BEFORE THE STATE ENVIRONMENTAL COMMISSION

STATE OF NEVADA

In Re: Appeal of Air Operating Permit: Class I Operating Permit No. AP4953-1148.01 by Refuse, Inc.	**REFUSE, INC.'S OPENING BRIEF**

INTRODUCTION

The Nevada Division of Environmental Protection's Bureau of Air Pollution Control ("NDEP") erred by imposing an unnecessarily burdensome monitoring requirement on Refuse Inc.'s ("RI") proposed project to recover renewable energy from its Lockwood landfill. The permit issued by NDEP will require RI to continuously monitor emissions from three engines that will generate electricity by burning gas produced by the landfill. While RI agrees that monitoring sufficient to provide a reasonable estimate of emissions is appropriate, it does not agree that emissions from this type of source need to be measured every minute of every day throughout the year. There exist less burdensome monitoring methods, routinely accepted for similar types of sources, which are more than sufficient to ensure RI is meeting its permit obligations. Specifically, annual source testing, along with periodic verification monitoring, provides robust monitoring that would assure compliance with applicable emission limitations for these emission sources.

Although NDEP has discretion to require monitoring sufficient to demonstrate compliance with applicable emission limitations, that discretion is not unfettered and must be exercised with basis and consistency. NDEP's stated justification for requiring continuous emissions monitoring systems ("CEMS") is in error and not consistent with the vast majority of monitoring determinations that NDEP (and other state and local air permitting authorities) have made in the past for similar types of sources. Accordingly, RI respectfully submits that it would be an arbitrary and capricious agency action if the Nevada State Environmental Commission ("SEC")

adopts NDEP's recommendation. RI therefore requests that the SEC direct NDEP to promptly revise RI's operating permit to eliminate the CEMS requirements and to substitute the requirement for annual stack testing supplemented with monthly measurements using portable emissions analyzers.

BACKGROUND AND SUMMARY OF ARGUMENT

RI operates the Lockwood Landfill located approximately seven miles east of Sparks, Nevada, just south of Interstate 80. When landfill waste decomposes, it gives off gases including methane and a small amount of volatile organic compounds ("VOC"). These gases are generally referred to as landfill gas or "LFG." In accordance with applicable laws, the Lockwood LFG is currently collected and combusted in a flare. This reduces captured LFG emissions to the environment by over 98%. RI hopes to use the LFG gas beneficially to generate renewable energy in internal combustion engines with associated electrical generators. Projects like these are commonly referred to as landfill-gas-to-energy ("LFGTE") projects. Like flaring, burning the LFG in the engines will also reduce LFG emissions into the environment, but it has the additional benefit of generating renewable energy.[1]

In accordance with applicable regulations, RI submitted an application to NDEP requesting approval for the LFGTE project. NDEP, in turn, issued a permit authorizing the LFGTE project and the installation of the engines. In issuing the permit, NDEP has required extensive continuous emissions monitoring for emissions of oxides of nitrogen ("NO_x") and carbon monoxide ("CO"). RI is appealing this requirement to install and operate the NO_x and CO continuous emissions monitoring systems ("CEMS").

In the case of both NO_x and CO emissions, NDEP asserts the need for <u>continuous</u> monitoring in order to verify compliance with <u>annual</u> emission limitations. Absent extraordinary circumstances,[2] annual emission limitations are not the kind of limitations that typically require

[1] The project consists of three engines and associated electrical generators, each capable of generating up to 1.6 megawatts of energy. This is enough energy to generate electricity for about 5,000 homes while offsetting fossil fuel consumption.

[2] For example, federal acid rain regulations require certain large electric generating units to install and operate CEMS. The smallest units that the acid rain regulations apply to are those generating at least 25 megawatts (compared to the 1.6 megawatts generated by the Lockwood engines). <u>See</u> 40 C.F.R. § 72.6.

continuous monitoring. In fact, NDEP frequently uses a single annual test consisting of three hours or testing runs of emission sampling for estimating annual emissions from much larger sources subject to much greater variability in emissions than the Lockwood engines.

NDEP's stated justification for requiring CEMS in the Lockwood permit does not withstand even cursory review. In the case of NO_x, NDEP claims that CEMS are necessary to ensure protection of the annual NO_x increment. This rationale is invalid, however, according to NDEP's own analysis which demonstrates that the Lockwood engines will not even remotely threaten the NO_x increment. Regarding CO, NDEP claims the annual limitation on CO emissions is so close to the PSD applicability threshold that CEMS are necessary to ensure that PSD review is not triggered. However, the facts plainly show the Lockwood engines' CO emissions have no realistic potential to trigger PSD review. Hence, NDEP's stated rationales for requiring NO_x and CO CEMS are without merit.

Even assuming that NDEP had compelling reasons for more frequent monitoring, NDEP made no attempt to assess the most important factor in deciding whether continuous emissions monitoring is warranted—that is, the potential variability of the emissions from the engines. While forthrightly acknowledging the importance of assessing the potential for emissions variability in deciding whether CEMS are warranted, NDEP admits that it failed to assess this criterion before making its decision to require CEMS for the Lockwood engines. Had NDEP made such inquiry prior to reaching its decision, it would have discovered that the engines exhibit consistent emission performance and that continuous monitoring is not warranted.[3]

For both NO_x and CO, NDEP asserts that <u>continuous</u> emission monitoring is necessary to protect an <u>annual</u> emission limitation. The actual requirement is to have monitoring that will provide a reasonable or sufficient basis for assuring compliance, not a perfect or absolute basis. In fact, for the overwhelming majority of sources, NDEP relies on a single annual stack test as the

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[3] Section II.B. of this brief presents data demonstrating that the Lockwood engines are expected to operate consistently in compliance with NOx and CO emission limitations. A key reason for the engines' consistent emissions is the fact that the Lockwood engines are not subject to post-combustion emission controls. This means that there are no emission controls that might fail. EPA monitoring rules implemented by NDEP specifically acknowledge that the absence of controls reduces the potential for emissions variability over time and, therefore, the need for continuous monitoring.

basis for estimating annual emissions. There is no defensible reason, and certainly not a compelling reason, to require continuous emissions monitoring for the Lockwood engines.

In any event, even assuming the need for more rigorous monitoring, there exists a much more reasonable alternative to CEMS that is capable of providing more frequent data from the engines than annual testing alone. This alternative involves the use of portable analyzer technology that is relied upon by other air quality permitting agencies to provide periodic emissions data without requiring CEMS.

FACTUAL BACKGROUND

1. Under cover dated August 10, 2010, RI submitted an application to NDEP requesting authorization to construct and operate three internal combustion engines at its Lockwood landfill for the purpose of generating renewable energy from landfill gas.

2. On or about February 10, 2011, NDEP made a preliminary determination to issue the permit authorizing the LFGTE project and issued a draft permit for public comment that required CEMS for NO_x and CO emissions. This was the first indication to RI that CEMS would be required in the permit.

3. On March 15, 2011, SCS Engineers, on behalf of RI, submitted a comment letter on the draft permit requesting that NDEP remove the CEMS requirement because CEMS were not necessary for purposes of providing a reasonable assurance of compliance. Among other things, the request explained that (i) there were no emission controls on the engines that might malfunction (and hence no potential for significant variation in emissions), (ii) essentially no other jurisdiction required CEMS for similar projects, relying instead on annual stack testing, (iii) requiring CEMS was an overly burdensome and costly requirement under the circumstances, and (iv) based on other monitoring and testing requirements already in the permit (including continuous monitoring and recording of operating hours, engine power output and fuel consumption rate, and annual emission testing), an accurate accounting of annual emissions could be made.

