



October 27, 2021

John P. Glass Jr.
Bureau of Air Quality, Modeling Section Manager
South Carolina Department of
Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Re: Responses to Corrective Action Plan Air Dispersion Modeling Comments

Dear John:

New-Indy Catawba LLC (New-Indy Catawba) appreciates the South Carolina Department of Health and Environmental Control (SCDHEC or DHEC) and the United States Environmental Protection Agency's (USEPA or EPA) review of the Mill's ambient air dispersion modeling report. As requested in your letter dated October 6, 2021, New-Indy Catawba has updated the ambient air dispersion modeling report and is providing the below responses to each of the comments. The updated modeling report can be downloaded from the link provided by email.

October 6, 2021 Comments from SCDHEC and USEPA:

1. **Section 3.2 and Appendix A, TRS and H2S Emissions:** The following excerpts from the New-Indy Modeling Report provide a brief, general description of how the emissions used in the modeling were calculated:

"The emissions from each test were divided by the pulp production during the test to establish the emissions factor in pounds of H2S and TRS (as H2S) per ton of pulp production. The average emissions factor from the June 2021 tests was multiplied by the future production rates in the February 2021 Title V permit modification request to incorporate Construction Permit DF."

The July 2021 liquid sample results are coupled with the National Council for Air and Stream Improvement (NCASI) wastewater Hydrogen Sulfide Emissions Simulator (H2SSIM) emissions model for H2S emissions from the primary clarifier and the aeration stabilization basin (ASB) and the U.S. EPA WATER9 air emissions model for other sources. The post aeration basin H2S emissions were measured at the outlet of the vent covering the basin. The average emissions from the wastewater treatment system were divided by the average pulp production during the July 2021 tests and multiplied by the future pulp production rate in the February 2021 Title V permit modification request to incorporate Construction Permit DF.

We have been unable to replicate or find calculation examples of the highlighted description above for H2S. We have verified that the maximum emissions listed in the table on page A- 243 were used in the air dispersion model.

- Please provide example calculations to calculate the average and maximum emissions for all the sources.

New-Indy Catawba Response 1A: Example calculations are provided in Appendix A of the Air Dispersion Modeling Report showing development of the H2S and TRS (as H2S) emissions factors and the maximum H2S and TRS (as H2S) emissions. Example calculations are provided for average TRS (as H2S) emissions (not modeled) and the H2S emissions. Note the emissions factor is the same for average and maximum emissions. Also note Appendix A has been revised and the page numbers are different from the August 30, 2021 report. The maximum emissions for H2S and TRS (as H2S) are now listed in Table A-1 of Appendix A of the Air Dispersion Modeling Report.

- Please provide the detailed calculations, spreadsheets, assumptions, supporting documentation, factor derivations, NCASI references and document, justifications as to why the factor is appropriate for the source, etc., for the wastewater fugitives sources on the summary page A-243 of the modeling submittal document. Note that this should also include information on the ditch missing in the modeling that connects the equalization basin (EQLBASIN) with the ditch that empties into the aeration stabilization basin (DITCH1). Note also there appear to be discrepancies between the area used in the emissions calculations and the area of the area sources in the modeling for Ditch0+Splitter, Ditch1, and Ditch2. In addition, the emission rates obtained for Ditch 1 and Ditch 2, using the information provided on pages A-362 and A-364, result in rates that are higher than presented. Please explain all these discrepancies.

New-Indy Catawba Response 1B: Detailed calculations, spreadsheets, assumptions, supporting documentation, factor derivations, NCASI references and justifications are provided electronically and in Appendix A of the Air Dispersion Modeling Report.

There is not a separate open ditch connecting the Equalization Basin (EQ Basin) to Ditch 1. There is, however, a channel along the northern edge of the EQ Basin from the open surface area on the western side of the EQ Basin to Ditch 1 on the eastern end of the EQ Basin. The area of the channel has been added to the surface area of the EQ Basin.

The areas for Ditch 0, Ditch 1, and Ditch 2 in the air dispersion modeling have been revised to more closely match the areas used to calculate the emissions. The modeled emissions rates in grams per second-meter squared are based on the areas used to calculate the emissions. In general, the model source areas appear slightly larger in a visual representation of the model, but the modeled rates are based on the areas used to calculate the emissions.

The emissions rates for Ditch 0, Ditch 1 and Ditch 2 have been revised and are included in Tables A-8, A-11 and A-15, respectively, in Appendix A of the Air Dispersion Modeling Report.

- Please provide a spreadsheet and example calculation detailing how the actual and maximum H2S emissions were calculated for the following sources:

- Recovery Furnace No. 2 and 3
- Smelt Dissolving Tank No. 2 and 3
- Lime Kiln No. 2
- Weak Black liquor Storage Tanks
- Strong Black Liquor Storage Tanks
- White Liquor Storage Tank
- Precipitator Mix Tanks
- Causticizing Area
- Holding Pond

New-Indy Catawba Response 1C: The actual and maximum H2S and TRS (as H2S) emissions were calculated using the emissions factors approved by the SCDHEC Permitting Section during previous Title V Operating Permit and Construction Permit Applications. The emissions calculation spreadsheets, with PPAB 6664864v1

an example calculation showing the maximum H₂S and TRS (as H₂S) emissions for each source, are provided electronically and included in Appendix A of the Air Dispersion Modeling Report. The same example calculations can be followed for average TRS (as H₂S) emissions (not modeled) and the H₂S emissions. Note the emissions factor is the same for average and maximum emissions.

The actual emissions for the Recovery Furnaces No. 2 and No. 3, Smelt Dissolving Tanks No. 2 and No. 3, and Precipitator Mix Tanks are based on the production during the June 23, 2021 source test of Smelt Dissolving Tanks No. 2 and No. 3. The maximum emissions are based on the maximum production rates listed in the Title V Operating Permit.

The Lime Kiln No. 2 and Causticizing Area actual emissions are based on the actual to maximum production ratio during the Smelt Dissolving Tank source test on June 23, 2021. The maximum emissions are based on the maximum production rates listed in the Title V Operating Permit.

The emissions from the Weak Black Liquor Tanks, Strong Black Liquor Tanks, and White Liquor Tanks are based on the total number of each tank type. The emissions from the weak and strong black liquor tanks collected in the NCG system are excluded from the calculations because the emissions from these tanks are combusted in the No. 1 and No. 2 Combination Boilers. Those emissions are provided in the June 2021 stack test report for the Combination Boilers.

The holding pond emissions are described in the response below. An example calculation is provided in Table A-16 of Appendix A of the Air Dispersion Modeling Report.

- Please justify the emission factor used to estimate emissions from the Holding Pond. This emission factor is referenced as coming from NCASI TB 956, Table 9.12. However: This factor is based on a 62-acre pond. Are any corrections necessary since New-Indy's Holding Pond is about twice the size at 123.62 acres?

