Statement of Basis

Permit to Construct No. P-2011.0054
Project ID 61834

Milner Butte Landfill
Burley, Idaho

Facility ID 031-00046

Final

July 28, 2017
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Permit Writer

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

acfm	actual cubic feet per minute
Btu	British thermal units
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CI	compression ignition
CO	carbon monoxide
DEQ	Department of Environmental Quality
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
hp	horsepower
hr/yr	hours per consecutive 12 calendar month period
ICE	internal combustion engines
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometers
lb/hr	pounds per hour
m	meters
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
POM	polycyclic organic matter
ppm	parts per million
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
RICE	reciprocating internal combustion engines
Rules	*Rules for the Control of Air Pollution in Idaho*
scfm	standard cubic feet per minute
SCL	significant contribution limits
SIP	State Implementation Plan
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO_2	sulfur dioxide
SO_x	sulfur oxides
TAP	toxic air pollutants
U.S.C.	United States Code
VOC	volatile organic compounds
$\mu g/m^3$	micrograms per cubic meter

FACILITY INFORMATION

Description

The Milner Butte Landfill (MBL), owned and operated by Southern Idaho Regional Solid Waste District (SISW), is located in Burley, Idaho. The MBL is located in Western Cassia approximately 13 miles west of Burley, Idaho and 25 miles east of Twin Falls, Idaho. The site lies near the East slope of Milner Butte and occupies 640 acres. The site began accepting waste in 1994. The landfill has a current overall permitted capacity of 140 acres and accepts mixed municipal solid waste from seven counties in southern Idaho.

Based upon an estimated annual increase of 1.5 percent in waste acceptance rates for the landfill for year 2011 and onward and the total maximum permitted waste capacity of the landfill (19,400,000 cubic yards), it is estimated that the final maximum permitted capacity will be reached by 2060.

The existing Gas Collection and Control System (GCCS) was constructed during 2009. To increase coverage, five (5) vertical extraction wells were installed in May 2010 and connected to the system on June 5, 2010. The existing GCCS consists of a header piping network, vertical gas extraction wells, horizontal gas collectors, condensate collection, connections to the existing Leachate Collection and Recovery System (LCRS), and a blower/flare station. The current permitting action is to add two internal combustion engines to generate power from landfill gas and to add landfill gas treatment (filtering with a 10 micron screen, dewatering and compressing) that meets the requirements of treatment in accordance with 40 CFR 60.752(b)(2)(iii)(C).

The blower/flare station is equipped with two blowers and a single enclosed flare. A second blower is used in the event of a breakdown or subsequent maintenance to the primary blower. The blowers are manufactured by Houston Service Industries (HSI) and are rated at 30 horsepower (HP) each. The flare was manufactured by Perennial Energy and has a maximum rating of 1,500 standard cubic feet per minute (scfm) at 50 % methane. The flare is equipped with:

- Continuous temperature and flow recorder
- Flow meter
- UV flame scanner to monitor for flame failure
- Automated shut-off (isolation valve) to close off the gas supply to the flare and avoid venting to atmosphere
- Flame arrestor

Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

April 12, 2012	P-2011.0054, Initial Permit to Construct, Permit status A, but will become S upon issuance of this permit
April 24, 2012	T1-2011.0076, Initial Tier I Permit status A

Application Scope

This PTC is for a modification at an existing Tier I facility. See the current Tier I permit Statement of Basis for the permitting history.

The applicant has proposed to:

- Install and operate two1, 810 horse-power generator engines that will operate on landfill gas.

- Reduce the allowable concentration of hydrogen sulfide in the landfill gas from 785 ppmv to 150 ppmv.

- Treat landfill gas prior to combustion in the engines to meet the requirements of "treatment" in accordance with 40 CFR 60.752(b)(2)(iii)(C). Treatment consists of filtering with a 10 micron screen, dewatering and compressing the landfill gas.

Application Chronology

January 4, 2017	DEQ received an application fee.
January 6, 2017	DEQ received an application.
2/22/17 – 3/9/17	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
February 1, 2017	DEQ determined that the application was incomplete.
February 9, 2017	DEQ received supplemental information from the applicant.
February 22, 2017	DEQ determined that the application was complete.
March 22, 2017	DEQ made available the draft permit and Statement of Basis for peer and regional office review.
April 24, 2017	DEQ made available the draft permit and Statement of Basis for applicant review.
April 27, 2017	DEQ received the permit processing fee.
June 13 – July 13, 2017	DEQ provided a public comment period on the proposed action.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Emissions Units / Processes	Emission Control Devices
Landfill Max. Capacity: 19,400,000 cubic yards Date of Construction: 1993	Flare Manufacturer: Perennial Energy, Inc. Model No.: FL114-32-E And/Or Landfill Gas Conditioning Skid (Gas Filtering with a 10 micron screen, dewatering, and compressing) Manufacturer: LFG Specialties, Capital Services, CB&I Rated Capacity: 1,000 scfm
Engine Generator Sets (2) Manufacturer: Dresser Rand Model: HGM 560 Engine Rated Capacity: 1,750 Hp (each, @ 4,390 feet and 86° F) Electric Generator Power Rating: 1,263 kW (each, @ 4,390 feet and 86° F)	None

Emissions Inventories

Potential to Emit

IDAPA 58.01.01 defines Potential to Emit as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Pre-Project Potential to Emit

Pre-project Potential to Emit is used to establish the baseline for assessing the change in emissions at a facility as a result of this project. The project consists of adding two internal combustion engines.

The following table presents the pre-project potential to emit for all criteria pollutants from the enclosed flare as documented in the April 10, 2012 Statement of Basis for PTC No. P-2011.0054 issued April 12, 2012.

Table 2 PRE-PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$	SO_2	NO_X	CO	VOC
	T/yr[(a)]	T/yr[(a)]	T/yr[(a)]	T/yr[(a)]	T/yr[(a)]
Flare	3.29	51.5	11.83	39.42	0.83

a) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Post Project Potential to Emit

Post project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility's classification as a result of this project. Post project Potential to Emit includes all emission units that are part of this project (reduce allowable H_2S concentrations and add two engines).

See Appendix A for a detailed presentation of the calculations of these emissions units that were provided by the applicant and reviewed by DEQ.

Table 3 provides a summary of the emission inventory.

Table 3 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$	SO_2	NO_X	CO	VOC
	T/yr[(a)]	T/yr[(a)]	T/yr[(a)]	T/yr[(a)]	T/yr[(a)]
Flare	1.16	4.30	3.02	3.56	1.42
Engine #1	0.49	2.68	21	46.1	14.7
Engine #2	0.49	2.68	21	46.1	14.7
Post Project Totals	**2.14**	**9.66**	**45.02**	**95.76**	**30.82**

a) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Change in Potential to Emit

The change in facility-wide potential to emit is used to determine if a public comment period may be required and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

Table 4 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$	SO_2	NO_X	CO	VOC
	T/yr	T/yr	T/yr	T/yr	T/yr
Pre-Project Potential to Emit	3.29	51.5	11.83	39.42	0.83
Post Project Potential to Emit	2.14	9.66	45.02	95.76	30.82
Changes in Potential to Emit	**-1.15**	**-41.84**	**33.19**	**56.34**	**29.99**

TAP Emissions

The only sources that are subject preconstruction compliance for toxic air pollutants are the two new engines.

These engines are regulated by 40 CFR 63 Subpart ZZZZ and must comply with that subpart by complying with the requirements of 40 CFR 60 Subpart JJJJ for new spark ignition internal combustion engines. Therefore, in accordance with IDAPA 58.01.01.210.20, since the engines are NESHAP affected emission units, the only toxic air pollutants that are subject to preconstruction compliance are those that are listed in Section 585 and 586 of the Rules that are not EPA listed hazardous air pollutants. The toxic air pollutants subject to preconstruction compliance for the engines are listed in Table 5.

Table 5 POST PROJECT POTENTIAL TO EMIT FOR TOXIC AIR POLLUTANTS

Non-Carcinogenic Toxic Air Pollutants	Post Project 24-hour Average Emissions Rates for new engines (lb/hr)	Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
2-Hexanone (Methyl butyl ketone)	3.912E-04	1.330E+00	No
2-Propanol (Isopropyl alcohol)	6.892E-04	6.530E+01	No
Acetone	2.479E-03	1.190E+02	No
Chlorobenzene	3.471E-04	2.330E+01	No
Cyclohexene	9.629E-06	6.770E+01	No
Cyclopentane	9.874E-06	1.147E+02	No
Ethyl acetate	1.055E-03	9.330E+01	No
Ethyl mercaptan (Ethanediol)	7.839E-05	6.700E-02	No
Heptane	8.554E-04	1.090E+02	No
Hydrogen sulfide	6.948E-03	9.330E-01	No
Nonane	1.937E-03	7.000E+01	No
Octane	7.860E-04	9.330E+01	No
Pentane	2.050E-03	1.180E+02	No
methylcyclohexane	8.070E-04	1.070E+02	No

None of the toxic air pollutant screening emission levels were exceeded as a result of this project. Therefore, modeling is not required and preconstruction compliance has been demonstrated.

Post Project HAP Emissions

Table 6 lists the facility-wide HAP emissions rates estimated by the applicant with the exception of mercury emissions. The applicant had inadvertently applied a combustion destruction efficiency for mercury, that over sight was corrected and is reflected in Table 6. The quantity of HAP emissions have no bearing on applicability of any state or federal regulation, except for mercury which has a modification threshold of 25 pounds per year at which emissions would trigger the mercury BACT requirement. Facility-wide mercury emissions are less than a tenth of a pound per year and mercury requirements are not triggered.

