E. I. du Pont de Nemours and Company
Washington Works
Mail: P.O. Box 2800
Washington, WV 26181-1217

October 14, 2015

CERTIFIED MAIL – 7007 1490 0001 6676 6183
RETURN RECEIPT REQUESTED

OCT 15 2015

Mr. W. Fred Durham, Director
Division of Air Quality
WV Department of Environmental Protection
601 57th Street
Charleston, West Virginia 25304

RE: Permit Determination Request for Added Scrubbers on Salt Reactors

Dear Mr. Durham:

With this letter DuPont requests a permit determination regarding the proposed addition of scrubbers to two existing Salt Reactors in the Salt Section of the Zytel® nylon resins production facility covered by permit R30-10700001-2011 Segment 5 of 14. This portion of the unit is not covered under an existing Rule 13 permit.

Attachment S is provided to describe the changes needed for the present Title V permit.

This request also serves as notice for our intent to implement this change as a 'minor modification' to the existing Rule 30 permit.

Should you have any questions or concerns regarding the actions described in this letter or any related matter, please contact me at 304-863-2202, or Chris Shoop at 304-863-2133.

Very truly yours,

C. R. Hill
SHE Manager
DuPont Washington Works

ENCLOSURE

CRH:ces/mlg

E. I. du Pont de Nemours and Company
Shipping: 8480 DuPont Rd – Bldg 24
Washington, WV 26181

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF AIR QUALITY 601 57th Street, SE Charleston, WV 25304 Phone: (304) 926-0475 www.dep.wv.gov/daq	***PERMIT DETERMINATION FORM (PDF)*** **FOR AGENCY USE ONLY:** PLANT I.D. # _____ PDF # _____ PERMIT WRITER _____

1. NAME OF APPLICANT (AS REGISTERED WITH THE WV SECRETARY OF STATE'S OFFICE):
E. I. du Pont de Nemours and Company

2. NAME OF FACILITY (IF DIFFERENT FROM ABOVE):
DuPont Washington Works

3. NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (**NAICS**) CODE:
3252111

4A. MAILING ADDRESS:
DuPont Washington Works
P.O. Box 2800
Washington WV 26181-1217

4B. PHYSICAL ADDRESS:
DuPont Washington Works
8480 DuPont Road, Building 24
Washington WV 26181

5A. DIRECTIONS TO FACILITY (PLEASE PROVIDE **MAP** AS **ATTACHMENT A**): See Map - From Charleston take I-77 north to the Route 50. Turn West on to Route 50 and use the bypass around Parkersburg. At the DuPont Road Exit - exit and at DuPont Road turn Left. The plant is approximately ¼ - ½ mile on the right side.

5B. NEAREST ROAD:	5C. NEAREST CITY OR TOWN:	5D. COUNTY:
DuPont Road	Parkersburg	Wood
5E. UTM NORTHING (KM):	**5F. UTM EASTING (KM):**	**5G. UTM ZONE:**
4346.8331	442.3767	17

6A. INDIVIDUAL TO CONTACT IF MORE INFORMATION IS REQUIRED:
Charles R. Hill

6B. TITLE:
SHE Manager

6C. TELEPHONE:	6D. FAX:	6E. E-MAIL:
(304) 863-2202	(304) 863-2190	Charles-R.F.Hill-1@dupont.com

7A. DAQ PLANT I.D. NO. (FOR AN EXISTING FACILITY ONLY):
107 - 00001

7B. PLEASE LIST ALL CURRENT 45CSR13, 45CSR14, 45CSR19 AND/OR TITLE V (45CSR30) PERMIT NUMBERS ASSOCIATED WITH THIS PROCESS (FOR AN EXISTING FACILITY ONLY):
R30-10700001 Part 5 of 14

7C. IS THIS PDF BEING SUBMITTED AS THE RESULT OF AN ENFORCEMENT ACTION? IF YES, PLEASE LIST:

8A. TYPE OF EMISSION SOURCE (CHECK ONE):
☐ **NEW SOURCE** ☐ **ADMINISTRATIVE UPDATE**
☐ **MODIFICATION** ☒ **OTHER** (PLEASE EXPLAIN IN 11B)

8B. IF ADMINISTRATIVE UPDATE, DOES DAQ HAVE THE APPLICANT'S CONSENT TO UPDATE THE EXISTING PERMIT WITH THE INFORMATION CONTAINED HEREIN?
☐ **YES** ☐ **NO**

9. IS *DEMOLITION* OR PHYSICAL *RENOVATION* AT AN EXISTING FACILITY INVOLVED? ☒ **YES** ☐ **NO**

10A. DATE OF ANTICIPATED INSTALLATION OR CHANGE:
10/ 15 /2015.

