Statement of Basis

Permit to Construct No. P-2009.0001
Project ID 60972

Ada County Solid Waste Management
Ada County Landfill
Boise, Idaho

Facility ID 001-00195

Proposed for Public Comment

February 13, 2012
Eric Clark
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

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
acfm	actual cubic feet per minute
ASTM	American Society for Testing and Materials
BMP	best management practices
Btu	British thermal units
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	continuous emission monitoring systems
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CI	compression ignition
CMS	continuous monitoring systems
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent emissions
COMS	continuous opacity monitoring systems
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gases
gr	grains (1 lb = 7,000 grains)
H_2S	Hydrogen sulfide
HAP	hazardous air pollutants
HHV	higher heating value
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
LFG	Landfill gas
km	kilometers
lb/hr	pounds per hour
lb/qtr	pound per quarter
m	meters
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
MMscf	million standard cubic feet
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
O&M	operation and maintenance
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
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*
scf	standard cubic feet
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
SSM	Startup, Shutdown and Maintenance
SO_2	sulfur dioxide
SO_x	sulfur oxides
T/day	tons per calendar day
T/yr	tons per consecutive 12 calendar month period
TAP	toxic air pollutants
ULSD	ultra-low sulfur diesel
U.S.C.	United States Code
VOC	volatile organic compounds
$\mu g/m^3$	micrograms per cubic meter

FACILITY INFORMATION

Description

Ada County Landfill is a municipal solid waste landfill and is located at 10300 Seaman's Gulch Road, roughly 6.5 miles northwest of Boise. The property consists of approximately 2,700 acres. The landfill is owned and operated by Ada County.

Ada County Landfill consists of two active cells - Hidden Hollow Landfill (HHLF) and the North Ravine Cell (NRC). The Hidden Hollow Landfill cell encompasses an area of approximately 110 acres with design capacity of 16 million cubic yards. In 2020, about forty-six acres of this cell will be closed. The North Ravine Cell, approximately 260 acres, was designed to have a final capacity of 70 million cubic yards and an active life of 90 years based on the anticipated growth patterns and LANDGEM modeling. The North Ravine Cell has been accepting waste since 2007.

Ada County Landfill generates landfill gas (LFG). This gas is a byproduct of the decomposition of organic material in the landfill. It is typically a mixture of approximately 50% methane and 50% carbon dioxide, and a minor amount of nonmethane organic compounds (NMOC). Within the NMOC are some hazardous air pollutants (HAPs) and toxic air pollutants (TAPs). A trace amount of hydrogen sulfide gas is also found in the landfill gas. Landfills may continue to generate gas for 10 to 20 years, or longer, after waste disposal has ceased.

The extracted LFG is drawn to the flare system by two exhausters (vacuum blowers). Condensate is captured ahead of the exhausters and pumped to the leachate collection ponds. The condensate consists primarily of water vapor generated at a rate of approximately 0.004 gallon per cubic foot of LFG. The exhausters blow the LFG into the flares.

Propane-fired pilots provide continuous auto-ignition of the LFG. Sensors (thermocouples) in the flare stacks continuously monitor flare operations. In the event the flame goes out, the integrated control system will shut down the flares. The flares are enclosed. The flare flame cannot be seen. However, system operators are able to monitor the presence of the flame through sight glasses of the enclosure.

The NMOC and methane are combusted by the enclosed flares at temperature between 1,400 – 1,800°F.

Federal regulations, 40 CFR 60 Subpart WWW, require municipal landfills to collect and control the gases emitted from the decomposition process. In April 2004, such a system began to collect gases from the forty six acres of HHLF. Initially, two identical enclosed flares systems were each permitted to burn 2000 scfm of land fill gas. This permit allow Flare 1 to combust 2320 scfm and Flare 2 to combust 2379 scfm of land fill gas, but a combined limit of 3,350 scfm. Also, a hydrogen sulfide limit of 600 ppm and corresponding monitoring and recordkeeping requirements have been included.

Foristar Energy LLC, formerly G2 Energy, (Facility ID 001-00214) has been permitted to produce electrical energy using landfill gas from Ada County Landfill. Fortistar Energy LLC is entirely independent from Ada County Landfill operations.

In addition to the flares, the Ada County Landfill utilizes a wood chipper and power screen to separate processed wood debris material into various sizes. The wood chipper consists of a 12-foot diameter cone to cut and shred various wood debris (i.e., stumps, logs, brush, yard waste, pallets, and construction waste). The chipper is powered by a 700-horsepower diesel engine generator. Wood debris material is loaded into the 12-foot cone and processed through a drop chute onto a conveyor. The conveyor transports the wood debris material to a power screen which further separates the processed material by shaking out the wood chips and debris into various sizes. The power screen is powered by a 106-horsepower diesel engine. Two emergency engines of are also operated by the facility.

A hazardous waste materials building is also operated on the property.

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).

Month XX, 2012	Tier I Operating Permit T1-2011.0128 Project 60939 (A)
July 22, 2009	P-2009.0001, Update the flare flow rate to 2,320 scfm for Flare 1and 2,379 scfm for flare 2, Permit status (S) upon issuance of this PTC.
April 13, 2007	Tier I Operating Permit T1-060050 (S) by T1-2011.0128, issued TBD.
May 18, 2006	PTC No.P-050056 - PTC modification to add North Ravine Cell. Permit status (S) by PTC P-050056, issued July 22, 2009.
June 15, 2004	PTC No. P-040004 – PTC for the construction of two flares and for the operation of an existing wood chipper, power screen, and two diesel engine generators. Permit status (S) by PTC No. P-050056, issued May 18, 2006.

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:

- Increase the hydrogen sulfide concentration from 35 ppm to 600 ppm. Included with this is appropriate monitoring and recordkeeping.
- Limit hydrogen sulfide emissions at 600 ppm and total landfill gas flow to the flares of 3,350 scfm.

Application Chronology

December 22, 2011	DEQ received an application and an application fee.
December 30, 2011	DEQ received supplemental information from the applicant.
January 11, 2012	DEQ determined that the application was complete.
January 18, 2012	DEQ made available the draft permit and statement of basis for peer and regional office review.
January 23, 2012	DEQ made available the draft permit and statement of basis for applicant review.
Feb. 13 – March 14, 2012	DEQ provided a public comment period on the proposed action.
Month Day, Year	***{For projects with public hearings}*** DEQ provided a public hearing in CITY.
February 3, 2012	DEQ received the permit processing fee.
Month Day, Year	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Source ID No.	Sources	Control Equipment	Emission Point ID No.
Hidden Hollow Landfill (HHLF) and North Ravine Cell (NRC)	Municipal solid waste landfill HHFL: ~110 acres Design capacity of 16 million cubic yards Anticipated closure: 2020 NRC: ~260 acres Design capacity of 70 million cubic yards Anticipated closure: ~2097	Flare 1& 2	Manufacturer: John Zink Model: Enclosed ZTOF flare. Recommended flowrates: 200 – 2000 scfm LFG, (combustion requires addition of ambient air) Permitted flowrates: 200 – 2320 scfm LFG Maximum heat release of 65.5 MMBtu/hr H=40 ft D=10 ft
Wood chipper w/engine	700 hp, CAT C18 diesel-fired engine	None	
Power screen w/engine	106 hp Deutz diesel-fired engine	None	
Emergency engine #1	44 hp Detroit diesel-fired engine	None	
Emergency engine #2	80 hp John Deere diesel-fired engine	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.

Using this definition of Potential to Emit an emission inventory was developed for the two flares, four diesel engines and fugitive emissions operations at the facility (see Appendix A) associated with this proposed project. Emissions estimates of criteria pollutant, GHG, HAP PTE were based on emission factors from AP-42, operation of 3,300 hours per year for the wood chipper/power screen and 500 hours per year for the two emergency engines, and process information specific to the facility for this proposed project.

Pre-Project Potential to Emit

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project.

The following table presents the pre-project potential to emit for all criteria and GHG pollutants from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

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

Source	$PM_{10}/PM_{2.5}$		SO_2		NO_x		CO		VOC		CO_2e
	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	T/yr[b]
Flare 1	3.19	13.98	0.92	4.05	6.08	26.63	1.52	6.66	4.64	20.31	121,156.2[c]
Flare 2	3.27	14.34	0.95	4.15	6.23	27.31	1.56	6.83	4.75	20.83	
Wood Chipper Engine	0.30	0.50	2.69	4.43	5.36	8.84	0.95	1.57	0.12	0.20	1,280.60
Power Screen Engine	0.27	0.44	0.25	0.41	3.79	6.25	0.82	1.35	0.30	0.50	214.79
Pre-Project Totals	**7.03**	**29.26**	**4.81**	**13.04**	**21.46**	**69.03**	**4.85**	**16.41**	**9.81**	**41.84**	**122,651.60**

a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.
c) The flare CO_2 values were excluded as those emissions were deferred in the Federal Register 43490, Wednesday July 20, 2011. Also, the methane determination is based on Eq HH-8 of Part 98.

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 permit limits resulting from this project.

The following table presents the post project Potential to Emit for criteria and GHG pollutants from all emissions units at the facility as determined by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 3 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$		SO_2		NO_x		CO		VOC		CO_2e
	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	T/yr[b]
Flare 1	1.59	6.97	10.02	43.89	3.03	13.27	0.76	3.32	4.62	20.24	121,156.2[c]
Flare 2	1.64	7.19	10.35	45.33	3.13	13.70	0.78	3.43	4.77	20.90	
Wood Chipper Engine	0.30	0.50	0.008	0.01	5.36	8.84	0.95	1.57	0.12	0.20	1,280.60
Power Screen Engine	0.27	0.44	0.001	0.002	3.79	6.25	0.82	1.35	0.30	0.50	214.79
Emergency Engine #1	0.13	0.03	0.0006	$1.59E^{-04}$	1.85	0.463	0.40	0.10	0.15	0.04	16.01
Emergency Engine #2	0.20	0.05	0.0010	$2.45E^{-04}$	2.86	0.714	0.62	0.15	0.23	0.06	24.54
Post Project Totals	**4.13**	**15.18**	**20.38**	**89.23**	**20.02**	**43.24**	**4.33**	**9.92**	**10.19**	**41.94**	**122,692.14**

a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.
c) The flare CO_2 values were excluded as those emissions were deferred in the Federal Register 43490, Wednesday July 20, 2011. Also, the methane determination is based on Eq HH-1 of Part 98.

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		CO_2e
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	T/yr
Pre-Project Potential to Emit	7.03	29.26	4.81	13.04	21.46	69.03	4.85	16.41	9.81	41.84	122,651.60
Post Project Potential to Emit	4.13	15.18	20.38	89.23	16.33	43.24	4.33	9.92	10.19	41.94	122,692.14
Changes in Potential to Emit	**-2.90**	**-14.08**	**15.57**	**76.19**	**-5.13**	**-25.79**	**-0.52**	**-6.49**	**0.38**	**0.10**	**40.54**

Toxic Air Pollutant Emissions

This project, from a TAPs standpoint, estimated changes in emissions for the hydrogen sulfide from the two flares and emissions from the two emergency engines that were recently added. The two emergency engines have been determined to be categorically exempt in accordance with IDAPA 58.01.01.222.01.c.ii. The two engines have a combined horsepower of 124. The Detroit Diesel Engine is 44 hp and the John Deere Engine is 80 hp. Because the two engines have been added to the facility at approximately the same timeframe they were considered one project. Therefore, the engines are exempt together as though they were one unit rather than two separate units. Regardless, the categorical exemption limits the engines to 450 hours per month combined operation. However, the Ada County Landfill is requesting only 500 hours per year for each engine. Thus, the exemption criteria are met. The emission estimates for each engine does exceed a few TAP screening levels. These pollutants include: benzene, formaldehyde, 1,3 Butadiene and Total PAH. Benzene, formaldehyde and Total PAH are urban HAPs as defined by 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ.

One engine is subject to ZZZZ and the other is subject to IIII. IDAPA 58.01.01.210.20.a states: if the owner or operator demonstrates that the toxic air pollutant from the source or modification is regulated by the Department at the time of permit issuance under 40 CFR Part 60, 40 CFR Part 61 or 40 CFR Part 63, no further procedures for demonstrating preconstruction compliance will be required under Section 210 for that toxic air pollutant as part of the application process. Therefore, three pollutants are being controlled adequately by the standards identified in each subpart. 1,3 Butadiene is not an urban HAP, but because the engines are exempt, according to 222.01.c.ii, all TAPs emissions are considered negligible.

Lastly, the increase of hydrogen sulfide from a concentration of 38 ppmv to 600 ppmv was modeled and demonstrated compliance with the 1-hr SO_2 NAAQS standard. For further details please see the modeling memorandum in Appendix B.

Post Project HAP Emissions

The following table presents the post project potential to emit for HAP pollutants from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 5 HAZARDOUS AIR POLLUTANTS EMISSIONS POTENTIAL TO EMIT SUMMARY

Hazardous Air Pollutants	PTE (lb/hr)	PTE (T/yr)
Benzene	6.20E-03	9.60E-03
Carbon disulfide	8.24E-05	3.61E-04
Carbon tetrachloride	7.66E-06	3.36E-05
Carbonyl sulfide	1.47E-04	6.42E-04
Chlorobenzene	3.50E-04	1.53E-03
Chloroethane (ethyl chloride)	1.00E-03	4.40E-03
Chloroform	4.46E-05	1.95E-04
Chloromethane (methylchloride)	7.60E-04	3.33E-03
Dichlorobenzene	3.84E-04	1.68E-03
Dichloromethane (methylene chloride)	1.51E-02	6.62E-02
Ethylbenzene	9.14E-04	4.00E-03
Ethylene dibromide	2.34E-06	1.02E-05
Formaldehyde	2.69E-03	2.68E-03
Hexane	1.06E-03	4.63E-03
Mercury (total)	3.65E-05	1.60E-04
Methyl isobutyl ketone (MIBK)	3.50E-04	1.53E-03
Naphthalene	8.55E-04	1.28E-03
Perchloroethylene (tetrachloroethylene)	7.70E-03	3.37E-02
Toluene	9.04E-03	3.28E-02
Trichoroethylene	4.61E-03	2.02E-02
Vinyl chloride	5.71E-03	2.50E-02
Xylenes	2.40E-03	1.05E-02
Hydrochloric Acid	9.45E-01	4.14E+00

o-Xylenes	1.58E-03	2.17E-03
Propylene	4.97E-03	4.34E-03
Acetaldehyde	1.61E-03	1.51E-03
Acrolein	2.20E-04	2.25E-04
1,3-Butadiene	7.53E-05	6.58E-05
Totals	**1.01**	**4.37**

Ambient Air Quality Impact Analyses

As presented in the Modeling Memo in Appendix B, the estimated emission rates of SO_2/H_2S from this project were exceeded applicable screening emission levels (EL) and published DEQ modeling thresholds established in IDAPA 58.01.01.585-586 and in the State of Idaho Air Quality Modeling Guideline[1]. Refer to the Emissions Inventories section for additional information concerning the emission inventories.

The applicant has demonstrated pre-construction compliance to DEQ's satisfaction that emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard. The applicant has also demonstrated pre-construction compliance to DEQ's satisfaction that the emissions increase due to this permitting action will not exceed any acceptable ambient concentration (AAC) or acceptable ambient concentration for carcinogens (AACC) for toxic air pollutants (TAP). A summary of the Ambient Air Impact Analysis for TAP is provided in Appendix A.

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 Ada 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

"Major" classification for criteria pollutants is defined as the uncontrolled Potential to Emit for criteria pollutants are above the applicable major source thresholds and the Potential to Emit for criteria pollutants is also above the applicable major source thresholds. Therefore, the following table compares the uncontrolled Potential to Emit and the Potential to Emit for criteria pollutants to the Major Source thresholds to determine if the facility will be "Major."

[1] Criteria pollutant thresholds in Table 1, State of Idaho Air Quality Modeling Guideline, Doc ID AQ-011, rev. 1, December 31, 2002.

Table 6 UNCONTROLLED PTE AND PTE FOR REGULATED AIR POLLUTANTS COMPARED TO THE MAJOR SOURCE THRESHOLDS

Pollutant	Uncontrolled PTE (T/yr)	PTE (T/yr)	Major Source Thresholds (T/yr)	Uncontrolled PTE Exceeds the Major Source Threshold and PTE Exceeds the Major Source Threshold?
PM_{10}	15.18	15.18	100	No
$PM_{2.5}$	15.18	15.18	100	No
SO_2	>100	89.23	100	No
NO_x	43.24	43.24	100	No
CO	9.92	9.92	100	No
VOC	41.94	41.94	100	No
CO_2e	122,692.14	122,692.14	100,000	Yes

"Synthetic Minor" classification for HAP pollutants is defined as the uncontrolled Potential to Emit for HAP pollutants are above the applicable major source thresholds and the Potential to Emit for HAP pollutants fall below the applicable major source thresholds. Therefore, the following table compares the uncontrolled Potential to Emit and the Potential to Emit for HAP pollutants to the Major Source thresholds to determine if the facility will be "Synthetic Minor."