Table 6 HAZARDOUS AIR POLLUTANTS EMISSIONS POTENTIAL TO EMIT SUMMARY

Hazardous Air Pollutants	PTE (T/yr)
1,1,1-Trichloroethane	1.545E-03
1,1,2,2-Tetrachloroethane	4.279E-03
1,1,2,3,4,4-Hexachloro-1,3-butadiene (Hexachlorobutadiene)	4.337E-05
1,1,2-Trichloroethane	1.004E-03
1,1-Dichloroethane	9.809E-03
1,1-Dichloroethene (1,1-Dichloroethylene)	7.392E-04
1,2,4-Trichlorobenzene	4.765E-05
1,2-Dibromoethane (Ethylene dibromide)	4.297E-05
1,2-Dichloroethane (Ethylene dichloride)	7.498E-04
1,2-Dichloropropane	2.800E-04
1,3-Butadiene (Vinyl ethylene)	4.279E-04
1,4-Dioxane (1,4-Diethylene dioxide)	3.481E-05
2,2,4-Trimethylpentane	7.847E-03
4-Methyl-2-pentanone (MIBK)	4.215E-03
Acetaldehyde	1.625E-04
Acetonitrile	1.088E-03
Acrylonitrile	0.000E+00
Anthracene	3.092E-09
SUM OF POMs	1.469E-08
Benzyl chloride	1.033E-04
Bromomethane (Methyl bromide)	2.767E-04
Carbon disulfide	3.366E-04
Carbon tetrachloride	1.790E-04
Carbonyl sulfide (Carbon oxysulfide)	1.564E-03
Chlorodifluoromethane (Freon 22)	6.953E-03
Chloroethane (Ethyl chloride)	7.354E-03
Chloromethane (Methyl chloride)	1.066E-02
Dichloromethane (Methylene chloride)	1.560E-02
Ethylbenzene	1.440E-02
Isopropylbenzene (Cumene)	2.288E-03
Mercury (total)	2.37E-05
Phenanathrene	6.192E-05
Styrene (Vinylbenzene)	3.343E-03
Tetrachloroethylene (Perchloroethylene)	9.561E-03
Tribromomethane (Bromoform)	1.840E-03
Trichloroethylene (Trichloroethene)	4.789E-03
Trichloromethane (Chloroform)	2.965E-03
Vinyl acetate	2.483E-03
Vinyl chloride (Chloroethene)	6.179E-03
1,4-Dichlorobenzene	9.134E-03
Formaldehyde	3.773E-04
Benzene	5.892E-02
Hexane	7.455E-03
Naphthalene	3.835E-04
Toluene (Methyl benzene)	1.295E-01
Totals	**0.34**

Ambient Air Quality Impact Analyses

An ambient air quality impact analyses document has been crafted by DEQ based on a review of the modeling analysis submitted in the application. That document is part of the final permit package for this permitting action (see Appendix B).

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Cassia County, which is designated as attainment or unclassifiable for $PM_{2.5}$, PM_{10}, SO_2, NO_2, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

Facility Classification

The facility classification codes are as follows:

For HAPs (Hazardous Air Pollutants) Only:

A = Use when any one HAP has actual or potential emissions ≥ 10 T/yr or if the aggregate of all HAPS (Total HAPs) has actual or potential emissions ≥ 25 T/yr.

SM80 = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the permit sets limits ≥ 8 T/yr of a single HAP or ≥ 20 T/yr of THAP.

SM = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the potential HAP emissions are limited to < 8 T/yr of a single HAP and/or < 20 T/yr of THAP.

B = Use when the potential to emit without permit restrictions is below the 10 and 25 T/yr major source threshold

UNK = Class is unknown

For All Other Pollutants:

A = Actual or potential emissions of a pollutant are ≥ 100 T/yr.

SM80 = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are ≥ 80 T/yr.

SM = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are < 80 T/yr.

B = Actual and potential emissions are < 100 T/yr without permit restrictions.

UNK = Class is unknown.

Table 7 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION

Pollutant	Uncontrolled PTE (T/yr)	Permitted PTE (T/yr)	Major Source Thresholds (T/yr)	AIRS/AFS Classification
PM	<2.91	2.1	**100**	B
PM_{10}	<2.8	2.1	**100**	B
$PM_{2.5}$	<2.8	2.1	**100**	B
SO_2	0.79[a]	9.7	**100**	B
NO_X	0.54[a]	45.0	**100**	B
CO	0.15[a]	95.8	**100**	B
VOC	57.8	30.8	**100**	B
HAP (single)	2.59	0.13	**10**	B
HAP (total)	6.78	0.34	**25**	B
Pb	Negligible	Negligible	**100**	B

a) There is not combustion byproducts for uncontrolled emissions from the landfill gas, therefore uncontrolled emissions are significantly less than permitted emissions (i.e. controlled emissions).

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201 ..... Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the two new engines. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Permit to Construct Procedures for Tier I Sources (IDAPA 58.01.01.209.05)

Milner Butte has requested that the PTC be incorporated into the Tier I permit at the time of renewal in accordance with 58.01.01.209.05.a.iv. DEQ is currently processing the Tier I renewal application.

Tier I Operating Permit (IDAPA 58.01.01.301)

The facility is subject to Tier I permitting as detailed in the April 20, 2012 Statement of Basis for the issuance of permit number T1-2011.0076 on April 24, 2012. Even though this source is a minor source, in accordance with IDAPA 58.01.01.859.04.c, the facility "...must submit a complete Federal Operating Permit application within one (1) year of becoming subject to this requirement." The facility became subject to this requirement with the promulgation of the NSPS Subpart WWW on March 16, 1996 and subsequent design capacity report submittal required by June 10, 1996. The facility applied for and was issued a Tier I operating permit. The applicant currently has an application submitted to renew that Tier I permit.

Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401 ..... Tier II Operating Permit

The application was submitted for a permit to construct (refer to the Permit to Construct section), and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625..... Visible Emissions

The sources of PM emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity.

Rules for the Control of Odors (IDAPA 58.01.01.676)

IDAPA 58.01.01.776.01 ..... General Restrictions

No person shall allow, suffer, cause or permit the emission of odorous gases, liquids or solids into the atmosphere in such quantities as to cause air pollution.

This requirement has been added to the permit.

Standards of Performance for Municipal Solid Waste Landfills that Commenced Construction, Reconstruction or Modifications on or After May 30, 1991. (IDAPA 58.01.01.859)

As detailed in the April 20, 2012 Statement of Basis that supports the issuance of permit number T1-2011.0076 on April 24, 2012 the facility is subject to this regulation. In short, the source must comply with 40 CFR 60 Subpart WWW. The requirements of Subpart WWW are included in the existing permit. No new requirements of IDAPA 58.01.01.859 are triggered. A detailed review of this regulation is provided in the April 20, 2012 Statement of Basis that supports the issuance of permit number T1-2011.0076 on April 24, 2012.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 ..... Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore, in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

NSPS Applicability (40 CFR 60)

40 CFR 60, Subpart WWW ..... Standards of Performance for Municipal Solid Waste Landfills

DEQ is delegated this Subpart.

The majority of the applicable requirements of this Subpart are in the existing permit. The one new requirement is to treat the landfill gases prior to sale or use in accordance with 40 CFR 60.752(b)(2)(iii)(C).

40 CFR 60.752(b)(2)(iii) specifies source shall route all the collected gas to a control system that complies with the requirements in either paragraph (b)(2)(iii) (A), (B) or (C) of this section.

(A) An open flare designed and operated in accordance with §60.18 except as noted in §60.754(e);

Milner Butte has not elected to use this option to comply with the NSPS.

(B) A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in §60.754(d).

(*1*) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.

(*2*) The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in §60.756;

This is one of the two options Milner Butte has elected to comply with.

(C) Route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of paragraph (b)(2)(iii) (A) or (B) of this section.

This is also an option that Milner Butte has chosen to comply with the NSPS requirements.

Although the NSPS does not define what the treatment system must consist of there are several EPA guidances describing what is acceptable. EPA has determined[1] *that treatment may consist of filtering with a 10 micron screen, dewatering and compressing the landfill gas constitutes treatment for this NSPS. That is what Milner Butte has proposed to do. The use of the treated landfill gas in the two new engines is not regulated by this Subpart.*

All other applicable provisions remain unchanged from the previous permitting action and are not repeated in this statement of Basis.

40 CFR 60, Subpart JJJJ..... Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

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1 January 17, 2001 EPA letter to Gregory J. Graetz, Project Engineer, Derenzo and Associates, Inc. from George T. Czeriak, Chief, Air Enforcement and Compliance Assurance Branch, EPA

DEQ is delegated this Subpart

A detailed regulatory review of this subpart is provided in Appendix C. In short, the engines have carbon monoxide, nitrogen oxide and VOC emissions standards (40 CFR 60 Subpart JJJJ Table 1) and an initial performance test must be conducted (within 180 days of startup) and then tests are required every 8,760 hours or 3 years, whichever comes first, and thereafter to demonstrate compliance.

NESHAP Applicability (40 CFR 61& 63)

This permitting action for the addition of two engines does not alter the applicability status for any existing NESHAP affected sources at the facility. As detailed in the April 20, 2012 Statement of Basis that supports the issuance of permit number T1-2011.0076 on April 24, 2012 the source is subject to 40 CFR 61 Subpart M and 40 CFR 63 Subpart AAAA. These requirements are included in the Tier I operating permit that is currently being processed for renewal.

Permit Conditions Review

This section describes only those permit conditions that have been added, revised, modified or deleted as a result of this permitting action. All permit conditions have been renumbered to match DEQ's current numbering format.

Permit Condition 2.3

This permit condition had specified that:

"The hydrogen sulfide concentration in the landfill gas being burned in the flare shall not exceed 785 ppmv."

It has been revised to match the emission inventory and associated ambient impact modeling analysis as follows:

2.3.1 Hydrogen Sulfide Limit

The hydrogen sulfide concentration in the landfill gas being <u>combusted</u> in the flare <u>or combusted in the engines</u> shall not exceed <u>150 ppmv</u>.

It is DEQ's experience that hydrogen sulfide emissions are highly variable from landfills. Therefore, this limit and associated monitoring are warranted. The facility is currently emitting, on average, hydrogen sulfide in concentrations of 84 ppm[2]. This value is nearly 2.5 times the value given in AP-42, indicating that hydrogen sulfide emissions from Milner Butte are significantly higher than what the current AP-42 emission factor would indicate. Additionally, since the SO_2 ambient standards include a 1-hour standard, it is not the average value that is critical it is the maximum values that will drive the 1-hour impacts. In part, hydrogen sulfide concentrations in the landfill gas are dependent on the varying types of wastes accepted in the landfill and a demonstration has not been provided that hydrogen sulfide concentration will not vary accordingly. It cannot be said with certainty that hydrogen sulfide emission will not increase over time and it is DEQ's experience that hydrogen sulfide emissions from landfill can be significantly higher. The hydrogen sulfide limit and associated monitoring are warranted.

The odor standard of IDAPA 58.01.01.776.01 has been added as follows:

2.3.2 <u>Odors</u>

<u>In accordance with IDAPA 58.01.01.776.01 the permittee shall not allow, suffer, cause or permit the emission of odorous gases, liquids or solids into the atmosphere in such quantities as to cause air pollution.</u>

2 Current Tier I renewal application

Permit Condition 2.4

The requirements of 40 CFR 60.752(b)(2)(iii)(B) that were included in the previous permit were updated to more closely cite the requirements of the CFR. The initial source test was conducted May 8, 2012. During that test the average flare temperature was 1,172 °F, the minimum temperature was 1,090 °F[3].

Also, this permit condition was updated because of comments received from Milner Butte Landfill during the public comment period. DEQ had inadvertently included CFR requirements for open flares instead of enclosed flares which Milner Butte Landfill actually operates. This final action corrects that oversight.

This permit condition has been updated to include that that the gases combusted in the engines is treated in accordance with 40 CFR 60.752(b)(2)(iii)(C). Treatment consists of filtering with a 10 micron screen, dewatering and compressing the gases. See the NSPS section of this Statement of Basis for a further explanation.