10B. DATE OF ANTICIPATED START-UP:
10/19/2015.

11A. PLEASE PROVIDE A **DETAILED PROCESS FLOW DIAGRAM** SHOWING EACH PROPOSED OR MODIFIED PROCESS EMISSION POINT AS **ATTACHMENT B**.

11B. PLEASE PROVIDE A **DETAILED PROCESS DESCRIPTION** AS **ATTACHMENT C**.

12. PLEASE PROVIDE **MATERIAL SAFETY DATA SHEETS (MSDS)** FOR ALL MATERIALS PROCESSED, USED OR PRODUCED AS **ATTACHMENT D**. FOR CHEMICAL PROCESSES, PLEASE PROVIDE A MSDS FOR EACH COMPOUND EMITTED TO AIR.

13A. **REGULATED AIR POLLUTANT EMISSIONS:**

⇒ **FOR A NEW FACILITY,** PLEASE PROVIDE PLANT WIDE EMISSIONS BASED ON THE POTENTIAL TO EMIT (PTE) FOR THE FOLLOWING AIR POLLUTANTS INCLUDING ALL PROCESSES.

⇒ **FOR AN EXISTING FACILITY,** PLEASE PROVIDE THE PROPOSED CHANGE IN EMISSIONS BASED ON THE PTE OF ALL PROCESS CHANGES FOR THE FOLLOWING AIR POLLUTANTS.

PTE FOR A GIVEN POLLUTANT IS TYPICALLY BEFORE AIR POLLUTION CONTROL DEVICES AND IS COLLECTED BASED ON THE MAXIMUM DESIGN CAPACITY OF PROCESS EQUIPMENT.

POLLUTANT	HOURLY PTE (LB/HR)	YEARLY PTE (TON/YR) (HOURLY PTE MULTIPLIED BY 8760 HR/YR) DIVIDED BY 2000 LB/TON
PM	+ 0.0016	+0.0063
PM_{10}	+ 0.0014	+0.0056
VOCs	No Change	No Change
CO	0	0
NO_x	0	0
SO_2	0	0
Pb	0	0
HAPs (AGGREGATE AMOUNT)	0	0
TAPs (INDIVIDUALLY)*	0	0
OTHER (INDIVIDUALLY)*	0	0

* ATTACH ADDITIONAL PAGES AS NEEDED

13B. PLEASE PROVIDE ALL **SUPPORTING CALCULATIONS** AS **ATTACHMENT E.**

CALCULATE AN HOURLY AND YEARLY PTE OF EACH PROCESS EMISSION POINT (SHOWN IN YOUR DETAILED PROCESS FLOW DIAGRAM) FOR ALL AIR POLLUTANTS LISTED ABOVE INCLUDING INDIVIDUAL HAP'S (LISTED IN SECTION 112[b] OF THE 1990 CAAA), TAP'S (LISTED IN 45CSR27), AND OTHER AIR POLLUTANTS (E.G. POLLUTANTS LISTED IN TABLE 45-13A OF 45CSR13, MINERAL ACIDS PER 45CSR7, ETC.).

14. CERTIFICATION OF DATA

I, JAY VALVO (*TYPE NAME*) ATTEST THAT ALL THE REPRESENTATIONS CONTAINED IN THIS APPLICATION, OR APPENDED HERETO, ARE TRUE, ACCURATE, AND COMPLETE TO THE BEST OF MY KNOWLEDGE BASED ON INFORMATION AND BELIEF AFTER REASONABLE INQUIRY, AND THAT I AM A ***RESPONSIBLE OFFICIAL**** (*PRESIDENT, VICE PRESIDENT, SECRETARY OR TREASURER, GENERAL PARTNER OR SOLE PROPRIETOR*) OF THE APPLICANT.

