SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	BACKGROUND & FACILITY INFORMATION	
ENGINEERING & COMPLIANCE	A/N:	**486802**
	DATE:	**9/15/2011**
RULE 1110.2 INSPECTION & MONITORING (I & M) PLAN EVALUATION	PROCESSED BY:	**RR08**
	CHECKED BY:	AO

BACKGROUND:

SCAQMD Rule 1110.2 was amended on February 1, 2008 with additional rule language that significantly changed the way facilities will be required to demonstrate compliance with the rule. Each facility is now required to prepare an **Inspection and Monitoring Plan** (I & M Plan) which details the procedures which the facility will implement to ensure compliance with the requirements of Rule 1110.2. Although only one plan is required for each facility, the facility is required to specify in detail how they will inspect and monitor each and every engine in the facility that is subject to Rule 1110.2. The basic I & M requirements are enumerated in Rule 1110.2 (f)(1)(D). An engine that is monitored by a NOx and CO Continuous Emissions Monitoring System (CEMS) is not required to be included in this I & M Plan. If CO CEMS is not required, an I&M plan for CO is still required.

There is one (1) 1850-BHP, landfill gas-fired, lean burn internal combustion engine, driving an electrical generator, at this facility. Because the engine is rated over 1000 BHP, is a lean burn engine, and has a current permit emission limit for CO that is more stringent than 2000 ppmvd, then the following Rule 1110.2 guidelines apply:

1. The engine is connected to a **NOx CEMS only**, and not a CO CEMS, [Rule 1110.2 (f)(1)(A)(i) and (vii)]
2. An Air-To-Fuel Ratio Controller (AFRC) with an oxygen sensor and feedback control is **not required** for any of these engines, and [Rule 1110.2 (d)(1)(E)]
3. A CO emission check using a portable emission analyzer is required for this engine at least quarterly, or every 2,000 engine operating hours, whichever occurs later. [Rule 1110.2 (f)(1)(D)(iii)(II)]

Since a CO CEMS is not required by Rule 1110.2 and a CO emission check using a portable analyzer is performed only once every quarter (see discussions above), the facility has devised a way to determine if a CO emission exceedance has occurred or is about to occur. The facility will monitor on a daily basis the exhaust temperatures (left and right banks) and percent oxygen using their SCADA system. Monitoring these parameters can indicate whether or not incomplete combustion is occurring or imminent (thus, increased CO emission). The exhaust temperature data is recorded by the engine control system, while the percent oxygen data is recorded by the CEMS. The acceptable ranges (maximum and minimum) for these parameters (with an allowance of +/- 15%) are determined during the scheduled source test. This procedure has been integrated into the facility's I & M plan.

On the pages following this cover page is a detailed evaluation of whether or not the submitted I & M Plan will satisfy the basic requirements of Rule 1110.2 (f)(1)(D). The evaluation will show whether or not each basic requirement is "Satisfied", "Deficient" or "Not Applicable". When deemed necessary, additional information/explanation will be provided by the evaluating engineer.

FACILITY INFORMATION:

Facility Name: NM COLTON GENCO LLC ID No.: 129659

Equipment Location Address: 1230 TROPICA RANCHO ROAD
COLTON, CA 92324

Name of Person Responsible for Plan Compliance: ANTHONY FALBO,
Vice President and General Manager

Telephone Number/Email Address: (716) -439-1004

Number of Engines at this Facility Subject to I & M Plan: 1

IMPORTANT NOTE ABOUT THIS FACILITY:

This facility is a Title V facility. Elements of this I & M plan will have to be included in Section I of the revised Title V permit. There is currently a Title V Permit Amendment application (A/N 508655) pending for this facility. Part of the revisions currently being made on the facility's Title V permit include the deletion/modification of permit conditions that refer to the use of an AFRC, which this engine does not have.