Permit Condition 2.15

The existing monitoring requirement of H_2S concentration has been updated to include that measurement must occur prior to combusting in the engines as well as the flare. The existing permit condition has been modified as follows:

> The permittee shall measure the H_2S concentration, in ppmv, of the landfill gas stream prior to being combusted in the flare and prior to being combusted in the engines. The H_2S concentration at each location shall be determined by conducting three separate measurements within five minutes of each other. The three separate measurements shall then be averaged to determine compliance with the Hydrogen Sulfide Limit permit condition.
>
> If the landfill gas that is combusted in the flare and the engines originates from the same wells then monitoring may be limited to the landfill gas stream prior to being combusted in either the flare or the engines, both locations do not need to be monitored.

Landfill gas combusted in the flare and engines originates in the ground. Several wells are used to extract the landfill gas from the ground. If the landfill gas that is combusted in the flare and engines originates from the same wells then testing is only required at one location (engine or flare) because the hydrogen sulfide concentration will remain constant (all of the gas at the point of combustion is the same). If the gas combusted at the flare comes from different wells than the gas combusted in the engines then testing at each location (engines and flare) is required.

Permit Conditions of Section 3 of the permit are new permit conditions.

Permit Condition 3.3

This permit condition limits NOx emissions from the engines to those rates used by the applicant to demonstrate compliance with ambient standards. These limits are more stringent than the 40 CFR 60 Subpart JJJJ emission limits that occur in Section 4 of the permit.

If NOx emissions were to equal those allowed by 40 CFR 60 Subpart JJJJ the source may not be in compliance with ambient standards for NO_2, therefore the more stringent NOx emission limits of this permit condition are warranted. The emission limits in the permit match the emission rates used by the applicant to demonstrate compliance with standards.

Particulate or carbon monoxide emission limits are not necessary to assure compliance with ambient standards.

If carbon monoxide emissions rates were increase by a factor of 10, and this resulted in ambient impacts from the source increasing by a factor of 10, there still would not be a violation of the carbon monoxide ambient standards. Carbon monoxide emissions are not expected to vary by a factor of 10.

If $PM_{2.5}$ emissions rates were increase by a factor of 4, and this resulted in ambient impacts from the source increasing by a factor of 4, there still would not be a violation of the $PM_{2.5}$ ambient standards. $PM_{2.5}$ emissions are not expected to vary by a factor of 4.

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3 DEQ Source Test Report Log (TRIM # 2008AAF123)

Sulfur dioxide emissions limits are warranted. Sulfur dioxide emissions result from combusting hydrogen sulfide in the landfill gas. Complying with the hydrogen sulfide concentration limit of Section 2 of the permit will assure compliance with the SO_2 emission limits in this section of the permit.

Permit Condition 3.4

This permit condition requires installing, operating and maintaining a non-resettable hour meter on each engine. This is because source testing is required every 8,760 hours or operation or 3 years, whichever comes first and requires ongoing testing according to this schedule.

Permit Condition 3.5

This permit condition requires source testing at the same frequency that is required by 40 CFR 60 Subject JJJJ (which is included in Section 4 of the permit).

Permit Condition 3.6

Specifies that testing shall be conducted utilizing methods and procedures specified of NOx in 40 CFR 60 Subject JJJJ.

Permit Condition 3.7

This permit condition requires reporting test results in accordance with the general provisions of the permit.

Section 4 of the Permit

The sole purpose of Section 4 of the permit is to summarize the applicable requirements of 40 CFR 60 Subpart JJJJ. For a detailed review of the applicable requirements see Appendix C of this Statement of Basis. DEQ is delegated this Subpart.

Section 5 of the Permit

The sole purpose of Section 5 of the permit is to include DEQ's standard language for incorporating federal requirements. In short, should there be any conflict between permit conditions that reference the CFR and the CFR, the CFR shall govern including any amendment to that regulation.

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c. During this time, there were no comments on the application and there was a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

Public Comment Period

A public comment period was made available to the public in accordance with IDAPA 58.01.01.209.01.c. During this time, comments were submitted in response to DEQ's proposed action. Refer to the chronology for public comment period dates.

A response to public comments document has been crafted by DEQ based on comments submitted during the public comment period. That document is part of the final permit package for this permitting action.

APPENDIX A – EMISSIONS INVENTORIES

Source F1 Existing SISW MBL Enclosed LFG Flare CRITERIA POLLUTANT EMISSION RATES

Combustion Source Characteristics				**Stack Data**			
Flare Manufacturer	Perennial Energy, Inc.			Stack Height (ft)	28.15	8.58012	m
Model	FL114-32-E			Stack Diameter (ft)	8.38	2.554224	m
Input Heat Capacity (BTU/hr)	18,027,040			Avg Exit Gas Temperature (°F)		1000	
Fuel	LFG from SISW MBL			Exit Gas Moisture Content			
Max Year Fuel Available				Wet Actual Flow Rate (wacf/min)		69429	32.76683903
				Wet Standard Flow Rate (wscf/min)		22575	
Heating Value (BTU/scf)	450			Dry Standard Flow Rate (dscf/min)			
Fuel Consumption (scf/hr) (scfm LFG)	40,060	668		Stack Velocity (m/s)		23.20	
	17,674	scf CH4/hr		F_d (dscf stack gas/BTU)			
	1020	CH4 Btu/scf		F_w (wscf stack gas/BTU)		**UTM East**	**UTM North**
Process Characteristics						m	m
Total PM Emission Rate (lb/hr)	0.265			**Site Information**		**756584**	**4705808**
PM2.5 Emission Rate (lb/hr)	0.265			Site Barometric Pressure (mm Hg)		25.08	
% Methane	0.50						
Actual Hours of Operation (hr/yr)	8,760			Site Grade		4790	m MSL
Annual Availability	1.00						

Criteria Pollutants

Pollutant	Pollutant Source	Emission Factor [a,b]	Emission Factor Unit	Emissions (lb/hr)	Emissions (TPY)	Emissions (g/s)	Significant Level[c]	Regulatory Concern?[d]	Contribution ?[c]
PM_{10}	LFG Combustion	15	lb/10^6 scf CH4	0.265	1.161E+00	3.340E-02	15	yes	no
PM_{25}	LFG Combustion	15	lb/10^6 scf CH4	0.265	1.161E+00	3.340E-02	15	yes	no
SO2	LFG Combustion		see SO2 tab	0.425	1.860E+00	5.352E-02	40	yes	no
NO2	LFG Combustion	39	lb/10^6 scf CH4	0.689	3.019E+00	8.685E-02	40	yes	no
CO	LFG Combustion	46	lb/10^6 scf CH4	0.813	3.561E+00	1.024E-01	100	yes	no
VOC	LFG Combustion	Use §585	Use §585	0.255	1.117E+00	3.213E-02	40	yes	no
Lead	LFG Combustion	0.0005	lb/10^6 scf	0.000	8.773E-05	2.524E-06	0.6	yes	no
				0.265	**PM25 Annual**	3.340E-02			
				0.689	**NOx Annual**	8.685E-02			

Non-Criteria Pollutants with Significant Threshold

Pollutant	Pollutant Source	Emission Factor [a,b]	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level[c] (TPY)	Below Regulatory Concern?[d]	Significant Contribution ?[c]
PM	LFG Combust	15	lb/10^6 scf CH4	0.265	1.161	3.340E-02	25	yes	no

Other Pollutants

Pollutant	Pollutant Source	Emission Factor [a]	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	CO2e Multiplier	Potential Emissions (TPY CO2e)	
TOC	LFG Combust	11	lb/10^6 scf CH4	0.194	0.852	2.450E-02	0.0	0	
Methane	LFG Combust	2.3	lb/10^6 scf CH4	0.041	0.178	5.122E-03	25.0	4	
CO_2	LFG Combust	120,000	lb/10^6 scf CH4	2120.828	9289.228	2.672E+02	1.0	9289	
N_2O	LFG Combust	2.2	lb/10^6 scf CH4	0.039	0.170	4.899E-03	298.0	51	
								9344.429	

Source G1 SISW MBL Dresser HGM560 at 100% Power per OEM Data CRITERIA POLLUTANT EMISSION RATES

Combustion Source Characteristics			Stack Data		Plot Plan Key "T"				
Engine	DresserRand Guascor		Stack Height (ft)		35	10.67	m		
Model	HGM 560		Stack Diameter (ft)		1.33	0.41	m		
Input Heat Capacity (BTU/hr) (annual bhp-hr)	11,236,480	15,855,600	Exit Gas Temperature (°F)		700	644	K		
Fuel	Landfill Gas scfm	416	Exit Gas Moisture Content						
Heating Value (BTU/scf) (Btu/bhphr)	450	9208	Wet Actual Flow Rate (wacf/min)			9218	260.87	m3/min	
Fuel Consumption (scf/hr) [m3/hr]	24,970	707.1	Wet Standard Flow Rate (wscf/min)				4.35	m3/sec	
Engine Power (100% Spec Sheet bhp@ 1640 ft i	1810		Dry Standard Flow Rate (dscf/min)						
Process Characteristics	C	D	Stack Velocity (m/s)			33.69			
2			25 Fd (dscf stack gas/BTU)						
m3 LFG used/yr 3	6193937		1 Fw (wscf stack gas/BTU)		UTM East	UTM North			
					m	m			
Actual Hours of Operation (hr/yr)	8,322	8760	Site Information		746274	4705910			
Annual Availability	95%		Site Barometric Pressure (mm Hg)		25.08		0.28	of LFG collection	
% Methane	0.50		Site Grade	ft MSL	4390				
Destruction Efficiency	0.95								

Criteria Pollutants

Pollutant	Pollutant Source	Emission Factor [a,b]	Emission Factor Unit	Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level[c] (TPY)	Below Regulatory Concern?[d]	Significant Contribution?[c]
PM_{10}	LFG Combustion	2.32E-01	g/m3 LFG	3.62E-01	1.584E+00	4.557E-02	15	no	no
PM_{25}	LFG Combustion	2.32E-01	g/m3 LFG	3.62E-01	1.584E+00	4.557E-02	15	no	no
SO2	LFG Combustion		see SO2 tab	2.65E-01	1.159E+00	3.336E-02	40	yes	no
NOx	LFG Combustion	1.20E+00	g/hp-hr	4.79E+00	2.097E+01	6.033E-01	40	no	no
CO	LFG Combustion	2.64E+00	g/hp-hr	1.05E+01	4.614E+01	1.327E+00	100	no	no
VOC	LFG Combustion	8.40E-01	g/hp-hr	3.35E+00	1.468E+01	4.223E-01	40	no	no
Lead	LFG Combustion		lb/10^6 Btu	0.00E+00	0.000E+00	0.000E+00	0.6	yes	no

Source G2 SISW MBL Dresser HGM560 at 100% Power per OEM Data CRITERIA POLLUTANT EMISSION RATES