SIGNATURE OF RESPONSIBLE OFFICIAL: Jay Valvo

TITLE: PLANT MANAGER DATE: 10 / 13 / 15

** THE DEFINITION OF THE PHRASE '*RESPONSIBLE OFFICIAL*' CAN BE FOUND AT 45CSR13, SECTION 2.23.

NOTE: PLEASE CHECK ENCLOSED ATTACHMENTS:

☒ **ATTACHMENT A** ☒ **ATTACHMENT B** ☒ **ATTACHMENT C** ☒ **ATTACHMENT D** ☐ **ATTACHMENT E**

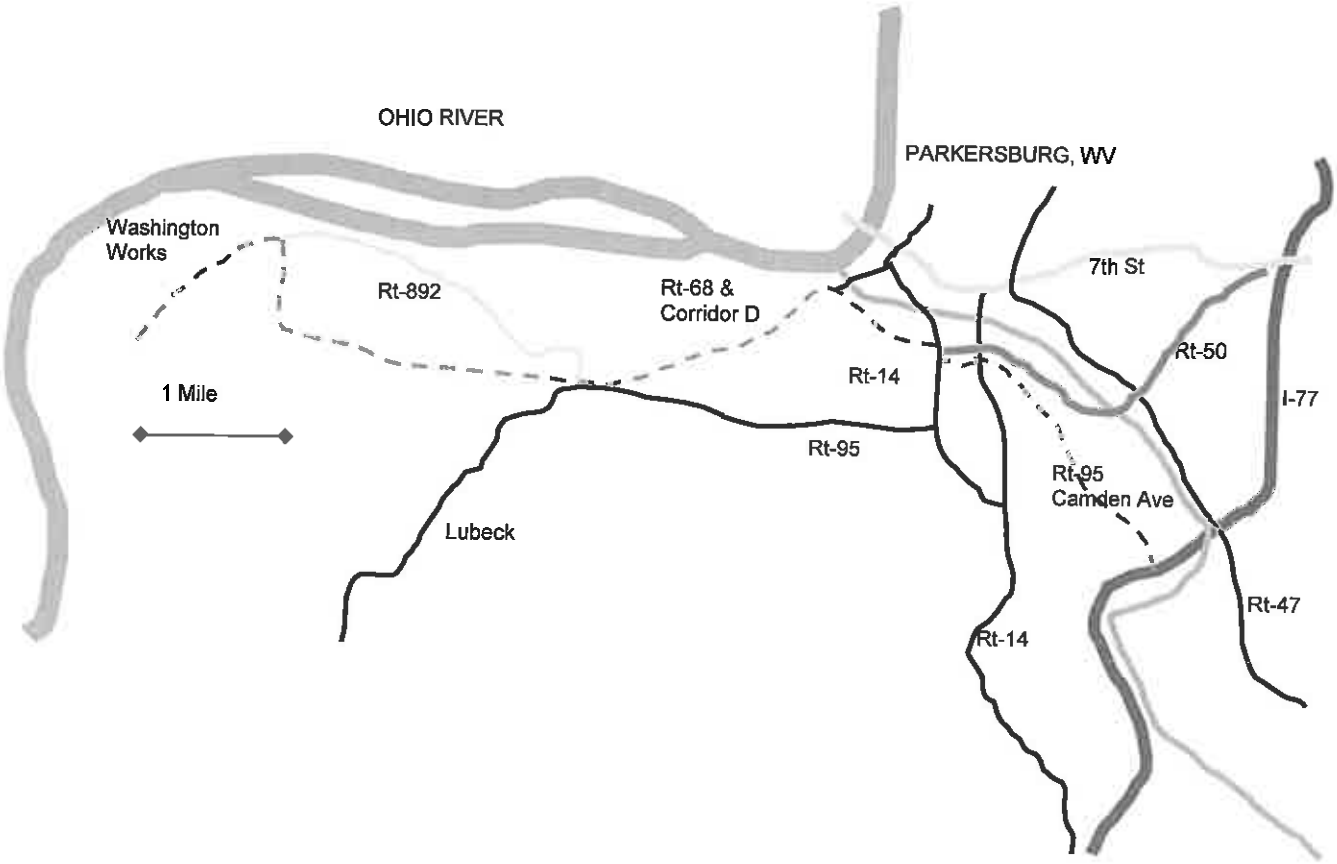
RECORDS ON ALL CHANGES ARE REQUIRED TO BE KEPT AND MAINTAINED ON-SITE FOR TWO (2) YEARS.