Table 7 UNCONTROLLED PTE AND PTE FOR HAZARDOUS AIR POLLUTANTS COMPARED TO THE MAJOR SOURCE THRESHOLDS

HAP Pollutant	Uncontrolled PTE (T/yr)	PTE (T/yr)	Major Source Thresholds (T/yr)	Uncontrolled PTE Exceeds the Major Source Threshold and PTE Exceeds the Major Source Threshold?
Total HAPs	**4.37**	**4.37**	**25**	**No**

As demonstrated in Table 6, the facility has an uncontrolled potential to emit greater than the Major Source thresholds of 100 T/yr for SO_2 and 100,000 T/yr for GHGs. In addition, as demonstrated in Table 7 the facility has uncontrolled potential HAP emissions of less than the Major Source threshold of 10 T/yr and for all HAP combined less than the Major Source threshold of 25 T/yr. Therefore, this facility is not designated as a Major facility.

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 modified emissions sources. 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 (IDAPA 58.01.01.224)

IDAPA 58.01.01.224................................. Permit to Construct Processing Fee

In accordance with the PTC processing fee requirements a fee of $5,000 is required to be paid prior to final issuance of the permit. The increase in emissions is the increase in SO_2 by 76.2 T/yr. The other pollutants are reduced by 46.3 T/yr. Therefore, the overall increase is 29.9 T/yr, which is between 10 – 100 T/yr. Hence, the $5,000 fee.

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. This requirement is assured by Permit Conditions 8, 13 and 21.

Standards for New Sources (IDAPA 58.01.01.776)

IDAPA 58.01.01.776 .... Rules for Control of Odors

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 is assured by Permit Conditions 10 and 14.

Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

IDAPA 58.01.01.301 .... Requirement to Obtain Tier I Operating Permit

Post project facility-wide emissions from this facility have a potential to emit greater than 100,000 tons per year for CO_2e as demonstrated previously in the Emissions Inventories Section of this analysis. Therefore, this facility is classified as a major facility, as defined in IDAPA 58.01.01.008.10. Also, the landfill is subject to 40 CFR 60, Subpart WWW and thus defined as a Title V source.

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/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)

Because the facility is a landfill and has one compression-ignited IC engines 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 IIII - Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984

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

§ 60.750 Applicability, designation of affected facility, and delegation of authority.

(a) The provisions of this subpart apply to each municipal solid waste landfill that commenced construction, reconstruction or modification on or after May 30, 1991. Physical or operational changes made to an existing MSW landfill solely to comply with subpart Cc of this part are not considered construction, reconstruction, or modification for the purposes of this section.

(b) The following authorities shall be retained by the Administrator and not transferred to the State: §60.754(a)(5).

(c) Activities required by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification for purposes of this subpart.

The Ada County Landfill was initially constructed in 1972 and modified in 2006. Therefore, the facility is subject to the subpart.

§ 60.751 Definitions.

This section outlines all the important definitions discussed in the subpart.

§ 60.752 Standards for air emissions from municipal solid waste landfills.

(b) Each owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, shall either comply with paragraph (b)(2) of this section or calculate an NMOC emission rate for the landfill using the procedures specified in §60.754. The NMOC emission rate shall be recalculated annually, except as provided in §60.757(b)(1)(ii) of this subpart. The owner or operator of an MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters is subject to part 70 or 71 permitting requirements.

(2) If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the owner or operator shall:

(iv) Operate the collection and control device installed to comply with this subpart in accordance with the provisions of §§60.753, 60.755 and 60.756.

(v) The collection and control system may be capped or removed provided that all the conditions of paragraphs (b)(2)(v) (A), (B), and (C) of this section are met:

(A) The landfill shall be a closed landfill as defined in §60.751 of this subpart. A closure report shall be submitted to the Administrator as provided in §60.757(d);

(B) The collection and control system shall have been in operation a minimum of 15 years; and

(C) Following the procedures specified in §60.754(b) of this subpart, the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart.

These standards require that the capture system be operated appropriately.

(d) When a MSW landfill subject to this subpart is closed, the owner or operator is no longer subject to the requirement to maintain an operating permit under part 70 or 71 of this chapter for the landfill if the landfill is not otherwise subject to the requirements of either part 70 or 71 and if either of the following conditions are met:

(1) The landfill was never subject to the requirement for a control system under paragraph (b)(2) of this section; or

(2) The owner or operator meets the conditions for control system removal specified in paragraph (b)(2)(v) of this section.

When the facility is closed, if the subpart is the only reason for maintaining a Title V Operating permit, a Title V permit is no longer required.

§ 60.753 Operational standards for collection and control systems.

Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of §60.752(b)(2)(ii) of this subpart shall:

(a) Operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for:

(1) 5 years or more if active; or

(2) 2 years or more if closed or at final grade;

The timeframe in which the collection system must be operated is dependent on whether it is active or closed.

(b) Operate the collection system with negative pressure at each wellhead except under the following conditions:

(1) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in §60.757(f)(1);

(2) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan;

(3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Administrator;

Under most circumstances the collection system must be operated under negative pressure at each wellhead unless stated in this section.

(c) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.

(1) The nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by §60.752(b)(2)(i) of this subpart.

(2) Unless an alternative test method is established as allowed by §60.752(b)(2)(i) of this subpart, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:

(i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;

(ii) A data recorder is not required;

(iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span;

(iv) A calibration error check is not required;

(v) The allowable sample bias, zero drift, and calibration drift are ±10 percent.

The wellheads must be operated under specific conditions that include temperature, nitrogen and oxygen levels. Also, specific methods must be used when determining nitrogen and oxygen levels.

d) Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.

(e) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with §60.752(b)(2)(iii). In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour; and

(f) Operate the control or treatment system at all times when the collected gas is routed to the system.

(g) If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of this section are not met, corrective action shall be taken as specified in §60.755(a)(3) through (5) or §60.755(c) of this subpart. If corrective actions are taken as specified in §60.755, the monitored exceedance is not a violation of the operational requirements in this section.

The methane concentration not collected shall not exceed 500 ppm. If it does, testing must be conducted and corrective action taken to reduce the concentration. A monitoring plan must also be developed.

§ 60.754 Test methods and procedures.

(b) After the installation of a collection and control system in compliance with §60.755, the owner or operator shall calculate the NMOC emission rate for purposes of determining when the system can be removed as provided in §60.752(b)(2)(v), using the following equation:

$M_{NMOC} = 1.89 \times 10^{-3} Q_{LFG} C_{NMOC}$

where,

M_{NMOC} *= mass emission rate of NMOC, megagrams per year*

Q_{LFG} *= flow rate of landfill gas, cubic meters per minute*

C_{NMOC} *= NMOC concentration, parts per million by volume as hexane*

(1) The flow rate of landfill gas, Q_{LFG}*, shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of section 4 of Method 2E of appendix A of this part.*

(2) The average NMOC concentration, C_{NMOC}*, shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of appendix A of this part. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP–42). The sample location on the common header pipe shall be before any condensate removal or other gas refining units. The landfill owner or operator shall divide the NMOC concentration from Method 25C of appendix A of this part by six to convert from* C_{NMOC} *as carbon to* C_{NMOC} *as hexane.*

(3) The owner or operator may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Administrator.

This section outlines the methods necessary to calculate NMOC emission rate and measuring flow rate of the landfill gas.

§ 60.755 Compliance provisions.

(a) Except as provided in §60.752(b)(2)(i)(B), the specified methods in paragraphs (a)(1) through (a)(6) of this section shall be used to determine whether the gas collection system is in compliance with §60.752(b)(2)(ii).

(1) For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with §60.752(b)(2)(ii)(A)(1), one of the following equations shall be used. The k and L_o *kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP–42) or other site specific values demonstrated to be appropriate and approved by the Administrator. If k has been determined as specified in §60.754(a)(4), the value of k determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.*

(i) For sites with unknown year-to-year solid waste acceptance rate:

$Q_m = 2L_oR\,(e^{-kc} - e^{-kt})$

where,

Q_m *= maximum expected gas generation flow rate, cubic meters per year*

L_o *= methane generation potential, cubic meters per megagram solid waste*

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, $year^{-1}$

t = age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t is the age of the landfill at installation, years

c = time since closure, years (for an active landfill c = O and $e^{-kc} = 1$*)*

(ii) For sites with known year-to-year solid waste acceptance rate:

$$Q_M = \sum_{i=1}^{n} 2\,k\,L_o\,M_i\left(e^{-kt_i}\right)$$

where,
Q_M=maximum expected gas generation flow rate, cubic meters per year
k=methane generation rate constant, year^{-1}
L_o=methane generation potential, cubic meters per megagram solid waste
M_i=mass of solid waste in the i^{th}section, megagrams
t_i=age of the i^{th}section, years

(iii) If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in paragraphs (a)(1) (i) and (ii) of this section. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using the equations in paragraphs (a)(1) (i) or (ii) or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

(2) For the purposes of determining sufficient density of gas collectors for compliance with §60.752(b)(2)(ii)(A)(2), the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Administrator, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.

(3) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with §60.752(b)(2)(ii)(A)(3), the owner or operator shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under §60.753(b). If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(4) Owners or operators are not required to expand the system as required in paragraph (a)(3) of this section during the first 180 days after gas collection system startup.

(5) For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as provided in §60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(6) An owner or operator seeking to demonstrate compliance with §60.752(b)(2)(ii)(A)(4) through the use of a collection system not conforming to the specifications provided in §60.759 shall provide information satisfactory to the Administrator as specified in §60.752(b)(2)(i)(C) demonstrating that off-site migration is being controlled.

These methods are used to confirm that the gas collection system is in compliance with §60.752(b)(2)(ii).

(b) For purposes of compliance with §60.753(a), each owner or operator of a controlled landfill shall place each well or design component as specified in the approved design plan as provided in §60.752(b)(2)(i). Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:

(1) 5 years or more if active; or

(2) 2 years or more if closed or at final grade.

(c) The following procedures shall be used for compliance with the surface methane operational standard as provided in §60.753(d).

(1) After installation of the collection system, the owner or operator shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in paragraph (d) of this section.

(2) The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.

(3) Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of this part, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.

(4) Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in paragraphs (c)(4) (i) through (v) of this section shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of §60.753(d).

(i) The location of each monitored exceedance shall be marked and the location recorded.

(ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance.

(iii) If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (c)(4)(v) of this section shall be taken, and no further monitoring of that location is required until the action specified in paragraph (c)(4)(v) has been taken.

(iv) Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in paragraph (c)(4) (ii) or (iii) of this section shall be re-monitored 1 month from the initial exceedance. If the 1-month remonitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month remonitoring shows an exceedance, the actions specified in paragraph (c)(4) (iii) or (v) shall be taken.

(v) For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Administrator for approval.

(5) The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

These procedures are used for compliance with the surface methane operational standards.

(d) Each owner or operator seeking to comply with the provisions in paragraph (c) of this section shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:

(1) The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of appendix A of this part, except that "methane" shall replace all references to VOC.

(2) The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.

(3) To meet the performance evaluation requirements in section 3.1.3 of Method 21 of appendix A of this part, the instrument evaluation procedures of section 4.4 of Method 21 of appendix A of this part shall be used.

(4) The calibration procedures provided in section 4.2 of Method 21 of appendix A of this part shall be followed immediately before commencing a surface monitoring survey.

(e) The provisions of this subpart apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices.

This section describes the methods used to show compliance with all standards of the subpart.

§ 60.756 Monitoring of operations.

Except as provided in §60.752(b)(2)(i)(B),

(a) Each owner or operator seeking to comply with §60.752(b)(2)(ii)(A) for an active gas collection system shall install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead and:

(1) Measure the gauge pressure in the gas collection header on a monthly basis as provided in §60.755(a)(3); and

(2) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in §60.755(a)(5); and

(3) Monitor temperature of the landfill gas on a monthly basis as provided in §60.755(a)(5).

(b) Each owner or operator seeking to comply with §60.752(b)(2)(iii) using an enclosed combustor shall calibrate, maintain, and operate according to the manufacturer's specifications, the following equipment.

(1) A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 degrees Celsius, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity equal to or greater than 44 megawatts.

(2) A device that records flow to or bypass of the control device. The owner or operator shall either:

(i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or

(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(c) Each owner or operator seeking to comply with §60.752(b)(2)(iii) using an open flare shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.

(2) A device that records flow to or bypass of the flare. The owner or operator shall either:

(i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or

(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

This section indicates the monitoring requirements for the landfill depending on the control device used.

(f) Each owner or operator seeking to demonstrate compliance with §60.755(c), shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in §60.755(d). Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.

This is monitoring requirements for surface methane.

§ 60.757 Reporting requirements.

Except as provided in §60.752(b)(2)(i)(B),

a) Each owner or operator subject to the requirements of this subpart shall submit an initial design capacity report to the Administrator.

(3) An amended design capacity report shall be submitted to the Administrator providing notification of an increase in the design capacity of the landfill, within 90 days of an increase in the maximum design capacity of the landfill to or above 2.5 million megagrams and 2.5 million cubic meters. This increase in design capacity may result from an increase in the permitted volume of the landfill or an increase in the density as documented in the annual recalculation required in §60.758(f).

If the capacity of the landfill increases an updated report needs to be sent in within 90 days of the increase.

(b) Each owner or operator subject to the requirements of this subpart shall submit an NMOC emission rate report to the Administrator initially and annually thereafter, except as provided for in paragraphs (b)(1)(ii) or (b)(3) of this section. The Administrator may request such additional information as may be necessary to verify the reported NMOC emission rate.

(1) The NMOC emission rate report shall contain an annual or 5-year estimate of the NMOC emission rate calculated using the formula and procedures provided in §60.754(a) or (b), as applicable.

(i) The initial NMOC emission rate report may be combined with the initial design capacity report required in paragraph (a) of this section and shall be submitted no later than indicated in paragraphs (b)(1)(i)(A) and (B) of this section. Subsequent NMOC emission rate reports shall be submitted annually thereafter, except as provided for in paragraphs (b)(1)(ii) and (b)(3) of this section.

(B) Ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification, or reconstruction on or after March 12, 1996.

(ii) If the estimated NMOC emission rate as reported in the annual report to the Administrator is less than 50 megagrams per year in each of the next 5 consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual report. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years for which an NMOC emission rate is estimated. All data and calculations upon which this estimate is based shall be provided to the Administrator. This estimate shall be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5-year estimate, a revised 5-year estimate shall be submitted to the Administrator. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.

(2) The NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions.

(3) Each owner or operator subject to the requirements of this subpart is exempted from the requirements of paragraphs (b)(1) and (2) of this section, after the installation of a collection and control system in compliance with §60.752(b)(2), during such time as the collection and control system is in operation and in compliance with §§60.753 and 60.755.

(c) Each owner or operator subject to the provisions of §60.752(b)(2)(i) shall submit a collection and control system design plan to the Administrator within 1 year of the first report required under paragraph (b) of this section in which the emission rate equals or exceeds 50 megagrams per year, except as follows:

(1) If the owner or operator elects to recalculate the NMOC emission rate after Tier 2 NMOC sampling and analysis as provided in §60.754(a)(3) and the resulting rate is less than 50 megagrams per year, annual periodic reporting shall be resumed, using the Tier 2 determined site-specific NMOC concentration, until the calculated emission rate is equal to or greater than 50 megagrams per year or the landfill is closed. The revised NMOC emission rate report, with the recalculated emission rate based on NMOC sampling and analysis, shall be submitted within 180 days of the first calculated exceedance of 50 megagrams per year.

(2) If the owner or operator elects to recalculate the NMOC emission rate after determining a site-specific methane generation rate constant (k), as provided in Tier 3 in §60.754(a)(4), and the resulting NMOC emission rate is less than 50 Mg/yr, annual periodic reporting shall be resumed. The resulting site-specific methane generation rate constant (k) shall be used in the emission rate calculation until such time as the emissions rate calculation results in an exceedance. The revised NMOC emission rate report based on the provisions of §60.754(a)(4) and the resulting site-specific methane generation rate constant (k) shall be submitted to the Administrator within 1 year of the first calculated emission rate exceeding 50 megagrams per year.

(d) Each owner or operator of a controlled landfill shall submit a closure report to the Administrator within 30 days of waste acceptance cessation. The Administrator may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted to the Administrator, no additional wastes may be placed into the landfill without filing a notification of modification as described under §60.7(a)(4).