The TB explains the derivation of the emission factor. Two of the eleven basins sampled had detections. Mill B's basin had issues with solids and the basin level during the sampling and resulted in a factor of 0.04 g/s and was noted as being lower than expected. Mill T had foul condensates hard piped to ASB#2, somewhat similar to New-Indy. The sampling results yielded an emission factor of 1.0 g/s. Thus, is 0.04 g/s an adequate emission factor to use for the New-Indy Holding Pond?

New-Indy Catawba Response 1D: The 0.04 g/s is an adequate emissions factor for the Holding Pond. Eleven post-aeration basins (i.e., holding or retention ponds) were tested as part of the North Carolina study published by NCASI in Technical Bulletin (TB) 956. Testing at two of the eleven post-aeration basins resulted in reported H₂S emissions (all others were not significant based on the screening study results). Based on the site-specific H₂SSIM Model results for the New-Indy Catawba ASB, the Holding Pond emissions are assumed to be equal to Mill B reported H₂S emissions (0.04 g/s). This H₂S rate is consistent with ASB Zones 2 and 3 emissions calculated using H₂SSIM (0.040 g/s and 0.024 g/s, respectively). The Holding Pond is aerated and dissolved oxygen levels were measured at an average of 1.1 across the Holding Pond during the July 2021 test, compared to 0.2 measured in ASB Zone 2 and 1.5 in ASB Zone 3.

- Please also provide information detailing how the dimensions of the surface areas were determined and how the areas for the sources in Table 5-4 of the Modeling Report (plus the missing ditch) were calculated. Also, please provide a figure showing each of the area sources, their vertices and dimensions used in the air dispersion model.

New-Indy Catawba Response 1E: Dimensions of the model area sources were based on the free liquid surface areas as documented by the drone images captured on July 8, 2021, one day prior to the ASB testing conducted July 9-11, 2021. Free liquid surface areas were calculated by Geographic Information PPAB 6664864v1

Systems (GIS) software using a shapefile boundary of the free water area. Visual representation of the emission model sources were imported into Lakes AERMOD View software and modified to approximate the emissions areas. As an exact match was not possible, the model areas sources represented are slightly larger than the actual emissions sources. As previously detailed, the model emissions rate was based on the area used in the emissions model. A figure showing each of the area sources as set up in the dispersion model is presented in Attachment 1 to this response. A second figure showing the drone image of the ASB as of July 8, 2021 is also included in Attachment 1.

2. **Section 5.3: Air Quality Modeling Results:** No maps or diagrams are provided to show where the maximum modeled concentrations are occurring.

- Please provide maps showing isopleths of the modeling outputs for the SO₂, H₂S, and TRS modeling results. The maps should clearly show the locations of maximum modeled concentrations.

New-Indy Catawba Response 2: New-Indy Catawba has included maps showing isopleths and maximum concentrations for SO₂, H₂S, and TRS (as H₂S) in the Air Dispersion Modeling Report.

3. **Section 5.3.2: South Carolina Standard No. 8 Results:** For the H₂S Modeling, the AERMOD modeling results are only provided for 24-hr average concentrations and compared to the SCDHEC MAAC air toxics standard. For evaluating the ambient H₂S monitoring data being collected at the New-Indy Fence line, EPA's action levels are 600 ppb/837 ug/m³ (30-minute) and 70 ppb/98 ug/m³ (7-day rolling average). EPA's regulatory version of AERMOD is not able to provide output for either 30-minute or 7-day rolling averages. However, we request that, in addition to the maximum 24-hr results, AERMOD modeling be provided to compare maximum 1-hour modeled concentrations to the 30-minute action level.

New-Indy Catawba Response 3: New-Indy Catawba has included the maximum 1-hour concentrations as requested for comparison to the EPA 30-minute action level of 837 ug/m³ (600 ppb) in the Air Dispersion Modeling Report.

4. **Emission rates for test results below the method detection limit (MDL):** The emission rates for several sources included in the H₂S and TRS modeling are based on stack tests where test runs resulted in values that were below the MDL. SCDHEC and EPA both agree that using a value of zero in the calculations for these situations is inappropriate. We also agree that an appropriate approach is to use an emission rate in the modeling that is derived from the full MDL and request that New-Indy update both the H₂S and TRS modeling based on this more conservative approach.

New-Indy Catawba Response 4: New-Indy Catawba used values of one-half the MDL, not a value of zero, for H₂S values shown below the MDL in the July 2021 Emissions Test Report, consistent with the EPA policy memorandum included as Attachment 2 to this response. The TRS as H₂S values reported in the July 2021 Emissions Test Report were composed of values for the four individual TRS compounds both above and below the MDL, therefore the TRS as H₂S emissions were not modeled as a value of zero. New-Indy Catawba does not agree that using the full MDL is appropriate for sources tested with values below the MDL. However, as requested, New-Indy Catawba has revised the Emissions Test Report and the H₂S and TRS (as H₂S) emissions calculations utilizing the full MDL for the air dispersion modeling analysis. The revised Emissions Test Report was submitted to SCDHEC and EPA on October 5, 2021.

September 10, 2021 SCDHEC Email Comments from Katharine Buckner and New-Indy Catawba Response:

1. Estimates for the Paper Machine No.2 were based on the emission factors calculated for Paper Machine No. 3, which were derived from the June 2021 stack test results. The emission factors for Paper Machine No. 3 were in units of lb/ADTFP/day. However, when these were used for Paper Machine No. 2, it appears the units were changed to lb/ODTP and converted again to lb/ADTFP. Please check and

provide revised calculations, if necessary, for the Paper Machine No. 2 emissions rates. (See page A-242 of the modeling submittal.)

2. Please provide the information necessary to review and verify the emission factors and emission rates for the Post Aeration Basin Vent. (Page A-242)

3. Please verify the stack IDs for the Combination No. 1 and Combination No. 2 Boilers. The Title V OP and application list these as:

Combination Boiler No. 1 – stack ID 2610S2, Combination Boiler No. 2 – stack ID 2610S1

4. We found that there are several parcels inside the fence line for New-Indy which do not appear to be owned by the facility. The parcel data comes from the York County GIS page. Notes in parenthesis are notes from BAQ and were not part of the York County parcel information. Please explain why receptors were not included for these parcels. If the facility does not own them, we request that the modeling be updated to include them.

Parcel 7640000005; Kim Sonya K Kim Eugene S (north side)(large)
Parcel 7640000031; KMS Financial Corporation Shah Rajen Shah Gita (north side)(medium)
Parcel 7640000030; United Steelworkers Union (north side)(medium)
Parcel 7570000001; Leonard Chemical Co Inc (WNW side)(medium)
Parcel 7560000097; Ingram Elaine (WNW side)(small)
Parcel 7590000012; Walker Theodore S Etal. (WNW side)(small)
Parcel 7590000011; Ingram Massey JR Ingram Margaret Ann % Ingram Deborah (WNW side)(small)
Parcel 7590000013.002; Lee Rebekah E (WNW side)(medium)
Parcel 7590000001; Singh Ganesh (WNW side)(small)
Parcel 7590000014; Sacco Alecander (NWN side)(medium)

5. One other item I missed covering in the meeting. I have received the requested pages from NCASI SARA Handbook for the wastewater fugitives. However, please provide any other information to assist in verifying these emission factors/rates.