THE PERMIT DETERMINATION FORM WITH THE INSTRUCTIONS CAN BE FOUND ON DAQ'S PERMITTING SECTION WEB SITE

www.dep.wv.gov/daq

ATTACHMENT A

MAP to the Facility

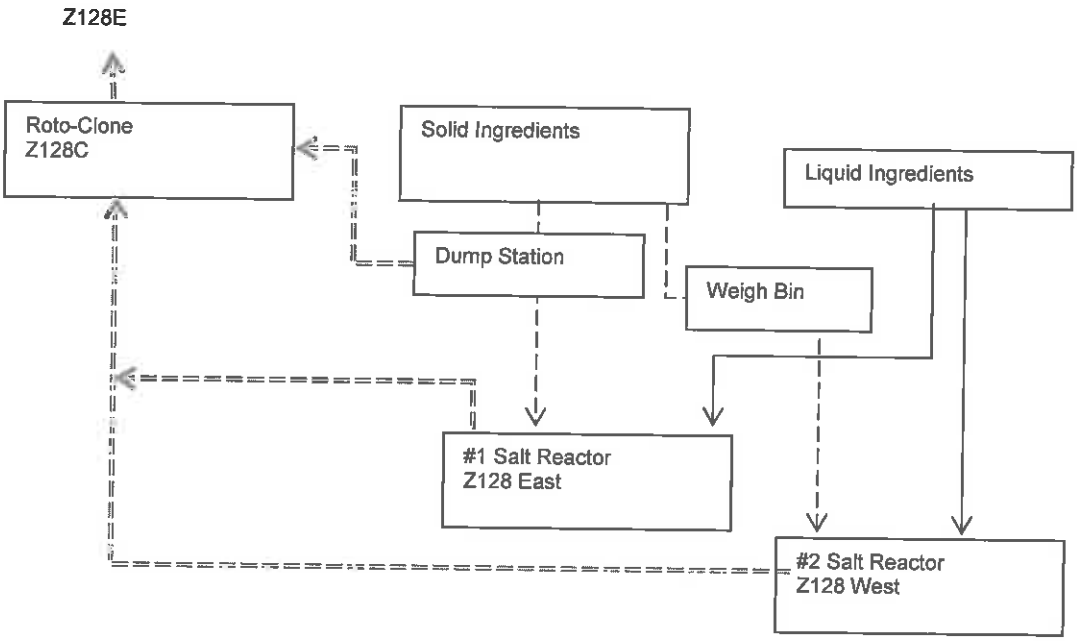


From Interstate 77, take exit for Rt-95/Camden Avenue.
Proceed West until intersection with Rt-14 then turn right (north).
After about 1/4 mile turn left onto Corridor D Bypass entrance.
Follow the bypass to the exit just before the bridge.
Turn left (south) onto DuPont Rd, Rt-892.
Proceed approx. 1 mile to facility on right.