4. On April 14, 2011, representatives of RI met with NDEP and proposed the use of hand-held monitoring instrumentation as an alternative to CEMS. The use of the hand-held monitors would provide additional (that is, in addition to annual stack testing and daily monitoring of engine fuel consumption, hours of operation, etc.) assurance of consistent engine performance.

5. In correspondence dated April 21, 2011, SCS Engineers, on behalf of RI, submitted documentation to NDEP detailing the use and acceptance of hand-held analyzers by other state and local air permitting agencies and explaining that, "[because] Renewable Energy projects operate in steady-state with limited swings in emissions and they are very sensitive to capital and operating costs, we believe that the hand-held monitoring alternative with the annual source test versus CEMS makes sense for the NDEP to adopt for LFG Renewable Energy projects."

6. Without any further communication with RI, NDEP issued the final permit with CEMS under cover dated May 12, 2011. Neither NDEP's Technical Review document nor its responses to comments addressed RI's request that NDEP consider the use of hand-held analyzers as an alternative to CEMS.

7. On May 23, 2011, RI filed an appeal with the SEC of the decision to require CEMS.

8. On May 25, 2011, after it issued the permit and after RI filed its appeal of the CEMS requirement, NDEP sought information on the expected variability of the engines' emissions in an attempt to assess the need for CEMS.

STATUTORY AND REGULATORY BACKGROUND

In explaining its basis for requiring CEMS, NDEP cites NAC 445B.3405.1(c)(3) which provides that an operating permit must include "requirements for monitoring that are sufficient to ensure compliance with the conditions of the operating permit, including … [a]s necessary, requirements concerning the use, maintenance and the installation of equipment, or methods for monitoring." RI agrees with NDEP that the permit should contain monitoring that is sufficient to ensure compliance with the NO_x and CO emission limits that have been established in the permit. However, RI believes that, by requiring CEMS, NDEP has imposed unreasonable and excessive monitoring requirements that are unwarranted for the reasons detailed in this brief.

STANDARD OF REVIEW

In reviewing NDEP's permit decision, it is important to recognize that the SEC is the final agency decision maker and is in a position to evaluate NDEP's permitting record as well as to consider new evidence that is submitted during the course of this proceeding. Indeed, Nevada law requires the SEC to conduct a *de novo* review of NDEP's permit decision. *See City of Las Vegas v. Clark County*, 755 F.2d 697, 700 n.4 (9th Cir. 1985) (stating that under the Nevada Code, a "permit applicant is entitled to a pre-permit departmental decision followed by a *de novo* hearing before the State Environmental Commission") (internal citations omitted).[4] As a result,

[4] In reaching its conclusion that the SEC must conduct a *de novo* review of a state-issued sewage discharge permit, the Ninth Circuit interpreted statutes enacted under Nevada's water pollution control law. *City of Las Vegas*, 755 F.2d at 700 n.4 (interpreting NRS §§ 445.267 & .274 (1981)). Although addressing a statute under Nevada's water pollution control law, the decision in *City of Las Vegas* is persuasive here because the controlling statutory language considered in that instance is virtually identical to the statutory language governing the SEC's review of a permit issued under Nevada's air pollution laws. Subsequent to the decision in *City of Las Vegas*, the Nevada Legislature re-numbered the statute controlling SEC review of water discharge permits—i.e., NRS § 445.274—as NRS § 445A.605. *See* NRS § 445A.605, Editor's note. Today, section 445A.605 remains virtually identical to section 445B.360, the statute governing review of the NDEP's air permit in this appeal. *Compare* NRS § 445A.605.2 (providing that in presiding over a permitting appeal under the Nevada's Water Pollution Control Law the SEC "shall affirm, modify or reverse any action of the Director which is appealed to it"), *with* NRS § 445B.360.2 (providing that in presiding over a permitting appeal under the state's air pollution laws, the SEC "shall affirm, modify or reverse any action taken by the Director which is the subject of the appeal").

NDEP's permit determination and basis for the same deserve the SEC's careful consideration, but NDEP's underlying decision is not entitled to any special deference by the SEC.

A careful review of the statutes and regulations governing the SEC's review of NDEP's initial determination requires this conclusion. Section 445B.360 controls the SEC's review in this regard, authorizing the SEC to "affirm, modify or reverse any action taken by the Director which is the subject of the appeal." NRS § 445B.360.2. The plain language does not instruct the SEC to afford NDEP's initial permitting decision deference. In contrast, Nevada law authorizes the SEC to receive evidence and reach independent factual findings. *See* NAC § 445B.895 (permitting the SEC to take evidence during a hearing); § 445B.8953 (allowing the SEC to limit the taking of testimony and presentation of evidence during a hearing); and § 445B.896 (requiring the SEC to issue written findings of fact with a concise statement of facts supporting the SEC's finding). The power to take testimony and evidence that supplements the factual basis of an initial agency determination is the hallmark of *de novo* review. *See* Black's Law Dictionary 852 (7th Ed. 1999) (defining *de novo* judicial review as "[a] court's nondeferential review of an administrative decision, usu. through a review of the administrative record *plus any additional evidence* the parties present"); *see also Pasillas v. HSBC Bank USA*, ___ P.3d ___, 2011 WL 2671894, *2 n.8 (Nev. 2011) (defining *de novo* review through the same definition articulated in Black's Law Dictionary); *Davis v. First Reliance Standard Life Ins. Co.*, 277 Fed. Appx. 737, 737 (9th Cir. 2008) (finding that a district court's conclusion that it was limited to the administrative record in a *de novo* review was a clear misstatement of the law); *Dean Foods Co. v. Pollution Control Bd.*, 492 N.E.2d 1344, (Ill. App. Ct. 1986) (concluding that procedural statutes and rules that call for an administrative body to consider testimony beyond the underlying record are *de novo* in nature). Where an administrative agency receives new evidence, it cannot defer to a previous agency determination that was not informed by the same facts. *See Asarco, Inc. v. Envtl. Prot. Agency*, 616 F.2d 1153, 1160 (9th Cir. 1980) ("When a reviewing court considers evidence that was not

before the agency, it inevitably leads the reviewing court to substitute its judgment for that of the agency.").

Finally, a conclusion that the SEC's review is *de novo* is informed by a comparison of the Nevada statutes governing SEC review with those that control judicial review. As shown previously, there is no limiting language found in section 445B.320 that restricts the SEC to a mere record review that affords deference to the underlying agency determination. In contrast, the statute governing judicial review of final agency action (that is, the SEC's determination) explicitly restricts judicial review to the then-existing administrative record; judicial review of an agency decision "must be . . . [c]onfined to the record." NRS § 233B.135.1. Ultimately, the dichotomy between these two statutory schemes is the product of the procedural step in which review is conducted. Unlike the SEC's decision, NDEP's determination is not final agency action and is not afforded the deference that comes with record review.

ARGUMENT

I. NDEP'S PURPORTED RATIONALE FOR IMPOSING CEMS IS WITHOUT MERIT

NDEP has asserted that CEMS for NO_x emissions are necessary to protect the PSD NO_x increment and that CEMS for CO emissions are necessary to ensure that a facility-wide emission cap is not exceeded, the consequences of which would be to trigger PSD review. In both instances, NDEP's assertions are without merit. As detailed below, NDEP's own analysis clearly shows that the Lockwood facility has no realistic chance of either adversely impacting the NO_x increment or triggering PSD review for CO emissions.

