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ENVIRONMENTAL
ENFORCEMENT

west virginia department of environmental protection

Division of Water and Waste Management
601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0470
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Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.dep.wv.gov

CONSENT ORDER
ISSUED UNDER THE
ABOVEGROUND STORAGE TANK ACT
WEST VIRGINIA CODE, CHAPTER 22, ARTICLE 30

TO: Covestro LLC
Attn: James H. White
501 2nd Ave
South Charleston, WV 25303

DATE: October 18, 2017

ORDER NO.: AST-18-004

INTRODUCTION

This Consent Order is issued by the Director of the Division of Water and Waste Management (hereinafter "Director"), under the authority of West Virginia Code, Chapter 22, Article 30, Section 1 et seq. to Covestro LLC (hereinafter "Covestro").

FINDINGS OF FACT

In support of this Order, the Director hereby finds the following:

1. Covestro is the owner/operator of ninety nine (99) aboveground storage tanks (ASTs) located at South Charleston, Kanawha County, West Virginia. This facility operates under WV Identification No. 2014-0012724.

2. On August 1, 2016, WV Legislative Rule 47CSR63 became effective. This Rule includes, but is not limited to, AST requirements regarding corrosion protection, leak detection, and secondary containment. The specific requirements of this Rule have or will become effective on various phase-in dates, depending upon the AST's designated Level.

3. On August 24, 2016, West Virginia Department of Environmental Protection (WVDEP) personnel conducted an inspection of the facility. During the inspection, areas of concern were observed and documented in relation to the following sections of the WV Legislative Rules:

a. 47CSR63 Section 9.2.b-Nine (9) ASTs in direct contact with electrolytes did not have adequate protection from corrosion.
b. 47CSR63 Section 10.3-Nine (9) ASTs did not have a leak detection method capable of detecting a release from any portion of the AST.
c. 47CSR63 Section 10.2-Several ASTs had inadequate secondary containment.

As a result of these areas of concern, an information request was issued to Covestro for submittal of documentation demonstrating compliance with the above regulations.

4. On October 14, 2016, Covestro responded to the August 24, 2016 information request. WVDEP personnel reviewed the correspondence and determined it to be insufficient to address the concerns at the facility.

5. On January 19, 2017 WVDEP personnel met with Covestro representatives to address the aforementioned areas of concern. Had the requirements of WV Legislative Rule 47CSR63 been in effect during the aforementioned inspection, the observed and documented areas of concern regarding secondary containment for some ASTs would have been violations. Therefore, in anticipation of these and upcoming requirements related to leak detection and corrosion protection, Covestro requested to enter into a Consent order with WVDEP as a means to resolve any foreseeable non-compliance with WV Legislative Rule.

6. On October 12, 2017, Covestro submitted an approvable plan of corrective action (POCA) to address areas of non-compliance with WV Legislative Rule 47CSR63.

ORDER FOR COMPLIANCE

Now, therefore, in accordance with Chapter 22, Article 30, Section 1 et seq. of the West Virginia Code, it is hereby agreed between the parties, and ORDERED by the Director:

1. The approved revised POCA, dated October 12, 2017, and associated schedule is incorporated into and has become part of this Order. Failure to adhere to the approved POCA and associated schedule is a violation of this Order.

2. Upon the effective date of this Order, Covestro agrees to the following stipulated penalties. Stipulated penalties, as outlined below, shall end twelve (12) months after the date of the last compliance milestone in the approved POCA.

    a. Compliance Milestones – The following stipulated penalties will accrue per violation per day for failing to achieve any compliance milestone of the POCA.

Period of Noncompliance	Penalty Per Day per Violation
1st through 14th Days	$500
15th through 30th Days	$1,000
31st Day and beyond	$1,500

b. Reporting Requirements – The following stipulated penalties will accrue per violation per day for each violation of any reporting requirement of the POCA.

Period of Noncompliance	Penalty Per Day per Violation
1st through 14th Days	$200
15th through 30th Days	$400
31st Day and beyond	$600

Covestro shall pay any stipulated penalty within thirty (30) days of receiving WVDEP's written demand. Payments made pursuant to this paragraph are not tax-deductible for purposes of State or federal law. Payment shall be paid to WVDEP for deposit in the AST Administrative Fund and shall be mailed to:

Chief Inspector
Environmental Enforcement - Mail Code #031328
WVDEP
601 57th Street SE
Charleston, WV 25304

OTHER PROVISIONS

1. Covestro hereby waives its right to appeal this Order under the provisions of Chapter 22, Article 30, Section 18 of the Code of West Virginia. Under this Order, Covestro agrees to take all actions required by the terms and conditions of this Order and consents to and will not contest the Director's jurisdiction regarding this Order. However, Covestro does not admit to any factual and legal determinations made by the Director and reserves all rights and defenses available regarding liability or responsibility in any proceedings regarding Covestro other than proceedings, administrative or civil, to enforce this Order.