ENGINE(S) INFORMATION:

Permit No.: F94437 Application No.: 425882 Device ID: ____

Engine Make: DEUTZ Model No.: TBG620V16K

BHP Rating: 1850 RPM: ____ Serial No.: ____

I.C.E. Function:

☒ Elect. Gen. ☐ Pump Driver ☐ Compressor ☐ Co-Gen ☐ Other:

Fuel: Primary: Landfill Gas Stand-By (if any): none

Combustion Type:

☐ Rich Burn ☒ Lean Burn

Permit Emission Limits (dry corrected to 15% O2):

	Current Limits:	***Effective 2/1/2008***	***Effective 7/1/2012***
NOx =	110 ppmv	36 ppmv	11 ppmv
VOC =	423 ppmv	40 ppmv	30 ppmv
CO =	755 ppmv	755 ppmv	250 ppmv

IMPORTANT NOTES TO OPERATOR:

- *In accordance with Rule 1110.2 (f)(3) – amended 2/1/2008, all required data, logs, test reports and other information shall be maintained for at least **five years** and made available for inspection by the Executive Officer.*
- *The Daily Monitoring Report should indicate the name (or, at least initials) of the operator completing the report.*
- *In addition to the Daily Report, a Rule 1110.2 Quarterly Report (see attached sample) shall be completed and submitted by the facility in a timely manner.*

CONTROL EQUIPMENT & COMPONENTS:

Emission Control (Check all that apply):

☐ NSCR (3-way Cat.) ☐ SCR (Selective Cat.) ☐ Non-Catalytic w/ NH_3 Inj.

Make & Model: ____

If NSCR/Oxid Cat: **Min. Inlet Temp.:** ____ **F**; **Max. Outlet Temp.:** ____ **F**
(Refer to permit conditions or NSCR manufacturer specs)

SCR/NOxTech: **Min. Inlet Temp.:** ____ **F ; Max. Ammonia Slip:** ____ **ppmv**
(Refer to permit conditions)

Air-To-Fuel Ratio Controller (AFRC) and Oxygen Sensor:

AFRC Make: ____ **AFRC Model No.:**

AFRC Setting:
☐ Variable Set Points at Variable Loads ☐ Single Set Point

Oxygen Sensor Type:
☒ Unheated Narrow Band (EGO) ☐ Heated Narrow Band (HEGO)
☐ Universal Wideband (UEGO) ☐ Other (specify) : ____

Optimum O2 Sensor Range Setting: * ____to____ Millivolts/ Lambda

Oxygen Sensor Location (relative to catalyst):
☒ Upstream Only ☐ Upstream and Downstream

Continuous Emissions Monitoring System (CEMS):
☒ NOx ☐ CO ☐ None

Other Parameters (if any): (for example, differential pressure - ΔP):

Parameter(s): Exhaust Temperature and Percent Oxygen
Compliance Limit (s): Voluntary (no permit limit)

INSPECTION & MONITORING (I & M) PLAN EVALUATION:

Satisfied	Deficient	N/A	Requirements	Additional Info/Explanation
☒	☐	☐	**PORTABLE ANALYZER (PA) TESTING PROCEDURES:** (1) The plan should have a set procedure for conducting a portable analyzer (PA) test (measuring NOx, CO and O_2) on this engine which includes the following: a) Identification of the person or company who will perform the PA test, including a declaration that this person/company has undergone AQMD PA training and is certified in the use of the particular PA equipment, b) A declaration, supported with O & M (operation and maintenance) information, indicating the proper calibration schedule and procedure used for the PA equipment, c) An declaration which indicates that the PA test will be conducted in accordance with the requirements in AQMD's "Protocol for the Periodic Monitoring of NOx, CO, and O2 from Stationary Engines Subject to SCAQMD Rule 1110.2" (dated November 2007), OR, the most recently approved USEPA protocol. d) An indication from the facility whether the PA equipment will measure both NO and NO_2, or, just NO (Note: For NO only, the facility must provide test data that shows that NO_2 emissions are less than 10% of total NOx emissions), and e) An explanation of how the facility intends to store PA test printouts. This statement should indicate the manner, frequency and format of data storage.	*Notes: This engine is connected to a NOx CEMS. In accordance with Rule 1110.2 (f)(1)(D)(iii)(II), only a CO emission check using a portable analyzer is required.* *A properly trained in-house operator will perform the CO portable analyzer tests using either an ECOM or COSA 704 portable analyzer.* *Portable analyzer tests for CO are done quarterly, usually on the middle month of every quarter (Feb., May, July, Oct.). All test data are entered by the operator manually onto an Excel spreadsheet and kept on file by the Environmental Department.* *NOx data will come from the CEMS. The CEMS is interfaced with a SCADA system for easy access of data.*
☐	☐	☒	(2) The plan should have a set schedule of performing PA tests on this engine at least **once a week**, or, **every 150 engine operating hours**, whichever occurs later. If the engine is in compliance for 3 consecutive emission checks, without any adjustments to the O_2 sensor set points, then the engine may be tested **once a month**, or, **every 750 engine operating hours**, whichever occurs later. If the facility opts for the 150 (or 750) engine operating hours criteria, the facility should indicate on the plan how they intend to get alerted on when a PA test is due.	*Note: See explanation in #3.*