A. NDEP'S Purported Reason For NO_x CEMS is Undercut by its Own Analysis.

In explaining its decision for requiring continuous monitoring of NO_x emissions, NDEP asserts that this extraordinary monitoring is required to protect the NO_x increment: "There is very little air resource available in the Tracy basin because of several large projects that triggered PSD. A high concentration of smaller sources in the basin has consumed much of the balance of the resource. The revised permit for this project will allow for even more consumption of the limited air resource." NDEP Response to RI Comments (May 12, 2011) at 6. However, NDEP's own

increment analysis for the Lockwood LFGTE project belies this purported justification and demonstrates that the NO_x increment is not even remotely threatened by RI's facility.

The PSD NO_x increment is established by EPA at 25 $\mu g/m^3$ (annual averaging period). The NO_x increment can be thought of as a growth allowance. The amount of increment "consumption" that occurs is the result of all "contributing" sources in an area.[5] In reaching its determination to issue a permit for the Lockwood LFGTE project, NDEP undertook an air quality dispersion modeling analysis. Importantly, NDEP's analysis shows that the project will have *de minimis* or insignificant impacts in areas where other emission sources have resulted in relatively high impacts on increment concentrations. NDEP's analysis further shows that the Lockwood LFGTE project will not create any new areas that threaten increment consumption. NDEP's analysis is reproduced below from its Technical Review document for the Lockwood LFGTE project:

Table 5.5-2 –Refuse, Inc. NO_x Increment Consumption

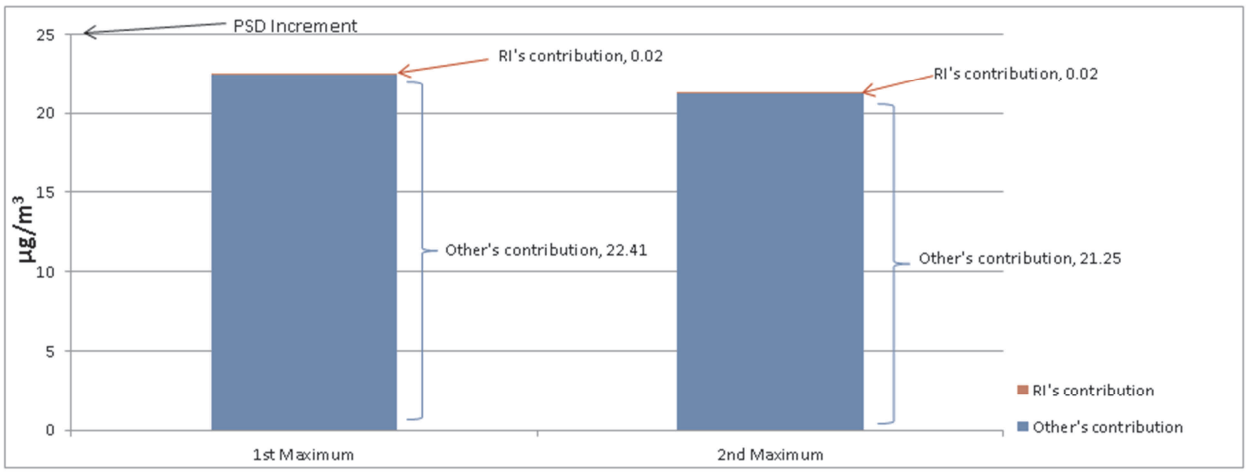
NO_x Results Increment Std. = 25 $\mu g/m^3$ annual avg							
		Increment Receptors					
Met Year	Avg. Period	Rec. No	X Coord.	Y Coord.	Total Conc.	RF Contrib.	Max. RF Conc.
2000	Annual	1587	274000	4377500	22.42728	0.02240	--
		1282	273500	4375000	3.237333	1.36056	1.36056
2001	Annual	1587	274000	4377500	21.26962	0.02173	--
		1282	273500	4375000	3.23954	1.30782	1.30782

Table 5.5-2 shows no receptors where the concentration exceeds the increment standards for NO_x as the esult of activities related to Refuse, Inc.'s Class I Significant Revision.

Table 5.5-2 in NDEP-BAPC's *Technical Review and Determination of Continued Compliance for: Refuse, Inc., Lockwood Landfill* (Amended April, 2011).

[5] Emissions from sources of air pollution are said to "contribute" to increment "consumption." NDEP's air quality modeling analysis assesses the consumption of increment that is expected to result specifically from the Lockwood project as well as the increment consumption from all other sources in the airshed. The amount of increment consumption will vary depending on location. Different locations are sometimes referred to as "receptors."

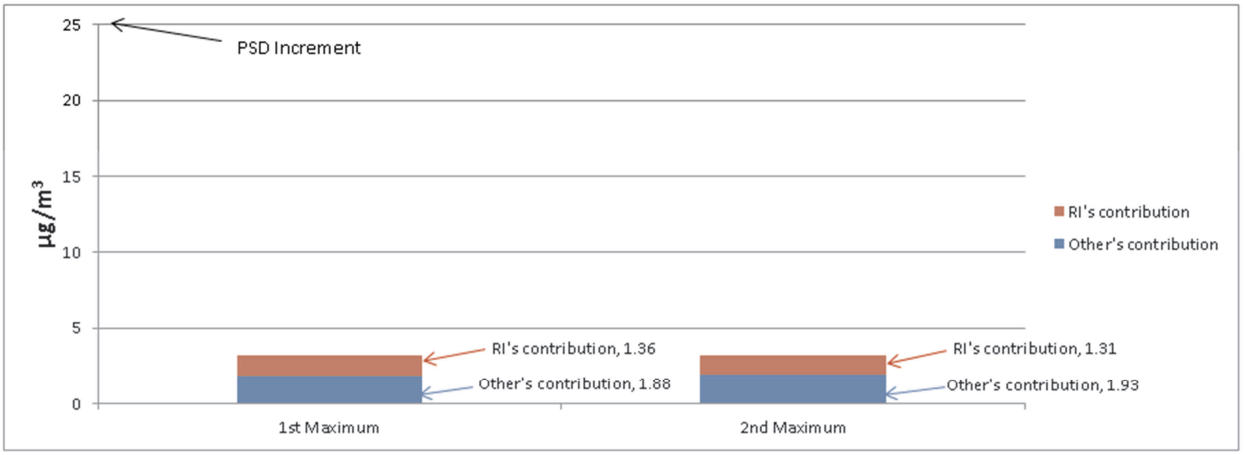
At the two receptors that have been identified by NDEP in the general vicinity of the Lockwood facility as having the highest PSD-increment consumption (22.43 µg/m^3 and 21.27 µg/m^3, respectively),[6] NDEP's analysis shows that RI's emissions contribute less than 1/10th of one percent of the total impacts (0.02 µg/m^3 in both instances). This is clearly trivial relative to the impact attributable to the other sources and the overall increment of 25 µg/m^3. The bar graph below shows the points of maximum increment consumption identified by NDEP's analysis and the contribution of the Lockwood facility to those impacts.



The contributions of RI's Lockwood landfill at both points of maximum predicted increment consumption are so small (0.02 µg/m^3) that they are barely visible as thin red slivers on the bar graph above, indicating that the Landfill is having a negligible impact on the increment.

