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Volatile Organic Compound Compliance Report

New Covert Generating Company, LLC
New Covert Generating Facility
Unit 003 Stack
Covert, Michigan
November 1 and 2, 2018

Report Submittal Date
November 13, 2018

Project No. M184414

888 Industrial Drive
Elmhurst, Illinois 60126
630-993-2100

1.0 EXECUTIVE SUMMARY

MOSTARDI PLATT conducted a compliance emissions test program for New Covert Generating Company, LLC at the New Covert Generating Facility in Covert, Michigan, on the Unit 003 Stack on November 1 and 2, 2018. This report summarizes the results of the test program and test methods used. The test location, test dates, and test parameters are summarized below.

TEST INFORMATION		
Test Location	**Test Dates**	**Test Parameters**
Unit 003 Stack	November 1 and 2, 2018	Volatile Organic Compounds (VOC), Methane (CH_4), Ethane (C_2H_6), and Volumetric Flow

The purpose of the test program was to demonstrate total non-methane, non-ethane hydrocarbon emissions during the three below listed operating conditions. Selected results of the test program are summarized below. A complete summary of emission test results follows the narrative portion of this report.

TEST RESULTS				
Test Location	**Test Parameter**	**Test Condition**	**Emission Rate**	**Emission Limit**
Unit 003	VOC	Full Load Duct Burners On	6.7 lb/hr	7.7 lb/hr
	VOC	Full Load Duct Burners Off	4.8 lb/hr	
	VOC	60 % Load	0.2 lb/hr	

The identification of individuals associated with the test program is summarized below.

TEST PERSONNEL INFORMATION		
Location	**Address**	**Contact**
Test Facility	New Covert Generating Company, LLC New Covert Generating Facility 26000 77th Street Covert, Michigan 49043	Mr. Chris Head Operations Manager (269) 764-3805 (phone) CHead@camsops.com
Testing Company Supervisor	Mostardi Platt 888 Industrial Drive Elmhurst, Illinois 60126	Mr. John Nestor Project Supervisor 630-993-2100 (phone) jnestor@mp-mail.com

The test program was conducted by Messrs. J. Kukla, R. Spoolstra, and J. Nestor of Mostardi Platt.

2.0 TEST METHODOLOGY

Emission testing was conducted following the methods specified in 40 CFR, Part 60, Appendix A, and 40 CFR, Part 63, Appendix A. Schematics of the test section diagrams and sampling trains used are included in Appendix A and B, respectively. Calculation examples and nomenclature are included in Appendix C. Copies of analyzer print-outs and field data sheets for each test run are included in Appendix D and E, respectively.

The following methodologies were used during the test program:

Method 1 Traverse Point Determination

Test measurement points were selected in accordance with Method 1. The characteristics of the measurement location are summarized below.

TEST POINT INFORMATION						
Location	Stack Diameter (Feet)	Duct Area (Square Feet)	Upstream Diameters	Downstream Diameters	Test Parameter	Number of Sampling Points
Unit 003 Stack	22.0	380.13	0.82	3.44	Volumetric Flow	16

Method 2 Volumetric Flowrate Determination

Flue gas velocity was measured following Method 2, for purposes of calculating Unit 003 Stack gas volumetric flow rate and VOC emission rates on a lb/hr basis. An S-type pitot tube, differential pressure gauge, thermocouple and temperature readout were used to determine gas velocity at each sample point. Temperature readouts were used at the Unit 003 Stack to record temperature. All of the equipment used was calibrated in accordance with the specifications of the Method. Calibration data are presented in Appendix F.

Method 3 Oxygen (O_2)/Carbon Dioxide (CO_2) Determination

Flue gas molecular weight was determined in accordance with Method 3. A Fyrite analyzer was used to determine stack gas O_2 and CO_2 and, by difference, nitrogen content. Grab samples were taken during each volumetric flowrate run utilizing a stainless-steel probe, out of stack filter, and squeeze bulb at a single test point. The fyrite is tested prior to field use against known gas calibration standards to ensure the absorbent chemicals are not exhausted.

Method 25A Volatile Organic Compound (VOC) Determination

VOC concentrations and emission rates were determined in accordance with Method 25A. A Thermo 51i flame ionization detector (FID) analyzer was used to determine total hydrocarbon (THC) concentrations, while Method 320 was performed simultaneously to subtract CH_4 and C_2H_6 concentrations to determine VOC. Stack gas was delivered to the system via a Teflon® sampling line, heated to a minimum temperature of 300°F. Sample was delivered first to the Method 320 FTIR analyzer, with the Method 25A FID analyzer connected to the exhaust of the FTIR analyzer.

