \*3. The owner/operator shall ensure that the combined ammonia emissions to the atmosphere from the MEI Plant 640 do not exceed 0.02 pounds on any day and that the exhaust concentration does not exceed 200 ppm.  
(Basis: [Regulation 2, Rule 5TRMP](#))
4. Deleted.

- \*5. If any source test conducted for this plant identifies the emission of any compound not identified in the below listing, then the owner/operator shall submit a either a revised Risk Screening Analysis or sufficient information to indicate that emissions of the new compound are less than the applicable trigger levels listed in Regulation 2, Rule 5, Table 2-5-1:

Methyl Chloroacetate (MCA)  
4-amino-3,5 dichloro-2,6 difluoropyridine  
N-Methyl Pyrrolidone (NMP)  
Methyl Chloride  
Methanol  
Ethylene Glycol  
Fully Halogenated Heterocycle (FHC)  
Ammonia  
Potassium Chloride  
Potassium Hydroxide  
Chloroform  
Trichloroethylene  
1,1,1,2-Tetrachloroethane  
Perchloroethylene  
Carbon Tetrachloride  
Methylene Chloride  
Vinyl Chloride  
1,1 Dichloroethylene  
(Basis: BAAQMD Regulation 2, Rule 5)

6. The owner/operator shall ensure that the there are no detectable organic emissions from Tank Truck Loading at source S-604. "Detectable emissions" for the purpose of this permit condition is defined as 100 ppm organic as methane measured 1 cm from the source using an FID, OVA, or equivalent monitoring device.

(Basis: Cumulative Increase, [Regulation 2, Rule 5TRMP](#))

7. Deleted.

8. Deleted.

9. Deleted.

10. Deleted.

11. The owner/operator shall ensure that total rail car shipments for the MEI Plant 640 (S-593, S-594, S-595, and S-596) do not exceed ~~34530~~ cars per consecutive

12-month period.  
(Basis: Cumulative Increase)

- \*12 The owner/operator shall ensure that MEI Plant 640 (S-593, S-594, S 595, and S-596) does not cause any detectable off-property odors as defined in District Regulation 7. The owner/operator of Plant 640 shall take immediate measures to eliminate any suspected or identified odorous emissions to the satisfaction of the APCO.  
(Basis: BAAQMD Regulation 7-301)
- \*13. The owner/operator shall ensure that the all materials handled at Tank Truck Loading source S-604 are not spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation to the atmosphere.  
(Basis: Cumulative Increase, Regulation 2, Rule 5TRMP)
14. The owner/operator shall ensure that the MEI Plant 640 (S-593, S-594, S-595, and S-596) product (herbicide intermediate) is loaded only in solid form, with sufficient moisture present to prevent visible emissions and odors from occurring at the loading site.  
(Basis: Regulation 2, Rule 5TRMP, Cumulative Increase)
15. Deleted.
16. To demonstrate compliance with these conditions, the owner/operator of S-593, S-594, S-595, S-596, and S-604 shall maintain the following records:
- a. The number of railcar shipments received for materials to be used at the MEI Plant 640 and offsite railcar shipments from the MEI Plant 640, totaled each month for the previous 12-month period;
  - b. Records indicating whether the emissions from A-147 and A-149 are abated at S-336, ~~S-389~~, or A-206;
  - c. Records of the number of hours that the emissions from A-147 and/or A-149 are vented to A-206, summed each month for the previous 12-month period;
  - d. A summary of the hours of A-206 use since last carbon changeout. After 96 hours~~se~~ of use on a carbon bed, record of carbon changeout or daily records of the monitored inlet and outlet organic compound concentrations for A-206 for each day of use until carbon changeout;

e. Records of all source tests performed to demonstrate compliance with Parts 1, 2, 3, and 5; upon receipt of the startup source test results for the Phase II modifications to the MEI Plant 640, the records must also include a POC emission factor derived from the source test to be used for compliance calculations until the subsequent source test;

f. Effective after receipt of the startup source test results for the Phase II modifications to the MEI Plant 640: Monthly POC emission calculations to demonstrate compliance with Part 1. These records shall be kept on file for a minimum of five years and shall be made available to District personnel upon request.

(Basis: Cumulative Increase, BAAQMD Regulation 2-6-501)

17. The owner/operator shall ensure that the A-147 Scrubber abates S-593, S-594, S-596, and S-607 at all times each source is operating. The owner/operator shall ensure that the A-149 Scrubber abates S-595 at all times S-595 is generating ammonia emissions.

(Basis: Cumulative Increase)

18. To demonstrate compliance with the emission limits in Parts 1, 2 and 5 the owner/operator shall perform a District-approved source test to measure the combined POC, organic toxic air contaminants, and ammonia

emissions from A-147 and A-149 no later than 60 days from the startup of the Phase II modifications to the MEI Plant 640 and at least once every 5 years thereafter.

The source test results shall be used to determine emission factors to be used to demonstrate compliance in parts 1, 2, and 3. The owner/operator shall obtain approval of

all source test procedures from the District's Source Test Section prior to conducting any tests and shall notify the Manager of the District's Source Test Section, in writing, of the source test protocols and the projected test dates at least seven (7) days prior to the test. Within 60 days of test completion, a comprehensive report of the test results shall be submitted to the Manager of the District's Source Test Section for review and disposition. (Basis: Cumulative Increase)

19. The following abatement requirements will become effective upon startup of the Phase I modifications to



the MEI Plant 640: The owner/operator shall ensure that S-595 is abated by A-147 whenever S-595 is operating and not being abated by A-149. The owner/ operator shall ensure that the emissions from A-147 and A-149 are further abated at either S-336, ~~S-389~~, or at the Backup Carbon Adsorber, A-206.