NDEP's analysis further shows that at the two receptors that have been identified by NDEP as having the highest impacts from RI's facility, the total maximum predicted concentration (that is, RI's impacts plus all other increment-consuming sources) is 3.24 µg/m^3 compared to an increment of 25 µg/m^3. This again demonstrates that the proposed Lockwood LFGTE project does not pose a threat to the NO_x increment. The bar graph below shows the points of RI's maximum impact along with other sources at those points relative to the increment of 25 µg/m^3.

[6] Numbers in the table have been rounded to hundredths for clarity of presentation.



Accordingly, NDEP's own analysis contradicts its justification for requiring NO_x CEMS. Indeed, RI's emissions would have to be many times greater to have even a modest impact on the increment.[7]

B. Contrary to NDEP'S Assertion, there is No Realistic Chance for the Lockwood LFGTE Project to Trigger PSD Review for CO Emissions.

NDEP's asserted rationale for requiring CEMS for CO emissions is based on an incorrect and incomplete analysis of the PSD regulations and a failure to properly analyze the emission potential associated with the project. Furthermore, requiring CEMS is inconsistent with NDEP's past permitting practices even where there does in fact exist a realistic prospect for triggering PSD review.

1. NDEP erroneously asserts that PSD review will be triggered if the facility-wide CO cap is exceeded.

The Lockwood Landfill is an existing minor source of emissions because its emissions are less than 250 tpy of each air pollutant, including CO, that it emits. Under EPA and NDEP's rules, the LFGTE project will trigger PSD review for CO only if the emissions associated with the engines exceed 250 tpy of CO emissions. Importantly, the facility's overall emissions may

[7] In addition to the PSD increment, there exist air quality standards that are design to protect health and the environment. NDEP does not assert that CEMS are necessary to ensure compliance with the air quality standards for NOx and CO and its analysis shows that Lockwood's maximum impacts will be 2% of the CO air quality standards and 5% of the NOx standard. See Table 5.4-1 of NDEP's Technical Review at 13.

exceed 250 tpy of CO without triggering PSD review.[8] This is because PSD applicability is based on the emissions increase associated with the particular project for which approval is being sought and not simply the potential emissions for the entire facility.

However, NDEP's technical review incorrectly asserts that PSD review will be triggered if the facility-wide cap of 249 tpy is exceeded: "[T]his revised permit will authorize CO emissions of 249.0 tpy, just below the major source threshold for PSD; since PSD would require BACT,[9] the NBAPC needs to ensure compliance with the CO emission cap." Letter from Lawrence Kennedy, P.E., Chief, Bureau of Air Pollution Control, to William Carr, District Manager, Refuse, Inc., regarding, Response to Comments on Class I Application for Significant Revision (May 12, 2011) at 6. This is not a correct statement of PSD applicability.

While it is correct that exceeding 250 tpy of CO emissions from the entire Lockwood Landfill will result in the source being classified as a "major stationary source," that does not mean that PSD review will be triggered. As noted in footnote 8, only if the increase in emissions from the proposed LFGTE project (that is, the proposed engines) exceeds 250 tpy will PSD review be required per federal PSD regulations and guidance and, as discussed in the next section, that is a virtual impossibility.

2. Emissions Data Demonstrates that there is no Realistic Prospect that the Lockwood Engines or Facility-wide Emissions will Exceed 250 tpy of CO.

The possibility of either the engines or the facility-wide emissions exceeding 250 tpy is not realistic. NDEP's emission analysis can be summarized as follows:

SYSTEM	**CO EMISSIONS (TPY)**
Miscellaneous	5.48
Flare	102.10
Engines	252.27
TOTAL	359.85

[8] See 40 C.F.R. §§ 52.21(a)(2) (PSD applicability procedures), (b)(1)(c) (definition of "major stationary source").

[9] BACT, or Best Available Control Technology, is one of the principle requirements imposed by PSD review. See 40 C.F.R. § 52.21(j).

See Technical Review at 10. At first blush, the facility's potential emissions appear to significantly exceed the 250 tpy threshold; however, these emissions include the flare's emissions which, as NDEP correctly notes in its Technical Review, "will serve as a back-up LFG control device" to the engines. *Technical Review* at 3. That is, landfill gas will be combusted in either the flare or the engines so the potential emissions from the flare and the engines are not additive. The operating scenario that results in the maximum amount of NO_x emissions is when the landfill gas is burned in the engines.[10] Therefore the facility's unrestricted potential emissions are the sum of the miscellaneous sources and the engines, a total of 257.75 tpy. This represents the annual maximum emissions from the facility if all three engines operated continuously at their maximum allowable hourly emission rate for the entire year. Other sources of NO_x and CO emissions at the facility (e.g., diesel engines) are also permitted at their maximum theoretical emission rate, but will likely operate well below those levels.

Given that the unrestricted, theoretical potential emissions of the facility exceed 250 tpy, it is appropriate for NDEP to establish an emission cap of less than 250 tpy (249 tpy) and to require sufficient monitoring to confirm compliance with the cap. But CEMS are not required to provide a reasonable assurance of compliance with the cap because it would be virtually impossible for the engines or the facility to exceed 249 tpy.

In Section II.B. of this brief, CO emission data from the same make and model engines proposed for Lockwood is presented in a bar chart. The data is compelling, representing 35 engine tests for the same engines as those proposed for Lockwood. This data demonstrates consistent engine performance and that there exists a significant margin of compliance between the permitted emission limit and actual expected emissions for CO. An average of all 35 tests results in an average CO emission rate of 11.63 lb/hr (compared to a permit limit of 19.2 lb/hr).[11]

[10] The combustion characteristics of engines are such that they generate a greater amount of NOx than the flare for a given quantity of gas burned.

[11] It is not unusual for permit limits to be established with a reasonable buffer between the permit limit and the expected actual emissions in order to provide a high degree of confidence that the emission limit will be met.

At this emission rate, again assuming continuous[12] operation of all three engines for one year, the Lockwood engines would generate 153 tpy. Adding an additional 6 tpy to account for miscellaneous sources, and annual emissions are estimated to be 159 tpy or 64% of the 249 tpy threshold. Accordingly, there is no realistic concern that the emission cap will be exceeded.

3. Even assuming that an emission cap is necessary to ensure that PSD review is not triggered, NDEP has previously established such caps but without requiring CEMS.

A permit issued to Naniwa Energy, LLC, for six 60 MW combustion turbines just several miles from the Lockwood Landfill establishes a monthly emission cap for CO emissions from the facility of 20.75 tons per calendar month or 249 tpy, the exact same cap required for Lockwood. See NDEP 2896, Exhibit 1. However, in the case of the Naniwa project, there is no CEMS requirement, despite the fact that engines at the Naniwa facility rely on emission controls (CO oxidizing catalyst) and have a much higher potential to emit even with the controls. NDEP 2855, Exhibit 2. The hourly emissions for each of the six turbines at Naniwa is 90 pounds per hour compared to 19.2 pounds per hour for each of the three engines at Lockwood. NDEP 2856, Exhibit 3. Assuming continuous operation of the Naniwa engines, the facility would have an annual emission rate of 2,365 tpy, almost ten times the major source threshold.

Accordingly, NDEP's sole justification for requiring the CO CEMS—to ensure that PSD review is not triggered—is undercut by its own analysis and is inconsistent with how it has addressed the monitoring required for other sources that have a much more realistic chance of triggering PSD review.