2. The Director reserves the right to take further action if compliance with the terms and conditions of this Order does not adequately address the violations noted herein and reserves all rights and defenses which he may have pursuant to any legal authority, as well as the right to raise, as a basis for supporting such legal authority or defenses, facts other than those contained in the Findings of Fact.

3. If any event occurs which causes delay in the achievement of the requirements of this Order, Covestro shall have the burden of proving that the delay was caused by circumstances beyond its reasonable control which could not have been overcome by due diligence (i.e., force majeure). Force majeure shall not include delays caused or contributed to by the lack of sufficient funding. Within three (3) working days after Covestro becomes aware of such a delay, notification shall be provided to the Director/Chief Inspector and shall, within ten (10) working days of initial notification, submit a detailed written explanation of the anticipated length and cause of the delay, the measures taken and/or to be taken to prevent or minimize the delay, and a timetable by which Covestro intends to implement these measures. If the Director agrees that the delay has been or will be caused by circumstances beyond the reasonable control of Covestro (i.e., force majeure), the time for performance hereunder shall be extended for a

period of time equal to the delay resulting from such circumstances. A force majeure amendment granted by the Director shall be considered a binding extension of this Order and of the requirements herein. The determination of the Director shall be final and not subject to appeal.

4. Compliance with the terms and conditions of this Order shall not in any way be construed as relieving Covestro of the obligation to comply with any applicable law, permit, other order, or any other requirement otherwise applicable. Violations of the terms and conditions of this Order may subject Covestro to additional penalties and injunctive relief in accordance with the applicable law.

5. The provisions of this Order are severable and should a court or board of competent jurisdiction declare any provisions to be invalid or unenforceable, all other provisions shall remain in full force and effect.

6. This Order is binding on Covestro, its successors and assigns.

7. This Order shall terminate upon Covestro's notification of full compliance with the "Order for Compliance" and verification of this notification by WVDEP.

Barbara J Buck
Barbara J. Buck, Site Leader, Vice President
Covestro LLC

10/23/17
Date

Public Notice begin:

Date

Public Notice end:

Date

Scott G. Mandirola, Director
Division of Water and Waste Management

Date

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Ms. Ruth Porter
Mr. Joe Sizemore
Division of Water and Waste Management
WV Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304-2345

Covestro LLC
501 2nd Avenue
South Charleston, WV
25303
USA

Date: October 12, 2017

Subject: **South Charleston Manufacturing**
WV DEP Ref ID 2014-0012724
Amended Aboveground Storage (AST) Plan of Corrective Action

Dear Ms. Porter and Mr. Sizemore:

Based upon our meeting of January 19th, May 1, 2017 and July 14, 2017 proposed Plan of Corrective Actions (POCA), subsequent discussions and your letter dated June 12, 2017; Covestro South Charleston is submitting this amended (POCA) regarding compliance with sections of the Aboveground Storage Tank rule (47 CSR 63) discussed below.

Covestro will submit quarterly updates documenting progress and compliance with POCA deadlines/requirements and associated milestones within 15 days of the end of each quarter until the proposed corrective actions are completed.

- *Corrosion and Deterioration Prevention (47-63-9)*

Section 9.2.b requires that metallic aboveground AST systems with tank bottoms in direct contact with the soil or other electrolyte shall be protected from corrosion....The following Level 1 AST's in the 60 series tankfarm will require cathodic protection systems as

specified in the AST rule.

WVDEP ID	Covestro Tank #
020-00002741	T-60
020-00002742	T-61
020-00002744	T-62
020-00002747	T-63
020-00002750	T-64
020-00002751	T-65
020-00002755	T-66
020-00002757	T-67
020-00002762	T-68

Section 9.2.g.1 states that Level 1 AST's not meeting cathodic protection standards must be upgraded or repaired and tested by June 30, 2017.

Proposed corrective action: Covestro is requesting that the compliance date for meeting cathodic protection standards including testing for the above 9 AST's be extended to June 30, 2018. We are proposing to install a cathodic protection system that will be designed by a National Association of Corrosion Engineer (NACE) certified (or equivalent) corrosion expert for the nine 60 series tanks. We will notify DEP in writing via the quarterly report when the requirements for cathodic protection are completed.