Combustion Source Characteristics			Stack Data		Plot Plan Key "T"					
Engine	DresserRand Guascor		Stack Height (ft)		35	10.668	m			
Model	HGM 560		Stack Diameter (ft)		1.33	0.41	m			
Input Heat Capacity (BTU/hr) (annual bhp-hr)	11,236,480	15,855,600	Exit Gas Temperature (°F)		700	644	K			
Fuel	Landfill Gas scfm	416	Exit Gas Moisture Content							
Heating Value (BTU/scf) (Btu/bhphr)	450	6208	Wet Actual Flow Rate (wacf/min)			9218	260.87	m3/min		
Fuel Consumption (scf/hr) (m3/hr)	24,970	707.1	Wet Standard Flow Rate (wscf/min)				4.35	m3/sec		
Engine Power (100% Spec Sheet bhp@ 1640 ft	1810		Dry Standard Flow Rate (dscf/min)							
Process Characteristics	C	D	Stack Velocity (m/s)			33.69				
2		25	Fd (dscf stack gas/BTU)							
m3 LFG used/yr 3	6193937	1	Fw (wscf stack gas/BTU)		UTM East	UTM North				
					m	m				
Actual Hours of Operation (hr/yr)	8,322	8760	Site Information		746274	4705909				
Annual Availability	95%		Site Barometric Pressure (mm		25.08		0.28	of LFG collection		
% Methane	0.50		Site Grade	ft MSL	4790					
Destruction Efficiency	0.95									
Criteria Pollutants										
Pollutant	Pollutant Source	Emission Factor [a,b]	Emission Factor Unit		Potential Emissions (lb/hr)	Potential Emissions (TPY)	Potential Emissions (g/s)	Significant Level[c] (TPY)	Below Regulatory Concern?[d]	Significant Contribution?[c]
PM_{10}	LFG Combustion	2.32E-01	g/m3 LFG		3.62E-01	1.584E+00	4.557E-02	15	no	no
PM_{25}	LFG Combustion	2.32E-01	g/m3 LFG		3.62E-01	1.584E+00	4.557E-02	15	no	no
SO2	LFG Combustion	from AP42 §2.4	see SO2 tab		2.65E-01	1.159E+00	3.336E-02	40	yes	no
NOx	LFG Combustion	1.20E+00	g/hp-hr		4.79E+00	2.097E+01	6.033E-01	40	no	no
CO	LFG Combustion	2.64E+00	g/hp-hr		1.05E+01	4.614E+01	1.327E+00	100	no	no
VOC	LFG Combustion	8.40E-01	g/hp-hr		3.35E+00	1.468E+01	4.223E-01	40	no	no
Lead	LFG Combustion		lb/10^6 Btu		0.00E+00	0.000E+00	0.000E+00	0.6	yes	no

Idaho TAPs	Emission Limit (EL)	Engines only	
TAPs Subject to Preconstruciton Compliance	(lb/hr)	(lb/hr)	Modeling Required?
LANDFILL GAS CONSTITUENTS			
2-Hexanone (Methyl butyl ketone)	1.330E+00	3.912E-04	NO
2-Propanol (Isopropyl alcohol)	6.530E+01	6.892E-04	NO
Acetone	1.190E+02	2.479E-03	NO
Chlorobenzene	2.330E+01	3.471E-04	NO
Cyclohexene	6.770E+01	9.629E-06	NO
Cyclopentane	1.147E+02	9.874E-06	NO
Ethyl acetate	9.330E+01	1.055E-03	NO
Ethyl mercaptan (Ethanediol)	6.700E-02	7.839E-05	NO
Heptane	1.090E+02	8.554E-04	NO
Hydrogen sulfide	9.330E-01	6.948E-03	NO
Nonane	7.000E+01	1.937E-03	NO
Octane	9.330E+01	7.860E-04	NO
Pentane	1.180E+02	2.050E-03	NO
methylcyclohexane	1.070E+02	8.070E-04	NO

2016 Application for New PTC 2 new engines, existing enclosed flare		Post-Project Potential to Emit for NSR Regulated Pollutants							
Emissions Unit	Description	PM	PM-10	PM-2.5	SO2	NO2	CO	Pb	O3 (by VOC)
		tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy
		Point Sources							
F1	Enclosed Flare at PTE	1.161E+00	1.161E+00	1.161E+00	4.302E+00	3.019E+00	3.561E+00	8.773E-05	1.421E+00
G1	New Dresser HGM 560 Engine	4.877E-01	4.877E-01	4.877E-01	2.681E+00	2.097E+01	4.614E+01	0.000E+00	1.468E+01
G2	New Dresser HGM 560 Engine	4.877E-01	4.877E-01	4.877E-01	2.681E+00	2.097E+01	4.614E+01	0.000E+00	1.468E+01
	TOTAL	2.1	2.1	2.1	9.7	45.0	95.8	0.0	30.8
		Fugitive Sources							
		Not a PSD source. No fugitive PM or LFG sources are applicable to this inventory. (No process fugitives)							

APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES

MEMORANDUM

DATE: **April 21**, 2017

TO: **Dan Pitman**, Permit Writer, Air Program

FROM: Thomas Swain, Air Quality Modeler, Analyst 3, Air Program

PROJECT: Milner Butte Landfill (MBL) facility in Cassia County, Idaho, operated by Southern Idaho Solid Waste (SISW), Permit to Construct (PTC) P-2011.0054, Facility ID No. 031-00046, Project 61834

SUBJECT: Demonstration of Compliance with IDAPA 58.01.01.203.02 (NAAQS) and 203.03 (TAPs) as it relates to air quality impact analyses.

Contents

1.0 Summary

MEAS LLC (Industrial Project Assurance Services), on behalf of Southern Idaho Solid Waste (SISW), submitted an application for a Permit to Construct (PTC) for the Milner Butte Landfill (MBL), on January 9, 2017, for modifications to their existing facility located in Cassia County, Idaho.

MBL is a municipal landfill located in rural Cassia County, 13 miles SW of Burley, Idaho. The facility has an existing landfill gas collection system and an enclosed flare. SISW is proposing to install two new engine-generators at MBL, fueled by landfill gas and generating electrical power for sale. The generators are expected to operate at 95% of annual capacity, but were conservatively modeled at potential to emit (PTE) for 8,760 hours/year.

Process details are discussed in the main body of the Department of Environmental Quality (DEQ) Statement of Basis supporting the issued proposed PTC. This modeling review memorandum provides a summary and approval of the ambient air impact analyses submitted with the permit application. It also describes DEQ's review of those analyses, DEQ's verification analyses, additional clarifications, and conclusions.

Project-specific air quality impact analyses involving atmospheric dispersion modeling of estimated emissions associated with the facility were submitted to DEQ to demonstrate that the facility would not cause or significantly contribute to a violation of any ambient air quality standard as required by IDAPA 58.01.01.203.02 and 203.03 (Idaho Air Rules Section 203.02 and 203.03).

MEAS performed the ambient air impact analyses for this project, on behalf of MBL. The analyses were performed to demonstrate compliance with air quality standards. The DEQ review summarized by this memorandum addressed only the rules, policies, methods, and data pertaining to the air impact analyses used to demonstrate that the estimated emissions increases at the facility associated with the proposed project will not cause or significantly contribute to a violation of any applicable air quality standard. This review did not evaluate compliance with other rules or analyses that do not pertain to the air impact analyses. Evaluation of emissions estimates is the responsibility of the permit writer and is addressed in the main body of the Statement of Basis. The accuracy of emissions estimates were not evaluated as part of DEQ's review of the air impact analyses described in this modeling review memorandum.

A pre-application meeting for this project was held on April 14, 2016, at which various regulatory and technical items were discussed. A modeling protocol was submitted on June 3, 2016. The protocol was approved, with conditions, on July 14, 2016. One DEQ condition requested the use the meteorological data collected at the Burley, Idaho airport, rather than the data collected at the Twin Falls, Idaho, airport, which was proposed by MEAS. Correspondence between MEAS and DEQ continued after issuance of the protocol approval regarding selection of an acceptable meteorological data set. On August 9, 2016, MEAS agreed to DEQ's request to use the Burley Idaho meteorological data in the modeling analyses. A permit application was submitted on January 6, 2017. This application was determined to be incomplete on February 1, 2017. Most of the completeness issues involved emission calculations. A revised application was submitted on February 8, 2017. Additional questions arose with this revised application, including a correction to the exhaust flows for the flare stack. Revised modeling analyses were submitted on February 21, 2017. The application was determined complete on February 22, 2017.

The final submitted air quality impact analyses: 1) utilized appropriate methods and models; 2) was conducted using reasonably accurate or conservative model parameters and input data (review of emissions estimates was addressed by the DEQ permit writer); 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that estimated potential/allowable emissions are at a level defined as below regulatory concern (BRC) and do not require a National Ambient Air Quality

Standard (NAAQS) compliance demonstration; b) that predicted pollutant concentrations from emissions associated with the project as modeled were below Significant Impact Levels (SILs) or other applicable regulatory thresholds; or c) that predicted pollutant concentrations from emissions associated with the project as modeled, when appropriately combined with co-contributing sources and background concentrations, were below applicable NAAQS at ambient air locations where and when the project has a significant impact; 5) showed that Toxic Air Pollutant (TAP) emissions increases associated with the project will not result in increased ambient air impacts exceeding allowable TAP increments.

Table 1 presents key assumptions and results to be considered in the development of the permit.

Air impact analyses are required by Idaho Air Rules to be conducted according to methods outlined in 40 CFR 51, Appendix W (*Guideline on Air Quality Models*). Appendix W requires that facilities be modeled using emissions and operations representative of design capacity or as limited by a federally enforceable permit condition. The submitted information and analyses demonstrated to the satisfaction of the Department that operation of the proposed facility will not cause or significantly contribute to a violation of any ambient air quality standard, provided the key conditions in Table 1 are representative of facility design capacity or operations as limited by a federally enforceable permit condition.

Table 1. KEY ASSUMPTIONS USED IN MODELING ANALYSES

Criteria/Assumption/Result	Explanation/Consideration
General Emissions Rates. Emissions rates used in the modeling analyses, as listed in this memorandum, represent maximum potential emissions as given by design capacity or as limited by the issued permit for the specific pollutant and averaging period.	Compliance has not been demonstrated for emissions rates greater than those used in the modeling analyses.
Modeling Thresholds for Criteria Pollutant Emissions. Maximum short-term and long-term emissions of PM_{10}[a], $PM_{2.5}$[b], SO_2[c], CO[d], and NOx[e] associated with the proposed project are above the Level 1 threshold for each pollutant. Therefore, a demonstration of compliance with NAAQS was done for these pollutants and averaging times.	Project-specific air impact analyses demonstrating compliance with NAAQS, as required by Idaho Air Rules Section 203.02, are required for pollutants having an emissions increase that is greater than Level I level modeling applicability thresholds. Compliance with NAAQS has not been demonstrated for emissions that exceed the emission estimates presented in the application.
TAPs Analyses. Air impact modeling for TAPs was not performed for this project. Air impact analyses demonstrating compliance with TAPs allowable impact increments, per Idaho Air Rules Section 203.03, is required for pollutants having an emissions rate greater than Emissions Screening Levels (ELs).	The application claimed that all emissions increases of TAPs are below ELs. Therefore, no demonstration of compliance with TAPs increments was required

a. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
b. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
c. Sulfur dioxide.
d. Carbon monoxide.
e. Oxides of nitrogen.