[12] The assumption of continuous operation introduces another level of conservatism leading to an overestimation of expected annual emissions. For example, engines must be taken off line for maintenance.

II. NDEP ACTED IN AN ARBITRARY AND CAPRICIOUS[13] MANNER BY FAILING TO CONSIDER THE CONSISTENCY OF THE ENGINES' EMISSIONS.

The requirement for CEMS is premised on the basis that there is a need to continuously monitor an emission unit's emissions. This implies that the unit's emissions are variable to the extent that, without continuous monitoring, emissions from the unit will not be knowable with any reasonable degree of accuracy.

In reaching its decision on the Lockwood LFGTE project, NDEP acknowledges the relevance of variability in assessing the need for CEMS; however, it candidly admits that it entirely failed to assess emissions variability for the Lockwood engines before making a decision to require CEMS. Although NDEP did seek to acquire some data to help it assess the potential for emission variability, it did so only after it issued the Lockwood permit and after RI appealed that decision. Additionally, an examination of a robust set of emission data from the same engines proposed to be used for the Lockwood LFGTE project confirms that these engines can be expected to consistently comply with emission limits.

A. NDEP Acknowledges that it did Not Consider or Understand the Lack of Variability in the Engines' Emissions.

After both the issuance of the Lockwood permit and RI's notice of appeal, NDEP finally became curious about emissions variability for these sources. In a May 25, 2011 e-mail correspondence between NDEP and the South Coast Air Quality Management District ("SCAQMD"), NDEP requested information to help it assess the variability of the engines' emissions:

> As I mentioned, we recently issued a Title V permit revision to a facility for a LFGTE project, requiring CEMS to demonstrate compliance with a CO facility-wide cap, and NO_x PSD increment limits. The permit holder appealed formally, and is claiming that CEMS

[13] As noted in the Standard of Review section of this brief, the SEC will make its own determination of the appropriate monitoring requirements based on its assessment of the evidence presented. It is not necessary for the SEC to conclude that NDEP's determination was arbitrary and capricious or not otherwise based on substantial evidence; the SEC need only determine, based on its judgment, whether the CEMS requirement is excessive and whether, in its view, there exist an alternative monitoring option that will provide a sufficient and reasonable assurance of compliance. Notwithstanding the foregoing, RI believes that, in fact, the record and evidence in this case demonstrate that the CEMS requirement would be arbitrary and capricious and not supported by substantial evidence.

> are unnecessary and unwarranted to demonstrate compliance, arguing that, because emissions change slowly over time, annual stack testing alone would be sufficient to demonstrate compliance. The NDEP is wondering just what the variability of emissions would be for a landfill gas ICE, and we were wondering if SCAQMD could share with us some data, either raw CEMS data (if available) or summary reports that would give us an idea of the variability of the measured pollutant emissions over time, so we can evaluate the permit holder's claim.

E-mail from Pat Mohn to Scott Wilson, SCAQMD (emphasis added) NDEP 1045, Exhibit 4. Significantly, this exchange, as indicated by the e-mail itself, took place after NDEP issued the permit and after the company appealed the permit decision to require CEMS.[14] NDEP's e-mail acknowledges both the relevance of the emission's variability in determining whether CEMS are appropriate and that it failed to consider the same in making its decision.

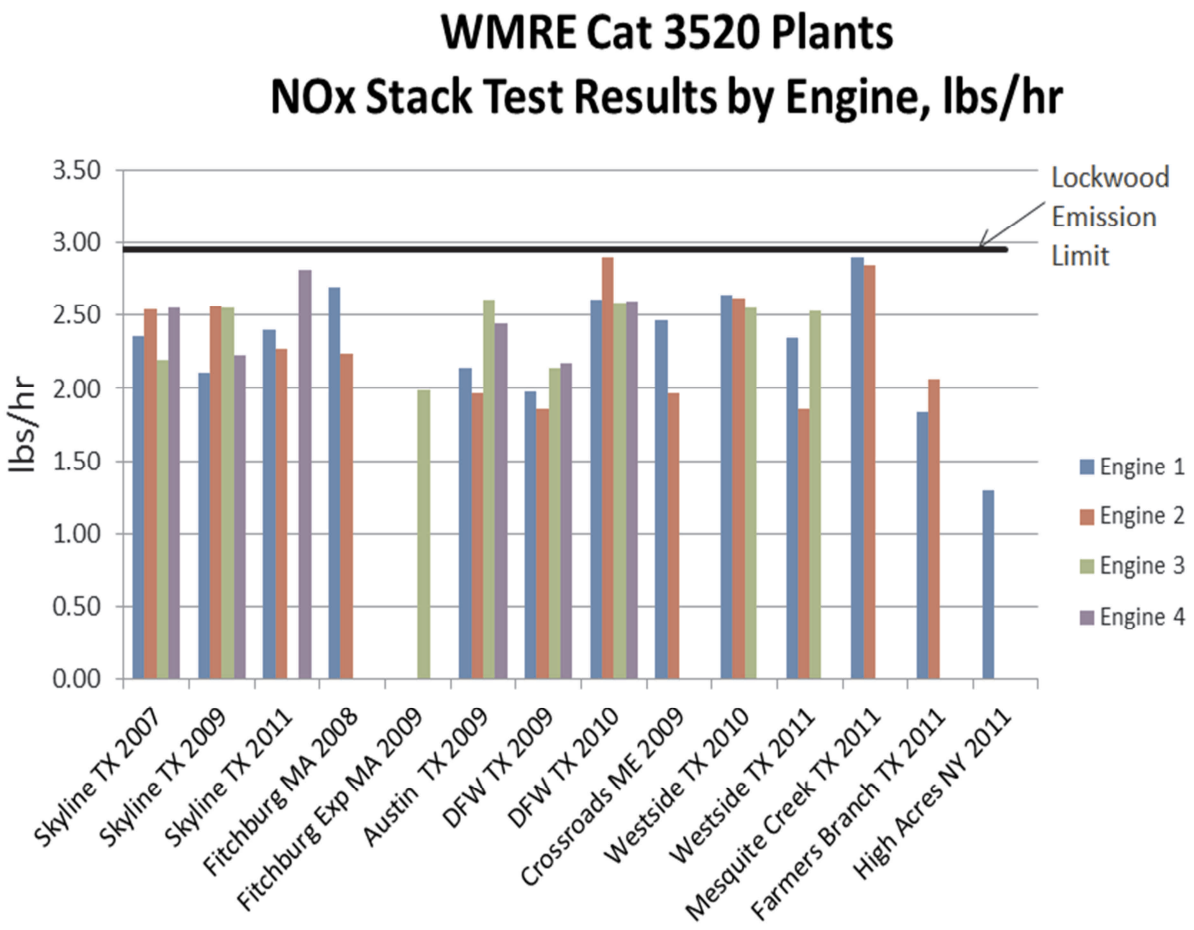
Obviously, this inquiry should have preceded NDEP's determination. How could NDEP claim that continuous monitoring is necessary when it had no idea of the potential for emission variability? *See Great Basin Mine Watch v. State of Nevada*, 2006 WL 1668890, *2 (Nev. April 19, 2006) (finding an agency claim that mistakes in a 1994 water discharge permit supported the agency conclusion to impose a more-lenient standard was a post-hoc rationalization and that "[c]ourts universally reject post-hoc rationalizations as justification for an agency's actions"); *Arrington v. Daniels*, 516 F.3d 1106, 1113 (9th Cir. 2008) (holding that a public-safety rationale by the Bureau of Prisons to exclude certain inmates from early release was not part of the underlying agency record and the reviewing court was "forbidden to consider" the information); *AT&T Info. Sys., Inc. v. Gen. Serv. Admin.*, 810 F.2d 1233, 1236 (D.C. Cir. 1987) (finding that an administrative record may be supplemented with new material that explains the original record, but the new material may not contain justifications that were not in the administrative record); *Stop H-3 Ass'n v. Dole*, 740 F.2d 1442, 1553 n.18 (9th Cir 1984) (finding that an affidavit that was created only for litigation following an agency's initial determination was a post-hoc rationalization that is not allowed in review of agency determinations); *Asarco, Inc. v. Envtl. Prot. Agency*, 616 F.2d 1153, 1159-60 (9th Cir. 1980) (stating that a reviewing court may go outside the administrative record to obtain "background information" that explains the agency