(e) Each owner or operator of a controlled landfill shall submit an equipment removal report to the Administrator 30 days prior to removal or cessation of operation of the control equipment.

(1) The equipment removal report shall contain all of the following items:

(i) A copy of the closure report submitted in accordance with paragraph (d) of this section;

(ii) A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired; and

(iii) Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.

(2) The Administrator may request such additional information as may be necessary to verify that all of the conditions for removal in §60.752(b)(2)(v) have been met.

(f) Each owner or operator of a landfill seeking to comply with §60.752(b)(2) using an active collection system designed in accordance with §60.752(b)(2)(ii) shall submit to the Administrator annual reports of the recorded information in (f)(1) through (f)(6) of this paragraph. The initial annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under §60.8. For enclosed combustion devices and flares, reportable exceedances are defined under §60.758(c).

(1) Value and length of time for exceedance of applicable parameters monitored under §60.756(a), (b), (c), and (d).

(2) Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under §60.756.

(3) Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.

(4) All periods when the collection system was not operating in excess of 5 days.

(5) The location of each exceedance of the 500 parts per million methane concentration as provided in §60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month.

(6) The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), and (c)(4) of §60.755.

This section identifies all reporting requirements.

§ 60.758 Recordkeeping requirements.

(a) Except as provided in §60.752(b)(2)(i)(B), each owner or operator of an MSW landfill subject to the provisions of §60.752(b) shall keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report which triggered §60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

(b) Except as provided in §60.752(b)(2)(i)(B), each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in paragraphs (b)(1) through (b)(4) of this section as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal.

(1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.752(b)(2)(ii):

(i) The maximum expected gas generation flow rate as calculated in §60.755(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator.

(ii) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in §60.759(a)(1).

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.752(b)(2)(iii) through use of an enclosed combustion device other than a boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts:

(i) The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test.

(ii) The percent reduction of NMOC determined as specified in §60.752(b)(2)(iii)(B) achieved by the control device.

(3) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.752(b)(2)(iii)(B)(1) through use of a boiler or process heater of any size: a description of the location at which the collected gas vent stream is introduced into the boiler or process heater over the same time period of the performance testing.

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.752(b)(2)(iii)(A) through use of an open flare, the flare type (i.e., steam-assisted, air-assisted, or nonassisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in §60.18; continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent.

(c) Except as provided in §60.752(b)(2)(i)(B), each owner or operator of a controlled landfill subject to the provisions of this subpart shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in §60.756 as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

(1) The following constitute exceedances that shall be recorded and reported under §60.757(f):

(i) For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal unit per hour) or greater, all 3-hour periods of operation during which the average combustion temperature was more than 28 oC below the average combustion temperature during the most recent performance test at which compliance with §60.752(b)(2)(iii) was determined.

(ii) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under paragraph (b)(3) of this section.

(2) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified under §60.756.

(3) Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 megawatts or greater to comply with §60.752(b)(2)(iii) shall keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State, local, Tribal, or Federal regulatory requirements.)

(4) Each owner or operator seeking to comply with the provisions of this subpart by use of an open flare shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under §60.756(c), and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.

(d) Except as provided in §60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector.

(1) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under §60.755(b).

(2) Each owner or operator subject to the provisions of this subpart shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in §60.759(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in §60.759(a)(3)(ii).

(e) Except as provided in §60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in §60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.

(f) Landfill owners or operators who convert design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, as provided in the definition of "design capacity", shall keep readily accessible, on-site records of the annual recalculation of site-specific density, design capacity, and the supporting documentation. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

This section describes all the recordkeeping requirements.

§ 60.759 Specifications for active collection systems.

(a) Each owner or operator seeking to comply with §60.752(b)(2)(i) shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the Administrator as provided in §60.752(b)(2)(i)(C) and (D):

(1) The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandibility, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.

(2) The sufficient density of gas collection devices determined in paragraph (a)(1) of this section shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.

(3) The placement of gas collection devices determined in paragraph (a)(1) of this section shall control all gas producing areas, except as provided by paragraphs (a)(3)(i) and (a)(3)(ii) of this section.

(i) Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under §60.758(d). The documentation shall provide the nature, date of deposition, location and amount

of asbestos or nondegradable material deposited in the area, and shall be provided to the Administrator upon request.

(ii) Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the Administrator upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the following equation:

$Q_i = 2\, k\, L_o M_i (e^{-kt_i}) (C_{NMOC}) (3.6 \times 10^{-9})$

where,
Q_i= NMOC emission rate from the i^{th} section, megagrams per year
k = methane generation rate constant, $year^{-1}$
L_o= methane generation potential, cubic meters per megagram solid waste
M_i= mass of the degradable solid waste in the i^{th} section, megagram
t_i= age of the solid waste in the i^{th} section, years
C_{NMOC}= concentration of nonmethane organic compounds, parts per million by volume
3.6×10^{-9}= conversion factor

(iii) The values for k and C_{NMOC} determined in field testing shall be used if field testing has been performed in determining the NMOC emission rate or the radii of influence (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k, L_O and C_{NMOC} provided in §60.754(a)(1) or the alternative values from §60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph (a)(3)(i) of this section.

(b) Each owner or operator seeking to comply with §60.752(b)(2)(i)(A) shall construct the gas collection devices using the following equipment or procedures:

(1) The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration.

(2) Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.

(3) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.

(c) Each owner or operator seeking to comply with §60.752(b)(2)(i)(A) shall convey the landfill gas to a control system in compliance with §60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:

(1) For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph (c)(2) of this section shall be used.

This section spells out the specifications for active collection systems.

40 CFR 60, Subpart IIII............................Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

The second emergency diesel engine, John Deere 80 hp, was constructed November 2010. Therefore, IIII is applicable. However, because the landfill is a Title V source a breakdown of the subpart can be found in the associated operating permit, T1-2011.0128, Project 60939. This decision was made to avoid redundancy in the PTC and Tier 1 permit.

NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements in 40 CFR 61.

MACT Applicability (40 CFR 63)

40 CFR 63, Subpart AAAA..............................National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills

§ 63.1930 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants for existing and new municipal solid waste (MSW) landfills. This subpart requires all landfills described in §63.1935 to meet the requirements of 40 CFR part 60, subpart Cc or WWW and requires timely control of bioreactors. This subpart also requires such landfills to meet the startup, shutdown, and malfunction (SSM) requirements of the general provisions of this part and provides that compliance with the operating conditions shall be demonstrated by parameter monitoring results that are within the specified ranges. It also includes additional reporting requirements.

§ 63.1935 Am I subject to this subpart?

You are subject to this subpart if you meet the criteria in paragraph (a) or (b) of this section.

(a) You are subject to this subpart if you own or operate a MSW landfill that has accepted waste since November 8, 1987 or has additional capacity for waste deposition and meets any one of the three criteria in paragraphs (a)(1) through (3) of this section:

(3) Your MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m^3) and has estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr) NMOC as calculated according to §60.754(a) of the MSW landfills new source performance standards in 40 CFR part 60, subpart WWW, the Federal plan, or an EPA approved and effective State or tribal plan that applies to your landfill.

The landfill is an area source and began taking waste in 1972. Thus, the permittee is subject to the subpart.

§ 63.1940 What is the affected source of this subpart?

(a) An affected source of this subpart is a MSW landfill, as defined in §63.1990, that meets the criteria in §63.1935(a) or (b). The affected source includes the entire disposal facility in a contiguous geographic space where household waste is placed in or on land, including any portion of the MSW landfill operated as a bioreactor.

(b) A new affected source of this subpart is an affected source that commenced construction or reconstruction after November 7, 2000. An affected source is reconstructed if it meets the definition of reconstruction in 40 CFR 63.2 of subpart A.

(c) An affected source of this subpart is existing if it is not new.

The Ada County Landfill is an existing affected source because they commenced construction prior to November 7, 2000.

§ 63.1945 When do I have to comply with this subpart?

(f) If your landfill is an existing affected source and is an area source meeting the criteria in §63.1935(a)(3), you must comply with the requirements in §§63.1955(b) and 63.1960 through 63.1980 by the date your landfill is required to install a collection and control system by 40 CFR 60.752(b)(2) of subpart WWW, the Federal plan, or EPA approved and effective State or tribal plan that applies to your landfill or by January 16, 2004, whichever occurs later.

The landfill is subject to 40 CFR 60, Subpart WWW. The collection system was installed on April 28, 2007.

§ 63.1947 When do I have to comply with this subpart if I own or operate a bioreactor?

The facility does not own and operate a bioreactor. Therefore, this section does not apply.

§ 63.1950 When am I no longer required to comply with this subpart?

You are no longer required to comply with the requirements of this subpart when you are no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of subpart WWW, or the Federal plan or EPA approved and effective State plan or tribal plan that implements 40 CFR part 60, subpart Cc, whichever applies to your landfill.

The subpart requirements are voided when the landfill no longer is subject to 40 CFR 60, Subpart WWW.

§ 63.1952 When am I no longer required to comply with the requirements of this subpart if I own or operate a bioreactor?

The facility does not own and operate a bioreactor. Therefore, this section does not apply.

§ 63.1955 What requirements must I meet?

(a) You must fulfill one of the requirements in paragraph (a)(1) or (2) of this section, whichever is applicable:

(1) Comply with the requirements of 40 CFR part 60, subpart WWW.

The Ada County Landfill is subject to 40 CFR 60, Subpart WWW.

§ 63.1960 How is compliance determined?

Compliance is determined in the same way it is determined for 40 CFR part 60, subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence. In addition, continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d) of subpart WWW, are used to demonstrate compliance with the operating conditions for control systems. If a deviation occurs, you have failed to meet the control device operating conditions described in this subpart and have deviated from the requirements of this subpart. Finally, you must develop a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write or maintain a copy of the SSM plan is a deviation from the requirements of this subpart.

Compliance with Subpart WWW and development of an SSM plan determines compliance with the Subpart.

§ 63.1965 What is a deviation?

A deviation is defined in §63.1990. For the purposes of the landfill monitoring and SSM plan requirements, deviations include the items in paragraphs (a) through (c) of this section.

(a) A deviation occurs when the control device operating parameter boundaries described in 40 CFR 60.758(c)(1) of subpart WWW are exceeded.

(b) A deviation occurs when 1 hour or more of the hours during the 3-hour block averaging period does not constitute a valid hour of data. A valid hour of data must have measured values for at least three 15-minute monitoring periods within the hour.

(c) A deviation occurs when a SSM plan is not developed or maintained on site.

This section defines a deviation used throughout the rest of the subpart.

§ 63.1975 How do I calculate the 3-hour block average used to demonstrate compliance?

Averages are calculated in the same way as they are calculated in 40 CFR part 60, subpart WWW, except that the data collected during the events listed in paragraphs (a), (b), (c), and (d) of this section are not to be included in any average computed under this subpart:

(a) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments.

(b) Startups.

(c) Shutdowns.

(d) Malfunctions.

This section describes that the average calculations are identical to that stated in WWW except the four components stated in this section.

§ 63.1980 What records and reports must I keep and submit?

(a) Keep records and reports as specified in 40 CFR part 60, subpart WWW, or in the Federal plan, EPA approved State plan or tribal plan that implements 40 CFR part 60, subpart Cc, whichever applies to your landfill, with one exception: You must submit the annual report described in 40 CFR 60.757(f) every 6 months.

(b) You must also keep records and reports as specified in the general provisions of 40 CFR part 60 and this part as shown in Table 1 of this subpart. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports.

All records and reports must be maintained in accordance with 40 CFR 60, subpart WWW and a report must be submitted every 6 months. All records as described in Table 1 must be kept.

40 CFR 60, Subpart ZZZZ.........................National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

The two primary engines (wood chipper and power screen) and the first emergency diesel engine (Detroit Diesel) are subject to ZZZZ. However, because the landfill is a Title V source a breakdown of the subpart can be found in the associated operating permit, T1-2011.0128, Project 60939. This decision was made to avoid redundancy in the PTC and Tier 1 permit.

Permit Conditions Review

This section describes those permit conditions that have been added, revised, modified or deleted as a result of this permitting action. Also note that the Subpart WWW and AAAA requirements have been moved out of the Landfill section of the permit and created their own separate section of the PTC.

Existing Permit Condition 1.3

Table** Error! No text of specified style in document..**1 SUMMARY OF REGULATED SOURCES

Emission Unit /ID No.	***Emissions Unit Description***	***Control Device Description***	***Emissions Discharge Point ID No. and/or Description***
Hidden Hollow Landfill (HHLF) and North Ravine Cell (NRC)	*Municipal solid waste landfill* *HHFL: ~110 acres* *Design capacity of 16 million cubic yards* *Anticipated closure: Phase I: 46 acres in 2020* *NRC: ~260 acres* *Design capacity of 70 million cubic yards* *Anticipated closure: ~2097*	*Flare 1 and Flare 2*	*John Zink enclosed landfill gas flare.* *Manufacturer's recommended flowrates: 200 – 2000 scfm landfill gas (LFG), (combustion requires addition of ambient air)* *Maximum heat release: 65.5 MMBtu/hr* *H=40 ft* *D=10 ft* *Flare 1: 2320 scfm LFG* *Flare 2: 2379 scfm LFG*
Wood chipper w/generator	*700 hp Caterpillar diesel fired generator*	*None*	*NA*
Power screen w/generator	*106 hp Deutz diesel fired generator*	*None*	*NA*

Revised Permit Condition 4

Table 8 REGULATED SOURCES

Sources	*Control Equipment*
Hidden Hollow Landfill (HHLF) and North Ravine Cell (NRC)	*Flare 1and Flare 2*
Wood Chipper w/Engine (Gen #1)	*N/A*
Power Screen w/Engine (Gen #2)	*N/A*
Emergency Engines (Gen #3/#4)	*N/A*

This permit condition has been revised to include the two emergency engines. These two engines are regulated only due to applicable federal regulations, 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ. Also, the emission point description was removed and included only in the Statement of Basis.

Removed Permit Conditions 2.6-2.8

The permittee shall comply with the procedures and requirements of IDAPA 58.01.01.130-136 for excess emissions due to startup, shutdown, scheduled maintenance, safety measures, upsets and breakdowns.

The permittee shall comply with provisions of IDAPA 58.01.01.600-616, Rules for Control of Open Burning.

The permittee shall comply with IDAPA 58.01.01.550-562, Air Pollution Emergency Rule.

These three conditions were eliminated because the excess emissions are already accounted for in the General Provisions. The Opening Burning requirements are also already included in the Tier I Operating Permit General Provisions. To avoid redundancy the condition has been removed from this PTC. Finally, the Emergency Rule condition has been removed because that rule requires that DEQ notify the facility should a state of emergency be declared. This condition has not been added to more recent permit and to remain consistency it has been removed.

New Permit Condition 7

The H_2S concentration of the landfill gas being combusted in the flares shall not exceed 600 ppm.

This H_2S concentration limit was added to make sure that the 1-hr SO_2 NAAQS standard is met. 600 ppm has been modeled to show that all NAAQS are not exceeded. See Appendix B for further details.

Existing Permit Condition 2.10

The LFG to the flares shall not exceed the following limits:

- *2320 scfm to Flare 1*
- *2379 scfm to Flare 2*

The flares shall be operated within the parameter ranges established by the manufacturer:

- *Gas temperature at outlet = 1400 – 1800 °F*

Revised Permit Condition 12

The landfill gas to the flares shall not exceed the following limits.

- *2,320 scfm to Flare1*
- *2,379 scfm to Flare2*
- *3,350 scfm to Combined Flares*

The Flares shall be operated within the parameter ranges established by the manufacturer:

- *Gas temperature at outlet = 1400 – 1800 °F*

The combined limit flow rate of 3,350 scfm was added to this condition. This limit was added in an attempt to limit the H_2S concentration and maintain compliance with the 1-hr SO_2 standard.

New Permit Condition 15

The permittee shall measure the H_2S concentration, in ppmv, of the landfill gas stream prior to being combusted in the flares. The H_2S concentration 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 H_2S Concentration Limit permit condition.

The concentration of H_2S must be measured, in ppmv, three separate times to determine compliance with the H_2S concentration limit condition.