Satisfied	Deficient	N/A	Requirements	Additional Info/Explanation
☒	☐	☐	(3) For diesel engines and lean burn engines subject to Reg. XX or have a NOx CEMS, and : a) If the permit contains a CO limit **more stringent than 2000 ppmvd**, then, the plan should have a set procedure and schedule for performing a PA test for **CO only** at least **quarterly** or **every 2,000 engine operating hours**, whichever occurs later. If the facility opts for the 2,000 engine operating hours criteria, the facility should indicate on the plan how they intend to get alerted on when a PA test is due. b) If the permit contains a CO limit that is **NOT more stringent than 2000 ppmvd**, then, **no emission tests** are required.	*Note: In accordance with Rule 1110.2 (f)(1)(D)(iii)(II), CO emission checks will be required because the permit contains a CO emission limit that is more stringent than 2000 ppmvd. CO emission checks will be performed **quarterly**. See explanation in #1 for quarterly test schedule and manner/format for storing data.*
☒	☐	☐	(4) The plan shall NOT contain a procedure for performing an engine or control system maintenance or tuning within **72 hours** prior to performing a PA test, unless the maintenance or tuning is a result of an unscheduled, required repair.	
☐	☐	☒	(5) If this engine is operated by a **public agency** or a **contractor hired by a public agency** solely to operate this engine, AND, if the public agency or contractor hired by the public agency opted to perform NOx and CO PA tests in lieu of the CEMS requirement of Rule 1110.2 (f)(1)(A)(ii)(I), THEN, the plan should have a set schedule of performing PA tests on this engine at least **once a week**, or, **every 150 engine operating hours**, whichever occurs later. If the facility opts for the 150 engine operating hours criteria, the facility should indicate on the plan how they intend to get alerted on when a PA test is due.	
☐	☐	☒	(6) If the facility is subject to RECLAIM, then only the CO emission is to be tested.	*Note: This facility is a Title V facility, but not a RECLAIM facility.*
☐	☐	☒	**NSCR, SCR, OXIDATION CATALYST I & M PROCEDURES:** (7) If this engine is a **rich burn engine** with an **NSCR (3-Way Catalyst)**, the plan should have a set procedure for monitoring the temperature of the exhaust gas entering and exiting the NSCR. Engine cold start-ups excluded, the plan should specify the minimum and maximum catalyst temperatures (based on permit conditions, or, if absent on the permit conditions, based on catalyst manufacturer specifications). The plan should have a set procedure for alerting the operator of deviations to the acceptable operating temperature range.	*Note: This engine is a lean burn engine.*