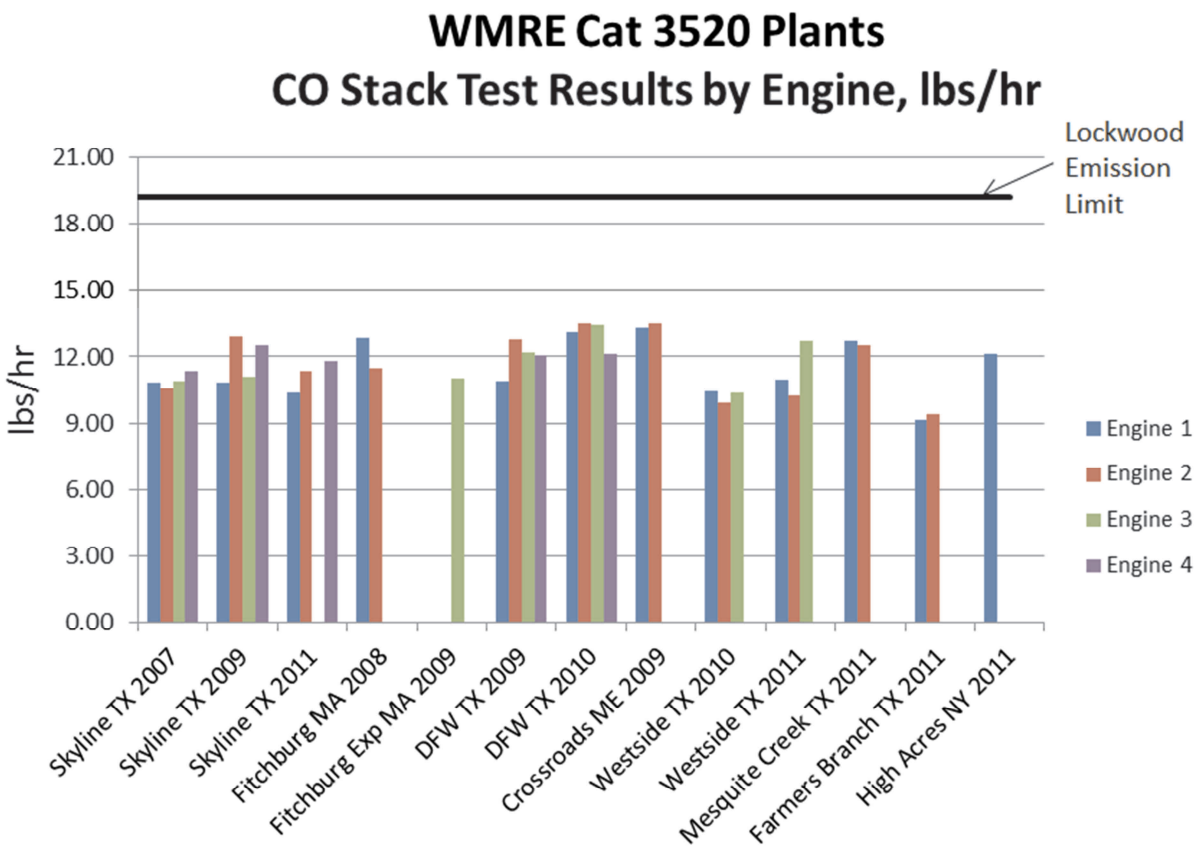
[14] NDEP issued the permit on May 12, 2011. RI filed an appeal on May 23, 2011. NDEP's e-mail request to SCAQMD was dated May 25, 2011.

determination but that any new evidence cannot be used to determine the "correctness or wisdom of the agency's decision").

B. Emissions Data Demonstrate that the Engines will Consistently Comply with their NO_x and CO Emission Limits.

Waste Management, the parent company for RI, has substantial experience with operating and evaluating emissions from the Caterpillar Model 3520 engines, the engines that are proposed for the Lockwood LFGTE project. Waste Management has almost 40 Caterpillar Model 3520 engines in service at various landfill sites throughout the United States for which it has NO_x and CO emissions test data. Typically, air pollution control agencies require annual stack tests. The following graphics show NO_x and CO emissions for those Caterpillar Model 3520 engines operated at Waste Management sites that have comparable NO_x emission limits to those established for the Lockwood engines:





As this data demonstrates, without exception, the engines have demonstrated compliance with their NO_x and CO emission limits. Average NO_x emissions from the engines are 2.34 lb/hr (compared to an emission limit of 2.95 lb/hr) and average CO emissions are 11.63 lb/hr (compared to an emission limit of 19.2 lb/hr). The data supporting these summary tables is provided on the CD attached to this brief as Exhibit 5.

III. NDEP'S DETERMINATION TO REQUIRE CEMS IS NOT SUPPORTED BY THE PRINCIPLES OF PERIODIC MONITORING.

The rule cited by NDEP as the basis for requiring CEMS, NAC 445B.3405.1(c)(3), is based on what is known as the Title V periodic monitoring rule.[15] EPA has issued guidance that

[15] *Compare* NAC 445B.3405.1(c)(3) (requiring that permits "[c]ontain requirements for monitoring that are sufficient to ensure compliance with the conditions of the operating permit … .") *with* 40 C.F.R. 70.6(a)(3)(B) (requiring that permits contain "periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit ….").

details the factors that should be considered when determining the stringency of monitoring that should be required in a particular circumstance. These common-sense factors may be summarized as follows:

- The likelihood of violating the applicable requirement (i.e., margin of compliance with the applicable requirement).
- Whether add-on controls are necessary for the unit to meet the emission limit.
- The variability of emissions from the unit over time.
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit.
- The technical and economic considerations associated with the range of possible monitoring methods.
- The kind of monitoring found on similar emission units.