- *Leak Detection Requirements (47-63-10.3)*

Since the 9 AST's listed in the cathodic protection section of this letter are in contact with the ground, visual checks cannot be performed for the bottom on the tanks. The 9 AST's are not double-bottomed. Covestro is proposing to utilize the "volumetric or mass measurements" methodology referenced in section 10.3.e of the AST rule for meeting the leak detection requirement.

> *Proposed corrective action:* Based upon a multiple month analysis of the capability of our level measurement devices for large diameter tanks, we are proposing a leak detection performance rate of 161 gal/hr which includes 3 standard deviations for each of the 9 AST's. Due to our level

instrumentation capability and the large size of the applicable tanks; the proposed leak detection performance rate, which includes 3 standard deviations, is the minimum amount for which we have a high level of confidence to detect an AST release.

The leak rate will be determined each month as follows:

- A minimum of 1 "still" period per AST will be used each month for determining a leak rate. A "still" period is defined as being at least 8 hours in length and no material transfers (either in or out) occur.
- At the end of the month the tank level data from the "still" periods will be utilized to calculate a leak rate for each AST listed in the corrosion section of this letter. If there are multiple "still" periods for an individual AST, the rates will be averaged for the month. The calculated leak rate will then be compared to pre-determined leak detection performance rate (161 gal/hr). An average leak rate above 161 gal/hr will deemed a potential leak or leak and the required AST rule actions will be taken.

Covestro will periodically review any new technologies or approaches that could improve our leak detection performance rate and specific actions relating to this will be addressed in the quarterly reports. In addition, this subject will be addressed during any major modification to the 60 series tanks.

The leak detection methodology discussed in the above section is in place and is being utilized.

- *Secondary Containment (47 CSR 10.2)*

Liquids from all the secondary containment areas at the South Charleston facility drain to the Blaine Island process sewer system then to the mainland process sewer system and ultimately to the industrial portion of the South Charleston Publicly Owned Wastewater Treatment (POTW) facility for processing. The industrial portion of the South Charleston POTW consists of two one million gal equalization tanks, 1 million gal diversion tank for

managing excess organic loading, two 64 foot diameter primary clarifiers, 6.45 million gal aeration basin and three 95 foot diameter secondary clarifiers. The Covestro AST secondary containment consists of dikes around tanks, sumps, catch basins and aboveground and underground process sewer piping up to 20 sump. The combination of the tank dikes, catch basins, sumps and piping is large enough to contain the worst credible release case from the Covestro AST's. In addition the island process sewer system contains multiple carbon analyzers to alert Covestro and DOW Chemical personnel of unusual total organic carbon (TOC) loading.

The Covestro facility utilizes multiple types of secondary containment strategies. Some secondary containment areas are sized to contain the largest tank plus rainwater and the containment valve is operated closed. Some secondary containment areas are large enough to contain the largest tank plus rainwater, but the containment valve is operated open or there is no containment valve. Liquids from this type of arrangement drain directly to the process sewer. Some secondary containment areas are not sized to contain the largest tank and liquids drain directly to the process sewer. See Attachment 1 (AST Secondary Containment Summary) for secondary containment details and planned corrective actions to address AST rule compliance.

Proposed corrective action:

- For all regulated AST secondary containment areas that drain directly (shut off valve kept open or there is none) to the process sewer and do not have the capacity to hold the largest regulated tank plus rainwater, we will determine the worst credible release case and either perform an engineering calculation or conduct a hydraulic field test to demonstrate that the drainage system for the secondary containment area will not overflow.

Because the process sewer on Blaine Island is being utilized as part of the Level 1 AST secondary containment system, verification of the integrity of the process sewer system is required. Covestro will implement "enhanced monitoring" for the Level 1 AST secondary containment areas. This "enhanced monitoring" will consist of documented one week visual inspections of all

above ground parts of the regulated secondary containment systems versus the required 14 day documented inspections for Level 1 AST's. When the process sewer integrity verification is completed, Covestro will return to documented 14 day inspections. Covestro is proposing that the integrity verification of the process sewers be conducted every 10 years.

The verification of the integrity of the process sewer system would include the following activities:

- Determination of worst credible case for the Level 1 AST secondary containment areas that will not contain the volume of the largest AST plus rainwater (attachment 1, Category "C").

  Complete by November 1, 2017

- Generate updated process sewer drawings which indicate the process sewers, catch basins and sumps that require integrity verification since they are part of the Level 1 AST secondary containment.

  This item has been completed as of October 12, 2017. Some revisions may be required to the current drawings if inaccuracies are discovered during the process sewer physical inspections. These revisions would be discussed in the quarterly update report.