(Basis: Cumulative Increase)

20. Beginning with the source test performed after startup of the Phase II modifications to the MEI Plant 640 (required by Part 18 above) and for every subsequent source test, the owner/operator shall derive a POC emission factor from each source test for use in calculation of POC emissions to the atmosphere from the MEI Plant 640 to demonstrate compliance with Part 1. This emission factor shall be used to calculate POC emissions on a monthly basis until the next source test is performed and a new emission factor is derived. The POC emissions to the atmosphere from the MEI Plant 640 shall be calculated as the combined emissions from A-147 and A-149, reduced by:

a.99.99% by weight for the periods that the A-147/A-

149 vents were directed to S-336 ~~or S-389~~, or

b.90% by weight for the periods that the A-147/A-149 vents were directed to A-206.

(Basis: Cumulative Increase)

21. Upon startup of the Phase I modifications to the MEI Plant 640, the owner/operator shall ensure that the A-206 Backup Carbon Adsorber is equipped with at least 1800 pounds of activated carbon whenever A-206 is in use.

(Basis: BAAQMD Regulation 2-1-301)

22. Upon startup of the Phase I modifications to the MEI Plant 640, the owner/operator shall ensure that use of A-206 to abate the emissions from A-147 or A-149 does not exceed 1,440 hours in any consecutive 12-month period. (Basis: Cumulative Increase)

23. Upon startup of the Phase I modifications to the MEI Plant 640, the owner/operator shall ensure that the A-205 Backup Carbon Adsorber reduces inlet POC emissions by at least 90% by weight. Compliance with this abatement efficiency shall be monitored by tracking hours of use of each carbon bed. After 96 hours of use,

the owner/operator must either changeout the carbon bed or monitor abatement efficiency each day A-206 is in use by measuring both the inlet and outlet organic compound concentrations. The owner/ operator must install fresh carbon in A-206 when the outlet organic concentration reaches 10% of the inlet concentration. During the carbon changeout, if S-593, S-594, S-595, or S-596 is operating, the emissions from A-147 and A-149 ~~shall~~ must be abated at the in-line spare carbon bed or at S-336 ~~or S-389~~.

(Basis: Cumulative Increase)

24. Within 45 days of startup of the Phase II modifications to the MEI Plant 640, the owner/operator shall provide a final valve, flange, pump, and other component count for the modified MEI Plant 640 (S-593, S-594, S-595, S-596). This submittal shall also include revised fugitive emission calculations for the MEI Plant 640 based on the final component count.

(Basis: Cumulative Increase)

COND# 25671 -----

Plant 31

Application 25436

Permit Conditions for Fugitive Components at MEI Plant

1. The owner/operator shall continue to monitor Regulation 8-18 monitored components at the MEI plant in accordance with Rule requirements. The owner/operator shall provide the District Engineering and Compliance and Enforcement Division total counts of all fugitive components including Regulation 8-18 monitored components and those that are not monitored under Regulation 8-18 installed at the MEI plant within 180 days of the approval of the change of conditions application 25436. The owner/operator shall also provide an estimate of fugitive components that are not accessible for fugitive monitoring in a permit application submitted the District Engineering Division within 210 days of the approval of the change of condition application 25436. The permit application will be a change of conditions application (condition 25671) and will ensure that emissions from all fugitive components remain below permitted levels. [Basis: Cumulative Increase, Regulation 2-1-403, Regulation 2-5, Regulation 8, Rule 18]
2. The owner/operator shall comply with a leak standard of 100 ppm of TOC (measured as methane) at all valves regulated by Regulation 8-18 installed as part of the MEI Plant in organic service unless the owner/operator complies with the applicable minimization and repair provisions contained in Regulation 8-18.  
[Basis: Regulation 8, Rule 18]

3. The owner/operator shall comply with a leak standard of 100 ppm of TOC (measured as methane) at any flanges and/or connectors regulated by Regulation 8-18 installed as part of the MEI Plant in organic service unless the owner/operator complies with the applicable minimization and repair provisions contained in Regulation 8-18. [Basis: Regulation 8 Rule 18]
4. The owner/operator shall comply with a leak standard of 500 ppm of TOC (measured as methane) at any pumps in organic service regulated by Regulation 8-18 installed as part of the MEI Plant unless the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18. [Basis: Regulation 8 Rule 18]
5. The owner/operator shall conduct inspections of fugitive components that are not required to be monitored under Regulation 8-18 (that are accessible) installed as part of the MEI Plant in organic service in accordance with the frequency below (this requirement becomes effective on the issuance date for application 25436):

Pumps: Annual

Valves: Annual

Connectors (Not Flanges): Annual

Flanges: Annual

[Basis: Regulations 8 Rule 18, Cumulative Increase, 2-1-403]

6. Until the requirements of part 7 become effective, the owner/operator shall not exceed 3.7 tons of POC emissions per consecutive 12-month period measured as methane from all fugitive components required to be monitored under Regulation 8, Rule 18 installed as part of the MEI plant in organic service effective on the date of issuance of approval of application 25436. [Basis: 2-1-403, Cumulative Increase]
7. The owner/operator shall not exceed 3.7 tons of POC emissions per consecutive 12-month period measured as methane from all fugitive components regulated by Regulation 8-18 installed as part of the MEI Plant in organic service effective one year from the date of issuance of approval of application 25436. If it is determined that the POC limit in this part needs to be increased, the owner/operator shall submit a permit application to the Engineering Division within 30 days of the determination. The owner/operator shall estimate emissions from all fugitive components at the MEI plant using District approved methods for each calendar year. The fugitive emissions estimate shall be submitted to the Director of Compliance and Enforcement by the end of February for the previous year. The emissions from fugitive components will be addressed by the permit application that is required to be submitted under part 1 of this condition. [Basis: 2-1-403, Cumulative Increase]
8. The owner/operator shall keep a District-approved log of monitoring results and any annual emissions estimates required per part 6 and/or part 7 for at least five years from

date of entry. The log shall be retained on site and made available to district staff upon request. [Basis: Offsets, Recordkeeping]