The system was calibrated before and after each test run using certified calibration gases of methane for the THC determination. Methane and ethane concentrations were then subtracted based upon the simultaneous data collected and recorded by the FTIR analyzer. A list of calibration gases used and the results of all calibration and other required quality assurance checks can be found in Appendix F. Copies of calibration gas certifications can be found in Appendix G.

Method 320 Fourier Transform Infrared (FTIR) Detector Multi-Gas Determination of Methane (CH_4), Ethane (C_2H_6) and Moisture (H_2O)

Methane and Ethane samples were collected using Extractive Fourier transform infrared (FTIR) spectrometry following Method 320 at the Unit 003 Stack. FTIR data were collected using an MKS MultiGas 2030 FTIR spectrometer. A heated transfer line was used to collect the sample and deliver it to the FTIR, where data were collected at 0.5cm-1 resolution. Each spectrum was derived from the co-addition of 64 scans, with a new data point generated approximately every one minute.

Spiking was performed following each test run to verify the ability of the sampling system to quantitatively deliver a sample containing the requested analytes from the base of the probe to the FTIR. Analyte spiking assures the ability of the FTIR to quantify analytes of interest in the presence of effluent gas.

3.0 TEST RESULT SUMMARIES

New Covert Generating Company, LLC
New Covert Generating Facility
Unit 003 Stack
VOC Summary - Full Load Duct Burners On

Test No.	Date	Start Time	End Time	CO_2 % (wet)	Flowrate, SCFM	THC ppm as CH_4 (wet)	CH_4 ppm as CH_4 (wet)	C_2H_6 ppm as CH_4 (wet)	VOC ppm as CH_4 (wet)	VOC lb/mmBtu	VOC lb/hr
1	11/01/18	08:20	09:19	4.2	1,197,017	88.3	75.4	11.0	1.9	0.00196	5.7
2	11/01/18	09:46	10:45	4.2	1,197,436	83.5	70.6	10.4	2.5	0.00258	7.5
3	11/01/18	11:10	12:09	4.2	1,198,493	85.2	72.3	10.6	2.3	0.00237	6.9
Average				4.2	1,197,649	85.7	72.8	10.7	2.2	0.00230	6.7

New Covert Generating Company, LLC
New Covert Generating Facility
Unit 003 Stack
VOC Summary - Full Load Duct Burners Off

Test No.	Date	Start Time	End Time	CO_2 % (wet)	Flowrate, SCFM	THC ppm as CH_4 (wet)	CH_4 ppm as CH_4 (wet)	C_2H_6 ppm as CH_4 (wet)	VOC ppm as CH_4 (wet)	VOC lb/mmBtu	VOC lb/hr
1	11/01/18	13:20	14:19	4.0	1,185,928	1.9	0.1	0.2	1.6	0.00173	4.7
2	11/01/18	14:45	15:44	4.0	1,188,758	1.2	0.1	0.0	1.1	0.00119	3.3
3	11/01/18	16:11	17:10	4.0	1,187,091	2.5	0.1	0.2	2.2	0.00238	6.5
Average				4.0	1,187,259	1.9	0.1	0.1	1.6	0.00177	4.8

New Covert Generating Company, LLC
New Covert Generating Facility
Unit 003 Stack
VOC Summary - 60% Load

Test No.	Date	Start Time	End Time	CO_2 % (wet)	Flowrate, SCFM	THC ppm as CH_4 (wet)	CH_4 ppm as CH_4 (wet)	C_2H_6 ppm as CH_4 (wet)	VOC ppm as CH_4 (wet)	VOC lb/mmBtu	VOC lb/hr
1	11/02/18	10:20	11:19	3.7	941,453	0.1	0.0	0.0	0.1	0.00012	0.2
2	11/02/18	11:40	12:39	3.7	924,664	0.1	0.0	0.0	0.1	0.00012	0.2
3	11/02/18	13:00	13:59	3.7	916,131	0.1	0.0	0.0	0.1	0.00012	0.2
Average				3.7	927,416	0.1	0.0	0.0	0.1	0.00012	0.2

4.0 CERTIFICATION

MOSTARDI PLATT is pleased to have been of service to New Covert Generating Company, LLC. If you have any questions regarding this test report, please do not hesitate to contact us at 630-993-2100.

CERTIFICATION

As project manager, I hereby certify that this test report represents a true and accurate summary of emissions test results and the methodologies employed to obtain those results, and the test program was performed in accordance with the methods specified in this test report.

MOSTARDI PLATT

Program Manager

John Nestor

Quality Assurance

Eric L. Ehlers