Satisfied	Deficient	N/A	Requirements	Additional Info/Explanation
☐	☐	☒	(8) If this engine is a rich burn engine with an NSCR (3-Way Catalyst), and a permit condition (or, the catalyst manufacturer specs) requires monitoring of the temperature increase (ΔT) across the catalyst bed, then, the plan should have a set procedure for calculating and monitoring the ΔT and for alerting the operator of any deviations to the acceptable ΔT.	*Note: This engine is a lean burn engine.*
☐	☐	☒	(9) If this engine is a rich burn engine with an NSCR (3-Way Catalyst), and a permit condition (or, the catalyst manufacturer specs) requires monitoring of the pressure differential (ΔP) across the catalyst bed, then, the plan should have a set procedure for calculating and monitoring the ΔP and for alerting the operator of any deviations to the acceptable ΔP.	*Note: This engine is a lean burn engine.*
☐	☐	☒	(10) If a permit condition or the catalyst manufacturer specifications requires cleaning or replacement of the catalyst element upon reaching a parameter milestone (e.g., after a specified number of operating hours, or, when a ΔP or ΔT limit is reached), the plan should have a set procedure for alerting the operator when such parameter milestone is reached.	
☐	☐	☒	(11) If this engine is a **lean burn engine** with an **SCR**, the plan has a set procedure for monitoring the following: (a) The temperature of the exhaust gas entering the SCR. The plan should specify the minimum catalyst inlet temperature for proper reaction to occur in the SCR and the maximum temperature to prevent catalyst decomposition. The plan should have a set procedure to alert the operator whenever the minimum temperature is not reached beyond the normal cold start-up timeframe; and (b) The NOx control algorithm which establishes the acceptable range of reactant (ammonia or urea) flow rate, as a function of engine load. The plan should have a set procedure for establishing the acceptable range of reactant flow rate using a portable NOx and O_2 analyzer.	*Note: This lean burn engine is not connected to an SCR unit.*
☐	☐	☒	**AIR-TO-FUEL RATIO CONTROLLER (AFRC) I & M PROCEDURES:** (12) For an engine operated on **variable loads**, the plan should have a set procedure for establishing the optimum (i.e., compliant with NOx & CO emission limits) AFRC set-points at 25%, 60% and 95% load (± 5%). The loads may also be based on the minimum, midpoint and maximum loads that actually occur during **normal operation** (± 5%). *(continued on next page)*	*Note: Per Rule 1110.2 (d)(1)(E), an AFRC is not required for this engine. Facility submitted an addendum to the I&M plan (in the form of an email – see attached) verifying that the engine DOES NOT have an AFRC.*

Satisfied	Deficient	N/A	Requirements	Additional Info/Explanation
			Set points shall be established with the use of a portable NOx, CO and O_2 analyzer. Engine load shall be determined using acceptable means, including but not limited to: (a) generator kilowatt output; (b) fuel flow meter measurement; or (c) evaluation of pump or compressor curves with measurement of RPM and pressure.	
☐	☐	☒	(13) For an engine operated on **a single load** and is limited to this load by means of a permit condition, the plan should have a set procedure for establishing the optimum (i.e., compliant with NOx & CO emission limits) AFRC set-point based on the defined single load (± 10%). Set point shall be established with the use of a portable NOx, CO and O_2 analyzer. Engine load shall be determined using acceptable means, including but not limited to: (a) generator kilowatt output; (b) fuel flow meter measurement; or (c) evaluation of pump or compressor curves with measurement of RPM and pressure.	*Note: See note in No.12*
☐	☐	☒	(14) For both variable-load or single-load operation, the plan should have a set procedure for verifying that the AFRC is controlling the engine to the optimum set-point(s) during the required daily monitoring (see section on General I & M Procedures for details on daily monitoring requirement).	*Note: See note in No.12*
☐	☐	☒	(15) For both variable-load or single-load operation, the plan should have a set procedure for re-establishing the AFRC set-point(s) whenever a set-point must be **readjusted** or **within 24 hours after the replacement of an oxygen sensor**. If the engine is a **rich burn** engine **with a 3-way catalyst**, the plan should have a set procedure for re-establishing the AFRC set-point(s) again **between 100 and 150 engine operating hours** after an oxygen sensor replacement. The plan shall indicate how the operator will be alerted when 100 operating hours has been reached. Set point shall be re-established with the use of a portable NOx, CO and O_2 analyzer.	*Note: See note in No.12*
☐	☐	☒	(16) The AFRC shall have a malfunction indicator light and audible alarm and the plan shall have procedures for alerting the operator of emission control malfunctions (see item #17 under "General I&M Procedures).	*Note: See note in No.12*
☒	☐	☐	**GENERAL I & M PROCEDURES:** (17) The plan should have a set procedure for alerting the operator of any malfunctions in the emission control system and the AFRC. If the facility has on-site personnel, operator-alert systems may include malfunction indicator lights on the defective system or an audible alarm. ***(continued next page)***	*Note: All parameters that need to be monitored are keyed into the facility's SCADA system. The SCADA system will send an alarm immediately when a malfunction or parameter out-of-range occurs. NOx exceedances recorded by*