## **RECOMMENDATION**

Recommend approving a change of conditions for the following equipment:

S-593, Plant 640, Section 1  
S-594, Plant 640, Section 2  
S-595, Plant 640, Section 3  
S-596, Plant 640, Section 4  
S-604, Truck Loading Facility Plant 640  
S-607, T-1904 Plant 640  
Abated by:  
A-146, Packed Bed NMP Scrubber B-3000  
A-147, B-3210 Packed Bed Water Scrubber  
A-148, Packed Bed Water Scrubber B-3200/B-3201  
A-149, B-1303 Packed Bed Water Scrubber  
A-206, ME-3220 Backup Carbon Adsorber  
S-336, Manufacturing Services Halogen Acid Furnace

## **EXEMPTIONS**

None.

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Lusher  
Senior Air Quality Engineer

**Engineering Evaluation  
Dow Chemical Company  
901 Loveridge Rd  
Pittsburgh, CA 94565  
Plant No. 31  
Application No. 25438**

## **BACKGROUND**

Dow Chemical Company (Dow) has applied for an increase in throughput for the Nitrapyrin Formulation Plant. Nitrapyrin nitrogen stabilizer is a commercial agricultural product that optimizes the yield potential of corn crops by ensuring nitrogen is available in the root zone during key stages of corn growth when used with liquid fertilizer or manure.

The Nitrapyrin plant consists of the following sources:

S-718 Nitrapyrin Formulation Plant  
S-719 (D-121 A) Aromatic 200 Pressure Tank, 35,900 gallons, exempt 2-1-123.3.2  
S-720 (T-310) Organic Mix, 9,000 gallons  
S-721 (D-110A) PAPI Storage Pressure Tank, 7,900 gallons, exempt 2-1-123.3.2  
S-722 (T-8) Tergitol S-15, 5,900 gallons, exempt 2-1-123.3.6  
S-723 (T-9) Tergitol S-15, 5,900 gallons, exempt 2-1-123.3.6  
S-724 (T-15) Propylene Glycol Storage, 7,800 gallons, exempt 2-1-123.3.2  
S-725 (V-250) Aqueous Mix, 2,900 gallons  
S-726 (T-112) Emulsion Storage, 8,800 gallons  
S-727 (T-11) Gel Phase Mix, 1,500 gallons  
S-728 (T-20) Ethylene Diamine Storage Pressure Tank, 8,200 gallons  
S-729 (V-100) Encapsulation Vessel, 8,200 gallons  
S-730 (T-569) Nitrapyrin Formulation Storage, 80,000 gallons  
S-731 (T-570) Nitrapyrin Formulation Storage, 80,000 gallons  
S-732 (T-16) Dispersant Tank, 13,500 gallons  
S-733 (T-216) Product Check Tank, 11,500 gallons  
S-734 N-Serve TG Isotainer  
S-735 (T-751) Proxell Tote, 375 gallons

Under application 21858, emissions were based on a throughput of \_\_\_\_\_ gallons per year. Application 24429 requested a change in operating schedule from 4 to 6 months to 12 months per year with no throughput increase. Application 24429 also corrected the number of components installed at the Nitrapyrin plant.

The current permit application is requesting an increase in throughput from \_\_\_\_\_ million gallons per year. The permitted POC emissions from fugitive components were fully offset under application 21858. The POC and naphthalene emissions from the Nitrapyrin plant are mainly due to fugitive components. Emissions from fugitive components are remaining below permitted levels.

There is a small emissions increase in POC and naphthalene emissions associated with tanks (including vents to atmosphere). Several tanks were determined to be exempt under 2-1-103 (Source not subject to any rule). However, portions of Regulation 8, Rule 5 do apply to these tanks, since the exemption for low vapor pressure materials under 8-5-117 is only a limited exemption. These tanks are now considered permitted sources.

There will also be an increase in railcars associated with the increase in throughput at the Nitrapyrin plant from 143 to 271 rail cars per year. The additional rail cars will be added to existing locomotive trips. There will also be an increase in truck trips from 118 to 223 per year. Dow has provide estimates of the increase in rail and truck emissions associated with this application.

Dow has also provided the final component counts for the Nitrapyrin plant. The permitted fugitive emissions are expected to stay the same, since the existing permit limits have adequate compliance margin. The small increases of POC associated with tank emissions will be offset. The increase in emissions from the project due to rail will also be offset.

A health risk screening assessment was prepared due to the small increase in naphthalene emissions at the permitted tanks at the Nitrapyrin plant.

## EMISSIONS SUMMARY

The primary emissions from the Nitrapyrin plant are the fugitive emissions from leaking components. The fugitive emissions are POC with a fraction of naphthalene.

The emissions from the Nitrapyrin plant are expected to be low due to the properties of the materials being handled at the plant.

The table below shows the organic chemicals in use at the plant and the vapor pressures in psia.

Chemical	Vapor Pressure (psia)
N-Serve TG	0.012
Aromatic 200	0.0008
Drapex	0.002
PAPI	0.0000002
Proxel	8.4 E-09
Tergitol	0.000193
Geroxon	Solid
Kraftperse	Solid
Antifoam 100	0.019
Propylene Glycol	0.005
Avicel	Solid
Kelzan	Solid
Ethyl Diamine	0.207
Encapsulated Nitrapyrin	Negligible

The final fugitive component counts for the project are contained in the following Table.