New Permit Condition 16

- *Beginning the day following the permit issuance date, the Permittee shall measure the H_2S concentration a minimum of three times per day for four consecutive work weeks (Monday-Friday). The measurements will be collected at various times throughout the work day to establish a "peak time of day" where concentrations are highest. Initially, measurements shall be collected during the hottest part of the day and within two hours (before and after) of the hottest part of the day. Once it is established, daily measurements shall be collected at the peak time interval. If, during the four week monitoring period, there are no average exceedances of the Landfill Gas Stream H_2S Concentration permit condition, the daily monitoring schedule will begin as described below.*
- *The Permittee shall measure the H2S concentration a minimum of once per day for four consecutive work weeks during the peak time. If, during this monitoring period, there are no average exceedances of the Landfill Gas Stream H_2S Concentration permit condition, the monitoring schedule will begin as described below.*
- *The Permittee shall measure the H2S concentration a minimum of once per work week during the peak time. This will be the monitoring schedule going forward.*
- *If the measured H_2S concentration does not demonstrate compliance during any of the monitoring periods, corrective action shall be taken to reduce the concentration. Also, monitoring will revert back to the three daily measurements schedule.*

This condition establishes the tiered monitoring schedule for the permittee that must be followed prior and post-installation of the H2S removal system.

New Permit Condition 17

Records shall include the results of each H_2S measurement and the calculated average of the three separate H_2S measurements used to demonstrate compliance with the H_2S Concentration Limit permit condition.

The hand held H_2S monitor used to measure the H_2S concentration of the landfill gas stream shall have a certified accuracy of plus or minus 10%. The hand held monitor shall be calibrated and maintained in accordance with the manufacturer's specifications.

Records of this information shall be maintained in accordance with the Recordkeeping General Provision.

Recordkeeping is necessary to demonstrate compliance with the H_2S concentration limit.

Existing Permit Condition 3.2

Particulate matter emissions from the wood chipper and from the power screen are uncontrolled. Emissions from the two diesel engine generators are uncontrolled.

Table 3.9 Wood Chipper, Power Screen, and Two Diesel Engine Generators

Emission Unit /ID No.	*Emissions Unit Description*	*Control Device Description*	*Emissions Discharge Point ID No. and/or Description*
Wood chipper w/generator	*700 hp, CAT C18 diesel-fired generator*	*None*	*NA*
Power screen w/generator	*106 hp Deutz diesel-fired generator*	*None*	*NA*

New Permit Condition 18

The Landfill Gas flow rate shall be monitored and recorded at the same schedule used for H_2S monitoring and recordkeeping to demonstrate compliance with the LFG Control System Permit Condition.

This condition was added to require recordkeeping to show compliance with the gas flow rate permit condition.

Revised Permit Condition 21

Particulate matter emissions from the wood chipper and from the power screen are uncontrolled. Emissions from the two diesel engines are uncontrolled.

Table 10 WOOD CHIPPER, POWER SCREEN DIESEL ENGINES AND TWO EMERGENCY ENGINES DESCRIPTION

Emission Unit /ID No.	*Emissions Unit Description*	*Control Device Description*
Wood chipper w/Engine	*700 hp, CAT C18 diesel-fired Engine*	*None*
Power screen w/Engine	*106 hp Deutz diesel-fired Engine*	*None*
Emergency Engine #1	*44 hp Detroit Diesel Engine*	*None*
Emergency Engine #2	*80 hp John Deere Engine*	*None*

The emergency engines were added to this table.

Existing Permit Condition 3.5

No diesel fuel oil containing sulfur in excess of 0.5% by weight shall be burned in the diesel engine generators.

Revised Permit Condition 24

No diesel fuel oil containing sulfur in excess of 15 ppm (0.0015% by weight) shall be burned in the diesel engines.

The sulfur content of all diesel engines was reduced from 0.5% to 0.0015% to help comply with the 1-hr SO_2 NAAQS standard.

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was not provided because this project was processed in accordance with IDAP 58.01.01.209.05(b). This is because that process requires the PTC go through a 30-day public comment period along with the Tier 1 Operating Permit.

Public Hearing

{If applicable, include the following, otherwise delete.} In addition to the public comment period, DEQ also provided a public hearing in **CITY** for persons interested to appear and submit written or oral comments. DEQ's responses to the comments submitted during the public hearing are included in the response to public comments document. Refer to the chronology for public hearing dates.

APPENDIX A – EMISSIONS INVENTORIES

Facility Wide PTE Emission Inventory

Table D2 ACLF Facility Wide PTE Criteria Emissions

Criteria Pollutant	C-18 Generator Gen 1 (lb/hr)	(ton/yr)	Deutz Generator Gen 2 (lb/hr)	(ton/yr)	Kohler Generator Gen 4 (lb/hr)	(ton/yr)	Detroit Diesel Generator Gen 3 (lb/hr)	(ton/yr)	Flare 1 (lb/hr)	(ton/yr)	Flare 2 (lb/hr)	(ton/yr)
PM	0.37	0.61	0.27	0.44	0.201	0.0502	0.13	0.0326	1.59	6.97	1.64	7.19
PM_{10}	0.30	0.50	0.27	0.44	0.201	0.0502	0.13	0.0326	1.59	6.97	1.64	7.19
$PM_{2.5}$	0.30	0.49	0.27	0.44	0.201	0.0502	0.13	0.0326	1.59	6.97	1.64	7.19
CO	0.95	1.57	0.82	1.35	2.86	0.714	1.85	0.463	0.76	3.32	0.78	3.43
SO_2	0.008	0.01	0.001	0.002	0.0010	0.000245	0.0006	0.000159	10.02	43.89	10.35	45.33
NO_X	5.36	8.84	3.79	6.25	0.62	0.1539	0.40	0.0998	3.03	13.27	3.13	13.70
VOC	0.12	0.20	0.30	0.50	0.23	0.0567	0.15	0.0368	4.62	20.24	4.77	20.90

Table D3 ACLF Facility Wide PTE Hazardous Air Pollutant Emissions

HAPS	C-18 Generator Gen 1 (lb/hr)	(ton/yr)	Deutz Generator Gen 2 (lb/hr)	(ton/yr)	Kohler Generator Gen 4 (lb/hr)	(ton/yr)	Detroit Diesel Generator Gen 3 (lb/hr)	(ton/yr)	Flare 1 (lb/hr)	(ton/yr)	Flare 2 (lb/hr)	(ton/yr)	Total (lb/hr)	(ton/yr)	IDAPA 585/586 EL (lb/hr)	Exceeds EL (Yes or NO)
1,1,1-Trichloroethane									3.92E-04	1.72E-03	4.05E-04	1.77E-03	7.97E-04	3.49E-03	1.27E+02	No
1,1,2,2-Tetrachloroethane									1.14E-03	5.00E-03	1.18E-03	5.16E-03	2.32E-03	1.02E-02	1.10E-05	Yes
1,1,2-Trichloroethane									8.17E-05	3.58E-04	8.44E-05	3.70E-04	1.66E-04	7.27E-04	4.20E-04	Yes
1,1-Dichloroethane (ethylidene dichloride)									1.42E-03	6.24E-03	1.47E-03	6.44E-03	2.90E-03	1.27E-02	2.50E-04	Yes
1,1-Dichloroethene (vinylidene chloride)									1.19E-04	5.20E-04	1.23E-04	5.37E-04	2.41E-04	1.06E-03	1.30E-04	Yes
1,2-Dichloroethane (ethylene dichloride)									2.48E-04	1.09E-03	2.57E-04	1.12E-03	5.05E-04	2.21E-03	2.50E-04	Yes
1,2-Dichloropropane (propylene dichloride)									1.25E-04	5.46E-04	1.29E-04	5.63E-04	2.53E-04	1.11E-03	2.31E+01	No
Acrylonitrile									3.09E-04	1.35E-03	3.19E-04	1.40E-03	6.27E-04	2.75E-03	6.53E+01	No
Benzene	4.13E-03	6.81E-03	8.01E-04	1.32E-03	6.05E-04	1.51E-04	3.92E-04	9.80E-05	1.37E-04	6.00E-04	1.42E-04	6.20E-04	6.20E-03	9.60E-03	8.00E-04	Yes
Carbon disulfide									4.06E-05	1.78E-04	4.19E-05	1.83E-04	8.24E-05	3.61E-04	2.00E+00	No
Carbon tetrachloride									3.77E-06	1.65E-05	3.89E-06	1.70E-05	7.66E-06	3.36E-05	4.40E-04	No
Carbonyl sulfide									7.21E-05	3.16E-04	7.45E-05	3.26E-04	1.47E-04	6.42E-04	2.70E-02	No
Chlorobenzene									1.72E-04	7.55E-04	1.78E-04	7.79E-04	3.50E-04	1.53E-03	2.33E+01	No
Chloroethane (ethyl chloride)									4.94E-04	2.16E-03	5.10E-04	2.23E-03	1.00E-03	4.40E-03	1.76E+02	No
Chloroform									2.19E-05	9.61E-05	2.26E-05	9.92E-05	4.46E-05	1.95E-04	2.80E-04	No
Chloromethane (methylchloride)									3.74E-04	1.64E-03	3.86E-04	1.69E-03	7.60E-04	3.33E-03	NA	NA
Dichlorobenzene									1.89E-04	8.28E-04	1.95E-04	8.55E-04	3.84E-04	1.68E-03	2.00E+01	No
Dichloromethane (methylene chloride)									7.44E-03	3.26E-02	7.68E-03	3.36E-02	1.51E-02	6.62E-02	1.60E-03	Yes
Ethylbenzene									4.50E-04	1.97E-03	4.64E-04	2.03E-03	9.14E-04	4.00E-03	2.90E+01	No
Ethylene dibromide									1.15E-06	5.04E-06	1.19E-06	5.20E-06	2.34E-06	1.02E-05	3.00E-05	No
Formaldehyde	4.20E-04	6.93E-04	1.01E-03	1.67E-03	7.65E-04	1.91E-04	4.96E-04	1.24E-04					2.69E-03	2.68E-03	5.10E-04	Yes
Hexane									5.20E-04	2.28E-03	5.37E-04	2.35E-03	1.06E-03	4.63E-03	1.20E+01	No
Mercury (total)									1.79E-05	7.86E-05	1.85E-05	8.11E-05	3.65E-05	1.60E-04	7.00E-03	No
Methyl ethyl ketone (MEK)									4.70E-04	2.06E-03	4.85E-04	2.12E-03	9.55E-04	4.18E-03	3.93E+01	No
Methyl isobutyl ketone (MIBK)									1.72E-04	7.54E-04	1.78E-04	7.78E-04	3.50E-04	1.53E-03	1.37E+01	No
Naphthalene	6.92E-04	1.14E-03	7.28E-05	1.20E-04	5.50E-05	1.37E-05	3.56E-05	8.90E-06					8.55E-04	1.28E-03	3.33E+00	No
Perchloroethylene (tetrachloroethylene)									3.79E-03	1.66E-02	3.91E-03	1.71E-02	7.70E-03	3.37E-02	1.30E-02	Yes
Toluene	1.49E-03	2.47E-03	3.51E-04	5.79E-04	2.65E-04	6.63E-05	1.72E-04	4.29E-05	3.33E-03	1.46E-02	3.43E-03	1.50E-02	9.04E-03	3.28E-02	2.50E+01	No
Trichoroethylene									2.27E-03	9.94E-03	2.34E-03	1.03E-02	4.61E-03	2.02E-02	1.79E+01	No
Vinyl chloride									2.81E-03	1.23E-02	2.90E-03	1.27E-02	5.71E-03	2.50E-02	9.40E-04	Yes
Xylenes									1.18E-03	5.17E-03	1.22E-03	5.34E-03	2.40E-03	1.05E-02	2.90E+01	No
Hydrochloric Acid									4.65E-01	2.04E+00	4.80E-01	2.10E+00	9.45E-01	4.14E+00	NA	NA
o-Xylenes	1.03E-03	1.69E-03	2.45E-04	4.04E-04	1.85E-04	4.62E-05	1.20E-04	2.99E-05					1.58E-03	2.17E-03	2.90E+01	No
Propylene			2.22E-03	3.66E-03	1.67E-03	4.18E-04	1.08E-03	2.71E-04					4.97E-03	4.34E-03	NA	NA
Acetaldehyde	1.34E-04	2.21E-04	6.59E-04	1.09E-03	4.97E-04	1.24E-04	3.22E-04	8.05E-05					1.61E-03	1.51E-03	3.00E-03	No
Acrolein	4.19E-05	6.92E-05	7.94E-05	1.31E-04	5.99E-05	1.50E-05	3.89E-05	9.71E-06					2.20E-04	2.25E-04	1.70E-02	No
1,3-Butadiene			3.36E-05	5.54E-05	2.53E-05	6.33E-06	1.64E-05	4.11E-06					7.53E-05	6.58E-05	2.40E-05	Yes
Total HAPs										4.38						

Potential Landfill Emissions Calculations
Table D4 - Flares

Assume potential LFG flow of 4699 scfm

$Q_{CH4\ Max}$ =	***3.497E+07***	***m^3/yr***	Design maximum; w/ 50% methane content

Uncontrolled Emissions of PM-10

Manufacturer Specifications

CM_{PM10} =	0.042	lb/MMBTU			
Qr_{max} =	65,520,000	Maximum flare heat release (BTU/hr); based on design specifications			
LHV =	546	Landfill gas lower heating value (BTU/SCF), based on design specifications			
Q_{CH4} =	3.497E+07	m^3/yr			
	1.23E+09	ft^3/yr			
Qr_{Total} =	76,969,620	Lower flare heat release (BTU/hr)			
CM_{PM10} =	***3.23***	***lb/hr***	***14.16***	***tons/yr***	Combined

AP-42 Emission Factor (Section 2.4, 11/98, Table 2.4-5)

CM_{PM10} =	17	lb/MMdscf			
CM_{PM10} =	***2.40***	***lb/hr***	***10.50***	***tons/yr***	Combined

Note: Conservative Engineering Assumption PM10 is assumed to equal PM10 and PM2.5

Potential Landfill Emissions Calculations

Table D5 - Flares

Given:

$Q_{CH4\ Max}$ = 3.497E+07 m^3/yr Design maximum; w/ 50% methane content

Estimate of NMOC & Other Constituent Concentrations

$Q_P = F * Q_{CH4} * (C_P / 1E+06)$ Eqn 3

Q_P =		Emission rate of pollutant P (m^3/yr)
$Q_{CH4\ Max}$ =	3.497E+07	Methane generation rate at time t (m^3/yr)
C_P =	172.5	Concentration of pollutant P in landfill gas sample, corrected (ppmv)
F =	2.0	Multiplication factor; 1.82 for landfill gas at 55% CH_4; 2.0 for landfill gas at 50% CH_4

Q_P = 12,066 m^3/yr NMOC = 0.81 cfm NMOC Combined Flares

Uncontrolled Mass Emissions Rate

$UM_P = Q_P * (MW_P * 1 \text{ atm}) / (8.205E\text{-}05 \text{ m3-atm/gmol-K} * 1000 \text{ g/kg} * (273 + T) \text{ K})$ Eqn 4

UM_P =		Uncontrolled mass emission rate of pollutant P (kg/yr)
Q_P =	12,066	Emission rate of pollutant P (m^3/yr)
MW_P =	86.18	Molecular weight of pollutant P; NMOC = hexane, MW =86.18 (g/gmol)
T =	20	Temperature of landfill gas (C); default 25 C.

