

6312 NW 18<sup>th</sup> Drive Suite 100 Gainesville, FL 32653

352.378.0332 рноле 352.378.0354 FAX

www.TRCsolutions.com

April 21, 2017

Ms. Lori Simmons Arkansas Department of Health 4815 West Markham Street Little Rock, Arkansas 72205 Via email Lori.Simmons@arkansas.gov

## Re: Georgia-Pacific, Crossett Mill - Biweekly Air Monitoring Report for Hydrogen Sulfide

Dear Ms. Simmons,

Following is the biweekly data summary for the Georgia-Pacific (GP) hydrogen sulfide (H<sub>2</sub>S) and meteorological monitoring program, at the GP Crossett mill, covering the calendar period of March 22, 2017 through April 4, 2017.

## Summary of Results

Included in this report are three plots presenting H<sub>2</sub>S concentrations calculated with varied rolling average periods (30-minute, 8-hour, and 24-hour). Please note, elevated H<sub>2</sub>S concentrations were recorded on March 22<sup>nd</sup>, 26<sup>th</sup>, and 31<sup>st</sup>. The highest recorded 30-minute and 8-hour rolling averages are presented in the table below.

|                | Maximum Concentrations and Time Recorded |                           |  |  |  |  |  |  |
|----------------|--|---------------------------|--|--|--|--|--|--|
| Date           | <b>30 minute</b>                         | 8 hour                    |  |  |  |  |  |  |
| March 22, 2017 | 73.4 ppb at 00:06 – 00:07                | 40.8 ppb at 00:37 – 02:03 |  |  |  |  |  |  |
| March 26, 2017 | 89.8 ppb at 02:42                        | 29.5 ppb at 07:22 – 07:34 |  |  |  |  |  |  |
| March 31, 2017 | 73.9 ppb at 01:32 – 01:33                | 18.7 at 06:11 – 08:04     |  |  |  |  |  |  |

Also included in this report is a summary of results from the daily 1-point QC checks performed during this biweekly period. The QAPP establishes goals for precision and bias as a coefficient of variation (CV) <10% and  $\pm$  10%, respectively. Precision and bias are calculated in accordance with 40 CFR Part 58 Appendix A, Section 4.1.

Additionally, weekly automated zero adjustment shave been put in place beginning February 1, 2017, so as to limit the effect of the analyzer's zero drift. There were a total of two zero checks performed during this biweekly report period; both within the acceptable range of  $\pm$  1.5 ppb, as defined in the



QAPP. Results for these zero checks are presented below.

| Date      | Zero Check |  |  |  |  |
|-----------|------------|--|--|--|--|
| 3/23/2017 | 0.3        |  |  |  |  |
| 3/30/2017 | 0.3        |  |  |  |  |

There were multiple occurrences of data loss during this monitoring period, in addition to those resulting from automated daily 1-point QC and weekly calibration checks. A LAN connection failure occurred in the evening of March 24<sup>th</sup>. The connection was reset the following morning; resulting in approximately four hours of data loss. On the evening of March 27<sup>th</sup> a calibration of the H<sub>2</sub>S analyzer was performed along with routine diagnostic checks, resulting in approximately six hours of data loss. Lastly, a power outage on April 2<sup>nd</sup> was responsible for 13 hours of data loss. Results for available automated daily 1-point QC checks fall within the acceptable range, indicating the H<sub>2</sub>S monitor was operating in accordance with the QAPP.

Fourteen-day time series plots for all recorded meteorological (met) parameters are presented in the final table. Routine maintenance of the met sensors on March 27<sup>th</sup> caused a brief period of missing met data. The majority of met parameters were lost for only 15 minutes, while replacement and calibration of the tipping bucket resulted in almost two hours of lost precipitation data.

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

Sincerely,

Bruce

Jonathan Bowser Manager, Air Quality and Meteorological Monitoring

Air Measurements – Gainesville Office 6312 NW 18th Drive, Suite 100 Gainesville, Florida 32653 (352) 260-1162 Email: jbowser@trcsolutions.com

CC: Becky Keough, ADEQ Director via email: keogh@adeq.state.ar.us Kara Allen, Environmental Engineer, USEPA Region 6 via email Allen.Kara@epa.gov