New-Indy Catawba Response to September 10 Comments: The September 10, 2021 SCDHEC comments and the September 17, 2021 New-Indy Catawba response to SCDHEC's comments are presented in Attachment 3 to this response.

September 14, 2021 SCDHEC Email Comments from John Glass:

I need to clarify the answer to the question during the call concerning where to place receptors on the parcels of land not owned by New Indy. As according to our modeling guidelines, those receptors should be placed at no greater than 50 m spacing at the boundary between the parcels in question and New Indy property. If there are any boundaries that are less than 50 m in length, receptors should be placed at the parcel corners. On the interior of the parcels, the spacing of receptors should be no greater than 100 m. Thus, if a parcel is narrow enough, it may be sufficient for receptors to be placed along the boundaries with none interior to the parcel. Note that contiguous parcels should be treated as one larger parcel (i.e., it is not necessary to place receptors along the interior shared boundaries between these contiguous parcels, but receptors should be placed such that the combined interior is covered by receptors no greater than 100 m apart.

New-Indy Catawba Response to September 14 Comments: Additional model receptors have been placed on outlying parcels of land not owned by New-Indy Catawba in the H2S and TRS as H2S modeling files. No changes were required to the model receptor grid for SO2. The additional receptors are depicted in Figure 5-2 of the Air Dispersion Modeling Report.

September 17, 2021 SCDHEC Comments from John Glass:

We have discovered another issue concerning the H2S/TRS modeling. The area sources that represent the aeration stabilization basin appear to be incomplete. That area has been divided into three separate area sources, which should be fine as long as the appropriate area and emissions have been accounted for. It appears that the area sources are representing those areas where aeration is occurring. However, the area representing the northern portion appears to be incomplete in that there is a large hole on the western side of the upper section. It appears that aeration does occur in that western part of that upper section and should be included within the area source designated as ASB1.

In addition, it appears there is a ditch that connects the equalization basin with the ditch that empties into the aeration stabilization basin that is not included in the modeling.

I have attached a figure from the model for reference that includes the equilibration basin (designated EQLBASIN) the ditch that empties into the aeration stabilization basin (designated as DITCH1) as well as the area sources representing the aeration stabilization basin (ASB1, ASB2, and ASB3).

Please address these issues with the revised modeling you are working on. If you have any questions about this information, please let me know.

New-Indy Catawba Response to September 17, 2021 Comments: The area of the ASB used for the emissions calculations and the air dispersion modeling encompasses the free liquid surface area of the ASB based on drone images captured on July 8, 2021, one day prior to the ASB testing conducted July 9-11, 2021. The western side of the upper section (ASB Zone 1) was filled in with material, so it was excluded from both the emissions calculations and the air dispersion modeling. Attachment 1 of this response shows the free water surface of the ASB on July 8, 2021.

The area of the Equalization Basin (EQ Basin) has been updated to include a channel from the free surface water along the western edge of the EQ Basin across the northern edge to the eastern edge where the EQ Basin meets Ditch 1. The emissions calculations and air dispersion modeling have been updated for the increased surface area to include the channel. Attachment 1 of this response shows the free water surface of the EQ Basin and the channel between the free water surface and Ditch 1.

Please feel free to contact me via phone at 803-981-8010 or email at dan.mallett@new-indycb.com if you have any additional questions.