UM_P = 43,253 kg/yr NMOC = 10.86 lb/hr NMOC Combined Flares

47.7 Tons/yr NMOC

Controlled Emissions of Methane, NMOC and Speciated Emissions

$CM_P = UM_P * (1 - n_{col}) + UM_P * n_{col} * (1 - n_{cnt})$ Eqn 5

CM_P =		Controlled mass emissions of pollutant P (kg/yr)
UM_P =		Uncontrolled mass emissions of pollutant P (kg/yr); use Eqn 4
n_{col} =	85.0%	Gas collection system control efficiency; default 75% = 0.75
n_{cnt} =		Emission control device control efficiency

CM_P = *Calculated values given in NMOC & TAPS emissions table*

Controlled Emissions of Carbon Dioxide and Sulfur Dioxide

Carbon Dioxide Emissions

$CM_{CO2} = UM_{CO2} + UM_{CH4} * n_{col} * 2.75$ Eqn 6

CM_{CO2} =		Controlled mass emissions of carbon dioxide (kg/yr)
UM_{CO2} =	6.400E+07	Uncontrolled mass emissions of carbon dioxide (kg/yr); Design Maximum value
$UM_{CH4\ Max}$ =	2.333E+07	Uncontrolled mass emissions of methane (kg/yr); Design maximum value
n_{col} =	85.0%	Gas collection system control efficiency

CM_{CO2} = 118,527,486 kg/yr CO_2 = 29,767.18 lb/hr NMOC Combined Flares

130,617 Tons/yr CO_2

If site-specific total reduced sulfur compound data is available --

Eqn 7

$CM_{SO2} = UM_S * n_{col} * 2.0$

CM_{SO2} =		Controlled mass emissions of sulfur dioxide (kg/yr)
UM_S =		Uncontrolled mass emissions of reduced sulfur compounds (kg/yr); use Eqn 3 & 4
n_{col} =	85%	Gas collection system control efficiency

Sulfur Dioxide Emissions

If site-specific total reduced sulfur compound data is not available --

$C_S = \text{Sigma } (C_P * S_P)$ Eqn 8

C_S =	46.9	Concentration of total reduced sulfur compounds (ppmv as S); default value 46.9 ppmv.
C_P =	NA	Concentration of each reduced sulfur compound (ppmv)
S_P =	NA	No. of moles of S produced from combustion of each reduced sulfur compound
F =	2.0	Multiplication factor; 1.82 for landfill gas at 55% CH_4; 2.0 for landfill gas at 50% CH_4

$Q_{CH4\ Max}$ =	3.497E+07	Methane generation rate at time t (m^3/yr)
MW_S =	32.06	Molecular weight of sulfur (g/gmol)

$Q_S = F * Q_{CH4} * (C_S / 1E+06)$ Eqn 3

Q_S = 3,280 ppmv S, sulfur

$UM_S = Q_S * (MW_S * 1 atm) / (8.205E-05 m3-atm/gmol-K * 1000 g/kg * (273 + T) K)$ Eqn 4

UM_S = 4,375 Uncontrolled mass emission rate of sulfur (kg/yr)

$CM_{SO2} = UM_S * n_{col} * 2.0$ Eqn 7

CM_{SO2} =		Controlled mass emissions of sulfur dioxide (kg/yr)
UM_S =	4,375	Uncontrolled mass emissions of reduced sulfur compounds (kg/yr); use Eqn 3 & 4
n_{col} =	85%	Gas collection system control efficiency; default 75% = 0.75

CM_{SO2} =	***7,437***	***kg/yr***	***SO_2***		Combined Flares
	8.2	***Tons/yr***	***SO_2 =***	***1.87 lb/hr SO_2***	Existing PTE

Controlled Emissions of Hydrochloric Acid

$C_{Cl} = Sigma (C_P * Cl_P)$ Eqn 9

C_{Cl} =	42.0	Concentration of total chloride (ppmv as Cl^-); default value 42.0 ppmv.
C_P =	NA	Concentration of each chlorinated compound (ppmv)
Cl_P =	NA	No. of moles of Cl^- produced from combustion of each reduced sulfur compound
F =	2.0	Multiplication factor; 1.82 for landfill gas at 55% CH_4; 2.0 for landfill gas at 50% CH_4
$Q_{CH4\ Max}$ =	3.497E+07	Methane generation rate at time t (m^3/yr)
MW_{Cl} =	35.453	Molecular weight of chloride, Cl^- (g/gmol)

$Q_{Cl} = F * Q_{CH4} * (C_{Cl} / 1E+06)$ Eqn 3

Q_{Cl} = 2,938 ppmv Chloride, Cl^-

$UM_S = Q_S * (MW_S * 1 atm) / (8.205E-05 m3-atm/gmol-K * 1000 g/kg * (273 + T) K)$ Eqn 4

UM_{Cl} = 4,332 Uncontrolled mass emission rate of chlorine, Cl^- (kg/yr)

$CM_{HCl} = UM_{Cl} * n_{col} * 1.03 * n_{cnt}$ Eqn 10

CM_{HCl} =		Controlled mass emissions of HCl (kg/yr)
UM_{Cl} =	4,332	Uncontrolled mass emissions of chlorinated compounds (kg/yr); use Eqn 3 & 4
n_{col} =	85%	Gas collection system control efficiency; default 75% = 0.75
n_{cnt} =	99%	Emission control device control efficiency (for flare, halogenated species, high-end of range)

CM_{HCl} =	***3,755***	***kg/yr***	***HCl***		Combined Flares
	4.1	***Tons/yr***	***HCl =***	***0.94 lb/hr HCL***	

Uncontrolled Emissions of Nitrogen Oxides (NOx) and Carbon Monoxide

Manufacturer Specifications

CM_{NOx} =	0.06	lb/MMBTU @1,600°F
	0.08	lb/MMBTU @1,800°F
CM_{CO} =	0.02	lb/MMBTU @1,600°F
	0.015	lb/MMBTU @1,800°F

Qr_{max} = 65,520,000 Maximum flare heat release (BTU/hr); based on design specifications

LHV =	546	Landfill gas lower heating value (BTU/SCF), based on design specifications	
$Q_{CH4\ Max}$ =	3.50E+07	m^3/yr	
	1.23E+09	ft3/yr	2.35E+03
Q_{rTotal} =	76,969,620	Total flare heat release (BTU/hr)	

CM_{NOx} =	***4.62***	***lb/hr @1,600°F***	***20.23***	***tons/yr***	Combined
	6.16	***lb/hr @1,800°F***	***26.97***	***tons/yr***	Combined
CM_{CO} =	***1.54***	***lb/hr @1,600°F***	***6.74***	***tons/yr***	Combined
	1.15	***lb/hr @1,800°F***	***5.06***	***tons/yr***	Combined

Landfill Emissions Calculations - NMOC & TAP Emissions

Table D6 - Flares

Note: Values already corrected for air infiltration
Uncontrolled Pollutant Concentrations (AP-42 Table 2.4-1, 11/98)

Year: 2011
$Q_{CH4\ Max}$ = 3.497E+07 m^3/yr — Design maximum for all pollutants except H2S and S02 (Existing Permit Conditions)
$Q_{CH4\ Max}$ = 2.493E+07 m^3/yr — Design maximum for H2S and SO2
Collection system efficiency: 85.0%
Landfill Temp: 20 C

Pollutant	CAS No.	MW	Concentration in Landfill Gas	Landfill Uncontrolled Emission Rates - No Flare: Volume	Landfill Uncontrolled Emission Rates - No Flare: Mass - Annual	Mass - Annual	Mass - Hourly	Flare Emissions (Emissions After Collection and Control)			IDAPA 58.01.01.585/586 Standards: EL	AAC	AACC	Flare - Controlled	Flare Control Efficiency
		(g/gmol)	(ppmv)	(m^3/yr)	(kg/yr)	(lb/yr)	(lb/hr)	(kg/yr)	(lb/yr)	(lb/hr)	(lb/hr)	(mg/m^3)	(ug/m^3)		
1,1,1-Trichloroethane	71-55-6	133.41	0.48	3.36E+01	1.86E+02	4.11E+02	4.69E-02	3.17E+00	6.98E+00	7.97E-04	127	95.5		Below	98.0%
1,1,2,2-Tetrachloroethane	79-34-5	167.85	1.11	7.76E+01	5.42E+02	1.20E+03	1.36E-01	9.22E+00	2.03E+01	2.32E-03	1.10E-05		1.70E-02	Exceeds	98.0%
1,1,2-Trichloroethane	79-00-5	133.41	0.10	6.99E+00	3.88E+01	8.56E+01	9.77E-03	6.60E-01	1.45E+00	1.66E-04	*4.20E-04*	NA	NA	Below	98.0%
1,1-Dichloroethane (ethylidene dichloride)	75-34-3	98.97	2.35	1.64E+02	6.77E+02	1.49E+03	1.70E-01	1.15E+01	2.54E+01	2.90E-03	2.50E-04		3.80E-02	Exceeds	98.0%
1,1-Dichloroethene (vinylidene chloride)	75-35-4	96.94	0.2	1.40E+01	5.64E+01	1.24E+02	1.42E-02	9.59E-01	2.11E+00	2.41E-04	1.30E-04		2.00E-02	Exceeds	98.0%
1,2-Dichloroethane (ethylene dichloride)	107-06-2	98.96	0.41	2.87E+01	1.18E+02	2.60E+02	2.97E-02	2.01E+00	4.42E+00	5.05E-04	2.50E-04		3.80E-02	Exceeds	98.0%
1,2-Dichloropropane (propylene dichloride)	78-87-5	112.99	0.18	1.26E+01	5.92E+01	1.30E+02	1.49E-02	1.01E+00	2.22E+00	2.53E-04	23.133	17.35		Below	98.0%
2-Propanol (isopropyl alcohol)	67-63-0	60.11	50.1	3.50E+03	8.76E+03	1.93E+04	2.21E+00	2.23E+01	4.93E+01	5.62E-03	6.53E+01	49		Below	99.7%
Acetone	67-64-1	58.08	7.01	4.90E+02	1.18E+03	2.61E+03	2.98E-01	3.02E+00	6.66E+00	7.60E-04	119	89		Below	99.7%
Acrylonitrile	107-13-1	53.06	6.33	4.43E+02	9.77E+02	2.15E+03	2.46E-01	2.49E+00	5.49E+00	6.27E-04	9.80E-05		1.50E-02	Exceeds	99.7%
Bromodichloromethane	75-27-4	163.83	3.13	2.19E+02	1.49E+03	3.29E+03	3.75E-01	2.54E+01	5.59E+01	6.38E-03	NA	NA	NA		98.0%
Butane	106-97-8	58.12	5.03	3.52E+02	8.51E+02	1.88E+03	2.14E-01	2.17E+00	4.78E+00	5.46E-04	NA	NA	NA		99.7%
Carbon disulfide	75-15-0	76.13	0.58	4.06E+01	1.28E+02	2.83E+02	3.23E-02	3.28E-01	7.22E-01	8.24E-05	2	1.5		Below	99.7%
Carbon tetrachloride	56-23-5	153.84	0.004	2.80E-01	1.79E+00	3.95E+00	4.51E-04	3.04E-02	6.71E-02	7.66E-06	4.40E-04		6.70E-02	Below	98.0%
Carbonyl sulfide	463-58-1	60.07	0.49	3.43E+01	8.56E+01	1.89E+02	2.16E-02	5.82E-01	1.28E+00	1.47E-04	0.027	0.02		Below	99.2%
Chlorobenzene	108-90-7	112.56	0.25	1.75E+01	8.19E+01	1.80E+02	2.06E-02	1.39E+00	3.07E+00	3.50E-04	23.3	17.5		Below	98.0%
Chlorodifluoromethane	75-45-6	86.47	1.3	9.09E+01	3.27E+02	7.21E+02	8.23E-02	5.56E+00	1.23E+01	1.40E-03	NA	NA	NA		98.0%
Chloroethane (ethyl chloride)	75-00-3	64.52	1.25	8.74E+01	2.35E+02	5.17E+02	5.91E-02	3.99E+00	8.79E+00	1.00E-03	176	132		Below	98.0%
Chloroform	67-66-3	119.39	0.03	2.10E+00	1.04E+01	2.30E+01	2.62E-03	1.77E-01	3.91E-01	4.46E-05	2.80E-04		4.30E-02	Below	98.0%
Chloromethane (methylchloride)	74-87-3	50.49	1.21	8.46E+01	1.78E+02	3.92E+02	4.47E-02	3.02E+00	6.66E+00	7.60E-04	NA	NA	NA		98.0%
Dichlorobenzene	95-50-1	147	0.21	1.47E+01	8.98E+01	1.98E+02	2.26E-02	1.53E+00	3.37E+00	3.84E-04	20	15		Below	98.0%
Dichlorodifluoromethane	75-71-8	120.91	15.7	1.10E+03	5.52E+03	1.22E+04	1.39E+00	9.39E+01	2.07E+02	2.36E-02	NA	NA	NA		98.0%
Dichlorofluoromethane	75-43-4	102.92	2.62	1.83E+02	7.85E+02	1.73E+03	1.97E-01	1.33E+01	2.94E+01	3.36E-03	2.67	2		Below	98.0%
Dichloromethane (methylene chloride)	75-09-2	84.94	14.3	1.00E+03	3.53E+03	7.79E+03	8.89E-01	6.01E+01	1.32E+02	1.51E-02	1.60E-03		2.40E-01	Exceeds	98.0%
Dimethyl sulfide (methyl sulfide)	75-18-3	62.13	7.82	5.47E+02	1.41E+03	3.12E+03	3.56E-01	9.61E+00	2.12E+01	2.42E-03	NA	NA	NA		99.2%
Ethane	74-84-0	30.07	889	6.22E+04	7.78E+04	1.71E+05	1.96E+01	1.98E+02	4.37E+02	4.99E-02	NA	NA	NA		99.7%
Ethanol	64-17-5	46.08	27.2	1.90E+03	3.65E+03	8.04E+03	9.18E-01	9.30E+00	2.05E+01	2.34E-03	125	94		Below	99.7%
Ethyl mercaptan (ethanethiol)	75-08-1	62.13	2.28	1.59E+02	4.12E+02	9.09E+02	1.04E-01	1.05E+00	2.32E+00	2.64E-04	0.067	0.05		Below	99.7%
Ethylbenzene	100-41-4	106.16	4.61	3.22E+02	1.42E+03	3.14E+03	3.58E-01	3.63E+00	8.00E+00	9.14E-04	29	21.75		Below	99.7%
Ethylene dibromide	106-93-4	187.88	0.001	6.99E-02	5.47E-01	1.21E+00	1.38E-04	9.29E-03	2.05E-02	2.34E-06	3.00E-05		4.50E-03	Below	98.0%
Fluorotrichloromethane	75-69-4	137.38	0.76	5.32E+01	3.04E+02	6.70E+02	7.65E-02	5.16E+00	1.14E+01	1.30E-03	NA	NA	NA		98.0%
Hexane	110-54-3	86.18	6.57	4.60E+02	1.65E+03	3.63E+03	4.15E-01	4.20E+00	9.26E+00	1.06E-03	12	9		Below	99.7%
Hydrogen sulfide	7783-06-4	34.08	600	2.99E+04	4.24E+04	9.35E+04	1.07E+01	2.88E+02	7.48E+02	8.54E-02	0.933	0.7		Below	99.2%
Mercury (total)	7439-97-6	200.61	0.000292	2.04E-02	1.70E-01	3.76E-01	4.29E-05	1.45E-01	3.19E-01	3.65E-05	0.007	0.005		Below	0.0%
Methyl ethyl ketone (MEK)	78-93-3	72.11	7.09	4.96E+02	1.49E+03	3.28E+03	3.74E-01	3.79E+00	8.36E+00	9.55E-04	39.3	29.5		Below	99.7%
Methyl isobutyl ketone (MIBK)	108-10-1	100.16	1.87	1.31E+02	5.45E+02	1.20E+03	1.37E-01	1.39E+00	3.06E+00	3.50E-04	13.7	10.25		Below	99.7%
Methyl mercaptan	74-93-1	48.11	2.49	1.74E+02	3.49E+02	7.68E+02	8.77E-02	8.89E-01	1.96E+00	2.24E-04	0.033	0.025		Below	99.7%
Pentane	109-66-0	72.15	3.29	2.30E+02	6.91E+02	1.52E+03	1.74E-01	1.76E+00	3.88E+00	4.43E-04	118	88.5		Below	99.7%
Perchloroethylene (tetrachloroethylene)	127-18-4	165.83	3.73	2.61E+02	1.80E+03	3.97E+03	4.53E-01	3.06E+01	6.74E+01	7.70E-03	1.30E-02		2.10E+00	Below	98.0%
Propane	74-98-6	44.09	11.1	7.76E+02	1.42E+03	3.14E+03	3.58E-01	3.63E+00	8.00E+00	9.14E-04	NA	NA	NA		99.7%
trans-1,2-Dichloroethene	540-59-0	96.94	2.84	1.99E+02	8.01E+02	1.77E+03	2.02E-01	1.36E+01	3.00E+01	3.43E-03	52.7	39.5		Below	98.0%
Trichoroethylene	79-01-6	131.4	2.82	1.97E+02	1.08E+03	2.38E+03	2.71E-01	1.83E+01	4.04E+01	4.61E-03	17.93	13.45		Below	98.0%
Vinyl chloride	75-01-4	62.5	7.34	5.13E+02	1.33E+03	2.94E+03	3.36E-01	2.27E+01	5.00E+01	5.71E-03	9.40E-04		1.40E-01	Exceeds	98.0%
Xylenes	1330-20-7	106.16	12.1	8.46E+02	3.74E+03	8.24E+03	9.41E-01	9.53E+00	2.10E+01	2.40E-03	29	21.75		Below	99.7%
Carbon monoxide	630-08-0	28.01	141	9.86E+03	1.15E+04	2.53E+04	2.89E+00	4.20E+04	9.25E+04	1.06E+01	NA	NA	NA		12,000

Codisposal Pollutant Concentrations (AP-42 Table 2.4-2, 11/98)