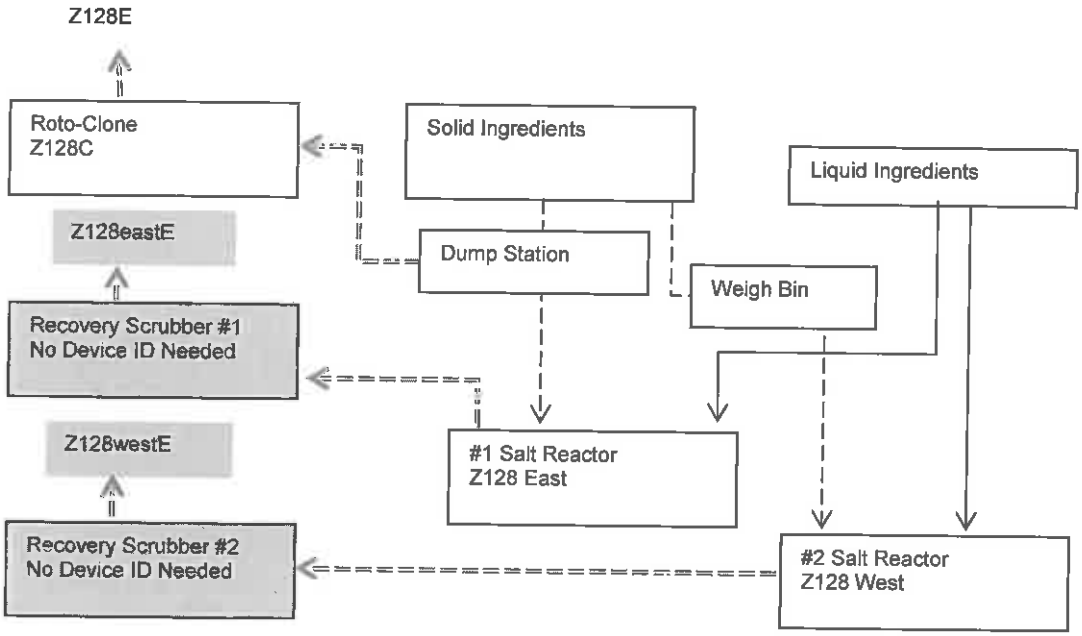
ATTACHMENT B

Process Flow Diagram

Nylon Salt Preparation EXISTING



Nylon Salt Preparation PROPOSED (Shaded)



ATTACHMENT C

Process/Project Description

The initial step in production of most types of Nylon resins is to produce a salt by combination of a di-functional acid with a di-functional amine in a concentrated aqueous solution. The solutions produced in the salt plant portion of the facility can be used for resin production in both the batch-type autoclave units and in the continuous polymerizer units.

The present vent configuration for the salt reactors uses a single control device to collect dust emissions that result from several emission points: From addition of solid ingredients into the Dump Station and from displacement air as powdered materials are dropped into either of the two salt reactors (#1 or #2).

The reactors pre-date the WV Reg 13 permitting rules and do not have emission limits other than those imposed by Reg 7. Emission point Z128E is estimated (generously) to have potential emissions of 0.29 pounds per hour and 1.3 tons per year of total suspended particulate. Emission rates for the PM-10 size fraction of the particulate were not stated earlier, though they may be assumed to be equal to the rates for PM-total. The efficiency of the Roto-Clone scrubber was assumed to be 90% for particulate matter.

To improve process safety, the existing salt reactors will be placed under a nitrogen blanket and will be operated closed under a slight positive pressure. The scrubbers act to limit the positive pressure so that the powdered materials can properly charge to the reactors. The proposed project will provide more effective and separate venturi-type scrubbers for each of the two salt reactors. The scrubbing medium is aqueous process solution, and the collected material is returned to the salt reactor, so the scrubbers act as recovery devices and pressure control devices that are necessary for the operation of the unit rather than as emission control devices.

The proposed scrubbers are rated by the manufacturer to have 99.99% efficiency for PM-total, and 99.98% for PM-10 so the change should result in a reduction in actual emissions though we prefer to consider the net as no change in emissions because the existing calculations appear to have accounted for one transfer of the powdered material and not for two – where the second would be the displacement air from the reactors. Each new scrubber will have a new emission point, to be designated as Z128eastE for the scrubber on the #1 Reactor and Z128westE for the scrubber on the #2 Reactor.

For the #1 Reactor two slightly different materials are added during the salt preparation process. Note in the calculations that the two materials have different proportions of PM-10 in the potential emissions.

Emissions Detail:

POLLUTANT	**HOURLY PTE** (LB/HR) Z128E + Z128eastE + Z128westE	**YEARLY PTE** (TON/YR) Z128E + Z128eastE + Z128westE
PM	0.29 + 0.0012 + 0.0004	1.30 + 0.0049 + 0.0014
PM_{10}	0.29 + 0.0011 + 0.0003	1.30 + 0.0045 + 0.0011
VOCs	Negligible, No Change	Negligible, No Change

ATTACHMENT D

MSD Sheets

No changes are proposed for the materials used in the process.