See EPA memorandum regarding Periodic Monitoring Guidance for Title V Operating Permits Programs, from Eric V. Schaeffer, Director, Office of Regulatory Enforcement, and John S. Seitz, Director, Office of Air Quality Planning and Standards (Sept. 15, 1998).[16] An application of these factors to the Lockwood LFGTE project (shown in *italics*) demonstrates that all relevant factors weigh against requiring CEMS:

- Likelihood of violating the applicable requirement: *As shown in Section II.B. of this brief, a robust data set demonstrates a high degree of confidence that the engines will comply with the emission limitations.*
- Presence of add-on controls: *NDEP has not required emission controls. Hence, add-on controls are not required or necessary to meet the emission limits and there is no potential for emission controls to malfunction and result in excess emissions.*[17]
- Variability of emissions: *Again, as shown in Section II.B. of this brief, a robust data set demonstrates that the engines' emissions will not vary significantly over time and will consistently comply with the emission limitations.*
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit. *The permit issued by NDEP imposes a number of emission-related limitations and monitoring requirements. These limits and*

[16] While this guidance was set aside by the United States Court of Appeals for the District of Columbia Circuit in Appalachian Power Co. v. EPA, 208 F.3d 1015 (D.C. Cir. 2000), as a result of EPA's failure to proceed through proper rulemaking procedures, the court did not specifically address the merits of EPA's factors. Indeed, RI would not anticipate that NDEP would take issue with the relevance of these common-sense factors when making determinations regarding appropriate monitoring.

[17] The importance of the absence of emission controls is further addressed in the next section of this brief.

monitoring relate to hours of operation, amount of LFG that can be burned and the requirement to conduct annual reference method emission testing for NO_x and CO. Such testing is what NDEP typically relies on for ensuring compliance with emission limits. In fact, the Lockwood permit expressly provides that the NO_x and CO testing will be used for purposes of demonstrating "initial and continued compliance with hourly emission rate limits…." In other words, even without the CEMS there exists sufficient monitoring under the circumstances to provide a reasonable assurance of compliance. Additionally, and, as discussed below, there is a ready alternative to CEMS.

- The technical and economic considerations associated with the range of possible monitoring methods. *In its comments on the draft permit, RI explained that "A CEMS for the facility will represent up to $500,000 in capital costs and approximately $40,000 in annual operating costs. Requiring a CEMS for small facilities such as Lockwood could very well prevent the development of other similar projects which are already struggling due to economic viability." See RI Comment No. 9, letter from SCS Engineers on behalf of RI to NDEP (March 15, 2011), regarding, Comments on Draft Class 1 Air Quality Operating Permit. Nowhere in the permitting record does NDEP respond to or otherwise indicate that it has considered this information. For small sources of emissions such as the Lockwood engines, CEMS present a disproportionately costly method of monitoring and is not necessary to provide a reasonable assurance of compliance.*

- The kind of monitoring found on similar emission units. *As shown in Section V. of this brief, CEMS monitoring on these types of engines is essentially unprecedented.*

IV. CEMS ARE NOT REQUIRED BY ENHANCED MONITORING REQUIREMENTS

Pursuant to Section 114(a)(3) of the Clean Air Act, EPA is required to establish "enhanced monitoring" requirements for "major stationary sources." The purpose of this requirement is to ensure an enhanced level of monitoring for certain large sources of emissions for which a higher level of scrutiny is warranted. To implement this requirement, EPA enacted the Compliance Assurance Monitoring ("CAM") rule. The CAM regulations are found in 40 C.F.R. Part 64. Whether a particular emission unit is subject to CAM is determined based on several factors including (i) that there be an enforceable emission limitation that relies on an emission control to be achieved and (ii) an emission unit has the potential to emit, without taking into account emission controls, emissions of a pollutant equal to or greater than the major source threshold for that pollutant. See 40 C.F.R. § 64.2(a).

The engines at Lockwood are not subject to the CAM requirements because they do not meet either of these criteria. First, the engines do not rely on controls to meet their emission limitation. EPA limited CAM to only those emission units that rely upon controls to meet their emission limits because it determined that those were the emission units that have the potential to result in significant emission variation should the controls malfunction. Emission units without controls, on the other hand, are not subject to such variations:

> The applicability provisions in § 64.2 [of the CAM rule] reflect EPA's decision to focus part 64 requirements on units that use control devices to achieve compliance. The types of emission exceedance problems that can arise from poor operation and maintenance of a control device can be severe and represent a significant compliance concern.

62 Fed. Reg. 54900, 54911 (Oct. 22, 1977) (final CAM rule). This is consistent with periodic monitoring principles discussed in the previous section of this brief. Clearly, the failure of an emission control can result in a significant variance in emissions. Emission controls frequently achieve an emission reduction greater than 90%. So, for example, an emission unit with a pre-controlled potential of 1,000 tpy that is subject to a 90% control requirement will emit at 100 tpy or less so long as the control is properly functioning. However, should the control malfunction, there could potentially be as much as a ten-fold increase in emissions, up to 1,000 tpy. One can readily understand why applicability of the enhanced monitoring rule is predicated in large part on the presence or absence of emission controls.

Additionally, the engines are not subject to CAM because each engine's emissions are less than the major source thresholds for NO_x and CO of 100 tpy.[18] In summary, notwithstanding the fact that the engines are not subject to the CAM requirements, NDEP has nonetheless imposed CEMS, the most stringent of emission monitoring requirements.[19]

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[18] Each engine is limited to a maximum allowable annual emissions of 12.94 tpy NOx and 84 tpy CO. See Conditions VI.I(2)(f) and (g) of the final permit. Actual emissions from each engine will likely be significantly less since these allowable emissions assume that the engines will operate continuously for the year at their maximum allowable emission rates.

[19] It is worth noting that, even if the engines were subject to CAM, CEMS would not necessarily, or even likely, be required. See 40 C.F.R. 64.3; 62 Fed. Reg. at 54923.

V. NDEP'S REQUIREMENT FOR CEMS IS UNPRECEDENTED BOTH NATIONALLY AND WITHIN NEVADA

Requiring CEMS on units such as the Lockwood engines is unprecedented absent extraordinary circumstances not present here.

In RI's comments on NDEP's proposed CEMS requirement, RI pointed out that NDEP's determination to require CEMS was without precedent nationally. RI identified the following partial list of landfills with LFGTE facilities in the western region that have been permitted and were not required to install and operate a CEMS:

Arizona

- Tri-Cities Landfill
- Skunk Creek Landfill

California

- Keller Canyon Landfill
- Crazy Horse Landfill
- Ostrom Road Landfill
- Newby Island Landfill
- Guadalupe Landfill
- Mountain View Landfill
- City of Sunnyvale Landfill
- Otay Landfill
- Sycamore Landfill
- San Marcos Landfill
- Sonoma Central Landfill
- Marina Landfill
- Buena Vista Landfill
- Johnson Canyon Landfill
- Visalia Landfill
- Woodville Landfill
- Western Regional Landfill
- Yolo Central Landfill
- Miramar Landfill
- Simi Valley Landfill
- Altamont Landfill

Colorado

- Denver Arapahoe Disposal Site (DADS)

Idaho

- Fighting Creek Landfill

Oregon

- Riverbend Landfill
- Columbia Ridge Landfill and Recycling Center

See RI Comment Letter at 5-6 (Mar. 15, 2011). Additionally, RI's parent company, Waste Management operates 64 LFGTE projects in 23 states and Canada. With the exception of 2 projects located in the SCAQMD's jurisdiction (discussed in the next paragraph), none require CEMS.

In its survey of other jurisdictions, RI did bring to NDEP's attention two instances where CEMS were in use at LFGTE projects; however, both instances involve very unique circumstances not applicable to the Lockwood LFGTE project. One situation involves a landfill operating in the South Coast Air Quality Management District ("SCAQMD") in the greater Los Angeles area. This area has been designated as an extreme nonattainment area for ozone (for which NO_x is a precursor). Under the federal Clean Air Act, this designation carries with it a major source threshold for NO_x of 10 tpy. See 42 U.S.C. § 7511a(e). Further, the Los Angeles area is designated as a serious nonattainment area for CO, resulting in a major source threshold for CO of 50 tpy. See 42 U.S.C. § 7512a(c). By comparison, the Lockwood landfill is located in an area that is attainment for both ozone and CO and the major source thresholds for both NO_x and CO are 250 tpy.