2.0 Background Information

This section provides background information applicable to the project and the site where the facility is located. It also provides a brief description of the applicable air impact analyses requirements for the project.

2.1 Project Description

MBL is an existing facility located in Cassia County, Idaho. The facility is a municipal landfill servicing the area of Burley, Idaho. This project was submitted as a modification to Permit to Construct (PTC) P-2011.0054. The facility intends to install two new RICE engines coupled with electrical generators that will be connected to the electrical power grid for sale of power resources.

MEAS's air impact analyses, as part of the permit application, was submitted to show that emissions increases associated with the proposed modification do not cause or contribute to an exceedance of any NAAQS or TAPs Acceptable Ambient Concentration (AAC) or Acceptable Ambient Concentration of a Carcinogen (AACC). A detailed description of the facility is listed in Section 1 of the submitted application.

2.2 Proposed Location and Area Classification

MBL is located in Cassia County, about 13 miles southwest of Burley, Idaho. This area is designated as an attainment or unclassifiable area for sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), lead (Pb), ozone (O_3), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers ($PM_{2.5}$). The area is not classified as non-attainment for any criteria pollutants.

2.3 Air Impact Analyses Required for All Permits to Construct

Criteria Pollutant and TAP Impact Analyses for a PTC are addressed in Idaho Air Rules Sections 203.02 and 203.03:

> *No permit to construct shall be granted for a new or modified stationary source unless the applicant shows to the satisfaction of the Department all of the following:*
>
> ***02. NAAQS.*** *The stationary source or modification would not cause or significantly contribute to a violation of any ambient air quality standard.*
>
> ***03. Toxic Air Pollutants.*** *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.*

Atmospheric dispersion modeling, using computerized simulations, is used to demonstrate compliance with both NAAQS and TAPs. Idaho Air Rules Section 202.02 states:

> ***Estimates of Ambient Concentrations.*** *All estimates of ambient concentrations shall be based on the applicable air quality models, data bases, and other requirements specified in 40 CFR 51 Appendix W (Guideline on Air Quality Models).*

2.4 Significant Impact Level and Cumulative NAAQS Impact Analyses

The Significant Impact Level (SIL) analysis for a new facility or proposed modification to a facility involves modeling estimated criteria air pollutant emissions from the facility or modification to determine the potential impacts to ambient air. Air impact analyses are required by Idaho Air Rules to be conducted per

methods outlined in 40 CFR 51, Appendix W (Guideline on Air Quality Models). Appendix W requires that facilities be modeled using emissions and operations representative of design capacity or as limited by a federally enforceable permit condition.

A facility or modification is considered to have a significant impact on air quality if maximum modeled impacts to ambient air exceed the established SIL listed in Idaho Air Rules Section 006 (referred to as a significant contribution in Idaho Air Rules) or as incorporated by reference as per Idaho Air Rules Section 107.03.b. Table 2 lists the applicable SILs.

If modeled maximum pollutant impacts to ambient air from the emissions sources associated with a new facility or modification exceed the SILs, then a cumulative NAAQS impact analysis is necessary to demonstrate compliance with NAAQS and Idaho Air Rules Section 203.02.

DEQ has developed modeling applicability thresholds that effectively assure that project-related emissions increases below stated values will result in ambient air impacts below the applicable SILs. The threshold levels and dispersion modeling analyses supporting those levels are presented in the *State of Idaho Guideline for Performing Air Quality Impact Analyses*[1] (*Idaho Air Modeling Guideline*). Use of a modeling threshold represents the use of conservative air impact modeling, performed in support of the threshold, as a project SIL analysis. Project-specific modeling applicability for this project is addressed in Section 3.1.1 of this memorandum.

A cumulative NAAQS impact analysis for attainment area pollutants involves assessing ambient impacts (typically the design values consistent with the form of the standard) from facility-wide emissions, and emissions from any nearby co-contributing sources, and then adding a DEQ-approved background concentration value to the modeled result that is appropriate for the criteria pollutant/averaging-period at the facility location and the area of significant impact. The resulting pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 2. Table 2 also lists SILs and specifies the modeled design value that must be used for comparison to the NAAQS. NAAQS compliance is evaluated on a receptor-by-receptor basis for the modeling domain.

If the cumulative NAAQS impact analysis indicates a violation of the standard, the permit may not be issued if the proposed project has a significant contribution (exceeding the SIL) to the modeled violation. This evaluation is made specific to both time and space. If the SIL analysis indicates the facility/modification has an impact exceeding the SIL, the facility might not have a significant contribution to a violation if impacts are below the SIL at the specific receptor showing the violation during the time periods when a modeled violation occurred.

Compliance with Idaho Air Rules Section 203.02 is generally demonstrated if: a) all modeled impacts of the SIL analysis are below the applicable SIL or other level determined to be inconsequential to NAAQS compliance; or b) modeled design values of the cumulative NAAQS impact analysis (modeling all emissions from the facility and co-contributing sources, and adding a background concentration) are less than applicable NAAQS at receptors where impacts from the proposed facility/modification exceeded the SIL or other identified level of consequence; or c) if the cumulative NAAQS analysis showed NAAQS violations, the impact of proposed facility/modification to any modeled violation was inconsequential (typically assumed to be less than the established SIL) for that specific receptor and for the specific modeled time when the violation occurred.

Table 2. APPLICABLE REGULATORY LIMITS				
Pollutant	**Averaging Period**	**Significant Impact Levels[a] ($\mu g/m^3$)[b]**	**Regulatory Limit[c] ($\mu g/m^3$)**	**Modeled Design Value Used[d]**
PM_{10}[e]	24-hour	5.0	150[f]	Maximum 6th highest[g]
$PM_{2.5}$[h]	24-hour	1.2	35[i]	Mean of maximum 8th highest[j]
	Annual	0.3	12[k]	Mean of maximum 1st highest[l]
Carbon monoxide (CO)	1-hour	2,000	40,000[m]	Maximum 2nd highest[n]
	8-hour	500	10,000[m]	Maximum 2nd highest[n]
Sulfur Dioxide (SO_2)	1-hour	3 ppb[o] (7.8 $\mu g/m^3$)	75 ppb[p] (196 $\mu g/m^3$)	Mean of maximum 4th highest[q]
	3-hour	25	1,300[m]	Maximum 2nd highest[n]
	24-hour	5	365[m]	Maximum 2nd highest[n]
	Annual	1.0	80[r]	Maximum 1st highest[n]
Nitrogen Dioxide (NO_2)	1-hour	4 ppb (7.5 $\mu g/m^3$)	100 ppb[s] (188 $\mu g/m^3$)	Mean of maximum 8th highest[t]
	Annual	1.0	100[r]	Maximum 1st highest[n]
Lead (Pb)	3-month[u]	NA	0.15[r]	Maximum 1st highest[n]
	Quarterly	NA	1.5[r]	Maximum 1st highest[n]
Ozone (O_3)	8-hour	40 TPY VOC[v]	70 ppb[w]	Not typically modeled

a. Idaho Air Rules Section 006 (definition for significant contribution) or as incorporated by reference as per Idaho Air Rules Section 107.03.b.
b. Micrograms per cubic meter.
c. Incorporated into Idaho Air Rules by reference, as per Idaho Air Rules Section 107.
d. The maximum 1st highest modeled value is always used for the significant impact analysis unless indicated otherwise. Modeled design values are calculated for each ambient air receptor.
e. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
f. Not to be exceeded more than once per year on average over 3 years.
g. Concentration at any modeled receptor when using five years of meteorological data.
h. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
i. 3-year mean of the upper 98th percentile of the annual distribution of 24-hour concentrations.
j. 5-year mean of the 8th highest modeled 24-hour concentrations at the modeled receptor for each year of meteorological data modeled. For the SIL analysis, the 5-year mean of the 1st highest modeled 24-hour impacts at the modeled receptor for each year.
k. 3-year mean of annual concentration.
l. 5-year mean of annual averages at the modeled receptor.
m. Not to be exceeded more than once per year.
n. Concentration at any modeled receptor.
o. Interim SIL established by EPA policy memorandum.
p. 3-year mean of the upper 99th percentile of the annual distribution of maximum daily 1-hour concentrations.
q. 5-year mean of the 4th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of 1st highest modeled 1-hour impacts for each year is used.
r. Not to be exceeded in any calendar year.
s. 3-year mean of the upper 98th percentile of the annual distribution of maximum daily 1-hour concentrations.
t. 5-year mean of the 8th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of maximum modeled 1-hour impacts for each year is used.
u. 3-month rolling average.
v. An annual emissions rate of 40 ton/year of VOCs is considered significant for O_3.
w. Annual 4th highest daily maximum 8-hour concentration averaged over three years.

2.5 *Toxic Air Pollutant Analyses*

Emissions of toxic substances are generally addressed by Idaho Air Rules Section 161:

> *Any contaminant which is by its nature toxic to human or animal life or vegetation shall not be emitted in such quantities or concentrations as to alone, or in combination with other contaminants, injure or unreasonably affect human or animal life or vegetation.*

Permitting requirements for toxic air pollutants (TAPs) from new or modified sources are specifically addressed by Idaho Air Rules Section 203.03 and require the applicant to demonstrate to the satisfaction of DEQ the following:

> *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.*

Per Idaho Air Rules Section 210, if the total project-wide emissions increase of any TAP associated with a new source or modification exceeds screening emission levels (ELs) of Idaho Air Rules Section 585 or 586, then the ambient impact of the emissions increase must be estimated. If ambient impacts are less than applicable Acceptable Ambient Concentrations (AACs) for non-carcinogens of Idaho Air Rules Section 585 and Acceptable Ambient Concentrations for Carcinogens (AACCs) of Idaho Air Rules Section 586, then compliance with TAP requirements has been demonstrated.

Idaho Air Rules Section 210.20 states that if TAP emissions from a specific source are regulated by the Department or EPA under 40 CFR 60, 61, or 63, then a TAP impact analysis under Section 210 is not required for that TAP.

3.0 Analytical Methods and Data

This section describes the methods and data used in analyses to demonstrate compliance with applicable air quality impact requirements.

3.1 Emission Source Data

Emissions rates of criteria pollutants and TAPs for the project were provided by the applicant for various applicable averaging periods. Review and approval of estimated emissions was the responsibility of the DEQ permit writer and is not addressed in this modeling memorandum. DEQ modeling review included verification that the application's potential emissions rates were properly used in the model. The rates listed must represent the maximum allowable rate as averaged over the specified period.

Emissions rates used in the dispersion modeling analyses submitted by MBL/MEAS should be reviewed by the DEQ permit writer against those in the emissions inventory of the permit application. All modeled criteria air pollutant and TAP emissions rates should be equal to or greater than the facility's emissions calculated in other sections of the PTC application or requested permit allowable emission rates.