Component	8-18	>302 deg. F	Seal Pot	Total
Valves	407	158	34	599
Connections (Flanges)	1547	514	225	2286
Pumps	15	8		23
Pressure Relief Devices	12	9	3	24
Compressor	8	0		8

Dow has installed BACT components for the majority of fugitive components in use at the Nitrapyrin plant. The components that do not meet District BACT requirements are identified below.

7 to 10 - Rising Stem Valves

1 - Single Mechanical Seal Pump for Propylene Glycol Offloading

1 - Single Mechanical Seal Pump for Aromatic 200 Offloading

## 5 - Pressure Relief Devices

Dow has requested that the fugitive emissions from the Nitrapyrin plant remain below permitted levels and below the POC BACT trigger level of 10 lb per day. Under the original application 21858, the District estimated the maximum fugitive emissions from the project using the following calculation:

POC Permit Limit lb/year = 9.9 lb POC/day (Below BACT trigger) x 180 days/year (Typical Service) = 1782 lb/year POC, 0.891 ton/year POC

Napthalene Permit Limit = 1782 lb POC/year x 0.14 lb Napthalene/lb POC = 249.48 lb/year of Napthalene

In application 24429, the District approved of a schedule change that allowed the Nitrapyrin plant to operate 365 days/year. The fugitive emission limit for POC of 0.891 tons/year and the corresponding naphthalene emissions of 249.5 lb/year were not changed since the facility could continue to meet these limits. Dow has requested that the fugitive POC and corresponding naphthalene limit be maintained at the current permitted level.

The increase in throughput at the Nitrapyrin plant may cause a slight emissions increase of POC and naphthalene from various tanks and storage vessels. Under the original application 21858, the District exempted some of these tanks using 2-1-103 (Source not subject to any District Rule) as shown below.

Source	Dow Number	Description	Size (gals)	Exempt
S-735	Isotainer	N-Serve TG	Unknown	2-1-103
S-720	T-310	Organic Mix	9,000	2-1-103
S-736	T-751, Tote	Proxel	375	2-1-103
S-725	V-250	Aqueous Mix	2,900	2-1-103
S-726	T-112	Emulsion Storage	8,800	2-1-103
S-727	T-11	Gel Phase Mix	1,500	2-1-103
S-729	V-100	Encapsulation Vessel	8,200	2-1-103
S-730	T-569	Nitrapyrin Formulation Storage	80,000	2-1-103
S-731	T-570	Nitrapyrin Formulation Storage	80,000	2-1-103



However, portions of Regulation 8, Rule 5 apply to these storage tanks and the exemption in 8-5-117 is only a limited exemption. Therefore, these tanks which were previously considered exempt sources are now permitted sources.

The Nitrapyrin Plant will also emit small amounts of particulate matter which have been estimated by Dow using the following equation:

Dow estimated the Particulate Matter emissions under application 21858 using the following equation:

$$\text{PM}_{10}/\text{PM}_{2.5} \text{ lb/year} = 161.05 \text{ tons/year of solids} \times 0.061 \text{ lb Particulate/ton} = 9.82 \text{ lb/year}$$

Emission Factor for PM from EPA AP-42 Table 9.9.1-1 for Grain Handling (3/03).

The increased PM<sub>10</sub> emissions due to the throughput increase are:

$$9.82 \text{ lb PM}_{10}/\text{year} \times (4.0 \text{ million gallons/year}) / (2.1 \text{ million gallons/year}) = 18.7 \text{ lb. PM}_{10}/\text{year}$$

Dow Chemical Company  
 Application No. 25438  
 BAAQMD December 2013

Source	Dow Number	Description	Size (gals)	Exempt	Napthalene Emissions (lb/year)	POC Emissions (lb/year)	Estimation Method
S-718		Nitrapyrin Formulation Plant					See Fugitives and Tank Estimates
		Fugitive Emissions from Nitrapyrin Plant			249.48	1782.00	Correlation Equations and Dow Data
S-719 (exempt)	D-121 A	Aromatic 200 Pressure Tank	35,900	2-1-123.3.2	Negligible	Negligible	Pressure Tank Negligible Emissions
S-734	Tote	Drापex	Unknown	2-1-123.3.6	Negligible	Negligible	
S-735	Isotainer	N-Serve TG	Unknown		Negligible	Negligible	
S-720	T-310	Organic Mix	9,000		3.9	13.23	EPA Tanks 4.09d
S-721 (exempt)	D-110A	PAPI Storage Pressure Tank	7,900	2-1-123.3.2	Negligible	Negligible	
S-736	T-751, Tote	Proxel	375		None	0	EPA Tanks 4.09d
S-722 (exempt)	T-8	Tergitol S-15	5,900	2-1-123.3.6	Negligible	Negligible	
S-723 (exempt)	T-9	Tergitol S-15	5,900	2-1-123.3.6	Negligible	Negligible	
S-737	Tote	Antifoam	Unknown		Negligible	Negligible	
S-724 (exempt)	T-15	Propylene Glycol Storage	7,800	2-1-123.3.2	0	1	EPA Tanks 4.09d
S-725	V-250	Aqueous Mix	2,900		0	0.08	EPA Tanks 4.09d
S-726	T-112	Emulsion Storage	8,800		0.1	0.44	EPA Tanks 4.09d
S-727	T-11	Gel Phase Mix	1,500		None	None	
S-728	T-20	Ethylene Diamine Storage Pressure Tank	8,200	Not Exempt	Negligible	Negligible	Pressure Tank, Vapor Balance Loading
S-729	V-100	Encapsulation Vessel	8,200		0.08	0.1	EPA Tanks 4.09d
S-730	T-569	Nitrapyrin Formulation Storage	80,000		0.25	0.32	EPA Tanks 4.09d
S-731	T-570	Nitrapyrin Formulation Storage	80,000		0.25	0.32	EPA Tanks 4.09d
S-732	T-16	Dispersent Tank	13,500		Negligible	Negligible	
S-733	T-216	Product Check Tank	11,500		0.08	0.1	EPA Tanks 4.09d
Total Project					254.14	1797.59	

Notes: Emissions estimated by CH2MHill for Dow using Tanks 4.09d

Fugitive Estimate prepared by Brian Lusher of BAAQMD using maximum emissions that would not trigger BACT for Nitrapyrin plant fugitives.