Sincerely,



Daniel J. Mallett
Environmental Manager

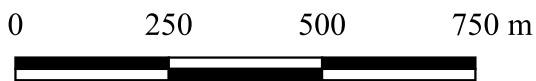
Enclosures

ATTACHMENT 1



Legend

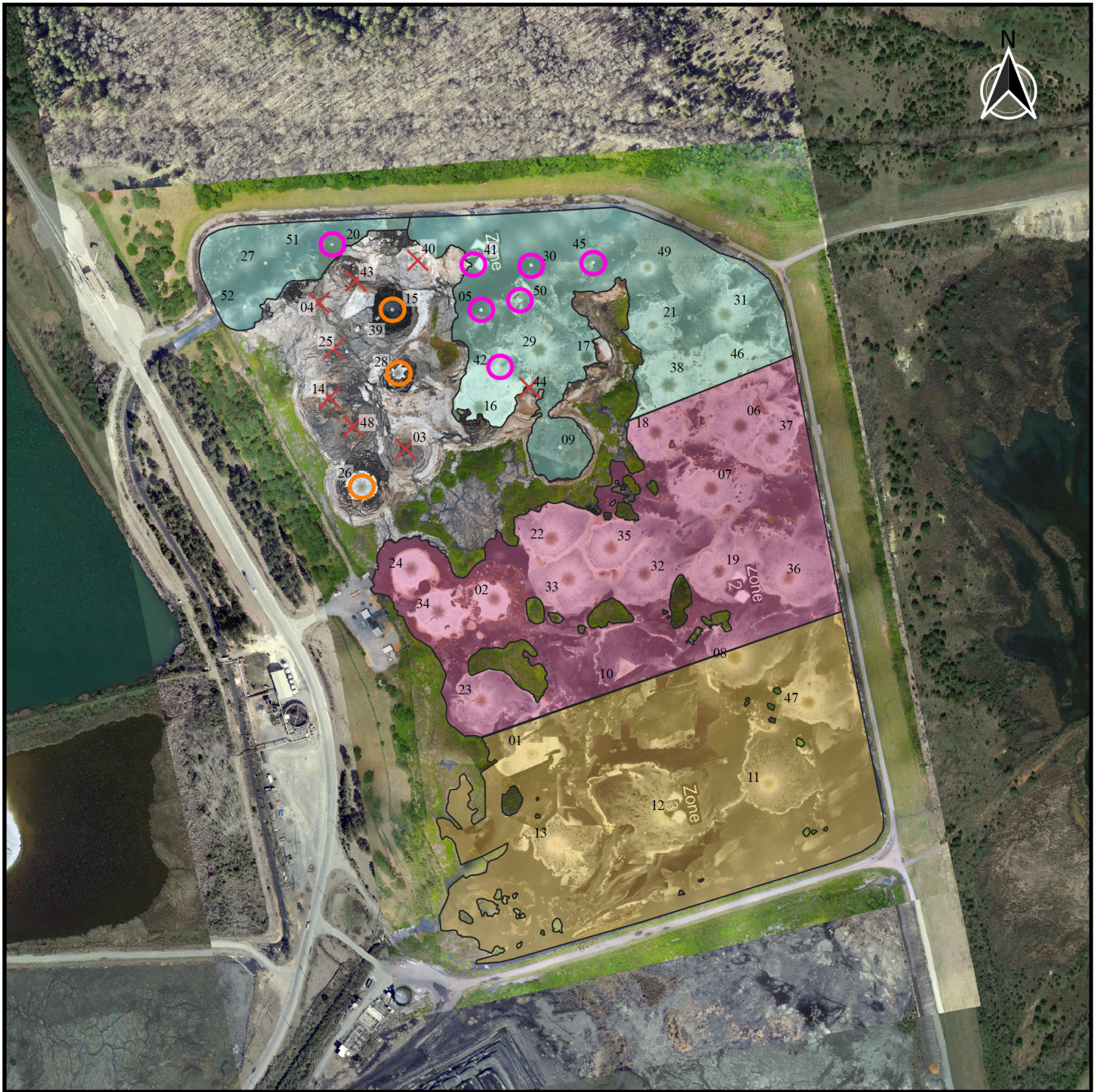
- Plant Boundary
- Area Sources



Aerial imagery obtained from Google Satellite

New-Indy Catawba, LLC
 Catawba, SC Mill
 Air Dispersion Modeling Analysis

Attachment 1
 Area Source Locations



Legend

- Zone 1 Free Water
 - Zone 2 Free Water
 - Zone 3 Free Water
 - ✕ Non-operational during IPT
 - Aerators Running at Night (5:30 pm - 7:00 am)
 - Operational but not included in the model
- 0 75 150 225 300 m
-

New-Indy Catawba
Catawba, SC

Attachment 1
Aerator Status during 7/9-11/2021 IPT

ATTACHMENT 2

Interim VOC Measurement Protocol for the Wood Products Industry – July 2007

1.0 Background and Introduction

On July 12, 2006, Mr. William Wehrum, EPA Acting Assistant Administrator, sent a letter to Mr. Timothy G. Hunt, Senior Director, Air Quality Programs, at the American Forest and Paper Association outlining a path forward for the complex issue of measuring and reporting volatile organic compounds (VOCs) in the forest products industry. In this letter, EPA discussed their desire for the forest products industry to report VOCs as the total mass of the individual organic compounds comprising the VOCs to determine major source applicability of federal programs such as NSR and Title V. EPA recognized, however, that the existing test methods fall short of this goal, and that “...*it is impracticable to identify and quantify every compound...*” EPA recognized that it will take some time to develop practical methods to accurately characterize VOC mass in forest products industry emissions. Therefore, EPA endorsed the use of interim VOC measurement approaches to estimate the total mass of VOC emissions while more appropriate methods and additional information are being developed. EPA stated that a “...*reasonable approximation (of total mass) will be sufficient for assessing the applicability of several regulatory programs.*” VOC measurements for existing SIP, NESHAPS, and NSPS requirements and permit limits should continue to use the specified methods.

This interim protocol establishes calculation procedures and emission measurement methods to approximate VOC emissions for determining applicability with federal programs (particularly for NSR and Title V) and to establish consistency across state programs for the forest products industry. For purposes of this protocol, “reasonable approximation” of total VOC mass means expressing VOC as propane and requiring individual measurements of methanol and formaldehyde at sources for which these compounds are significant, as listed in Appendix 1. Historically, the forest products industry has reported its VOC emissions in terms of the mass of carbon atoms in the VOC compounds because the analytical methods measured the VOCs in those terms. For many facilities, therefore, this interim protocol will substantially increase the reported total mass of VOCs to be used in applicability determinations.

2.0 Interim Protocol Overview

In general, VOC is to be calculated as Total Hydrocarbons (THC) expressed as propane plus methanol and formaldehyde expressed as compound, minus adjustments. In specific cases THC may be expressed as alpha-pinene and measurement of formaldehyde and methanol may be omitted. Further details are provided in subsequent sections of this protocol.

In an effort to reduce confusion, VOC as measured and calculated by this protocol is referred to as “WPP1 VOC” (Wood Products Protocol 1 VOC). It is suggested that the industry and sampling companies use this terminology to identify VOC measured by this protocol as differentiated from VOC measured by other protocols.

3.0 THC Measurement

EPA Method 25A shall be used for THC measurement with the following specifications or modifications:

- The THC portion of the VOCs shall be expressed as propane.
- For some facilities, in states where it is the current practice, it may be appropriate to report the THC portion of the VOCs as terpenes (as alpha-pinene) rather than propane.
- The reporting basis for VOC should be clearly identified.

4.0 Methanol and Formaldehyde Measurement

Methanol and formaldehyde may be measured by any of the approved methods listed in the Plywood and Composite Panel MACT (40 CFR 63 Subpart DDDD).

- Appendix 1 provides a list of sources for which formaldehyde and methanol testing must be conducted concurrently with VOC testing. For sources not listed, formaldehyde and methanol testing are not required and WPP1 VOC is the THC as propane measurement minus adjustments for non-VOCs.
- Separate measurement methods may be used for formaldehyde and methanol.

5.0 Response Factors

For the purposes of this document, response factor is defined as the Flame Ionization Analyzer (FIA) response divided by the actual compound concentration, both expressed on the same basis, and expressed as a percentage. For example, an EPA Protocol 1 methane gas with a tag value of 300 ppmvd is measured by a FIA as 315 ppmvd expressed as carbon (315 ppmvd expressed as methane or 105 ppmvd as expressed as propane). The response factor is $315/300 = 105\%$.

This protocol provides the following default response factors:

- Formaldehyde RF = 0%
- Methanol RF = 65%
- Alkanes, alkenes, and arenes RF = 100% (includes methane and ethane)
- Acetone RF = 65%

If desired, instrument specific response factors can be developed and used. Response factors must be developed according to procedures provided in Appendix 3.

Some compounds, such as methane, can have response factors exceeding 100%. For sources for which methane emissions are a significant fraction of the FIA measurement, the testing company may determine a response factor for methane. Similarly, if methanol represents a relatively large fraction of WPP1 VOC, response factor determination may be prudent.

6.0 Treatment of Values Below Detection Limits (Non-Detects)

This section applies to individual compounds required for measurement by this protocol (e.g., methanol) as well as compounds that may be measured as an option. Emissions of these individual compounds may be treated as zero if all of the test runs result in a non-detect measurement and the detection limit is less than or equal to one part per million by volume. Otherwise, non-detect sample runs should be treated as one-half of the detection limit. Compounds measured at concentrations between the detection limit and the practical limit of quantitation should be flagged, but used in calculations as a fully detected value.

7.0 WPP1 VOC Adjustments

This protocol allows users to make adjustments for methanol and non-VOC compounds measured by the FIA. Adjustments are discussed in the following sub-sections. Equations and examples are provided in later sections.