3.1.1 Criteria Pollutant Emissions Rates and Modeling Applicability

If facility-wide potential to emit (PTE) values, or project wide PTE in some instances, for a specific criteria pollutant would qualify for a below regulatory concern (BRC) permit exemption as per Idaho Air Rules Section 221 if it were not for some pollutants exceeding BRC thresholds, then an air impact analysis for that pollutant may not be required for permit issuance. DEQ's regulatory interpretation policy of exemption provisions of Idaho Air Rules (Policy on NAAQS Compliance Demonstration Requirements, DEQ policy memorandum, July 11, 2014) is that: "A DEQ NAAQS compliance assertion will not be made by the DEQ modeling group for specific criteria pollutants having a project emissions increase below BRC levels,

provided the proposed project would have qualified for a Category I Exemption for BRC emissions quantities except for the emissions of another criteria pollutant." The interpretation policy also states that the exemption criteria of uncontrolled PTE not to exceed 100 ton/year (Idaho Air Rules Section 220.01.a.i) is not applicable when evaluating whether a NAAQS impact analyses is required. A permit will be issued limiting PTE below 100 ton/year, thereby negating the need to maintain calculated uncontrolled PTE under 100 ton/year.

The proposed project did not meet the requirements to exempt it from NAAQS compliance demonstration requirements because there were existing permit conditions in place that required changing, regardless of the emissions quantities associated with the project.

DEQ has generated non-site-specific project modeling thresholds for those projects that cannot use the BRC exemption from an impact analysis (if there are specific permitted emissions limits that require changing, etc.). Modeling applicability thresholds are provided in the *Idaho Air Modeling Guideline*. These thresholds were based on assuring an ambient impact of less than established SIL for that specific pollutant and averaging period.

If project-specific total emissions rates are below Level I Modeling Thresholds, project-specific air impact analyses are not necessary for permitting. Use of level II modeling thresholds are conditional, requiring DEQ approval. Table 3 provides the emissions-based modeling applicability summary based upon emissions from the two new engines (the defined project). MEAS compared emission estimates with Level I Modeling Thresholds, and determined that modeling is necessary for all the criteria pollutants listed in Table 3 except lead. Emissions as modeled per source in the final application submitted on February 21, 2017, are listed in Table 4.

Table 3. MODELING APPLICABILITY ANALYSIS RESULTS

Pollutant	Averaging Period	Emissions	Level I Modeling Thresholds (lb/hour or ton/year)	Level II Modeling Thresholds (lb/hour or ton/year)	Modeling Required
$PM_{2.5}$	Annual	0.98 ton/yr	0.350	4.1	Yes
	24-hour	0.22 lb/hr	0.054	0.63	Yes
PM_{10}	24-hour	0.22 lb/hr	0.22	2.6	Yes
NOx	Annual	41.9 ton/yr	1.2	14	Yes
	1-hour	9.58 lb/hr	0.2	2.4	Yes
SO_2	Annual	5.36 ton/yr	1.2	14	Yes
	1-hour	1.22lb/hr	0.21	2.5	Yes
CO	1-hr, 8-hr	21.1 ton/yr	15	175	Yes
Lead	Month	0.0 lb/month	14 lb/month		No

Ozone (O_3) differs from other criteria pollutants in that it is not typically emitted directly into the atmosphere. O_3 is formed in the atmosphere through reactions of VOCs, NOx, and sunlight. Atmospheric dispersion models used in stationary source air permitting analyses (see Section 3.3.3) cannot be used to estimate O_3 impacts resulting from VOC and NOx emissions from an industrial facility. O_3 concentrations resulting from area-wide emissions are predicted by using more complex airshed models such as the Community Multi-Scale Air Quality (CMAQ) modeling system. Use of the CMAQ model is very resource

intensive and DEQ asserts that performing a CMAQ analysis for a particular permit application is not typically a reasonable or necessary requirement for air quality permitting.

Addressing secondary formation of O_3 has been somewhat addressed in EPA regulation and policy. As stated in a letter from Gina McCarthy of EPA to Robert Ukeiley, acting on behalf of the Sierra Club (letter from Gina McCarthy, Assistant Administrator, United States Environmental Protection Agency, to Robert Ukeiley, January 4, 2012):

> *. . . footnote 1 to sections 51.166(I)(5)(I) of the EPA's regulations says the following: "No de minimis air quality level is provided for ozone. However, any net emission increase of 100 tons per year or more of volatile organic compounds or nitrogen oxides subject to PSD would be required to perform an ambient impact analysis, including the gathering of air quality data."*
>
> *The EPA believes it unlikely a source emitting below these levels would contribute to such a violation of the 8-hour ozone NAAQS, but consultation with an EPA Regional Office should still be conducted in accordance with section 5.2.1.c. of Appendix W when reviewing an application for sources with emissions of these ozone precursors below 100 TPY."*

Allowable emissions estimates of VOCs and NOx are below the 100 tons/year threshold, and DEQ determined it was not appropriate or necessary to require a quantitative source specific O_3 impact analysis.

The applicant elected to proceed to a full facility modeling demonstration of compliance with all NAAQS, and not perform SIL modeling analyses. Table 4 lists criteria pollutant emissions for the entire facility inventory for those pollutants exceeding the level I modeling thresholds. All criteria pollutants except lead were modeled in the NAAQS compliance analyses.

Table 4. MODELED EMISSION RATES FOR NAAQS ANALYSES

Source ID	Source Description	NO_2 (lb/hr)[a]	PM_{10} (lb/hr)[a]	$PM_{2.5}$ (lb/hr)[a]	SO_2 (lb/hr)[a]	CO (lb/hr)[a]
G1	New Engine	4.7882	0.1114	0.1114	0.6123	10.5319
G2	New Engine	4.7882	0.1114	0.1114	0.6123	10.5319
F1	Existing Flare	0.6893	0.2651	0.2651	0.9826	0.8127
H1	Existing LPG Radiant Heat	0.0213	0.0011	0.0011	0.0002	0.0123
H2	Existing Used Oil Heat	0.0400	0.0312	0.0312	0.0896	0.0053
H3	Existing Used Oil Heat	0.0400	0.0312	0.0312	0.0896	0.0053
H4	Existing LPG Radiant Heat	0.0213	0.0011	0.0011	0.0002	0.0123

[a] pounds/hour

Secondary Particulate Formation

The impact from secondary particulate formation resulting from emissions of NOx, SO_2, and/or VOCs was assumed by DEQ to be negligible based on the magnitude of emissions and the short distance from emissions sources to modeled receptors where maximum PM_{10} and $PM_{2.5}$ impacts would be anticipated.

3.1.2 Toxic Air Pollutant Emissions Rates

TAP emissions regulations under Idaho Air Rules Section 220 are only applicable for new or modified sources constructed after July 1, 1995. The submitted emissions inventory in the application identified no TAPs having potential emissions increases that could exceed screening emissions levels (ELs) of Idaho Air Rules Section 585 and 586. Detailed calculations of estimated TAP emissions are included in the permit application.

3.1.3 Emission Release Parameters

Table 5 provides emissions release parameters, including stack height, stack diameter, exhaust temperature, and exhaust velocity for facility sources as used in the final modeling assessment.

Stack parameters used in the modeling analyses were largely documented/justified in the application. Final exhaust flow characteristics for the flare source were revised in late February based upon discussions with DEQ and MEAS with respect to combustion characteristics. Final modeling analyses submitted on February 21, 2017 incorporated these values.

Table 5. MODELING SOURCE PARAMETERS

Source ID	Source Description	UTM Coordinates		Stack Height (ft)[c]	Temp. (°F)[d]	Exit Velocity (fps)[e]	Stack Diameter (ft)[c]
		Easting (X)[a] (m)	Northing (Y)[b] (m)				
G1	New Engine	746274	4705910	35.0	700.0	108.11	1.35
G2	New Engine	746274	4705909	35.0	700.0	108.11	1.35
F1	Existing Flare	746584	4705808	27.9	1000.0	3.83	8.33
H1	Existing LPG Radiant Heat	746480	4705841	20.0	215.3	11.81	0.49
H2	Existing Used Oil Heat	746504	4705839	24.9	409.7	10.50	0.72
H3	Existing Used Oil Heat	746503	4705838	24.9	411.0	10.50	0.72
H4	Existing LPG Radiant Heat	746500	4705819	20.0	215.3	11.81	0.49

a. Universal Transverse Mercator coordinates in meters (m) in the east/west direction.
b. Universal Transverse Mercator coordinates in meters in the north/south direction.
c. Feet.
d. Temperature in degrees Fahrenheit.
e. Feet per second.

3.2 Background Concentrations

Background concentrations were obtained from the NW AIRQUEST[(2)] Consortium website, as recommended by DEQ. These values are listed in Table 7, "Results for Cumulative NAAQS Impact Analyses".

3.3 Impact Modeling Methodology

This section describes the modeling methods used by the applicant to demonstrate preconstruction compliance with applicable air quality standards.

3.3.1 General Overview of Analyses

MEAS performed project-specific air impact analyses that were determined by DEQ to be reasonably representative of the proposed facility as described in the application. Results of the submitted analyses demonstrate compliance with applicable air quality standards to DEQ's satisfaction, provided the facility is operated as described in the submitted application and in this memorandum.

Table 6 provides a brief description of parameters used in the modeling analyses.

Table 6. MODELING PARAMETERS

Parameter	Description/Values	Documentation/Addition Description
General Facility Location	Cassia County, Idaho	The facility is located in an area that is attainment or unclassified for all criteria air pollutants
Model	AERMOD	AERMOD with the PRIME downwash algorithm, version 15181.
Meteorological Data	2011-2015 Burley, Idaho surface data, and upper air data from Boise, ID	The meteorological model input files for this project were provided by and recommended as most representative for this project by IDEQ, as described in the IDEQ modeling protocol and verified by IDEQ's approval of that protocol.
Terrain	Considered	See section 3.35 below
Building Downwash	Considered	Because there are substantial buildings at the facility, BPIP-PRIME was used to evaluate building dimensions for consideration of downwash effects in AERMOD.
Receptor Grid	Grid 1	10-meter spacing along the ambient air boundary and 10-meter spacing in areas of high impacts
	Grid 2	30-meter spacing in areas of public access and out to distances of 1000+ meters with respect to the facility
	Grid 3	200-meter spacing out to approximately 5,000 meters

3.3.2 Modeling protocol and Methodology

A modeling protocol was submitted on June 3, 2016. The protocol was conditionally approved on July 14, 2016. Included in these conditions was a recommendation by DEQ to use the meteorological data collected at the Burley, Idaho airport, rather than the data collected at the Twin Falls, Idaho, airport, which was recommended by MEAS. Correspondence continued after DEQ's conditional approval between MEAS and DEQ regarding selection of an acceptable meteorological data set. Based on further assessment, including consultation from DEQ meteorologist Jacob Wolfe, DEQ again recommended that the data from Burley, Idaho be used. On August 9, 2016, MEAS agreed to DEQ's request to use the Burley Idaho meteorological data in the modeling analyses. A permit application was later submitted by MEAS on behalf of MBL on January 6, 2017.