Original Estimate under 21858, Fugitive emissions lb/year of POC = 180 days/year x 9.9 lb/day = 1782 lb POC/year,

Original Estimate under 21858, Fugitive emissions of napthalene = 1782 lb POC/year x 0.14 lb napthalene/lb POC = 249.48 lb/year

Dow plans to continue to comply with the fugitive limits calculated under 21858 even though throughput has doubled and days of operations has increased from 180 to 365 days per year.

All tank emission estimates prepared by Dow using Tanks 4.09d.

Dow has estimated the emissions from rail traffic associated with the Nitrapyrin plant:

<b>Pollutant</b>	<b>Current (lb/day)</b>	<b>Current (lb/year)</b>	<b>Post (lb/day)</b>	<b>Post (lb/year)</b>	<b>Increase (lb/day)</b>	<b>Increase (lb/year)</b>
NO <sub>x</sub>	1.389	198.57	1.389	376.32	0	177.75
CO	0.174	24.84	0.174	47.07	0	22.23
POC	0.041	5.87	0.041	11.12	0	5.25
PM10	0.028	4.01	0.028	7.60	0	3.59
SO <sub>x</sub>	0.096	13.73	0.096	26.03	0	12.29

**Plant Cumulative Increase: (tons/year)**

Total POC from the project is estimated at 15.6 lb/year plus 5.3 lb/year for a total of 20.9 lb/year.

Total PM10 from the project is estimated at 18.7 lb/year plus 3.6 lb/year for a total of 22.3 lb/year.

The cumulative increase for the project is shown below:

<b>Pollutant</b>	<b>New</b>
NO <sub>x</sub>	0.089
CO	0.011
POC	0.010
PM10	0.011
SO <sub>x</sub>	0.006

**Toxic Risk Screening:**

Napthalene emissions from the nitrapyrin plant are estimated at 254 lb/year from all sources including exempt tanks. The trigger level for naphthalene is 3.2 lb/year per Regulation 2, Rule 5. This application required a Risk Screening Analysis under Regulation 2, Rule 5.

The maximum cancer risk estimated for the project was 0.3 in a million and the maximum chronic hazard index was 0.0009 (See Memorandum dated October 28, 2013 from Jane Lundquist.) These results were based on emission rates that were slightly lower than the correct permitted level of toxic air contaminant emissions associated with the production increase in nitrapyrin. The naphthalene emissions from several sources were slightly to low and the corrected values were higher. The largest increase was a 60% change as shown below.

Source	HRSA Naphthalene (lb/year)	Corrected Naphthalene (lb/year)	Percent Change (%)
S-726	0.07	0.1	43
S-729	0.05	0.08	60
S-730	0.17	0.25	47
S-731	0.17	0.25	47

District staff could rerun the HRSA with the revised naphthalene emission rates. However, since the naphthalene emissions are less than a pound per year from each of these source the original HRSA results will be scaled by multiplying by 1.6 (cancer, chronic). The revised maximum cancer risk estimated for the project would be 0.5 in a million and the revised maximum chronic hazard index would be 0.0014.

These revised results are in accordance with the requirements of Regulation 2, Rule 5, Section 301 for a source not installing TBACT (cancer risk less than one in a million with a chronic hazard index less than 0.2). The District will limit organic emissions from the Nitrapyrin plant in condition 24763. As long as the Nitrapyrin plant emits less than the permitted level for organics the emissions of naphthalene will also remain below the amount evaluated in the HRSA under this application.

## STATEMENT OF COMPLIANCE

The owner/operator of the Nitrapyrin plant is expected to continue to comply with revised permit condition no. 24763.

The Nitrapyrin plant is expected to comply with the requirements of District Regulation 8, Rule 18 Equipment Leaks.

All tanks and storage vessels associated with the Nitrapryin plant qualify for the limited exemption under 8-5-117. Pressure tanks S-719, S-721, S-724 are expected to continue to meet the requirements of 8-5-307.3.

The project will require a minor revision to the Title V permit. The project meets the requirements for a minor revision since it is not considered a significant revision under 2-6-226.