7.1 Adjustments for Methanol

The flame ionization analyzer (FIA) used to measure THC partially measures methanol, resulting in partial “double counting” since methanol is also measured individually according to this protocol. To avoid double-counting, a percentage of the methanol measured independently is subtracted from the THC measurement. The percentage subtracted is either 65% (based on the default response factor provided in Section 5) or a percentage based on an instrument specific response factor. Methanol must be converted to the same basis as THC before subtraction, as shown in Equation 1. This approximately corrects double-counting. The 65% response factor (or instrument specific response factor) represents the amount of methanol measured by the FIA divided by the amount present in the gas stream (both on a carbon basis or common basis).

7.2 Exempt VOCs or non-VOCs

This protocol does not require separate or individual measurement of exempt VOCs or non-VOCs but allows measurement and adjustment for non-VOCs, if desired. Any listed non-VOC compound may be measured independently and the value subtracted from the THC measurement, with appropriate adjustments (proper basis and response factor). An equation and example calculations are provided in later sections of this protocol. Methane, ethane, and acetone are the non-VOCs most commonly sampled in the wood products industry. Methane emissions can sometimes be significant from natural gas fired sources such as direct-natural-gas-fired dryers and RTOs. Typically, acetone and ethane emissions are relatively small, but may vary by source. EPA provides a list of non-VOCs in 40 CFR 51.100(s).

8.0 Calculation of Total VOC Emissions

Total VOC emissions may be calculated by using Equation 1 or by using the “VOC Worksheet.” A spreadsheet for conducting the calculations is also available at www.ncasi.org.

WPP1 VOC emissions are calculated by subtracting (b) from (a) where (a) equals the sum of THC expressed as propane, methanol expressed as methanol (if applicable), and formaldehyde expressed as formaldehyde (if applicable) and (b) equals the sum of methanol and all measured non-VOC compounds, all expressed as propane with each compound multiplied by the appropriate response factor. Units for the calculations should be mass basis (lb/hr or other mass emission rate unit such as lb/ODT or grams/second). Concentration units (e.g., ppm) cannot be used. If, according to Section 3, VOCs are expressed as terpenes, then the term “alpha-pinene” may be substituted for “propane” in Equation 1.

Equation 1

$$\text{VOC} = \left[\begin{array}{l} \left(\text{Method 25A VOC} \right) \\ \left(\textit{expressed as propane} \right) \\ + \left(\text{Methanol} \right) \\ \left(\textit{expressed as methanol} \right) \\ + \left(\text{Formaldehyde} \right) \\ \left(\textit{expressed as formaldehyde} \right) \end{array} \right] - \left(\sum_{i=1}^n \left(\text{RF}_i \times \text{Compound}_i \right) \right) \\ \left(\textit{expressed as propane} \right)$$

Where: RF_i = response factor of i th compound (expressed as a decimal)

Compound_i includes methanol and any individually measured, listed, non-VOC compound but does not include formaldehyde.

Units for all expressions are lb/hr or other mass emission rate unit. Units cannot be concentration units.

Methanol and formaldehyde measurements are required only for sources listed in Appendix 1.

Appendix 1

Dryers
Presses
Board Coolers
Blenders
Formers
Pressurized refiners
Fiber washers

(Includes control devices for the above listed process units. For example, a RTO controlling a dryer would be a listed source.)

Appendix 2

- (1) VOC Worksheet – Page 7
- (2) Sample Calculation – Pages 8-9
- (3) Example VOC Worksheet – Page 10

VOC Worksheet

	<u>Run 1</u>	<u>Run 2</u>	<u>Run 3</u>
Measurements – VOC, formaldehyde, and methanol			
lb/hr VOC expressed as propane	1a _____	1a _____	1a _____
lb/hr Formaldehyde expressed as formaldehyde	2b _____	2b _____	2b _____
lb/hr Methanol expressed as methanol	3c _____	3c _____	3c _____
(1a + 2b + 3c) lb/hr	4 _____	4 _____	4 _____
Adjustments - methane, ethane, and methanol			
Methanol expressed as methanol, lb/hr	5a _____	5a _____	5a _____
(5a x 0.458 x RF) lb/hr	6 _____	6 _____	6 _____
Methane expressed as methane, lb/hr	7a _____	7a _____	7a _____
(7a x 0.917 x RF) lb/hr	8 _____	8 _____	8 _____
Ethane expressed as ethane, lb/hr	9a _____	9a _____	9a _____
(9a x 0.976 x RF) lb/hr	10 _____	10 _____	10 _____
Non-VOC compounds other than methane and ethane			
Response factor for non-VOC Compound 1	11a _____	11a _____	11a _____
Molecular weight of non-VOC Compound 1	12b _____	12b _____	12b _____
Number of carbon atoms in non-VOC Compound 1	13c _____	13c _____	13c _____
Mass ER non-VOC Compound 1	14d _____	14d _____	14d _____
[(14d x 13c x 11a x 14.667) ÷ (12b)] =	15 _____	15 _____	15 _____
Response factor for non-VOC Compound 2	16a _____	16a _____	16a _____
Molecular weight of non-VOC Compound 2	17b _____	17b _____	17b _____
Number of carbon atoms in non-VOC Compound 2	18c _____	18c _____	18c _____
Mass ER non-VOC Compound 2	19d _____	19d _____	19d _____
[(19d x 18c x 16a x 14.667) ÷ (17b)] =	20 _____	20 _____	20 _____
Final Calculations			
Enter value from line 4	21 _____	21 _____	21 _____
Enter sum of lines 6, 8, 10, 15 and 20	22 _____	22 _____	22 _____
Subtract line 22 from line 21	23 _____	23 _____	23 _____

Sample Calculation

This example follows the VOC worksheet but provides equations and additional detail. Calculations are provided and discussed, corresponding with the line number on the VOC Worksheet.

Example - A sampling company provides the following results from concurrent sampling at a wood products source:

Compound	Value	Units
VOC as propane (from FIA)	50	lb/hr
Methanol as methanol	10	lb/hr
Formaldehyde as formaldehyde	5	lb/hr
Methane as methane	2	lb/hr
Ethane as ethane	2	lb/hr
Acetone as acetone	2	lb/hr

Acetone, methane, and ethane are listed non-VOCs. The sampling company does not conduct response factor work but uses the default response factors provided in Section 5. Calculate the WPP1 VOC value for this example problem?

Line 4 – This is simply a sum of the mass emission rates of formaldehyde, methanol, and VOCs. 50 lb/hr VOCs as propane + 10 lb/hr methanol as methanol + 5 lb/hr formaldehyde as formaldehyde = 65 lb/hr.