ATTACHMENT E

Calculations

Process Emissions Calculations
#1 Reactor FCR (G-0091)
Confidential Calculations

This sheet calculates the emissions from the proposed #1 Salt Reactor project.

Basis:
The venturi scrubber acts as a recovery device that is necessary for operation of the unit and is therefore inherent and is not a control device.
Emission point located at reactor vent scrubber outlet.
Item 1 Bulk Material, PM10 = TSP * 0.05280
Item 2 Bulk Material, PM10 = TSP * 0.11390

Operation	Emission Point	Rate	Dust Factor, [2]	Dust Rate	TSP Reduction at Device	TSP, Potential to emit[1]	PM10 Reduction at Device	PM10 as Percentage of TSP	PM10, Potential to emit[1]	TSP, Potential to emit[1]	PM10, Potential to emit[1]
		pph	lb/lb	pph	Fraction-Wt.	pph	Fraction-Wt.	%	pph	tn/yr	tn/yr
Reactor Fill - Item 1	Z128EastE	1466	0.0010	1.4659	0.999892	0.000158	0.998247	5.280149	0.000136	0.000690	0.000594
Reactor Fill - Item 2	Z128EastE	3399	0.0010	3.3987	0.999718	0.000959	0.997691	11.390012	0.000894	0.004199	0.003916
Total of Project						0.001116			0.001030	0.004889	0.004510

1. Since the scrubber is an inherent recovery device, the potential emissions are calculated after recovery.
2. The Dust Factor is 0.0010 lb/lb, which is a rule of thumb for dusty materials.
3. Reductions at Device are calculated from vent scrubber vendor literature and from particle size distribution data.

Process Emissions Calculations
#2 Reactor FCR (G-0103)
Confidential Calculations

This sheet calculates the emissions from the proposed #2 Salt Reactor project.

Basis:
The venturi scrubber acts as a recovery device that is necessary for operation of the unit and is therefore inherent and is not a control device.
Emission point located at reactor vent scrubber outlet.
In Bulk Material, PM10 = TSP * 0.05277

Operation	Emission Point	Rate	Dust Factor, [2]	Dust Rate	TSP Reduction at Device	TSP, Potential to emit[1]	PM10 Reduction at Device	PM10 as Percentage of TSP	PM10, Potential to emit[1]	TSP, Potential to emit[1]	PM10, Potential to emit[1]
		pph	lb/lb	pph	Fraction-Wt.	pph	Fraction-Wt.	%	pph	tn/yr	tn/yr
Reactor Fill	Z128WestE	4050	0.0010	4.050001	0.999924	0.000310	0.998838	5.276571	0.000248	0.001357	0.001088
Total of Project											

1. Since the scrubber is an inherent recovery device, the potential emissions are calculated after recovery.
2. The Dust Factor is 0.0010 lb/lb, which is a rule of thumb for dusty materials.
3. Reductions at Device are calculated from vent scrubber vendor literature and from particle size distribution data.

Attachment S

Title V Permit Revision Information

1. New Applicable Requirements Summary	
Mark all applicable requirements associated with the changes involved with this permit revision:	
☐ SIP	☐ FIP
☐ Minor source NSR (45CSR13)	☐ PSD (45CSR14)
☐ NESHAP (45CSR15)	☐ Nonattainment NSR (45CSR19)
☐ Section 111 NSPS (Subpart(s)_____)	☐ Section 112(d) MACT standards (Subpart(s)_____)
☐ Section 112(g) Case-by-case MACT	☐ 112(r) RMP
☐ Section 112(i) Early reduction of HAP	☐ Consumer/commercial prod. reqts., section 183(e)
☐ Section 129 Standards/Reqts.	☐ Stratospheric ozone (Title VI)
☐ Tank vessel reqt., section 183(f)	☐ Emissions cap 45CSR§30-2.6.1
☐ NAAQS, increments or visibility (temp. sources)	☐ 45CSR27 State enforceable only rule
☐ 45CSR4 State enforceable only rule	☐ Acid Rain (Title IV, 45CSR33)
☐ Emissions Trading and Banking (45CSR28)	☐ Compliance Assurance Monitoring (40CFR64) [1]
☐ NO_x Budget Trading Program Non-EGUs (45CSR1)	☐ NO_x Budget Trading Program EGUs (45CSR26)

[1] If this box is checked, please include **Compliance Assurance Monitoring (CAM) Form(s)** for each Pollutants Specific Emission Unit (PSEU) (See Attachment H to Title V Application). If this box is not checked, please explain why **Compliance Assurance Monitoring** is not applicable:

The only applicable requirements derive from 45CSR7 for opacity and particulate mass emissions.