The submitted application was determined to be incomplete on February 1, 2017. Most of the incompleteness issues involved emission calculations in the EI. A new application was submitted on February 8, 2017. Additional questions arose with this application, including a correction to the exhaust flows for the flare stack. Revised modeling analyses were submitted on February 21, 2017. The application was called complete on February 22, 2017.

Project-specific modeling and other required impact analyses were generally conducted using data and methods discussed in pre-application correspondence and in the *Idaho Air Quality Modeling Guideline*[1].

3.3.3 Model Selection

Idaho Air Rules Section 202.02 requires that estimates of ambient concentrations be based on air quality models specified in 40 CFR 51, Appendix W (Guideline on Air Quality Models). The refined, steady state, multiple source Gaussian dispersion model AERMOD was promulgated as the replacement model for ISCST3 in December 2005. AERMOD retains the single straight line trajectory of ISCST3, but includes more advanced algorithms to assess turbulent mixing processes in the planetary boundary layer for both convective and stable stratified layers.

AERMOD version 15181 was used by the applicant for the air impact modeling analyses to evaluate impacts of the facility. This version is the current version at the time the application was received by DEQ.

3.3.4 Meteorological Data

MEAS used meteorological data supplied by DEQ. This data was collected at the Burley, Idaho airport for the period 2011-2015. Upper air data was collected from the Boise, Idaho airport. DEQ determined the data as used in the submitted analyses is representative for modeling in the locale of this facility.

3.3.5 Effects of Terrain on Modeled Impacts

Terrain data were extracted from United States Geological Survey (USGS) National Elevation Dataset (NED) files in the WGS84 datum (approximately equal to the NAD83 datum). NWRC used 1 Arc Second resolution data, which is adequate for this analysis.

The terrain preprocessor AERMAP Version 11103 was used to extract the elevations from the NED files and assign them to receptors in the modeling domain in a format usable by AERMOD. AERMAP also determined the hill-height scale for each receptor. The hill-height scale is an elevation value based on the surrounding terrain which has the greatest effect on that individual receptor. AERMOD uses those heights to evaluate whether the emissions plume has sufficient energy to travel up and over the terrain or if the plume will travel around the terrain.

DEQ reviewed the area surrounding the facility by using the web-based mapping program Google Earth, which uses the WGS84 datum. DEQ also overlaid modeling files with a digital photograph background images acquired from the 2013 ARCGIS NAIP (National Agriculture Imagery Program) data base. The immediate area is effectively flat with regard to dispersion modeling affects. Elevations in the modeling domain matched those indicated by the background images

3.3.6 Facility Layout

DEQ compared the facility layout used in the model to that indicated in aerial photographs on Google Earth. The modeled layout was consistent with aerial photographs in Google Earth as well as from those in the ARCGIS 2013 NAIP database.

3.3.7 Effects of Building Downwash on Modeled Impacts

Potential downwash effects on emissions plumes are usually accounted for in the model by using building dimensions and locations (locations of building corners, base elevation, and building heights). Dimensions and orientation of proposed buildings were needed as input to the Building Profile Input Program for the

Plume Rise Model Enhancements downwash algorithm (BPIP-PRIME) because there are existing structures affecting the emissions plumes at the facility.

3.3.8 Ambient Air Boundary

Ambient air is defined in Section 006 of the Idaho Air Rules as "that portion of the atmosphere, external to buildings, to which the general public has access." For the modeling analyses, the boundary has been defined as that part of the facility allowed access to the public . Public access is precluded through management and physical barriers, including fencing.

3.3.9 Receptor Network

Table 6 describes the receptor grid used in the submitted analyses. The receptor grid met the minimum recommendations specified in the *Idaho Air Quality Modeling Guideline*[1]. DEQ determined this grid assured maximum impacts were reasonably resolved by the model considering: 1) types of sources modeled; 2) modeled impacts and the modeled concentration gradient; 3) conservatism of the methods and data used as inputs to the analyses; 4) potential for continual exposures or exposure to sensitive receptors. Additionally, DEQ performed sensitivity analyses using a finer grid spaced receptor network to assure that maximum concentrations were below all applicable standards. The results from these sensitivity analyses did not change from the the results as listed in Table 7.

3.3.10 Good Engineering Practice Stack Height

An allowable good engineering practice (GEP) stack height may be established using the following equation in accordance with Idaho Air Rules Section 512.03.b:

$H = S + 1.5L$, where:

H = good engineering practice stack height measured from the ground-level elevation at the base of the stack.

S = height of the nearby structure(s) measured from the ground-level elevation at the base of the stack.

L = lesser dimension, height or projected width, of the nearby structure.

Buildings exist in the vicinity for all point sources modeled. Therefore, consideration of downwash caused by nearby buildings was required.

4.0 Impact Modeling Results

4.1 Results for Significant and NAAQS Impact Level Analyses

MEAS performed air quality modeling for those criteria pollutants having emissions exceeding Level I modeling thresholds (PM_{10}, $PM_{2.5}$, CO, SO_2, and NO_2). The applicant elected to not perform modeling to assess project impacts with respect to the Significant Impact Levels (SIL). Therefore, modeling was required to demonstrate compliance with all NAAQS. Table 7 lists the results for these analyses, which shows compliance with all NAAQS.

Table 7. RESULTS FOR CUMULATIVE NAAQS IMPACT ANALYSES					
Pollutant	**Averaging Period**	**Modeled Design Concentration ($\mu g/m^3$)[a]**	**Background Concentration ($\mu g/m^3$)**	**Total Impact ($\mu g/m^3$)**	**NAAQS ($\mu g/m^3$)**
$PM_{2.5}$[b]	24-hour	4.98[e]	14	19.0.4[e]	35
	Annual	1.0	4.8	5.8	12
PM_{10}[c]	24-hour	7.4[f]	50	57.4[i]	150
NO_2[d]	1-hour	85.3[e]	18.8	104.1[e]	188
	Annual	2.85	3.4	6.3	100
SO_2[e]	1-hour	70.93[g]	4.2	75.1	196
	3-hour	36.2[h]	4.7	40.9[h]	365
CO	1-hour	336	1681	2018	40,000
	8-hour	71	743	814	10,000

a. Micrograms/cubic meter
b. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
c. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
d. Nitrogen dioxide. 1-hour Background is 7.8 ppb, equal to 14.7 $\mu g/m^3$ and annual background is 1.3 ppb equal to 2.45 $\mu g/m^3$.
e. Maximum of 5-year means (or a lesser averaging period if less than 5 years of meteorological data were used in the analyses) of 8th highest modeled concentrations for each year modeled.
f. Maximum of 6th highest modeled concentrations for a 5-year period (or the maximum of the 2nd highest modeled concentrations if only 1 year of meteorological data are modeled).
g. Maximum of 5-year means (or a lesser averaging period if less than 5 years of meteorological data were used in the analyses) of 4th highest modeled concentrations for each year modeled.
h. Maximum of 2nd highest modeled concentrations for each year modeled.

4.2 Results for TAPs Impact Analyses

Dispersion modeling is required to demonstrate compliance with TAP increments specified by Idaho Air Rules Section 585 and 586 for those TAPs with project-specific emission increases exceeding emissions screening levels (ELs). Because there are no TAPs emissions that exceed the ELs, modeling analyses were not needed to demonstrate compliance with those AACs and AACCs.

5.0 Conclusions

The ambient air impact analyses and other air quality analyses submitted with the PTC application demonstrated to DEQ's satisfaction that emissions from the MBL project will not cause or significantly contribute to a violation of any ambient air quality standard.

References:

1. *State of Idaho Guideline for Performing Air Quality Impact Analyses.* Idaho Department of Environmental Quality. September 2013. State of Idaho DEQ Air Doc. ID AQ-011. Available at http://www.deq.idaho.gov/media/1029/modeling-guideline.pdf.

2. Air Quality Environmental Science and Technology Consortium (NW AIRQUEST). *Lookup 2009-2011 Design Values of Criteria Pollutants.* Available at: http://lar.wsu.edu/nw-airquest/lookup.html.

APPENDIX C – 40 CFR 60 SUBPART JJJJ

Section 4 Applicable Requirements

4.1 Federal Requirements

PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY (40 CFR 52.21)

Not Applicable. Milner Butte Landfill is an existing minor source. The facility is not a major stationary source as defined in 40 CFR 52.21 (b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21 (a)(2), PSD requirements are not applicable to this permitting action.

NSPS Applicability (40 CFR 60)

Applicable Because the Milner Butte Landfill has an existing enclosed flare (F1) and two proposed landfill gas engines (LFG Engines G1 and G2) that are associated with the landfill, the following NSPS requirements apply to this facility :

- 40 CFR 60, Subpart WWW - Standards of Performance for Municipal Solid Waste Landfills
- 40 CFR 60, Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

STANDARDS OF PERFORMANCE FOR MUNICIPAL WASTE LANDFILLS (40 CFR 60, SUBPART WWW)

Applicable to Facility, Not Project. These requirements are written into the existing PTC P-2011-0054 and DEQ's existing Statement of Basis for that PTC. They are not part of the current new PTC for the two added RICE engines.

STANDARDS OF PERFORMANCE FOR STATIONARY COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES (40 CFR 60 Subpart JJJJ)

§60.4230 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured :

(i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

(6) The provisions of §4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

Applicable. Proposed LFG Engines G1 and G2 are stationary spark ignition engines that will commence construction after June 12, 2006. The proposed engines will have a power rating of more than 500 HP. Therefore the engines are subject to Subpart JJJJ.

§60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?

*(e) Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards in **Table 1** to this subpart for their stationary SI ICE. For owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 100 HP (except gasoline and rich burn engines that use LPG) manufactured prior to January 1, 2011 that were certified to the certification emission standards in 40 CFR part 1048 applicable to engines that are not severe duty engines, if such stationary SI ICE was certified to a carbon monoxide (CO) standard above the standard in Table 1 to this subpart, then the owners and operators may meet the CO certification (not field testing) standard for which the engine was certified.*

Table 1 to Subpart JJJJ of Part 60—NO_x, CO, and VOC Emission Standards for Stationary Non-Emergency SI Engines [>100 HP] (Except Gasoline and Rich Burn LPG), Stationary SI Landfill/Digester Gas Engines, and Stationary Emergency Engines >25 HP

Engine type and fuel	Maximum engine power	Manufacture date	Emission standards[a]					
			g/HP-hr			ppmvd at 15% O_2		
			NO_x	CO	VOC[a]	NO_x	CO	VOC[a]
Landfill/Digester Gas (except lean burn 500<HP<1,350)	HP>500	7/1/2010	2.0	5.0	1.0	150	610	80

[a]Owners and operators of stationary non-certified SI engines may choose to comply with the emission standards in units of either g/HP-hr or ppmvd at 15 percent 02.

[b] Owners and operators of new or reconstructed non-emergency lean bum SI stationary engines with a site rating of greater than or equal to 250 brake HP located at a major source that are meeting the requirements of 40 CFR part 63, subpart ZZZZ, Table 2a do not have to comply with the CO emission standards of Table 1 of this subpart.