|                 |                  |               |            |                               | $H_2S$         | Asse  | ssment              | t   |                      |                 |                  |                     |  |
|-----------------|------------------|---------------|------------|-------------------------------|----------------|-------|---------------------|-----|----------------------|-----------------|------------------|---------------------|--|
| G               | P - Crossett, AF | ł             | Compound   | of Interest: H <sub>2</sub> S |                |       |                     |     | CV <sub>ub</sub> (%) |                 | Bias (%)         |                     |  |
| Date            | Meas Val (Y)     | Audit Val (X) | d (Eqn. 1) | 25th Percentile               | d <sup>2</sup> | d     | d  <sup>2</sup>     |     |                      |                 |                  |                     |  |
| 3/22/2017 13:00 | 67.6             | 70.0          | -3.4       | -3.000                        | 11.755         | 3.429 | 11.755              |     |                      |                 |                  |                     |  |
| 3/23/2017 13:00 | 68.2             | 70.0          | -2.6       | 75th Percentile               | 6.612          | 2.571 | 6.612               | n   | Sd                   | S <sub>d2</sub> | ∑∣d∣             | "AB" (Eqn 4)        |  |
| 3/24/2017 13:00 | 67.9             | 70.0          | -3.0       | 0.679                         | 9.000          | 3.000 | 9.000               | 14  | 3.140                | 9.315           | 37.286           | 2.663               |  |
| 3/25/2017 13:00 | 67.3             | 70.0          | -3.9       |                               | 14.878         | 3.857 | 14.878              | n-1 | ∑d                   | ∑d²             | ∑ d ²            | "AS" (Eqn 5)        |  |
| 3/26/2017 13:00 | 67.6             | 70.0          | -3.4       |                               | 11.755         | 3.429 | 11.755              | 13  | -7.571               | 132.265         | 132.265          | 1.592               |  |
| 3/27/2017 13:00 | 67.9             | 70.0          | -3.0       |                               | 9.000          | 3.000 | 9.000               |     |                      |                 |                  |                     |  |
| 3/28/2017 13:00 | 72.1             | 70.0          | 3.0        |                               | 9.000          | 3.000 | 9.000               |     |                      |                 | Bias (%) (Eqn 3) | Both Signs Positive |  |
| 3/29/2017 13:00 | 70.5             | 70.0          | 0.7        |                               | 0.510          | 0.714 | 0.510               |     |                      |                 | 3.42             | FALSE               |  |
| 3/30/2017 13:00 | 69.3             | 70.0          | -1.0       |                               | 1.000          | 1.000 | 1.000               |     | CV (%) (Eqn 2)       |                 | Signed Bias (%)  | Both Signs Negative |  |
| 3/31/2017 13:00 | 70.4             | 70.0          | 0.6        |                               | 0.327          | 0.571 | 0.327               |     | 4.27                 |                 | +/-3.42          | FALSE               |  |
| 4/1/2017 13:00  | 69.1             | 70.0          | -1.3       |                               | 1.653          | 1.286 | 1.653               |     |                      |                 |                  |                     |  |
| 4/2/2017 13:00  | 69.4             | 70.0          | -0.9       |                               | 0.735          | 0.857 | 0.735               |     | Upper Probabil       | lity Limit      | Lower Probabilit | y Limit             |  |
| 4/3/2017 13:00  | 73.5             | 70.0          | 5.0        |                               | 25.000         | 5.000 | 25.000              |     | 5.61                 |                 | -6.7             |                     |  |
| 4/4/2017 13:00  | 73.9             | 70.0          | 5.6        |                               | 31.041         | 5.571 | 31.041              |     |                      |                 |                  |                     |  |
|                 |                  |               |            |                               |                |       |                     |     |                      |                 |                  |                     |  |
|                 |                  |               |            |                               |                |       |                     |     |                      |                 |                  |                     |  |
|                 |                  |               |            |                               |                |       | Percent Differences |     |                      |                 |                  |                     |  |
|                 |                  |               |            |                               |                |       |                     |     |                      |                 |                  |                     |  |
|                 |                  |               |            |                               |                |       | 15.0 T              |     |                      |                 |                  |                     |  |
|                 |                  |               |            |                               |                |       | 10.0 -              |     |                      |                 |                  |                     |  |
|                 |                  |               |            |                               |                |       | 5.0 -               |     |                      |                 |                  | <b>_</b> _          |  |
|                 |                  |               |            |                               |                |       | 0.0                 |     |                      |                 |                  |                     |  |
|                 |                  |               |            |                               |                |       | 0.0                 | +   |                      |                 |                  |                     |  |
|                 |                  |               |            |                               |                |       | -5.0 -              |     | •                    |                 |                  |                     |  |
|                 |                  |               |            |                               |                |       | -10.0 -             |     |                      |                 |                  |                     |  |
|                 |                  |               |            |                               |                |       | -15.0               |     |                      |                 |                  |                     |  |
|                 |                  |               |            |                               |                |       |                     |     |                      |                 |                  |                     |  |
|                 |                  |               |            |                               |                |       |                     |     |                      |                 |                  |                     |  |
|                 |                  |               |            |                               |                |       |                     |     |                      |                 |                  |                     |  |
|                 |                  |               |            |                               |                |       |                     |     |                      |                 |                  |                     |  |



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