Pollutant	CAS No.	MW (g/gmol)	Concentration (ppmv)	Uncontrolled: Volume Emission Rate Uncontrolled (m^3/yr)	Uncontrolled: Mass Emission Rate - Uncontrolled (kg/yr)	Mass Emission Rate - Annual (lb/yr)	Uncontrolled: Mass Emission Rate - Hourly Avg (lb/hr)	Flare: Mass Emission Rate - Controlled (kg/yr)	Flare: Mass Emission Rate - Controlled (lb/yr)	Mass Emission Rate - Hourly Avg (lb/hr)	IDAPA 58.01.01.585/586 Standards: EL (lb/hr)	AAC (mg/m^3)	AACC (ug/m^3)	Total - Controlled: Exceeds EL?	Flare
Benzene															
Co-disposal	71-43-2	78.11	11.1	7.76E+02	2.52E+03	5.56E+03	6.35E-01	6.43E+00	1.42E+01	1.62E-03	8.00E-04		1.20E-01	Exceeds	99.7%
No or unknown co-disposal	71-43-2	78.11	1.91	1.34E+02	4.34E+02	9.57E+02	1.09E-01	1.11E+00	2.44E+00	2.79E-04	8.00E-04		1.20E-01	Below	99.7%
NMOC (as hexane)															
Co-disposal		86.18	2,420	1.69E+05	6.07E+05	1.34E+06	1.53E+02	4.13E+03	9.10E+03	1.04E+00	NA	NA	NA		99.2%
No or unknown co-disposal		86.18	595	4.16E+04	1.49E+05	3.29E+05	3.75E+01	1.01E+03	2.24E+03	2.55E-01	NA	NA	NA		99.2%
Regulatory default		86.18	4,000	2.80E+05	1.00E+06	2.21E+06	2.52E+02	6.82E+03	1.50E+04	1.72E+00	NA	NA	NA		99.2%
Site-Specific Value		86.18	172.5	1.21E+04	4.33E+04	9.54E+04	1.09E+01	3.68E+04	8.11E+04	9.25E+00	NA	NA	NA		
Toluene															
Co-disposal	108-88-3	92.13	165	1.15E+04	4.42E+04	9.75E+04	1.11E+01	1.13E+02	2.49E+02	2.84E-02	25	18.75		Below	99.7%
No or unknown co-disposal	108-88-3	92.13	39.3	2.75E+03	1.05E+04	2.32E+04	2.65E+00	2.69E+01	5.92E+01	6.76E-03	25	18.75		Below	99.7%

Notes:
1. 1,1,2-Trichloroethane emissions calculated by LANDGEM but not in AP-42 listing (Table 2.4-1, 11/98)
2. Carbon monoxide emissions from flare: 12,000kg/10^6 dscm CH_4

Landfill Emissions Calculations

Table D7 - Potential Summary of Emissions - Maximum Flow

Based on Design Maximum rates

	Flare - Controlled (Tons/yr)	Flare - Controlled (lb/hr)	Flare1 - Controlled (Tons/yr)	Flare1 - Controlled (lb/hr)	Flare 2- Controlled (Tons/yr)	Flare 2- Controlled (lb/hr)	
Sulfur Dioxide	**88.0**	**20.09**	**43.30**	**9.89**	**44.71**	**10.21**	Based on Flowrate of 3,350 cfm
Nitrogen Oxides	**26.97**	**6.16**	**13.27**	**3.03**	**13.70**	**3.13**	Existing Permit Condition 4,699 cfm
Carbon Monoxide	**6.74**	**1.54**	**3.32**	**0.76**	**3.43**	**0.78**	Existing Permit Condition 4,699 cfm
PM10	**14.16**	**3.23**	**6.97**	**1.59**	**7.19**	**1.64**	Existing Permit Condition 4,699 cfm

HAP/VOC		Flare - Controlled (Tons/yr)	Flare - Controlled (lb/hr)	Flare1 - Controlled (Tons/yr)	Flare1 - Controlled (lb/hr)	Flare 2- Controlled (Tons/yr)	Flare 2- Controlled (lb/hr)	IDAPA 585/586 EL (lb/hr)	Exceeds?
HAP	1,1,1-Trichloroethane	3.49E-03	7.97E-04	1.72E-03	3.92E-04	1.77E-03	4.05E-04	1.27E+02	Below
HAP/VOC	1,1,2,2-Tetrachloroethane	1.02E-02	2.32E-03	5.00E-03	1.14E-03	5.16E-03	1.18E-03	1.10E-05	Exceeds
HAP/VOC	1,1,2-Trichloroethane	7.27E-04	1.66E-04	3.58E-04	8.17E-05	3.70E-04	8.44E-05	4.20E-04	Exceeds
HAP/VOC	1,1-Dichloroethane (ethylidene dichloride)	1.27E-02	2.90E-03	6.24E-03	1.42E-03	6.44E-03	1.47E-03	2.50E-04	Exceeds
HAP/VOC	1,1-Dichloroethene (vinylidene chloride)	1.06E-03	2.41E-04	5.20E-04	1.19E-04	5.37E-04	1.23E-04	1.30E-04	Exceeds
HAP/VOC	1,2-Dichloroethane (ethylene dichloride)	2.21E-03	5.05E-04	1.09E-03	2.48E-04	1.12E-03	2.57E-04	2.50E-04	Below
HAP/VOC	1,2-Dichloropropane (propylene dichloride)	1.11E-03	2.53E-04	5.46E-04	1.25E-04	5.63E-04	1.29E-04	2.31E+01	Below
VOC	2-Propanol (isopropyl alcohol)	2.46E-02	5.62E-03	1.21E-02	2.77E-03	1.25E-02	2.86E-03	6.53E+01	Below
*	Acetone	3.33E-03	7.60E-04	1.64E-03	3.74E-04	1.69E-03	3.86E-04	1.19E+02	Below
HAP/VOC	Acrylonitrile	2.75E-03	6.27E-04	1.35E-03	3.09E-04	1.40E-03	3.19E-04	9.80E-05	Exceeds
VOC	Bromodichloromethane	2.80E-02	6.38E-03	1.38E-02	3.14E-03	1.42E-02	3.24E-03	NA	
VOC	Butane	2.39E-03	5.46E-04	1.18E-03	2.69E-04	1.21E-03	2.77E-04	NA	
HAP/VOC	Carbon disulfide	3.61E-04	8.24E-05	1.78E-04	4.06E-05	1.83E-04	4.19E-05	2.00E+00	Below
HAP/VOC	Carbon tetrachloride	3.36E-05	7.66E-06	1.65E-05	3.77E-06	1.70E-05	3.89E-06	4.40E-04	Below
HAP/VOC	Carbonyl sulfide	6.42E-04	1.47E-04	3.16E-04	7.21E-05	3.26E-04	7.45E-05	2.70E-02	Below
HAP/VOC	Chlorobenzene	1.53E-03	3.50E-04	7.55E-04	1.72E-04	7.79E-04	1.78E-04	2.33E+01	Below
VOC	Chlorodifluoromethane	6.13E-03	1.40E-03	3.02E-03	6.88E-04	3.11E-03	7.11E-04	NA	
HAP/VOC	Chloroethane (ethyl chloride)	4.40E-03	1.00E-03	2.16E-03	4.94E-04	2.23E-03	5.10E-04	1.76E+02	Below
HAP/VOC	Chloroform	1.95E-04	4.46E-05	9.61E-05	2.19E-05	9.92E-05	2.26E-05	2.80E-04	Below
HAP/VOC	Chloromethane (methylchloride)	3.33E-03	7.60E-04	1.64E-03	3.74E-04	1.69E-03	3.86E-04	NA	
HAP/VOC	Dichlorobenzene	1.68E-03	3.84E-04	8.28E-04	1.89E-04	8.55E-04	1.95E-04	2.00E+01	Below
VOC	Dichlorodifluoromethane	1.03E-01	2.36E-02	5.09E-02	1.16E-02	5.26E-02	1.20E-02	NA	
VOC	Dichlorofluoromethane	1.47E-02	3.36E-03	7.23E-03	1.65E-03	7.47E-03	1.71E-03	2.67E+00	Below
HAP	Dichloromethane (methylene chloride)	6.62E-02	1.51E-02	3.26E-02	7.44E-03	3.36E-02	7.68E-03	1.60E-03	Exceeds
VOC	Dimethyl sulfide (methyl sulfide)	1.06E-02	2.42E-03	5.21E-03	1.19E-03	5.38E-03	1.23E-03	NA	
VOC	Ethane	2.19E-01	4.99E-02	1.08E-01	2.46E-02	1.11E-01	2.54E-02	NA	
VOC	Ethanol	1.03E-02	2.34E-03	5.04E-03	1.15E-03	5.21E-03	1.19E-03	1.25E+02	Below
VOC	Ethyl mercaptan (ethanethiol)	1.16E-03	2.64E-04	5.70E-04	1.30E-04	5.89E-04	1.34E-04	6.70E-02	Below
HAP/VOC	Ethylbenzene	4.00E-03	9.14E-04	1.97E-03	4.50E-04	2.03E-03	4.64E-04	2.90E+01	Below
HAP/VOC	Ethylene dibromide	1.02E-05	2.34E-06	5.04E-06	1.15E-06	5.20E-06	1.19E-06	3.00E-05	Below
VOC	Fluorotrichloromethane	5.69E-03	1.30E-03	2.80E-03	6.39E-04	2.89E-03	6.60E-04	NA	
HAP/VOC	Hexane	4.63E-03	1.06E-03	2.28E-03	5.20E-04	2.35E-03	5.37E-04	1.20E+01	Below
*	Hydrogen sulfide	3.74E-01	8.54E-02	1.84E-01	4.20E-02	1.90E-01	4.34E-02	9.33E-01	Below
HAP	Mercury (total)	1.60E-04	3.65E-05	7.86E-05	1.79E-05	8.11E-05	1.85E-05	7.00E-03	Below
HAP/VOC	Methyl ethyl ketone (MEK)	4.18E-03	9.55E-04	2.06E-03	4.70E-04	2.12E-03	4.85E-04	3.93E+01	Below
HAP/VOC	Methyl isobutyl ketone (MIBK)	1.53E-03	3.50E-04	7.54E-04	1.72E-04	7.78E-04	1.78E-04	1.37E+01	Below
VOC	Methyl mercaptan	9.80E-04	2.24E-04	4.82E-04	1.10E-04	4.98E-04	1.14E-04	3.30E-02	Below
VOC	Pentane	1.94E-03	4.43E-04	9.55E-04	2.18E-04	9.86E-04	2.25E-04	1.18E+02	Below
HAP/VOC	Perchloroethylene (tetrachloroethylene)	3.37E-02	7.70E-03	1.66E-02	3.79E-03	1.71E-02	3.91E-03	1.30E-02	Below
VOC	Propane	4.00E-03	9.14E-04	1.97E-03	4.50E-04	2.03E-03	4.64E-04	NA	
*	trans-1,2-Dichloroethene	1.50E-02	3.43E-03	7.38E-03	1.69E-03	7.63E-03	1.74E-03	5.27E+01	Below
HAP/VOC	Trichoroethylene	2.02E-02	4.61E-03	9.94E-03	2.27E-03	1.03E-02	2.34E-03	1.79E+01	Below
HAP/VOC	Vinyl chloride	2.50E-02	5.71E-03	1.23E-02	2.81E-03	1.27E-02	2.90E-03	9.40E-04	Exceeds
HAP/VOC	Xylenes	1.05E-02	2.40E-03	5.17E-03	1.18E-03	5.34E-03	1.22E-03	2.90E+01	Below
HAP	Hydrochloric Acid	4.14E+00	9.45E-01	2.04E+00	4.65E-01	2.10E+00	4.80E-01	NA	
HAP/VOC	Benzene								
	No or unknown co-disposal	1.22E-03	2.79E-04	6.00E-04	1.37E-04	6.20E-04	1.42E-04	8.00E-04	Below
VOC	NMOC (as hexane)								
	Site-Specific Value	4.05E+01	9.25E+00	1.99E+01	4.55E+00	2.06E+01	4.70E+00	NA	NA
HAP/VOC	Toluene								
	No or unknown co-disposal	2.96E-02	6.76E-03	1.46E-02	3.33E-03	1.50E-02	3.43E-03	2.50E+01	Below
	Total TAPS	**4.83**	**1.10**	2.38E+00	5.42E-01	2.45E+00	5.60E-01		
	Total HAPS	**4.32**	**0.99**	2.12E+00	4.85E-01	2.19E+00	5.01E-01		
	Total VOCS	**41.14**	**9.39**	2.02E+01	4.62E+00	2.09E+01	4.77E+00		

	Flare 1 Tons/yr	Flare 1 lb/hr	Flare 2 Tons/yr	Flare 2 lb/hr
Total TAPS	**2.38**	**0.54**	**2.45**	**0.56**
Total HAPS	**2.12**	**0.49**	**2.19**	**0.50**
Total VOCS	**20.24**	**4.621**	**20.90**	**4.771**

Notes:
* Not classified as either HAP or VOC
1. 1,1,2-Trichloroethane emissions calculated by LANDGEM but not in AP-42 listing (Table 2.4-1, 11/98)
2. Lead emissions are not calculated by LANDGEM nor is it listed in EPA AP-42 Section 2.4 Municipal Solid Waste Landfills as a landfill gas constituent. Therefore, we assume that the emissions are zero for this pollutant.

Table D8

H2S Conversion from lb/hr H2S to lb/hr SO2

Assumptions:

34 MW of H2S
32 MW of Sulfur
64 MW of SO2
1.07E+01 lb/hr H2S

Assume 100% H2S conversion for SO2

10.05 lb/hr S
0.31 lb-mol S
20.09 lb/hr SO2

$CM_{SO2} = UM_S * n_{col} * 2.0$ Eqn 7

CM_{SO2} =		Controlled mass emissions of sulfur dioxide (lb/hr)	
UM_S =	10.05	lb/hr S	
n_{col} =	2	Gas collection system control efficiency	
CM_{SO2} =	***20.09***	***lb/hr***	***SO_2*** Combined Flares
	88.0	***Tons/yr***	***SO_2***
CM_{SO2} =	***20.37***	***lb/hr***	***SO_2*** IDEQ calculated results (November 2011)
	89.2	***Tons/yr***	***SO_2***

Current SO2 Limits:
1.87 lb/hr SO2 Combined Flares
0.92 lb/hr SO2 Flare 1
0.95 lb/hr SO2 Flare 2

SO2 Net Increase:
18.22 lb/hr SO2 Combined Flares
8.965 lb/hr SO2 Flare 1
9.257 lb/hr SO2 Flare 2

Based on IDEQ calculated results

SO2 Total Flares (facility wide modeling)
20.37 lb/hr SO2 Combined Flares
10.022 lb/hr SO2 Flare 1
10.348 lb/hr SO2 Flare 2

89.22 Ton/yr SO2 Combined Flares
43.89 Ton/yr SO2 Flare 1
45.33 Ton/yr SO2 Flare 2

Potential Emission Calculations

Table D9 - ACLF - Wood Chipper Diesel Engine Emissions (Gen 1)

Emission Point No.	**SC-E-1**	
Model No.	**CAT C18**	
Engine Power Rating (bhp)	650	
Fuel Type	Distillate #2	
- maximum sulfur content	0.0015%	Ultra low sulfur fuel
Maximum Firing Rate (gals/hr)	38.0	
Maximum Heat Input Rating (Btu/hr)	5,320,000	
(hp)	2,090	*Large Engine*
Maximum Hours of Operation	3,300	
Maximum Firing Rate (gals/yr)	125,400	
Heat Capacity of Fuel (Btu/gal)	140,000	

			Uncontrolled Potential to Emit		
Pollutant	**CAS No.**	**Emission Factor (lb/MMBtu)**	**Emission Rate (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**
Total Particulate Matter (PM)[1]		0.0697	0.37	1,224	0.61
Total Particulate Matter ($PM_{2.5}$)[2]		0.0556	0.30	976	0.49
Particulate Matter (PM_{10})[3]		0.0573	0.30	1,006	0.50
Sulfur Oxides (SO_2)[4]		0.00152	0.0081	26.60	0.013
Nitrogen Oxides (NOx)[5]			**5.36**	17,688	8.84
Carbon Monoxide (CO)[5]			**0.95**	3,135	1.57
HC as VOC[5]			**0.12**	396	0.20