Line 6 – In order for the methanol to be subtracted from the FIA THC measurement, methanol must first be converted to a propane basis. This can be done by using Equation 2 as shown below:

Equation 2

$$\text{Mass}_{\text{VOC expressed as X}} = \text{Mass}_{\text{VOC expressed as Y}} \times \left(\frac{\text{molecular weight of X}}{\text{molecular weight of Y}} \right) \times \left(\frac{\text{number of carbon atoms in compound Y}}{\text{number of carbon atoms in compound X}} \right)$$

For this example converting 10 lb/hr of methanol, measured as methanol, to a mass rate of methanol expressed as propane yields 4.89 lb/hr of methanol expressed as propane as shown below.

$$\begin{aligned} \text{methanol}_{\text{expressed as propane}} &= 10 \text{ lb/hr methanol}_{\text{expressed as methanol}} \times \left(\frac{44}{32} \right) \times \left(\frac{1}{3} \right) \\ &= 4.89 \text{ lb/hr methanol}_{\text{expressed as propane}} \end{aligned}$$

This value requires a second adjustment since less than 100% of the methanol responds in a FIA. The response factor set by this protocol is 65%.

$$0.65 \times 4.89 = 2.98 \text{ lb/hr methanol expressed as propane}$$

Line 8 – Methane must be converted to a propane basis prior to adjustment. Equation 2 may be used as shown below. A response factor adjustment is not needed for methane.

$$\begin{aligned} \text{methane}_{\text{expressed as propane}} &= 2 \text{ lb/hr methane}_{\text{expressed as methane}} \times \left(\frac{44}{16}\right) \times \left(\frac{1}{3}\right) \\ &= 1.83 \text{ lb/hr methane}_{\text{expressed as propane}} \end{aligned}$$

Line 10 – Ethane must be converted to a propane basis prior to adjustment. Equation 2 may be used as shown below. A response factor adjustment is not needed for ethane.

$$\begin{aligned} \text{ethane}_{\text{expressed as propane}} &= 2 \text{ lb/hr ethane}_{\text{expressed as ethane}} \times \left(\frac{44}{30}\right) \times \left(\frac{2}{3}\right) \\ &= 1.95 \text{ lb/hr ethane}_{\text{expressed as propane}} \end{aligned}$$

Lines 15 and 20 - For this example, two non-VOC compounds were included – acetone and methyl acetate. The example assumes the sampling company developed response factors of 65% for both compounds. Equation 2 is used, followed by a response factor correction, as shown below.

Line 15 -

$$\begin{aligned} \text{acetone}_{\text{expressed as propane}} &= 2 \text{ lb/hr acetone}_{\text{expressed as acetone}} \times \left(\frac{44}{58.1}\right) \times \left(\frac{3}{3}\right) \\ &= 1.52 \text{ lb/hr acetone}_{\text{expressed as propane}} \end{aligned}$$

This value requires a second adjustment since the example response factor for acetone is 65%.

$$0.65 \times 1.52 = 0.98 \text{ lb/hr acetone expressed as propane}$$

Line 20 – Not required for this example problem.

Line 21 – This is the sum of VOCs as propane, formaldehyde, and methanol and is copied from Line 4. For this example the value is 65 lb/hr.

Line 22 – The sum of lines 6, 8, 10, 15 and 20 is the sum of the adjustments. $2.98 + 1.83 + 1.95 + 0.98 = 7.75$ lb/hr of VOCs that may be adjusted or subtracted from the total from Line 4.

Line 23 – The adjustments are subtracted from Line 21 to provide the adjusted Total VOC value. $65 - 7.75 = \mathbf{57.3 \text{ lb/hr of VOCs}}$.

Example VOC Worksheet

	Run 1	Run 2	Run 3
Measurements – VOC, formaldehyde, and methanol			
lb/hr VOC expressed as propane	1a <u>50</u>	1a _____	1a _____
lb/hr Formaldehyde expressed as formaldehyde	2b <u>5</u>	2b _____	2b _____
lb/hr Methanol expressed as methanol	3c <u>10</u>	3c _____	3c _____
(1a + 2b + 3c) lb/hr	4 <u>65</u>	4 _____	4 _____
Adjustments - methane, ethane, and methanol			
Methanol expressed as methanol, lb/hr	5a <u>10</u>	5a _____	5a _____
(5a x .458 x 0.65) lb/hr	6 <u>2.98</u>	6 _____	6 _____
Methane expressed as methane, lb/hr	7a <u>2</u>	7a _____	7a _____
(7a x 0.917 x 1.0) lb/hr	8 <u>1.83</u>	8 _____	8 _____
Ethane expressed as ethane, lb/hr	9a <u>2</u>	9a _____	9a _____
(9a x 0.976 x 1.0) lb/hr	10 <u>1.95</u>	10 _____	10 _____
Non-VOC compounds other than methane and ethane			
Response factor for non-VOC Compound 1	11a <u>65%</u>	11a _____	11a _____
Molecular weight of non-VOC Compound 1	12b <u>58.1</u>	12b _____	12b _____
Number of carbon atoms in non-VOC Compound 1	13c <u>3</u>	13c _____	13c _____
Mass ER non-VOC Compound 1	14d <u>2</u>	14d _____	14d _____
[(14d x 13c x 11a x 14.667) ÷ (12b)] =	15 <u>0.98</u>	15 _____	15 _____
Response factor for non-VOC Compound 2	16a _____	16a _____	16a _____
Molecular weight of non-VOC Compound 2	17b _____	17b _____	17b _____
Number of carbon atoms in non-VOC Compound 2	18c _____	18c _____	18c _____
Mass ER non-VOC Compound 2	19d _____	19d _____	19d _____
[(19d x 18c x 16a x 14.667) ÷ (17b)] =	20 _____	20 _____	20 _____
Final Calculations			
Enter value from line 4	21 <u>65</u>	21 _____	21 _____
Enter sum of lines 6, 8, 10, 15 and 20	22 <u>7.75</u>	22 _____	22 _____
Subtract line 22 from line 21	23 <u>57.3</u>	23 _____	23 _____

Appendix 3

Procedure for Response Factor Determination for the Interim VOC Measurement Protocol for the Wood Products Industry

Introduction and Definitions -

The Interim VOC Measurement Protocol for the Wood Products Industry (referred to herein as the Protocol) provides the following default response factors (RFs):

- Formaldehyde RF = 0%
- Methanol RF = 65%
- Alkanes, alkenes, and arenes RF = 100% (includes methane and ethane)
- Acetone RF = 65%

These default response factors may be used in Protocol calculations or, if desired, response factors can be determined for methane, ethane, methanol, and acetone by following the measurement procedures established in this Appendix. EPA Protocol 1 gases with air as a diluent must be used for response factor determination for methane and ethane. If methanol and acetone EPA Protocol 1 gases can be obtained with air as a diluent, they may also be used. Otherwise, methanol and acetone standard gases must be prepared in Tedlar or Teflon sampling bags using air as a diluent. Flame ionization analyzers (FIAs) used to determine response factors must be calibrated with propane in an air diluent. If response factors are determined, then the WPP1 VOC testing must be conducted with the same Flame Ionization Analyzer (FIA) calibrated with the same type hydrocarbon gas used during response factor determination and the gas must be in an air diluent. (If response factors are determined, VOC calibration gases with nitrogen diluents cannot be used either during RF determination or during testing.)