**2-6-226 Significant Permit Revision:** Any revision to a federally enforceable condition contained in a major facility review permit that can be defined as follows:

- 226.1 The incorporation of a change considered a major modification under 40 CFR Parts 51 (NSR) or 52 (PSD);
- 226.2 The incorporation of a change considered a modification under 40 CFR Parts 60 (NSPS), 61 (NESHAPS), or Section 112 of the Clean Air Act (HAP);
- 226.3 Any significant change or relaxation of any applicable monitoring, reporting or recordkeeping condition;
- 226.4 The establishment of or change to a permit term or condition allowing a facility to avoid an applicable requirement, including:
  - 4.1 a federally enforceable emission limit assumed in order to avoid classification as a modification under any provision of Title I of the federal Clean Air Act, or

- 4.2 an alternative hazardous air pollutant emission limit pursuant to Section 112(i)(5) of the Clean Air Act;
- 226.5 The establishment of or change to a case-by-case determination of any emission limit or other standard;
- 226.6 The establishment of or change to a facility-specific determination for ambient impacts, visibility analysis, or increment analysis on portable sources; or
- 226.7 The incorporation of any requirement promulgated by the U. S. EPA under the authority of the Clean Air Act provided that three or more years remain on the permit term. (Amended 10/20/99)

The project is not a major modification under NSR or PSD. The project is not considered a modification under an NSPS, since no NSPS applies to the project (See NSPS discussion below.) The NESHAPs general provisions under 63.41 do not have a definition for modification. The NESHAPs discuss reconstruction of a major source of HAPs. The project is not subject to any MACT requirements. The project does not change or relax existing monitoring, reporting, or recordkeeping requirements. The project does not involve a change to a permit term or condition allowing a facility to avoid an applicable requirements. The project does not establish or change a case by case determination of any emission limit or standard which may apply if a project increases emissions above the major source thresholds for HAP. The project does not involve changes described in 2-6-226.6 or 2-6-226.7.

The project is considered to be ministerial under the District's CEQA regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emissions factors and therefore is not discretionary as defined by CEQA. (Permit Handbook Chapter 3.4, Chapter 4)

The project is also exempt from CEQA in accordance with Regulation 2-1-312.11.4. The project will offset its POC emissions and the project satisfies the "no net emission increase" provisions of District Regulation 2, Rule 2. The project has provided CEQA related information in the permit application (See Appendix H) that demonstrates there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. This regulation states:

- 312.11 Permit applications for a proposed new or modified source or sources or for process changes which will satisfy the "No Net Emission Increase" provisions of District Regulation 2, Rule 2, and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality. Examples of such projects include, but are not necessarily limited to, the following:
  - 11.4 Projects satisfying the "no net emission increase" provisions of District Regulation 2, Rule 2 for which there will be some increase in the emissions of any toxic air contaminant, but for which the District staff's health risk screening analysis shows that the project will not result in a cancer risk (as defined in Regulation 2-5-206) greater than 1.0 in a million ( $10^{-6}$ ) and will not result in a chronic hazard index (as defined in Regulation 2-5-208) greater than 0.20, and for which there will be no other significant environmental effect. (Adopted 7/17/91; Amended 5/17/00; 12/21/04; 6/15/05)

Finally, emissions from rail and truck traffic associated with the Nitrapyrin plant do not increase the project emissions to a level that exceeds any CEQA significance thresholds.

The project is not located within 1000 feet from a School and is not subject to the public notification requirements of Reg. 2-1-412.

**Best Available Control Technology:**

This application does not trigger BACT since emissions of POC and PM10 do not exceed 10 lb/day from any permitted source.

**Offsets:** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. Based on the emissions from the facility and the emission calculations above, offsets are required for this application. Dow is required to provide NOx and POC offsets at a ratio of 1.15 to 1.0.

The 20.9 lb/year of POC emissions from the increase in emissions from tanks that were previously exempt under application 21858 and increased rail traffic will be offset at a 1.15 to 1 ratio in accordance with 2-2-302.

The 177.8 lb/year of NOx emissions from the increase in emissions from increased rail traffic will be offset at a 1.15 to 1 ratio in accordance with 2-2-302. The offsets were not collected during the initial permitting under application 21858.

Dow has elected to defer offsetting the following emissions per 2-2-421:

NOx 0.102 tons/year (1.15 to 1)  
POC 0.012 tons/year (1.15 to 1)

Dow has identified Emission Reduction Credit No. 1208 as the banking certificate available to offset the NOx and POC emissions increases associated with this application.

**NESHAPs**

Dow currently has a facility wide condition that limits the emissions of hazardous air pollutants from the facility. This condition is expected to no longer be applicable after the Title V renewal is issued.

COND# 24004 -----

Dow Chemical, Plant #31,  
The following conditions establish the federally enforceable permit terms that ensure this plant is classified as a Minor source of Hazardous Air Pollutants under District Regulation 2, Rule 6, Major Facility Review. All applications submitted by the applicant and all modifications to the plant's equipment after issuance of the minor HAP permit must be evaluated to ensure that the facility will not exceed the HAP minor general limits below, and that sufficient monitoring, recordkeeping, and reporting requirements are imposed to ensure enforceability of the limits.

Any revision to a condition establishing this plant's status as a HAP Minor Facility or any new permit term that would limit emissions of a new or modified source for the purpose of maintaining the facility as a HAP minor, must undergo the procedures pursuant to Regulation 2, Rule 6, section 423. The basis for the HAP minor conditions is an emission limit for a single hazardous air pollutant of less than 9 tons per year, and an emission limit for a combination of hazardous air pollutants of less than 23 tons per year.

1. The owner/operator of Dow Chemical Pittsburg facility shall not emit more than 9 tons of any single hazardous air pollutant (HAP) or 23 tons of any combination of HAPs in any consecutive 12-month period. (basis: Clean Air Act, Section 112, District Regulation 2, Rule 6)
2. The owner/operator of Dow Chemical Pittsburg facility shall maintain quarterly emission estimates to demonstrate compliance with this condition. The owner/operator shall prepare all emission estimates using District approved calculations. Emission estimates for each calendar quarter shall be prepared by the owner/operator of Dow Chemical Pittsburgh facility within 30 days from the end of the calendar quarter. Emission estimates shall be submitted to the District upon request. The owner/operator shall notify the District immediately if emission estimates indicate Part 1 of this condition has been exceeded during any consecutive 12 month period.