- If required, complete hydraulic testing for the AST secondary containment areas (attachment 1, "C" category items) that are not large enough to contain the Level 1 worst credible case plus rainwater. If the worst credible case plus rainwater does not exceed the capacity of secondary containment, then hydraulic testing will not be required.

  Complete by 1/1/2018

- Complete process sewer/catch basin/sump integrity verification of Level 1 AST areas not requiring manufacturing shut down. The B103 acid tank area does not have any underground process sewers and no verification is required.

Complete by July 1, 2018

- Complete process sewer/catch basin/sump integrity verification of Level 1 AST areas requiring a manufacturing shut down. This is assumed to be the B196 and B103 areas

Complete by 12/31/2018

If the process sewer/catch basin/sump integrity checks reveal issues that cannot be readily repaired or the sewer system cannot be taken out of service without shutting down the manufacturing unit, Covestro will notify DEP of the issue upon discovery and propose a corrective plan.

Covestro appreciates your time and consideration in regard to addressing potential AST compliance issues. If you have any question or need additional information, please call me at (304) 746-8046 or e-mail at james.white@covestro.com.

Sincerely,

James H. White

James H. White
Senior HES Manager

Attachment

ATTACHMENT 1

Covestro AST Secondary Containment Summary

Secondary Containment Area	Secondary Containment Structure Category (**See notes)	Aboveground Secondary Containment Capacity (gal)	Largest AST in Secondary Containment Area	Largest AST Volume (gal)	Secondary containment shutoff valve/s position)	Planned corrective action
B196 Structure	B	86,000	T-1	27,000	Open	Secondary containment large enough to contain largest vessl + rainwater. Due to dike valve being normally open, integrity of process sewer needs to be verified.
20 Series Tank Farm	B	51,000	T-10	24,000	Open	Secondary containment large enough to contain largest vessl + rainwater. Due to dike valve being normally open, integrity of process sewer needs to be verified.
60 Series Tank Farm	B	2,400,000	T-60	280,000	Open	Secondary containment large enough to contain largest vessl + rainwater. Due to dike valve being normally open, integrity of process sewer needs to be verified.
70 Series Tank Farm	C	113,000	T-70	200,000	Dual drains. One open valve and no valve	Worst credible case needs to be determined and demonstrated as not overflowing containment walls. Process sewer integrity needs to be verified.
80 Series Tank Farm	C	65,000	T-94	180,000	Open	Worst credible case needs to be determined and demonstrated as not overflowing containment walls. Process sewer integrity needs to be verified.
PO North Sphere	A	177,000	T-102	170,000	Closed	Verify integrity of internal process sewers to dike shut off valves.
PO South Sphere	A	177,000	T-101	170,000	Closed	Verify integrity of internal process sewers to dike shut off valves.
Poly 4 Tank Farm	A	50,000	T-112	30,000	Closed	Verify integrity of internal process sewers to dike shut off valves.
200 Series Tank Farm	B	31,000	T-276	22,000	Open (No valve)	Secondary containment large enough to contain largest vessl + rainwater. Integrity of process sewer needs to be verified.
B103 Acid Tank	A	9,000	T-610	6,200	Closed	No action required
B103 East Tank Farm	C	45,000	T-626	52,000	Open	Worst credible case needs to be determined and demonstrated as not overflowing containment walls. Due to dike valves being normally open, process sewer integrity needs to be verified.
B103 West Tank Farm	C	14,000	T-651	14,000	Open (No valve)	Worst credible case needs to be determined and demonstrated as not overflowing containment walls. Process sewer integrity needs to be verified.
600 Series South Tank Farm	B	74,000	T-683	49,000	Open	Secondary containment large enough to contain largest vessl + rainwater. Due to dike valve being normally open, integrity of process sewer needs to be verified.
1500 Series Tank Farm	B	730,000	T-698	320,000	Open (No valve)	Secondary containment large enough to contain largest vessl + rainwater. Integrity of process sewer needs to be verified.
B196 Liquid KOH	B	7,600	T-5340A	4,700	Open	Secondary containment large enough to contain largest vessl + rainwater. Due to dike valve being normally open, integrity of process sewer needs to be verified.

ATTACHMENT 1 (cont)

Covestro AST Secondary Containment Summary

Notes:

A - secondary containment large enough to contain the contents of the largest AST and has a closed valve
B - secondary containment large enough to contain the contents of the largest AST, but the structure has an open valve or no valve
C - secondary containment area is not large enough to contain the largest AST and the structure has an open valve or no valve

*** Most secondary containment areas contain internal process sewers and sumps that will require verification of integrity.

JHW 6-30-2017