Procedures for preparing challenge gases and determining response factors, other than those provided in this Appendix (e.g. permeation tubes or syringe pumps), may be used if approved by the administrator or regulatory authority.

For the purposes of this document:

Response factor is defined as the flame ionization analyzer (FIA) response divided by the “actual compound concentration”, both expressed on the same basis, and expressed as a percentage. Examples are provided near the end of this Appendix.

Actual compound concentration is defined as the tag or bottle value of the EPA Protocol 1 gas or as the concentration of gas in a Tedlar or Teflon sampling bag. The concentration in the bag is determined by dividing the mass of compound by the volume of total dry gas in the bag and using appropriate conversion factors. Examples are provided near the end of this Appendix.

Challenge gas is defined as the gas used to determine a response factor. Challenge gases must be purchased or prepared as specified in this Appendix.

Determining Response Factors Using EPA Protocol 1 Gases – Prior to introduction of the Protocol 1 challenge gas, the VOC analyzer (Flame Ionization Analyzer or FIA) must be successfully calibrated according to EPA Method 25A procedures with EPA Protocol 1 gases in an air diluent. Once calibrated, the instrument may be challenged with the challenge gas to determine the response factor of the compound in the gas. The challenge-compound concentration should be near the mid range of the FIA span and may not be less than 30% of span or more than 70% of span. For example, a 150 ppmvd methane gas (expressed as methane or as carbon and equivalent to 50 ppmvd expressed as propane) would be an appropriate challenge gas for use on an instrument calibrated with propane with a 0 to 100 ppmvd span (expressed as propane).

The EPA Protocol 1 challenge gas must be introduced to the analyzer in the same manner as the calibration gases were introduced. The gas must be introduced until the response stabilizes and remains stable for at least a five-minute period. One-minute averages or less must be recorded during the five-minute period. Any single one-minute average within the five-minute period must not differ from the overall five-minute-average by more than 10%. The five-minute average concentration of the challenge gas is used to determine the response factor as defined in the Introduction and Definitions section of this document. Documentation of challenge gas introduction and measurement as well as the FIA calibration must be included in the VOC test report.

Determining Response Factors Using Standard Gases Prepared in Tedlar or Teflon Sampling Bags – Methanol and acetone standard gases may be prepared in Tedlar or Teflon sampling bags using the procedures specified in EPA Method 18. Three or more separate bag samples must be prepared. Air must be used as the diluent gas. The mass of methanol or acetone and the volume of gas in the bag must be measured and recorded in the VOC report. Measurements of the compound mass and gas volume must be made by devices traceable to a primary standard and the sampling company must describe how the volume of gas and the mass of compound was measured or determined. The means of introducing the compound into the bag must also be described in the test report.

If the compound is introduced as an aqueous solution the amount of water introduced may not exceed water vapor saturation in the air at 50°F (a moisture content of about 1.2%). The testing company must report the concentration of compound in the water, the amount of solution introduced into the bag, measures taken to assure that all water was converted into water vapor within the bag, the amount of dry air in the bag, and the moisture content of the final gas in the bag. (Because the bag will contain water vapor, the FIA reading will be on a wet basis. The actual compound concentration should also be calculated on a wet basis or both values should be converted to a dry basis before calculation of the response factor. See “Actual Compound Concentration – Example 2” below.)

Prior to introduction of the Teflon or Tedlar bag challenge gas, the VOC analyzer (Flame Ionization Analyzer or FIA) must be successfully calibrated according to EPA Method 25A procedures with EPA Protocol 1 gases in an air diluent. Propane in nitrogen gases cannot be used. Once calibrated, the instrument may be challenged with the bag challenge gas to determine the response factor of the compound in the gas. The challenge-compound concentration should be near the mid range of the FIA span and may not be less than 30% of span or more than 70% of span (measured on an equivalent basis). For example, a 230 ppmvd methanol gas would be appropriate for use on an instrument calibrated with propane with a 0 to 100 ppmvd span (expressed as propane). (The example assumes a 65% response factor for methanol.)

The Tedlar or Teflon sampling bag challenge gas must be introduced to the analyzer in the same manner as the calibration gases. The gas must be introduced until the response stabilizes. Three or more separate bag samples must be introduced. A single bag sample may not be introduced three times. The results from the three or more samples must be averaged and the average used to determine the response factor as defined in the Introduction and Definitions section of this Appendix. The results from any one of the bag samples may not vary from the average by more than 10%. Documentation must be provided to show that the FIA reading stabilized on each of the three bag samples. Additionally, the VOC test report must contain a discussion of the means by which bag challenge gases and FIA calibration gases were introduced to the FIA. Evidence of a successful FIA calibration must also be provided.

Applicability – The response factors developed via the above described procedures may be used in conjunction with the Interim VOC Measurement Protocol for the Wood Products Industry only for the instrument on which the response factors were determined. The response factors determined via these procedures are not valid for the instrument if (1) adjustments have been made that would affect the fuel or air flow rates to the instrument, (2) the instrument has undergone repair, or (3) adjustments to the instrument other than those required for calibrations have been made. Further, the determined response factors may only be used within 30 days of the date on which they were determined. Response factors may be, but are not required to be, determined in the field during the testing event. Response factors determined in the laboratory may be determined under better controlled conditions but response factors determined in the field may be determined under conditions more representative of the testing.

Response factors determined via these procedures are not applicable to FIAs calibrated with nitrogen diluent gases.

Example Calculations Intended to Illustrate the Definitions of “Response Factor” and “Actual Compound Concentration”

Actual Compound Concentration – Example 1

Fifteen milligrams of methanol is introduced into a Tedlar bag containing 45.0 liters of dry air (corrected to 68°F and one atmosphere). The 15 mg of methanol occupies 0.01 liters at standard conditions. The total Tedlar bag volume is 45.01 liters. The actual compound concentration is

$$\left(\frac{15 \text{ mg methanol}}{45.0113 \text{ liters}} \right) \times \left(\frac{24.05 \text{ liters}}{\text{gram - mole}} \right) \times \left(\frac{\text{gram - mole}}{32.04 \text{ grams methanol}} \right) \times \left(\frac{\text{gram}}{1000 \text{ mg}} \right) = 0.00025 = 250 \text{ ppmvd methanol}$$

Actual Compound Concentration – Example 2

Four milliliters of a 5,000 mg/L solution of methanol in water is introduced into a Tedlar bag containing 50 liters of dry air (corrected to 68°F and one atmosphere). The water and 20 mg of methanol

introduced occupy 0.53 and 0.015 liters, respectively. The total Tedlar bag volume is 50.55 liters. The moisture content of the bag is 1.05%. The actual compound concentration is

$$\left(\frac{20 \text{ mg methanol}}{50.545 \text{ liters}} \right) \times \left(\frac{24.05 \text{ liters}}{\text{gram - mole}} \right) \times \left(\frac{\text{gram - mole}}{32.04 \text{ grams methanol}} \right) \times \left(\frac{\text{gram}}{1000 \text{ mg}} \right) = 297 \text{ ppmvw methanol}$$

Note that the methanol concentration is expressed on a wet basis.