This condition limits emissions of hazardous air pollutants below the major hazardous air pollutant thresholds for new MACT standards that have taken effect this condition was added to the District permit on May 7, 2008.

The Nitrapyrin plant could be subject to MACT standards that the facility was already subject to prior to May of 2008. Dow and the District have reviewed the MACT standards that the facility is currently subject to and have determined that only the Organic Liquid Distribution MACT (40 CFR Part 63 Subpart EEEE) may apply to the Nitrapyrin plant.

Subpart EEEE applies to each new, reconstructed, or existing operation affected source. The affected source under Subpart EEEE is the collection of activities and equipment used to distribute "organic liquids" into, out of, or within a facility that is a major source of HAP emissions.

In order to determine if the Nitrapyrin plant is subject to Subpart EEEE the District needed to determine if the plant handled any "organic liquids" as defined by the Subpart.

For the purposes of Subpart EEEE organic liquids do not include any of the following:

Gasoline, kerosene, diesel, asphalt, and heavier distillate oils and fuel oils;

Any fuel consumed or dispensed on the plant site directly to users;  
Hazardous waste;  
Wastewater;  
Ballast water; or  
Any non-crude oil liquid with an annual average vapor pressure less than 0.7 kilopascals (0.1 psia).

Under Subpart EEEE annual average true vapor pressure is the equilibrium partial pressure exerted by the total Table 1 organic HAP in the stored or organic liquid (See 63.2406 Definitions).

Napthalene and 4,4-methylenediphenyl diisocyanate are HAPs used in the Nitrapyrin plant that are in Table 1 of Subpart EEEE.

The true vapor pressure of naphthalene at 25 deg. C is 0.00556 psia.  
The true vapor pressure of 4,4-methylenediphenyl diisocyanate at 25 deg. C is 1.84E-07 psia.  
The annual average true vapor pressure of the total HAPs (two) in any tank in the Nitrapyrin plant will be well below 0.1 psia. Therefore, there are no organic liquids, as defined by Subpart EEEE, in use at the Nitrapyrin plant and Subpart EEEE does not apply.

Dow Pittsburg is not subject to Synthetic Organic Chemical Manufacturing Industry requirements contained in 40 CFR 63 Subpart F, Subpart G, and Subpart H. The requirements of 40 CFR 60 Subpart I apply to the Symtet manufacturing area of the Dow facility, but would not apply to the Nitrapyrin plant.

## **NSPS**

Dow and the District reviewed the NSPS regulations that apply to the facility and determined that none of the NSPS regulations apply to the Nitrapyrin plant. Specifically, Subpart Kb – Volatile Organic Liquid Storage does not apply to the Nitrapyrin plant. All of the the organic liquid storage tanks at the Nitrapyrin plant were exempt based on one of the following exemptions:

1. Vessels with a capacity less than 19,800 gallons are exempt.
2. Vessels with a capacity greater than 19,800, but less than 38,890 gallons storing a liquid with a maximum true vapor pressure which is less than 2.18 psia. Aromatic 200 Tank S-719 (D-121A) meets this exemption.
3. Vessels with a capacity greater than 39,890 gallons storing a liquid with a maximum vapor pressure less than 0.5 psia. The two large product storage tanks S-730 and S-731 meet this exemption with a product vapor pressure that is less than 0.3 psia.
4. Pressure vessels designed to operate at a pressure greater than 15 psig without emissions to the atmosphere. S-719 (D-121) Aromatic 200 tank meets this exemption.

Subpart VV does not apply to the Nitrapyrin plant since construction will commence after November 7, 2006.



Subpart VVA does not apply to the Nitrapyrin plant since this plant does not produce a chemical regulated under the synthetic organic chemical manufacturing industry (SOCMI) requirements as an intermediate or a final product.

**PSD does not apply to this specific permit application.**

**PERMIT CONDITIONS**

COND# 24763 -----

Plant 31  
S-718 Nitrapyrin Plant

1. The owner/operator of the Nitrapyrin plant shall construct and operate the plant as described in Application No. 21858, 24429, and 25438. The owner/operator shall submit a permit application to the District for approval, prior to any increases in capacity or throughput above levels in these Applications ~~No. 21858~~.  
[Basis: 2-2-419]
  
2. Within 30 days of District's issuance of the Permit to Operate for Application 21858 or the completion of the Nitrapyrin Plant, the Owner/Operator shall provide the District's Engineering Division with a final count of all fugitive components and each component's unique permanent identification codes for this project. The owner/operator has been permitted to install the following fugitive components:  
  
599367 valves;  
2286936 connections (flanges, connectors);  
2347 pumps;  
2443 pressure relief devices;  
8 compressor  
7 agitators (mechanical stirrers);  
  
[Basis: Cumulative Increase, Offsets, Regulation 2-5]
  
3. The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any valves installed as part of the Nitrapyrin Plant in organic liquid service unless the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18.  
[Basis: BACT, Regulation 8 Rule 18]
  
4. The Owner/Operator shall comply with a leak standard of 100 ppm of TOC (measured as C1) at any flanges and/or connectors installed as part of the

Nitrapyrin Plant in organic liquid service unless the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18.

[Basis: Regulation 8 Rule 18]

5. The Owner/Operator shall comply with a leak standard of 500 ppm of TOC (measured as C1) at any pumps in organic liquid service installed as part of the Nitrapyrin Plant unless the Owner/Operator complies with the applicable minimization and repair provisions contained in Regulation 8-18.