Satisfied	Deficient	N/A	Requirements	Additional Info/Explanation
			If the facility is unmanned, an operator shall be alerted remotely by either a Supervisor Control and Data Acquisition (SCADA) system or other similar systems.	*the CEMS will alert an operator to perform diagnostic checks and maintenance as required. (Also, see note in No.37)*
☒	☐	☐	(18) The plan shall describe how the operator will respond to, diagnose and correct breakdowns, faults, malfunctions, alarms, and emissions checks finding emissions in excess of rule or permit limits.	
☒	☐	☐	(19) For breakdown resulting in a violation of Rule 1110.2 or a permit condition, the plan shall contain procedures on how the operator shall correct the problem and demonstrate compliance with another emissions check or shut down the engine at the end of the operating cycle. The breakdown shall be reported per section (H) of Rule 1110.2.	
☒	☐	☐	(20) Within 15 days of the end of each calendar quarter, the operator will submit to the AQMD (Attention: Compliance) a completed Form - Rule 1110.2 - Quarterly Report for Stationary Engines that reports each occurrence of a breakdown, fault, malfunction, alarm, engine or control system operating parameter out of the acceptable range established by an I&M plan or permit condition, or an emission check that finds excess emissions. Operator will also report if no incidents occurred.	
☒	☐	☐	(21) For other problems, such as parameters out-of-range, the operator shall correct the problem and demonstrate compliance with another emissions check within 48 hours of first knowing the problem.	
☒	☐	☐	(22) Procedures and schedules for preventive and corrective maintenance. The maintenance schedule shall include the items on the engine and control system that are to be serviced (examples: O2 sensor replacement, catalyst replacements or washes, engines tunes ups, spark plug replacements). The plan shall indicate who will be responsible for maintenance – in-house or contractor. The format for record keeping of maintenance and repairs should include engine operating hours, explanation and description of what was done and why.	
☒	☐	☐	(23) Procedures for recordkeeping of monitoring and other actions required by the plan.	
☒	☐	☐	(24) For any plan revision the operator shall file a new compliance plan.	
☒	☐	☐	**GENERAL DAILY MONITORING PROCEDURES:** (25) The plan need NOT require daily parameter monitoring for diesel engines or lean burn engines which do not have either exhaust gas recirculation or catalytic control devices.	

Satisfied	Deficient	N/A	Requirements	Additional Info/Explanation
☒	☐	☐	(26) Engines will be monitored daily, including weekends and holidays by either remote monitoring or in person or a combination of the two.	*Note: Daily monitoring done through SCADA system.*
☒	☐	☐	(27) The Plan specifies which in-house personnel **or** which outside contractor will conduct the daily monitoring.	*Note: See note in No.1*
☒	☐	☐	(28) The format for the daily monitoring report shall include but not be limited to: name of person doing the monitoring (if not remote monitoring), date/time of monitoring, and all parameters to be monitored.	*Note: Daily monitoring data are available through the SCADA system.*
☒	☐	☐	**PARMETERS TO BE MONITORED DAILY** (29) Engine load or fuel flow rate.	
☐	☐	☒	(30) The actual values of the AFRC set points.	
☒	☐	☐	(31) The elapsed time meter operating hours.	
☒	☐	☐	(32) The operating hours since the last emissions check.	
☐	☐	☒	(33) For rich burn engines with 3-way catalysts, the difference between the inlet and outlet temperature (ΔT) of the catalytic converter.	
☐	☐	☒	(34) Engine control systems and AFRC system faults or alarms that affect emissions	
☐	☐	☒	(35) For lean burn engines with SCR, the exhaust temperature at the inlet to the SCR and the reactant flow rate.	*Note: See note in No.11*
☐	☐	☒	(36) Other parameters to be monitored, for example, if the permit conditions have a pressure drop requirement (ΔP), the pressure drop should be monitored.	
☒	☐	☐	(37)* Other parameters that the facility is proposing to monitor: Exhaust Temperature and Percent Oxygen.	*Note: Since a CO CEMS is not required by Rule 1110.2 and a CO emission check using a portable analyzer is performed only once every quarter, the facility has devised a way to determine if a CO emission exceedance has occurred or is about to occur. The facility will monitor daily the exhaust temperature and percent oxygen using their SCADA system. Monitoring these parameters can indicate whether or not incomplete combustion is occurring or imminent (thus, increased CO emission).*