			Uncontrolled Potential to Emit					
	CAS Number	**Emission Factor (lb/MMBtu)**	**Emission Rate (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**	**IDAPA 58.01.01.585/586 - EL (lb/hr)**	**PTE Emission Rate vs. EL**	**HAP**
Benzene	71-43-2	7.76E-04	4.13E-03	1.36E+01	6.81E-03	8.00E-04	**Exceeds**	HAP
Formaldehyde	50-00-0	7.89E-05	4.20E-04	1.39E+00	6.93E-04	5.10E-04	Below	HAP
Naphthalene	91-20-3	1.30E-04	6.92E-04	2.28E+00	1.14E-03	3.33E+00	Below	HAP
Toluene	108-88-3	2.81E-04	1.49E-03	4.93E+00	2.47E-03	2.50E+01	Below	HAP
o-Xylenes	1330-20-7	1.93E-04	1.03E-03	3.39E+00	1.69E-03	2.90E+01	Below	HAP
Acetaldehyde	75-07-0	2.52E-05	1.34E-04	4.42E-01	2.21E-04	3.00E-03	Below	HAP
Acrolein	107-02-8	7.88E-06	4.19E-05	1.38E-01	6.92E-05	1.70E-02	Below	HAP
Acenaphthene	83-32-9	4.68E-06	2.49E-05	8.22E-02	4.11E-05	#N/A	#N/A	
Acenaphthylene	203-96-8	9.23E-06	4.91E-05	1.62E-01	8.10E-05	#N/A	#N/A	
Anthracene	120-12-7	1.23E-06	6.54E-06	2.16E-02	1.08E-05	#N/A	#N/A	
Benz(a)anthracene	56-55-3	6.22E-07	3.31E-06	1.09E-02	5.46E-06	#N/A	#N/A	
Benzo(b)fluoranthene	205-99-2	1.11E-06	5.91E-06	1.95E-02	9.74E-06	#N/A	#N/A	
Benzo(k)fluoranthene	205-82-3	2.18E-07	1.16E-06	3.83E-03	1.91E-06	#N/A	#N/A	
Benzo(g,h,l)perylene	191-24-2	5.56E-07	2.96E-06	9.76E-03	4.88E-06	#N/A	#N/A	
Chrysene	218-01-9	1.53E-06	8.14E-06	2.69E-02	1.34E-05	#N/A	#N/A	
Dibenzo(a,h)anthracene	53-70-3	3.46E-07	1.84E-06	6.07E-03	3.04E-06	#N/A	#N/A	
Indeno(1,2,3-cd)pyrene	193-39-5	4.14E-07	2.20E-06	7.27E-03	3.63E-06	#N/A	#N/A	
Benzo(a)pyrene	50-32-8	2.57E-07	1.37E-06	4.51E-03	2.26E-06	#N/A	#N/A	
Total PAH			2.69E-05	8.87E-02	4.44E-05	2.00E-06	**Exceeds**	
Fluoroanthene	206-44-0	4.03E-06	2.14E-05	7.08E-02	3.54E-05	#N/A	#N/A	
Fluorene	86-73-7	1.28E-05	6.81E-05	2.25E-01	1.12E-04	#N/A	#N/A	
Phenanthrene	85-01-8	4.08E-05	2.17E-04	7.16E-01	3.58E-04	#N/A	#N/A	
Pyrene	129-00-0	3.71E-06	1.97E-05	6.51E-02	3.26E-05	#N/A	#N/A	
Propylene	115-07-1	2.79E-03	1.48E-02	4.90E+01	2.45E-02	#N/A	#N/A	
Total HAPS			**7.94E-03**		**1.31E-02**			

[1] Total PM emission factor (AP-42, Table 3.4-2, 10/96)

[2] Total $PM_{2.5}$ emission factor based on filterable particulate < 3 um plus condensable particulate (AP-42, Table 3.4-2, 10/96)

[3] PM_{10} emission factor is the sum of filterable and condensible PM10 emission factors (AP-42,Table 3.4-2, 10/96)

[4] SO_2 emission factor multiplied by sulfur content of fuel (Ap-42, Table 3.4.1, 10/96)

[5] Manufacturer (Caterpillar) provided worst case emission estimates "Not to exceed data" for NOx, CO, and HC.

Potential Emission Calculations

Table D10 - ACLF - Power Wood Screen Diesel Engine Emissions (Gen 2)

Emission Point No.	SC-E-2	
Model No.	Deutz BF4L913	
Engine Power Rating (bhp)	106	
Fuel Type	Distillate #2	
- maximum sulfur content	0.0015%	Ultra low sulfur fuel
Maximum Firing Rate (gals/hr)	6.1	
Maximum Heat Input Rating (Btu/hr)	858,600	
(hp)	337	*Small Engine*
Maximum Hours of Operation	3,300	
Maximum Firing Rate (gals/yr)	20,238	
Heat Capacity of Fuel (Btu/gal)	140,000	

Pollutant	CAS No.	Emission Factor (lb/MMBtu)	Uncontrolled Potential to Emit: Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)
Total Particulate Matter (PM)[1]		0.31	0.27	878	0.44
Total Particulate Matter ($PM_{2.5}$)[2]		0.31	0.27	878	0.44
Particulate Matter (PM10)[3]		0.31	0.27	878	0.44
Nitrogen Oxides (NOx)[4]		4.41	3.79	12,495	6.25
Sulfur Oxides (SO_2)[5]		0.00152	0.0013	4.293	0.002
Carbon Monoxide (CO)[4]		0.95	0.82	2,692	1.35
TOC as VOC[4]		0.35	0.30	992	0.50

	CAS Number	Emission Factor (lb/MMBtu)	Uncontrolled Potential to Emit: Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	IDAPA 58.01.01.585/586 - EL (lb/hr)	PTE Emission Rate vs. EL	HAP
Benzene	71-43-2	9.33E-04	8.01E-04	2.64E+00	1.32E-03	8.00E-04	**Exceeds**	HAP
Formaldehyde	50-00-0	1.18E-03	1.01E-03	3.34E+00	1.67E-03	5.10E-04	**Exceeds**	HAP
Naphthalene	91-20-3	8.48E-05	7.28E-05	2.40E-01	1.20E-04	3.33E+00	Below	HAP
Toluene	108-88-3	4.09E-04	3.51E-04	1.16E+00	5.79E-04	2.50E+01	Below	HAP
o-Xylenes	1330-20-7	2.85E-04	2.45E-04	8.08E-01	4.04E-04	2.90E+01	Below	HAP
Propylene	115-07-1	2.58E-03	2.22E-03	7.31E+00	3.66E-03	NA	NA	HAP
Acetaldehyde	75-07-0	7.67E-04	6.59E-04	2.17E+00	1.09E-03	3.00E-03	Below	HAP
Acrolein	107-02-8	9.25E-05	7.94E-05	2.62E-01	1.31E-04	1.70E-02	Below	HAP
1,3-Butadiene	106-99-0	3.91E-05	3.36E-05	1.11E-01	5.54E-05	2.40E-05	**Exceeds**	HAP
Acenaphthene	83-32-9	1.42E-06	1.22E-06	4.02E-03	2.01E-06	NA	NA	
Acenaphthylene	203-96-8	5.06E-06	4.34E-06	1.43E-02	7.17E-06	NA	NA	
Anthracene	120-12-7	1.87E-06	1.61E-06	5.30E-03	2.65E-06	NA	NA	
Benz(a)anthracene	56-55-3	1.68E-06	1.44E-06	4.76E-03	2.38E-06	NA	NA	
Benzo(b)fluoranthene	205-99-2	9.91E-08	8.51E-08	2.81E-04	1.40E-07	NA	NA	
Benzo(k)fluoranthene	205-82-3	1.55E-07	1.33E-07	4.39E-04	2.20E-07	NA	NA	
Benzo(g,h,l)perylene	191-24-2	4.89E-07	4.20E-07	1.39E-03	6.93E-07	NA	NA	
Chrysene	218-01-9	3.53E-07	3.03E-07	1.00E-03	5.00E-07	NA	NA	
Dibenzo(a,h)anthracene	53-70-3	5.83E-07	5.01E-07	1.65E-03	8.26E-07	NA	NA	
Indeno(1,2,3-cd)pyrene	193-39-5	3.75E-07	3.22E-07	1.06E-03	5.31E-07	NA	NA	
Benzo(a)pyrene	50-32-8	1.88E-07	1.61E-07	5.33E-04	2.66E-07	NA	NA	
Total PAH			3.37E-06	1.11E-02	5.56E-06	2.00E-06	**Exceeds**	
Fluoroanthene	206-44-0	7.61E-06	6.53E-06	2.16E-02	1.08E-05	NA	NA	
Fluorene	86-73-7	2.92E-05	2.51E-05	8.27E-02	4.14E-05	NA	NA	
Phenanthrene	85-01-8	2.94E-05	2.52E-05	8.33E-02	4.17E-05	NA	NA	
Pyrene	129-00-0	4.78E-06	4.10E-06	1.35E-02	6.77E-06	NA	NA	
Total HAPS			**5.47E-03**		**9.02E-03**			

[1] PM is assumed to equal PM_{10} (AP-42, Table 3.3-1, 10/96)

[2] $PM_{2.5}$ is assumed to equal PM_{10} (AP-42, Table 3.3-1, 10/96)

[3] PM_{10} emission factor (AP-42, Table 3.3-1, 10/96)

[4] NOx, CO and TOC emission factors(Table 3.3-1, 10/96). Note TOC is based on exhaust emission factor for VOC

[5] SO_2 is based on AP-42, Table 3.4-1, 10/96, multiplied by sulfur content of fuel

Potential Emission Calculations

Table D11 - ACLF - HHHW Facility Diesel Engine Emissions (Gen 3)

Emission Point No.	SC-E-2	
Model No.	Detroit Diesel 30DS60	
Engine Power Rating (bhp)	44	
Fuel Type	Distillate #2	
- maximum sulfur content	0.0015%	Ultra low sulfur fuel
Maximum Firing Rate (gals/hr)	3.0	
Maximum Heat Input Rating (Btu/hr)	420,000	
(hp)	165	*Small Engine*
Maximum Hours of Operation	500	
Maximum Firing Rate (gals/yr)	1,500	
Heat Capacity of Fuel (Btu/gal)	140,000	

Pollutant	CAS No.	Emission Factor (lb/MMBtu)	Uncontrolled Potential to Emit Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)
Total Particulate Matter (PM)[1]		0.31	0.13	65	0.033
Total Particulate Matter ($PM_{2.5}$)[2]		0.31	0.13	65	0.033
Particulate Matter (PM10)[3]		0.31	0.13	65	0.033
Nitrogen Oxides (NOx)[4]		4.41	1.85	926	0.46
Sulfur Oxides (SO_2)[5]		0.00152	0.0006	0.318	0.00016
Carbon Monoxide (CO)[4]		0.95	0.40	200	0.10
TOC as VOC[4]		0.35	0.15	74	0.04

	CAS Number	Emission Factor (lb/MMBtu)	Uncontrolled Potential to Emit Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	IDAPA 58.01.01.585/586 - EL (lb/hr)	PTE Emission Rate vs. EL	HAP
Benzene	71-43-2	9.33E-04	3.92E-04	1.96E-01	9.80E-05	8.00E-04	**Below**	HAP
Formaldehyde	50-00-0	1.18E-03	4.96E-04	2.48E-01	1.24E-04	5.10E-04	**Below**	HAP
Naphthalene	91-20-3	8.48E-05	3.56E-05	1.78E-02	8.90E-06	3.33E+00	Below	HAP
Toluene	108-88-3	4.09E-04	1.72E-04	8.59E-02	4.29E-05	2.50E+01	Below	HAP
o-Xylenes	1330-20-7	2.85E-04	1.20E-04	5.99E-02	2.99E-05	2.90E+01	Below	HAP
Propylene	115-07-1	2.58E-03	1.08E-03	5.42E-01	2.71E-04	NA	NA	HAP
Acetaldehyde	75-07-0	7.67E-04	3.22E-04	1.61E-01	8.05E-05	3.00E-03	Below	HAP
Acrolein	107-02-8	9.25E-05	3.89E-05	1.94E-02	9.71E-06	1.70E-02	Below	HAP
1,3-Butadiene	106-99-0	3.91E-05	1.64E-05	8.21E-03	4.11E-06	2.40E-05	**Below**	HAP
Acenaphthene	83-32-9	1.42E-06	5.96E-07	2.98E-04	1.49E-07	NA	NA	
Acenaphthylene	203-96-8	5.06E-06	2.13E-06	1.06E-03	5.31E-07	NA	NA	
Anthracene	120-12-7	1.87E-06	7.85E-07	3.93E-04	1.96E-07	NA	NA	
Benz(a)anthracene	56-55-3	1.68E-06	7.06E-07	3.53E-04	1.76E-07	NA	NA	
Benzo(b)fluoranthene	205-99-2	9.91E-08	4.16E-08	2.08E-05	1.04E-08	NA	NA	
Benzo(k)fluoranthene	205-82-3	1.55E-07	6.51E-08	3.26E-05	1.63E-08	NA	NA	
Benzo(g,h,l)perylene	191-24-2	4.89E-07	2.05E-07	1.03E-04	5.13E-08	NA	NA	
Chrysene	218-01-9	3.53E-07	1.48E-07	7.41E-05	3.71E-08	NA	NA	
Dibenzo(a,h)anthracene	53-70-3	5.83E-07	2.45E-07	1.22E-04	6.12E-08	NA	NA	
Indeno(1,2,3-cd)pyrene	193-39-5	3.75E-07	1.58E-07	7.88E-05	3.94E-08	NA	NA	
Benzo(a)pyrene	50-32-8	1.88E-07	7.90E-08	3.95E-05	1.97E-08	NA	NA	
Total PAH			1.65E-06	8.24E-04	4.12E-07	2.00E-06	**Below**	
Fluoroanthene	206-44-0	7.61E-06	3.20E-06	1.60E-03	7.99E-07	NA	NA	
Fluorene	86-73-7	2.92E-05	1.23E-05	6.13E-03	3.07E-06	NA	NA	
Phenanthrene	85-01-8	2.94E-05	1.23E-05	6.17E-03	3.09E-06	NA	NA	
Pyrene	129-00-0	4.78E-06	2.01E-06	1.00E-03	5.02E-07	NA	NA	
Total HAPS			**2.68E-03**		**6.69E-04**			

[1] PM is assumed to equal PM_{10} (AP-42, Table 3.3-1, 10/96)

[2] $PM_{2.5}$ is assumed to equal PM_{10} (AP-42, Table 3.3-1, 10/96)

[3] PM_{10} emission factor (AP-42, Table 3.3-1, 10/96)

[4] NOx, CO and TOC emission factors(Table 3.3-1, 10/96). Note TOC is based on exhaust emission factor for VOC

[5] SO_2 is based on AP-42, Table 3.4-1, 10/96, multiplied by sulfur content of fuel

Potential Emission Calculations

Table D12 - ACLF - Scales Emergency Backup Generator (Gen 4)

Emission Point No.	**SC-E-2**	
Model No.	**John Deere 4024 HF 285**	
Engine Power Rating (bhp)	80	
Fuel Type	Distillate #2	
- maximum sulfur content	0.0015%	Ultra low sulfur fuel
Maximum Firing Rate (gals/hr)	4.6	
Maximum Heat Input Rating (Btu/hr)	648,000	
(hp)	255	*Small Engine*
Maximum Hours of Operation	500	
Maximum Firing Rate (gals/yr)	2,314	
Heat Capacity of Fuel (Btu/gal)	140,000	

			Uncontrolled Potential to Emit		
Pollutant	**CAS No.**	**Emission Factor (lb/MMBtu)**	**Emission Rate (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**
Total Particulate Matter (PM)[1]		0.31	0.20	100	0.050
Total Particulate Matter ($PM_{2.5}$)[2]		0.31	0.20	100	0.05
Particulate Matter (PM10)[3]		0.31	0.20	100	0.05
Nitrogen Oxides (NOx)[4]		4.41	2.86	1,429	0.71
Sulfur Oxides (SO_2)[5]		0.00152	0.0010	0.491	0.00025
Carbon Monoxide (CO)[4]		0.95	0.62	308	0.15
TOC as VOC[4]		0.35	0.23	113	0.06