[Basis: Regulation 8 Rule 18, Cumulative Increase, Offsets]

6. The Owner/Operator shall conduct inspections of fugitive components installed as part of the Nitrapyrin Plant in organic liquid service in accordance with the frequency below:

Pumps: Quarterly  
Valves: Quarterly  
Connectors (Not Flanges): Biannual  
Flanges: Biannual

[Basis: 2-2-419, Regulations 8 Rule 18]

7. The Owner/Operator shall not exceed 0.891 tons of POC emissions per consecutive 12 month period measured as C1 from all fugitive components installed as part of the Nitrapyrin Plant in organic liquid service. The Owner/Operator shall not exceed 9.9 lb/day of POC measured as C1 from

all fugitive components. If the TOC concentration (as C1) measured at any component at the Nitrapyrin plant exceeds the concentration standards contained in parts 3 through 5, then the owner/operator shall estimate daily emissions from all Nitrapyrin fugitive components using a District approved method. The owner/operator shall continue to estimate daily emissions from all fugitive components at the Nitrapyrin plant until the leak rate of TOC (as C1) from each component at the Nitrapyrin plant is less than the concentration standards contained in parts 3 through 5. The Owner/Operator shall demonstrate compliance with the daily emissions limit by calculating the total emissions for the quarter and dividing by the number of days in the quarter. Compliance with this provision shall be verified quarterly using methods described in part 8. The results shall be submitted to the District within 30 days of the close of each calendar quarter after the completion of the Nitrapyrin Plant or the District's issuance of the Permit to

Operate for Application 21858.  
[Basis: 2-2-419, Cumulative Increase, Offsets]

- ~~8. If all of the fugitive components installed as part of the Nitrapyrin Plant in organic liquid service are leaking at a rate less than 5000 ppm of TOG (measured as C1) in any calendar quarter, no further verification and no submittal of the results shall be required. If any of the fugitive components installed as part of the Nitrapyrin Plant in organic liquid service are leaking at a rate equal to or greater than 5,000 ppm of TOG (measured as C1) in any calendar quarter, the owner/operator shall estimate the annual emissions and daily emissions in order to demonstrate compliance with part 7 and shall submit the results to the district within 30 days of the emissions calculation.~~

~~The owner/operator shall calculate the fugitive emissions from all Nitrapyrin Plant components on a 12-month rolling average basis and a daily basis (as necessary) to demonstrate compliance with part 7 using District approved methodology. The owner/operator shall maintain monthly records of monitoring results, fugitive emission calculations, component counts, and unique permanent identification codes for each component. These records shall be maintained onsite for inspection by District staff for a period of 5 years. The Owner/Operator shall demonstrate compliance with the daily emissions limit by calculating the total emissions for the quarter and dividing by the number of days in the quarter. For any calendar quarter in which one~~

~~or more of these components is leaking at a rate equal to or greater than 10,000 ppm of TOG (measured as C1), the Owner/Operator shall calculate and submit a report of fugitive emissions from all Nitrapyrin Plant fugitive components in organic liquid service utilizing District approved methods for the consecutive 12 month period ending with this quarter. This calculation shall continue each quarter until there is not a quarter containing a pegged leaker. For leaking components the Owner/Operator shall use a District approved calculation method and LeakDAS. The Owner/Operator shall include emissions estimates from all Nitrapyrin Plant fugitive components in organic liquid service regardless of the component Rule 8-18 repair status in order to demonstrate compliance with part 7.~~

~~[Basis: 2-2-419, Cumulative Increase, Offsets, Recordkeeping]~~

- ~~9. The Owner/Operator shall keep a District approved monthly log of fugitive component counts of the Nitrapyrin Plant, each component's unique permanent identification codes, monitoring results, and any annual emissions estimates required per parts 7 and 8 for at least five years from date of entry. The~~

~~\_\_\_\_\_ log shall be retained on site and made available to  
\_\_\_\_\_ district staff upon request. [Basis: Offsets,  
\_\_\_\_\_ Recordkeeping]~~

## RECOMMENDATION

I recommend waiving the Authority to Construct and issuing a Permit to Operate to the following:

S-734 N-Serve TG Isotainer  
S-735 (T-751) Proxell Tote, 375 gallons

I recommend approving of a change of conditions (#24763) for the following equipment:

S-718 Nitrapyrin Formulation Plant  
S-719 (D-121 A) Aromatic 200 Pressure Tank, 35,900 gallons, exempt 2-1-123.3.2  
S-720 (T-310) Organic Mix, 9,000 gallons  
S-721 (D-110A) PAPI Storage Pressure Tank, 7,900 gallons, exempt 2-1-123.3.2  
S-722 (T-8) Tergitol S-15, 5,900 gallons, exempt 2-1-123.3.6  
S-723 (T-9) Tergitol S-15, 5,900 gallons, exempt 2-1-123.3.6  
S-724 (T-15) Propylene Glycol Storage, 7,800 gallons, exempt 2-1-123.3.2  
S-725 (V-250) Aqueous Mix, 2,900 gallons  
S-726 (T-112) Emulsion Storage, 8,800 gallons  
S-727 (T-11) Gel Phase Mix, 1,500 gallons  
S-728 (T-20) Ethylene Diamine Storage Pressure Tank, 8,200 gallons  
S-729 (V-100) Encapsulation Vessel, 8,200 gallons  
S-730 (T-569) Nitrapyrin Formulation Storage, 80,000 gallons  
S-731 (T-570) Nitrapyrin Formulation Storage, 80,000 gallons  
S-732 (T-16) Dispersant Tank, 13,500 gallons  
S-733 (T-216) Product Check Tank, 11,500 gallons  
S-734 N-Serve TG Isotainer  
S-735 (T-751) Proxell Tote, 375 gallons

## EXEMPTIONS

None

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Lusher  
Senior Air Quality Engineer