Response Factor – Example 3

A FIA calibrated with propane in air measures an EPA Protocol 1 methane in air cylinder gas with a tag value of 150 ppmvd, as methane. The FIA measures the gas as 57 ppmvd, expressed as propane, or 171 ppmvd expressed as methane. The response factor is the measured concentration divided by the actual compound concentration or $171/150 = 114\%$.

Response Factor – Example 4

A FIA calibrated with propane in air measures the Tedlar bag in Example 2 above. The actual compound concentration is 297 ppmvw, expressed as methanol or expressed as carbon. The FIA measures the bag gas as 59 ppmvw, expressed as propane, or 177 ppmvw expressed as carbon. The response factor is the measured compound concentration divided by the actual compound concentration or $177/297 = 59.6\%$.

ATTACHMENT 3



September 17, 2021

Katharine Buckner
Bureau of Air Quality- Air Permitting Division
South Carolina Department of
Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Re: Response to DHEC comments on New-Indy Catawba, LLC's Air Dispersion Modeling Analysis

Dear Katharine:

New-Indy Catawba LLC (New-Indy Catawba) submits this information in response to questions and comments by the South Carolina Department of Health and Environmental Control (DHEC) received via electronic mail on September 10, 2021. The DHEC questions pertain to the air dispersion modeling submittal from New-Indy Catawba to DHEC on August 30, 2021. The DHEC questions and New-Indy Catawba responses are discussed below.

DHEC Question 1: Estimates for the Paper Machine No.2 were based on the emission factors calculated for Paper Machine No. 3, which were derived from the June 2021 stack test results. The emission factors for Paper Machine No. 3 were in units of lb/ADTFP/day. However, when these were used for Paper Machine No. 2, it appears the units were changed to lb/ODTP and converted again to lb/ADTFP. Please check and provide revised calculations, if necessary, for the Paper Machine No. 2 emissions rates. (See page A-242 of the modeling submittal.)

New-Indy Catawba Response 1: The Paper Machine No. 2 estimated emissions calculations have been updated to remove the conversion from oven dried ton pulp to air dried ton pulp. The emissions calculations will be re-submitted following resolution of the Paper Machine No. 3 emission factors for TRS as H₂S presented in the Weston stack test report.

DHEC Question 2: Please provide the information necessary to review and verify the emission factors and emission rates for the Post Aeration Basin Vent. (Page A-242)

New-Indy Catawba Response 2: The emission factors and emission rates from the Post Aeration Basin Vent for hydrogen sulfide (H₂S) were calculated using weekly field measurements taken from the outlet vent during July 2021. New-Indy Catawba used a Scentroid TR8+ PolluTracker manufactured by IDEC Canada Inc. to measure emissions at the outlet vent. The lowest detection threshold of the instrument is 7 ppb. The measured H₂S concentrations in the outlet vent ranged between 38 and 68 ppb. The measured H₂S concentrations were converted into emissions rates based on the vent flow rate and emissions factors based on the pulp production on the days the

vent was sampled. Those calculations were previously submitted to DHEC. The Scentroid Operation and Maintenance Manual is attached.

DHEC Question 3: Please verify the stack IDs for the Combination No. 1 and Combination No. 2 Boilers. The Title V OP and application list these as:

Combination Boiler No. 1 – stack ID 2610S2, Combination Boiler No. 2 – stack ID 2610S1

New-Indy Catawba Response 3: The updated Title V application forms submitted on March 6, 2017, renumbered the stack IDs for Combination Boiler No. 1 to 2610S1 and for Combination Boiler No. 2 to 3710S2 to eliminate confusion caused by the previous numbering convention. This change is not reflected in the July 1, 2019 Title V permit. However, it should be noted the air dispersion modeling analyses do not use the Title V stack ID numbers for Combination Boilers No. 1 and No. 2.

DHEC Question 4: We found that there are several parcels inside the fence line for New-Indy Catawba which do not appear to be owned by the facility. The parcel data comes from the York County GIS page. Notes in parenthesis are notes from BAQ and were not part of the York County parcel information. Please explain why receptors were not included for these parcels. If the facility does not own them, we request that the modeling be updated to include them.

Parcel 7640000005; Kim Sonya K Kim Eugene S (north side)(large)

Parcel 7640000031; KMS Financial Corporation Shah Rajen Shah Gita (north side)(medium)

Parcel 7640000030; United Steelworkers Union (north side)(medium)

Parcel 7570000001; Leonard Chemical Co Inc (WNW side)(medium)

Parcel 7560000097; Ingram Elaine (WNW side)(small)

Parcel 7590000012; Walker Theodore S Etal. (WNW side)(small)

Parcel 7590000011; Ingram Massey JR Ingram Margaret Ann % Ingram Deborah (WNW side)(small)

Parcel 7590000013.002; Lee Rebekah E (WNW side)(medium)

Parcel 7590000001; Singh Ganesh (WNW side)(small)

Parcel 7590000014; Sacco Alecander (NWN side)(medium)

New-Indy Catawba Response 4: The model receptor grid for H₂S and total reduced sulfur (TRS) has been updated to include the parcels within the New-Indy Catawba property boundary listed above, following the additional guidance received from DHEC via email on September 14, 2021. The model receptor grid for sulfur dioxide (SO₂) does not require updates because the parcels listed above are outside the New-Indy Catawba ambient air boundary used for the SO₂ modeling. The United States Environmental Protection Agency (USEPA or EPA) also contacted New-Indy

Catawba on September 13, 2021, to clarify that EPA modelers are reviewing the August 30, 2021 submission and will be contacting DHEC to coordinate any additional comments regarding the modeling submittal. New-Indy Catawba will resubmit the H₂S and TRS modeling analyses following resolution of additional EPA and DHEC comments.

DHEC Question 5: One other item I missed covering in the meeting. I have received the requested pages from NCASI SARA Handbook for the wastewater fugitives. However, please provide any other information to assist in verifying these emission factors/rates.

New-Indy Catawba Response 5: The figure below shows the free water surface of the Equalization Basin and the active disposal areas of the #4 Sludge Lagoon. These areas were used to determine the acreage for calculating the H₂S emissions using the emissions factor from the NCASI SARA Handbook.



Additionally, earlier today New-Indy Catawba received a follow-up request related to the wastewater fugitive emissions. That request, and any additional comments or information requests received from DHEC or USEPA, will be addressed in a revised modeling report to be completed once all requested revisions have been communicated to New-Indy Catawba.

Please feel free to contact me if you have any additional questions.

Sincerely,



Daniel J. Mallett
Environmental Manager