2. Non Applicability Determinations
List all requirements, which the source has determined not applicable to this permit revision and for which a permit shield is requested. The listing shall also include the rule citation and a rationale for the determination.
☐ **Permit Shield Requested** *(not applicable to Minor Modifications)*

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

3. Suggested Title V Draft Permit Language

Are there any changes involved with this Title V Permit revision outside of the scope of the NSR Permit revision? ☒ Yes ☐ No If Yes, describe the changes below.

Also, please provide **Suggested Title V Draft Permit language** for the proposed Title V Permit revision (including all applicable requirements associated with the permit revision and any associated monitoring /recordkeeping/ reporting requirements), OR attach a marked up pages of current Title V Permit. Please include appropriate citations (Permit or Consent Order number, condition number and/or rule citation (e.g. 45CSR§7-4.1)) for those requirements being added / revised.

1. Add Z128eastE and Z128westE to list of emission points subject to opacity limits in permit condition 4.1.2
2. Add Z128eastE to permit condition 4.1.3 for 45CSR7.4.1 Allowable rates with limit of 4.2 pph
3. Add Z128westE to permit condition 4.1.3 for 45CSR7.4.1 Allowable rates with limit of 3.1 pph

4. Active NSR Permits/Permit Determinations/Consent Orders Associated With This Permit Revision

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
R30-10070001-2011 Segment 5 of 14	06/24/2011	4.1.2 & 4.1.3
No R13 permits are applicable		

5. Inactive NSR Permits/Obsolete Permit or Consent Orders Conditions Associated With This Revision

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
	MM/DD/YYYY	

6. Change in Potential Emissions

Pollutant	Change in Potential Emissions (+ or -), TPY
PM total	+ 0.0063
PM10	+ 0.0056

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

7. **Certification For Use Of Minor Modification Procedures** ***(Required Only for Minor Modification Requests)***	
Note:	*This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete. The criteria for allowing the use of Minor Modification Procedures are as follows:*

i. Proposed changes do not violate any applicable requirement;

ii. Proposed changes do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;

iii. Proposed changes do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient air quality impacts, or a visibility increment analysis;

iv. Proposed changes do not seek to establish or change a permit term or condition for which there is no underlying applicable requirement and which permit or condition has been used to avoid an applicable requirement to which the source would otherwise be subject (synthetic minor). Such terms and conditions include, but are not limited to a federally enforceable emissions cap used to avoid classification as a modification under any provision of Title I or any alternative emissions limit approved pursuant to regulations promulgated under § 112(j)(5) of the Clean Air Act;

v. Proposed changes do not involve preconstruction review under Title I of the Clean Air Act or 45CSR14 and 45CSR19;

vi. Proposed changes are not required under any rule of the Director to be processed as a significant modification;

Notwithstanding subparagraph 45CSR§30-6.5.a.1.A. (items i through vi above), minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in rules of the Director which are approved by the U.S. EPA as a part of the State Implementation Plan under the Clean Air Act, or which may be otherwise provided for in the Title V operating permit issued under 45CSR30.

Pursuant to 45CSR§30-6.5.a.2.C., the proposed modification contained herein meets the criteria for use of Minor permit modification procedures as set forth in Section 45CSR§30-6.5.a.1.A. The use of Minor permit modification procedures are hereby requested for processing of this application.

(Signed):	Jay Valvo *(Please use blue ink)*	Date:	10 / 13 / 15 *(Please use blue ink)*
Named (typed):	Jay Valvo	Title:	Plant Manager

Note: Please check if the following included (if applicable):

☐	Compliance Assurance Monitoring Form(s)
☒	Suggested Title V Draft Permit Language

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.