The emission standards applicable to emergency engines between 25 HP and 130 HP are in terms of NO_x + HC.

"For purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

Applicable. The proposed LFG engines will comply with the emission standards as shown above in Table 1 to Subpart JJJJ.

§60.4234 How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine?

Owners and operators of stationary SI ICE must operate and maintain stationary SI ICE that achieve the emission standards as required in §60.4233 over the entire life of the engine.

Applicable. The proposed engines must meet the emission standards over the entire life of the engines.

§60.4236 What is the deadline for importing or installing stationary SI ICE produced in previous model years?

(b) After July 1, 2009, owners and operators may not install stationary SI ICE with a maximum engine power of greater than or equal to 500 HP that do not meet the applicable requirements in §60.4233, except that lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP that do not meet the applicable requirements in §60.4233 may not be installed after January 1, 2010.

Not Applicable. The proposed engines will not be ordered until after January 1, 2010.

§60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?

(b) If you are an owner or operator of a stationary SI internal combustion engine and must comply with the emission standards specified in §60.4233(d) or (e), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) and (2) of this section.

(2) Purchasing a non-certified engine and demonstrating compliance with the emission standards specified in §60.4233(d) or (e) and according to the requirements specified in §60.4244, as applicable, and according to paragraphs (b)(2)(i) and (ii) of this section.

(ii) If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance.

Applicable. The permittee will keep a maintenance plan and records for minimizing emissions. Performance tests will be performed according to the schedule stated above.

(g) It is expected that air-to-fuel ratio controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.

Not Applicable. Engines G1 and G2 design does not include three-way catalysts/non-selective catalytic reduction, or associated air-to-fuel ratio controllers.

§60.4244 What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?

Owners and operators of stationary SI ICE who conduct performance tests must follow the procedures in paragraphs (a) through (f) of this section.

(a) Each performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in §60.8 and under the specific conditions that are specified by Table 2 to §60.4244.

(b) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c). If your stationary SI internal combustion engine is non-operational, you do not need to startup the engine solely to conduct a performance test; however, you must conduct the performance test immediately upon startup of the engine.

(c) You must conduct three separate test runs for each performance test required in this section, as specified in §60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour.

(d) To determine compliance with the NOx mass per unit output emission limitation, convert the concentration of NOx, in the engine exhaust using Equation 1 of this section:

$$ER = (Cd \times 1.912\ E\text{-}03 \times Q \times T) / (hp\text{-}hr) \quad (Eq.\ 1)$$

Where:

ER = Emission rate of NO_x in g/HP -hr.

Cd = Measured NO, concentration in parts per million by volume (ppmv).

1.912×10^{3} = Conversion constant for ppm NOx to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, horsepower-hour (HP-hr).

(e) To determine compliance with the CO mass per unit output emission limitation, convert the concentration of CO in the engine exhaust using Equation 2 of this section:

$$ER = (Cd \times 1.164\ E\text{-}03 \times Q \times T) / (hp\text{-}hr) \quad (Eq.\ 2)$$

Where:

ER = Emission rate of CO in g/HP-hr.

C_d = Measured CO concentration in ppmv.

1.164×10^{-3} = Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

(f) For purposes of this subpart, when calculating emissions of VOC, emissions of formaldehyde should not be included. To determine compliance with the VOC mass per unit output emission limitation, convert the concentration of VOC in the engine exhaust using Equation 3 of this section:

ER = (Cd x 1.833 E-03 x Q x T) / (hp-hr) (Eq. 3)

Where:

ER = Emission rate of VOC in g/HP-hr.

Ca = VOC concentration measured as propane in ppmv.

1.833 x 10 = Conversion constant for ppm VOC measured as propane, to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

(g) If the owner/operator chooses to measure VOC emissions using either Method 18 of 40 CFR part 60, appendix A, or Method 320 of 40 CFR part 63, appendix A, then it has the option of correcting the measured VOC emissions to account for the potential differences in measured values between these methods and Method 25A. The results from Method 18 and Method 320 can be corrected for response factor differences using Equations 4 and 5 of this section. The corrected VOC concentration can then be placed on a propane basis using Equation 6 of this section.

RFi = (CMi / CAi) (Eq. 4)

Where:

RFi, = Response factor of compound i when measured with EPA Method 25A.

CMi = Measured concentration of compound i in ppmv as carbon.

CAi= True concentration of compound i in ppmv as carbon.

Cicorr = RFi x Cimeas (Eq. 5)

where:

Cicorr = Concentration of compound i corrected to the value that would have been measured by EPA Method 25A, ppmv as carbon.

Cimeas = Concentration of compound i measured by EPA Method 320, ppmv as carbon.

$$CPeq = 0.6098 \times C_{icorr} \qquad \text{(Eq. 6)}$$

Where:

CPeq = Concentration of compound i in mg of propane equivalent per DSCM.

Applicable. The permittee will conduct performance tests according to the procedures outlined above. Compliance will be demonstrated by periodic G1 and G2 source testing which will be required in this permit.

§60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?

Owners or operators of stationary SI ICE must meet the following notification, reporting and recordkeeping requirements.

(a) Owners and operators of all stationary SI ICE must keep records of the information in paragraphs (a)(1) through (4) of this section.

(1) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(2) Maintenance conducted on the engine.

... (3)... [re Certified Engine -- Not Applicable]

(4) If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards

(b)... [re Emergency Engines -- Not Applicable]

(c) Owners and operators of stationary SI ICE greater than or equal to 500 HP that have not been certified by an engine manufacturer to meet the emission standards in §60.4231 must submit an initial notification as required in §60.7(a)(1). The notification must include the information in paragraphs (c)(1) through (5) of this section.

(1) Name and address of the owner or operator;

(2) The address of the affected source;

(3) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(4) Emission control equipment; and

(5) Fuel used.

(d) Owners and operators of stationary SI ICE that are subject to performance testing must submit a copy of each performance test as conducted in §60.4244 within 60 days after the test has been completed.

Applicable. The proposed engines will not be certified by the manufacturer; and the permittee will comply with the requirements above. Compliance will be demonstrated by periodic G1 and G2 source testing and associated reporting which will be required in this permit.

NESHAP Applicability (40 CFR 61)

Applicable. Because the Milner Butte Landfill includes an active asbestos waste disposal facility, it is subject to *Subpart M National Emission Standard for Asbestos*, §61.154 Standard for active waste disposal sites. These activities are not associated with the engines that are the subject of this PTC) .

APPENDIX D – PROCESSING FEE

PTC Processing Fee Calculation Worksheet

Instructions:
Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.

Company: Milner Butte Landfill
Address: 1050 West 400 South
City: Burley
State: Idaho
Zip Code: 83318
Facility Contact: Josh Bartlome
Title: Exec. Director and CEO
AIRS No.: 031-00046

N Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N

Y Did this permit require engineering analysis? Y/N

N Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO_X	33.19	0	33.2
SO_2	0	41.84	-41.8
CO	56.34	0	56.3
PM10	0	1.15	-1.2
VOC	29.99	0	30.0
TAPS/HAPS	0	0	0.0
Total:	0.0	42.99	**76.5**
Fee Due	**$ 5,000.00**		

Comments: There are TAP and HAP emisisons changes, but those changes are not sigificant enough to alter the processing fee amount.

APPENDIX E - FACILITY COMMETS ON DRAFT PERMIT

Comment #1: Milner Butte Landfill relied on 150 ppmv as a conservative estimate of potential H_2S concentrations, based on historical monitoring data, to demonstrate compliance with the SO_2 National Ambient Air Quality Standard. Milner Butte maintains that the incorporation of this modeling input into the permit as an enforceable condition is not necessary.

Response: The application for this permit did not include the historical monitoring data. However, DEQ did review the current application for the Tier I operating permit renewal and found that in that application it is stated that the facility is currently emitting, on average, hydrogen sulfide in concentrations of 84 ppm[4]. This value is nearly 2.5 times the value given in AP-42, indicating that hydrogen sulfide emissions from Milner Butte are significantly higher than what the current AP-42 emission factor would indicate. Additionally, since the SO_2 ambient standards include a 1-hour standard, it is not the average value that is critical it is the maximum values that will drive the 1-hour impacts. In part, hydrogen sulfide concentrations in the landfill gas are dependent on the varying types of wastes accepted in the landfill and a demonstration has not been provided that hydrogen sulfide concentration will not vary accordingly. It cannot be said with certainty that hydrogen sulfide emission will not increase over time and it is DEQ's experience that hydrogen sulfide emissions from landfill can be significantly higher. The Ada County Landfill reported landfill gas concentrations as high as 610 ppm[5].

The hydrogen sulfide limit and associated monitoring are warranted.

Comment #2: Milner Butte commented that the Control Equipment listing in Table 1.1 should not list the engines as controls for landfill gas emissions.

Response: DEQ made this change. From the Standards of Performance for Municipal Solid Waste Landfills (40 CFR 60 Subpart WWW) perspective, the control or treatment system for landfill gas consists of either combustion in the flare or treating the gas by filtering, dewatering and compressing for use or sale. The engines are not "control" units by 40 CFR 60 Subpart WWW. See the NSPS Section of the Statement of Basis.

The permit still requires that the landfill gas be combusted in the flare or the engines.

Comment #3: Milner Butte commented on facility draft Permit Condition 2.4. The draft permit condition required that non-methane organic carbon from the engines be reduced by 98% and cited 40 CFR 60.752(b)(2)(iii)(B) as the origin of this requirement. Milner Butte commented that this interpretation of the regulation was not appropriate and cited EPA guidance supporting the fact that the engines are not affected units by this subpart.

Response: EPA guidance does in fact provide that engines are not affected emissions units. See the NSPS section of the statement of basis. The reference to 40 CFR 60.752(b)(2)(iii)(B) in the permit has been removed and 40 CFR 60.752(b)(2)(iii)(C) has been put in its place. This provision, clarified by EPA guidance, requires routing "the collected gas to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of paragraph (b)(2)(iii) (A) or (B) of this section." EPA has clarified[6] that filtering, dewatering and compressing the gases qualifies as "treatment" for the purpose of the NSPS. The engines are not affected by the NSPS and the treatment system does not vent to the atmosphere.

DEQ has updated the permit to reflect EPA guidance.

Comment #4: Milner Butte commented that 40 CFR 60, Subpart JJJJ only requires testing for NO_2.

Response: Based on a review of the provisions of the NSPS, and Milner Butte's own regulatory review that was provided in the application, source testing is required for CO, VOC and NOx. See the regulatory review of the NSPS provided in Appendix C of this statement of basis.

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4 Current Tier I renewal application

5 Ada County Landfill Excess Emissions Report, November 16, 2012 (TRIM record #2012AAI2705)

6 January 17, 2001 EPA letter to Gregory J. Graetz, Project Engineer, Derenzo and Associates, Inc. from George T. Czeriak, Chief, Air Enforcement and Compliance Assurance Branch, EPA