The extreme nonattainment area designation for ozone and the serious nonattainment area designation for CO, respectively, are the most stringent designations established by the federal Clean Air Act, requiring the most onerous air pollution control measures. See 42 U.S.C. §§ 7511-7511f, 7512-7512a. Accordingly, the SCAQMD has enacted specific rules imposing stringent NO_x and CO emissions limits on internal combustion engines. See SCAQMD Rule 1110.2. The limits are sufficiently stringent that emission controls will be necessary to comply with them.[20]

[20] The table below provides a comparison of the concentration of NOx and CO emissions for the Lockwood engines compared to the limits imposed by the SCAQMD rule. (The emission limits specified in the Lockwood permit are expressed in pound per hour. The table below expresses them on a parts-per-million-volume-equivalent basis to allow a direct comparison to the SCAQMD limits.)

The rule specifically establishes a requirement for CEMS in order to verify compliance with the rule's stringent emission limits. In view of the generally good air quality in Nevada, the Clean Air Act does not mandate, and the SEC has not required, such limits and monitoring in Nevada.

Additionally, RI identified one facility in the Bay Area Air Quality Management District ("BAAQMD") that operates a CEMS; however, this monitoring was agreed upon as part of an experimental project for testing various emission controls and not as the result of a compliance monitoring requirement. In fact, this facility has six engines. Only the engine that is being used to evaluate emission controls is utilizing a CEMS.

Based on documents provided by NDEP, there appear to be a total of sixteen permits issued by NDEP requiring CEMS.[21] In the vast majority of those instances, it appears that the emission units subject to CEMS are either subject to (i) a federal regulatory requirement to do so[22] and/or (ii) an emission control, the malfunctioning of which might lead to a significant increase in emissions. There are no specific federal (or state) regulatory requirements that require CEMS for the Lockwood LFGTE project. Additionally, the engines are not subject to emission controls.

VI. NDEP ACTED IN AN ARBITRARY AND CAPRICIOUS MANNER BY FAILING TO CONSIDER ALTERNATIVE MONITORING OPTIONS THAT COULD PROVIDE RELIABLE EMISSIONS DATA.

Even assuming that more robust emissions data is warranted than the annual stack test that NDEP typically requires for sources such as the Lockwood engines, there exists a far more

Pollutant	Lockwood Engine (Equivalent ppmv values based on pound-per-hour emission limits.)	SCAQMD Rule Limit (Rule 1110.2) Table III (Effective July 1, 2012)
NOx	42 ppmv	11 ppmv
CO	452 ppmv	250 ppmv

[21] RI does not have access to the entire permitting record for these facilities and had a limited amount of time to review them. RI has tried to be as accurate as possible in characterizing the CEMS requirements for these facilities.

[22] This federal requirement is usually pursuant to the Clean Air Act's Acid Rain Program.

reasonable alternative to CEMS; that is, the use of hand-held analyzers to provide more frequent (for example, monthly) emission measurements to confirm engine emission performance. These analyzers can be used to provide direct measurement of the emission concentration of NOx and CO in the engine exhaust and allow RI and NDEP to verify the consistency of emissions over time. Analyzers such as these have been accepted across the Country including in Arizona, California and Texas.[23]

RI proposed to NDEP using the ECOM J2KN portable emission analyzer for conducting periodic emissions monitoring to supplement other monitoring required by the permit and to further document the consistent performance of the engines. The ECOM J2KN analyzer has an accuracy of ±2%. A copy of ECOM's brochure for the analyzer is attached as Exhibit 7 to this brief.

Waste Management has used the portable analyzers at more than ten landfill sites in the United States as directed by local and state air quality agencies. An example of a Waste Management permit condition requiring the use of potable analyzers to monitor NOx and CO emission contained in a permit issued by the New York State Department of Environmental Conservation is attached as Exhibit 8.

Excluding the CEMS requirement, the permit issued by NDEP contains all of the conditions that are typically specified by NDEP and relied upon by NDEP to verify compliance with emission limits and estimating annual emissions. These conditions include the requirement to conduct annual emission testing and the requirements to monitor and record the amount of

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[23] At an April 14, 2011 meeting between RI and NDEP, RI proposed the use of portable emission analyzer's as an alternative to CEMS and agreed to provide NDEP additional information documenting the use and acceptance of portable analyzers as an alternative to CEMS in other jurisdictions. Accordingly, under cover dated April 21, 2011, RI's engineering consultants, SCS Engineers, provided information documenting the acceptability of this technology in Maricopa County, Arizona, San Joaquin Valley, California, Ventura County, California, the State of Texas, and the Bay Area Quality Management District in California. See letter from Patrick S. Sullivan, Senior Vice President, to Pat Mohn, NDEP, regarding Information Requested at Meeting (April 21, 2011) (Exhibit 6) (Exhibit contains letter only. A copy of the letter and complete attachments can be found beginning at NDEP475 of documents produced by NDEP). RI also stated that it would be available to meet or have a conference call with NDEP to further discuss the use of analyzers as an alternative to CEMS. Unfortunately, there was no further communication from NDEP on the CEMS issue and NDEP issued the final permit with CEMS under cover dated May 12, 2011. Neither NDEP's Technical Review document nor its responses to comments addressed RI's request that NDEP consider the use of hand-held analyzers as an alternative to CEMS.

landfill gas being combusted, the power output for each engine, the hours of engine operation and the heating value of the landfill gas. These types of conditions are usually, by themselves, deemed sufficient by NDEP. The proposal for analyzers would be in addition to these typical monitoring requirements.

REQUESTED RELIEF

In view of the arguments made in this brief, RI respectfully requests that the SEC order NDEP to expedite processing of a significant modification of RI's permit to remove the requirements related to the CEMS and to specify an alternative monitoring option based on hand-held analyzers.[24] RI has previously submitted a complete application and NDEP has issued a permit and the necessary changes required to the permit are limited. RI will submit proposed permit language to the SEC at the scheduled hearing that will address the alternative monitoring option based on hand-held analyzers. RI requests that the SEC direct NDEP to accept the previously submitted application along with the proposed permit language as a complete application, effective immediately. RI further requests that the SEC direct NDEP to immediately initiate public and EPA review and to run the reviews concurrently to the greatest extent possible. Finally, RI respectfully request that the SEC direct NDEP to issue a final permit revision no later than 5 days following completion of public and EPA review.

DATED this 22nd day of August, 2011.

/s/ Richard J. Angell
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[24] RI understands that a significant permit revision is required to modify the CEMS requirement.

CERTIFICATE OF SERVICE

I, Richard J. Angell, certify that I am an employee of Parsons Behle & Latimer, and that on this 22nd day of August, 2011, I deposited for mailing a true and correct copy of the foregoing **REFUSE, INC.'S OPENING BRIEF**, via United States Postal Service in Salt Lake City, Utah, by first class mail, postage prepaid, to the following:

Jasmine K. Mehta
Deputy Attorney General
Nevada Attorney General's Office
100 North Carson Street
Carson City, NV 89701

/s/ Richard J. Angell