			Uncontrolled Potential to Emit					
	CAS Number	**Emission Factor (lb/MMBtu)**	**Emission Rate (lb/hr)**	**Emission Rate (lb/yr)**	**Emission Rate (ton/yr)**	**IDAPA 58.01.01.585/586 - EL (lb/hr)**	**PTE Emission Rate vs. EL**	**HAP**
Benzene	71-43-2	9.33E-04	6.05E-04	3.02E-01	1.51E-04	8.00E-04	**Below**	HAP
Formaldehyde	50-00-0	1.18E-03	7.65E-04	3.82E-01	1.91E-04	5.10E-04	**Exceeds**	HAP
Naphthalene	91-20-3	8.48E-05	5.50E-05	2.75E-02	1.37E-05	3.33E+00	Below	HAP
Toluene	108-88-3	4.09E-04	2.65E-04	1.33E-01	6.63E-05	2.50E+01	Below	HAP
o-Xylenes	1330-20-7	2.85E-04	1.85E-04	9.23E-02	4.62E-05	2.90E+01	Below	HAP
Propylene	115-07-1	2.58E-03	1.67E-03	8.36E-01	4.18E-04	NA	NA	HAP
Acetaldehyde	75-07-0	7.67E-04	4.97E-04	2.49E-01	1.24E-04	3.00E-03	Below	HAP
Acrolein	107-02-8	9.25E-05	5.99E-05	3.00E-02	1.50E-05	1.70E-02	Below	HAP
1,3-Butadiene	106-99-0	3.91E-05	2.53E-05	1.27E-02	6.33E-06	2.40E-05	**Exceeds**	HAP
Acenaphthene	83-32-9	1.42E-06	9.20E-07	4.60E-04	2.30E-07	NA	NA	
Acenaphthylene	203-96-8	5.06E-06	3.28E-06	1.64E-03	8.20E-07	NA	NA	
Anthracene	120-12-7	1.87E-06	1.21E-06	6.06E-04	3.03E-07	NA	NA	
Benz(a)anthracene	56-55-3	1.68E-06	1.09E-06	5.44E-04	2.72E-07	NA	NA	
Benzo(b)fluoranthene	205-99-2	9.91E-08	6.42E-08	3.21E-05	1.61E-08	NA	NA	
Benzo(k)fluoranthene	205-82-3	1.55E-07	1.00E-07	5.02E-05	2.51E-08	NA	NA	
Benzo(g,h,l)perylene	191-24-2	4.89E-07	3.17E-07	1.58E-04	7.92E-08	NA	NA	
Chrysene	218-01-9	3.53E-07	2.29E-07	1.14E-04	5.72E-08	NA	NA	
Dibenzo(a,h)anthracene	53-70-3	5.83E-07	3.78E-07	1.89E-04	9.44E-08	NA	NA	
Indeno(1,2,3-cd)pyrene	193-39-5	3.75E-07	2.43E-07	1.22E-04	6.08E-08	NA	NA	
Benzo(a)pyrene	50-32-8	1.88E-07	1.22E-07	6.09E-05	3.05E-08	NA	NA	
Total PAH			2.54E-06	1.27E-03	6.35E-07	2.00E-06	**Exceeds**	
Fluoroanthene	206-44-0	7.61E-06	4.93E-06	2.47E-03	1.23E-06	NA	NA	
Fluorene	86-73-7	2.92E-05	1.89E-05	9.46E-03	4.73E-06	NA	NA	
Phenanthrene	85-01-8	2.94E-05	1.91E-05	9.53E-03	4.76E-06	NA	NA	
Pyrene	129-00-0	4.78E-06	3.10E-06	1.55E-03	7.74E-07	NA	NA	
Total HAPS			**4.13E-03**		**1.03E-03**			

[1] PM is assumed to equal PM_{10} (AP-42, Table 3.3-1, 10/96)

[2] $PM_{2.5}$ is assumed to equal PM_{10} (AP-42, Table 3.3-1, 10/96)

[3] PM_{10} emission factor (AP-42, Table 3.3-1, 10/96)

[4] NOx, CO and TOC emission factors(Table 3.3-1, 10/96). Note TOC is based on exhaust emission factor for VOC

[5] SO_2 is based on AP-42, Table 3.4-1, 10/96, multiplied by sulfur content of fuel

Certification Statement:

The designated representative or alternate designated representative must sign (i.e., agree to) this certification statement. If you are an agent and you click on "SUBMIT", you are not agreeing to the certification statement, but are submitting the certification statement on behalf of the designated representative or alternate designated representative who is agreeing to the certification statement. An agent is only authorized to make the electronic submission on behalf of the designated representative, not to sign (i.e., agree to) the certification statement.

Facility Name: Ada County Solid Waste Management
Facility Identifier: 525253
Facility Reporting Year: 2010
Facility Location:
Address: 10300 Seaman's Gulch Road
City: Boise
State: ID
Postal Code: 83714

Facility Site Details:
CO2 Equivalent (excluding biogenic, mtons, Subparts C-HH): 122452.3
CO2 Equivalent (mtons, Subparts NN-PP): 0
Biogenic CO2 (mtons, Subparts C-HH): 0
Cogeneration Unit Emissions Indicator: N
GHG Report Start Date: 2010-01-01
GHG Report End Date: 2010-12-31
Description of Changes to Calculation Methodology: The Ada County Landfill has two active landfill cells, the 110 acre Hidden Hollow Landfill Cell which was open in 1972 and nearing capacity, and the 240 acre North Ravine Cell which was open in 2008. As of 12/31/2010, the North Ravine Cell had yet to start collecting landfill gas or recirculating leachate. Also, as of 12/31/2010, there are no active scales at the Ada County Landfill.
Description of Best Available Monitoring Methods Used: Landfill gas monitoring for the presence of methane, carbon dioxide, and oxygen was collected using a Landtec GEM 5000 at least three times a week and recorded in a log. Landfill gas flow rate and temperature are continuously recorded prior to the gas passing through a control technology (flare or engines).
Part 75 Biogenic Emissions Indication: Biogenic carbon dioxide emissions from Part 75 methods excluded from annual GHG emissions
Primary NAICS Code: 562212
Second Primary NAICS Code:

Subpart C: General Stationary Fuel Combustion

Gas Information Details

Gas Name	Other Gas Name	Gas Quantity	Override	Override Explanation
Biogenic Carbon dioxide		0 (Metric Tons)		
Methane		0.01 (Metric Tons)		
Nitrous Oxide		0.002 (Metric Tons)		
Carbon Dioxide		345.1 (Metric Tons)		

Unit Details:

Unit Name : Gen 2 Screen
Unit Type : RICE (Reciprocating internal combustion engine)
Unit Description : 106 HP Wood screen. Exact fuel usage unknown. Assumed 75% of maximum fuel usage of 6.1 gallons per hour.

Individual Unit Details:
Maximum Rated Heat Input Capacity: 0.8586 (mmBtu/hr)

Emission Details:
Annual Sorbent based CO2 Emissions (metric tons):
Annual Biogenic CO2 Emissions (metric tons):
Annual Fossil fuel based CO2 Emissions (metric tons):

Tier Fuel Details:
Fuel : Distillate Fuel Oil No. 2
Tier Name : Tier 1 (Equation C-1)
Tier Methodology Start Date : 2010-01-01
Tier Methodology End Date : 2010-12-31

Fuel Emission Details :

Total CO2 emissions	Total CH4 emissions	Total N2O emissions	Total CH4 emissions CO2e	Total N2O emissions CO2e
47.6 (Metric Tons)	0.00 (Metric Tons)	0.000 (Metric Tons)	0.0 (Metric Tons)	0.1 (Metric Tons)

Unit Name : Household Hazardous Waste Gen 3
Unit Type : RICE (Reciprocating internal combustion engine)
Unit Description : Emergency backup generator 33 kW (44 HP)

Individual Unit Details:
Maximum Rated Heat Input Capacity: 0.356 (mmBtu/hr)

Emission Details:
Annual Sorbent based CO2 Emissions (metric tons):
Annual Biogenic CO2 Emissions (metric tons):
Annual Fossil fuel based CO2 Emissions (metric tons):

Tier Fuel Details:
Fuel : Distillate Fuel Oil No. 2
Tier Name : Tier 1 (Equation C-1)
Tier Methodology Start Date : 2010-01-01
Tier Methodology End Date : 2010-12-31

Fuel Emission Details :

Total CO2 emissions	Total CH4 emissions	Total N2O emissions	Total CH4 emissions CO2e	Total N2O emissions CO2e
0.8 (Metric Tons)	0.00 (Metric Tons)	0.000 (Metric Tons)	0.0 (Metric Tons)	0.0 (Metric Tons)

Unit Name : Gen 1 Chipper
Unit Type : RICE (Reciprocating internal combustion engine)
Unit Description : 650 HP Wood Chipper Generator. Exact fuel usage unknown. Assumed 75% use based on maximum fuel usage of 38 gallons per hour.

Individual Unit Details:
Maximum Rated Heat Input Capacity: 5.32 (mmBtu/hr)

Emission Details:
Annual Sorbent based CO2 Emissions (metric tons):
Annual Biogenic CO2 Emissions (metric tons):
Annual Fossil fuel based CO2 Emissions (metric tons):

Tier Fuel Details:
Fuel : Distillate Fuel Oil No. 2
Tier Name : Tier 1 (Equation C-1)
Tier Methodology Start Date : 2010-01-01
Tier Methodology End Date : 2010-12-31

Fuel Emission Details :

Total CO2 emissions	Total CH4 emissions	Total N2O emissions	Total CH4 emissions CO2e	Total N2O emissions CO2e
296.7 (Metric Tons)	0.01 (Metric Tons)	0.002 (Metric Tons)	0.2 (Metric Tons)	0.6 (Metric Tons)

Subpart HH: Municipal Solid Waste Landfills
Gas Information Details

Gas Name	Other Gas Name	Gas Quantity	Override	Override Explanation
Biogenic Carbon dioxide		0 (Metric Tons)		
Methane		5814.59 (Metric Tons)		
Nitrous Oxide		0 (Metric Tons)		

Landfill Details:

Open	Y
Estimated Year LandFill Closure	2100
Leachate Recirculation Indicator	N
LeachRate Recirculation Frequency	
Scales Indicator	N
LandFill Gas Collection System Indicator	Y
Passive Vent Flare Indicator	Y
Landfill Capacity	5911597 (Metric Tons)
Landfill SurfaceArea Containing Waste	505857 (Square Meters)
Covertype Details	Organic cover Sand cover

Aeration Details:

Aeration Blower Capacity	()
Landfill Fraction Affected by Aeration	()
Aeration Blower Operations Hours	()
Other MCF Factors	
Additional Description	

Current Waste Disposal Quantity Determination Details

Current Annual Waste Quantity Method	Used working capacity for each vehicle/container

Year Waste Disposed -- 2010					
	Current Annual Waste Quantity :	N			
	Number of Times Substituted:				
	Waste Type Details	Option	Waste Type	Methane Fraction Determination Method	is MCF Value Default Indicator Used
		Bulk Waste	Bulk waste	measured	N

Historical Waste Disposal Quantity Estimation Details

Method used to determine the annual waste quantity for any years prior to 2010

Were scales used to determine the annual waste quantity	N

Tipping Receipt Details

Were tipping receipts or company records used to determine waste disposal quantities	N

Method used for estimating all annual waste quantities that are not determined with the methods above

Method	Method #2: Use the estimated population served by the landfill in each year, the values for national average per capita waste generation, and fraction of generated waste disposed of in solid waste disposal sites (Equation HH-2).

Start Year	1972
Method End Year	2009
Reason	The exact topography of the existing Hidden Hollow Landfill cell is unknown so exact quantities in place is unknown. To date, the landfill uses aerial photography to estimate changes in topography and determine the amount of waste collected on a yearly basis.

Methane Generation and Emissions for Landfills with LFG Collection Systems

Gas Collection System Information

System Manufacturer	John Zinc Flare, engineered wells per specs provided by CH2M Hill
System Capacity	4699 (acfm)

Number of Wells	168

Methane Generation and Emissions values

Methane Generation Equation HH5	5357.98(Metric Tons)
Methane Generation Equation HH7	13612.99(Metric Tons)
Basis for Input Methane Generation Value	Equation HH-4
Methane Emissions Equation HH6	276.15(Metric Tons)
Methane Emission from Equation HH8	5814.59(Metric Tons)

Gas Collection Systems details

Annual Volume FGCollected Gas Volumetric Flow	1128354700 (scf)	
	IsSubstitutedIndicator	N
	NumberofTimesSubstituted	
Annual Average Methane Concentration	45.7 (Number (between 0 and 100))	
	IsSubstitutedIndicator	N
	NumberofDaysSubstituted	
	NumberofWeeksSubstituted	
isTemperatureIncorporatedIndicator	Y	
	January	()
	February	()
	March	()
	April	()
	May	()
	June	()
	July	()
	August	()
	September	()
	October	()
	November	()
	December	()
isPressureIncorporatedIndicator	Y	
	January	()
	February	()
	March	()
	April	()
	May	()
	June	()
	July	()
	August	()
	September	()
	October	()
	November	()
	December	()
isLFGFlowWetBasisIndicator	Y	

isMethaneConcentrationWetBasisIndicator	N	
	January	0.057 (fraction (number between 0 and 1))
	February	0.0574 (fraction (number between 0 and 1))
	March	0.0581 (fraction (number between 0 and 1))
	April	0.0605 (fraction (number between 0 and 1))
	May	0.0559 (fraction (number between 0 and 1))
	June	0.0454 (fraction (number between 0 and 1))
	July	0.0478 (fraction (number between 0 and 1))
	August	0.0428 (fraction (number between 0 and 1))
	September	0.0407 (fraction (number between 0 and 1))
	October	0.0423 (fraction (number between 0 and 1))
		0.0575 (fraction

	November	(number between 0 and 1))
	December	0.0568 (fraction (number between 0 and 1))
OnSiteDestructionIndicator	On-site	
BackupDevicePresent	Y	

Waste depth details

Area Type	WasteDepth(UOM)
A1	()
A2	39(Meters)
A3	()
A4	35(Meters)
A5	()

APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES

MEMORANDUM

DATE: November 28, 2011

TO: Eric Clark, EIT, Permit Engineer, Air Quality Division

FROM: Cheryl Robinson, P.E., Air Quality Engineer/Modeling Analyst, Air Quality Division

PROJECT NUMBER: P-2009.0098, Project 60803 (HHE) and P-2009.0001, Project 60972 (ACLF)

SUBJECT: DEQ Modeling for Hidden Hollow Energy, LLC, Facility ID 001-00214, and Ada County Landfill, Facility ID 001-00195, Boise, Idaho
Project: Increased H_2S in Landfill Gas combusted in HHE Engines and ACLF Flares

1.0 Summary

In mid-2011, Hidden Hollow Energy, LLC (HHE), a wholly-owned subsidiary of Fortistar, identified a potential issue with previous analyses submitted in support of their current Permit to Construct (PTC) for their landfill gas-to-energy facility located within the boundaries of the Ada County Landfill (ACLF) near Boise, Idaho. Previous analyses for HHE 1 (engine generators 1/2) and HHE 2 (engine generators 3/4) presumed a maximum H_2S concentration of 150 parts per million by volume (ppmv) in the landfill gas (LFG), while grab sample testing of the landfill gas in the early summer of 2011 indicated that the H_2S concentration can be considerably higher. After tuning the landfill gas collection system, maximum H_2S concentrations in the landfill gas are expected to be in the range of 600 ppmv. In late October 2011, HHE proposed installing an H_2S treatment system upstream of the two enclosed flares operated by the landfill and the HHE engine generators.

The landfill gas collection system is currently providing about 2,700 scfm of LFG. More than 60 new extraction wells are scheduled to be installed during December 2011. The wells will be capped until ready to be connected to the existing collection and treatment system. The total landfill gas collected is anticipated to rise to about 3,350 scfm when these new wells are connected during the spring of 2012. Ada County is expected to submit an application at the end of November 2011, requesting a reduction from 4,699 scfm to about 3,350 scfm in the allowable amount of LFG collected in the system that must then be combusted in either the engine generators or the flares before being released to the atmosphere.

The purpose of this modeling evaluation is to conduct significance and (if needed) full impact analyses to:

1) <u>Change the allowable SO_2 emission rate for HHE1 and HHE2</u>. Determine the maximum allowable increase in pound-per-hour SO_2 emissions from HHE's four permitted engine generators at LFG collection rates of 3,350 scfm. Conduct atmospheric dispersion modeling to demonstrate that the increase will not cause or significantly contribute to a violation of the 1-hour or annual SO_2 NAAQS, in accordance with Idaho Air Rules Section 203.02 (IDAPA 58.01.01.203.02).
2) <u>Change the allowable SO_2 emission rate for ACLF Flare 1 and Flare 2</u>. Determine the ambient impact associated with increasing the H_2S concentration in the landfill gas combusted in the ACLF flares from the values used in the analysis for ACLF permit to construct P-2009.001 to "x" ppmv (where "x" is determined in step 1 above), presuming an LFG collection rate of 3,350 scfm. Conduct atmospheric dispersion modeling to demonstrate that this increase will not cause or significantly contribute to a violation of the 1-hour or annual SO_2 NAAQS, in accordance with Idaho Air Rules Section 203.02 (IDAPA 58.01.01.203.02).
3) <u>Characterize the 1-hour SO_2 ambient impacts from operation of the engines and flares prior to installation of an H_2S treatment system</u>, presuming LFG collection rates of 2,700 scfm, 3,350 scfm, and 4,699 scfm, with an H_2S concentration of 600 ppmv. Presume Hidden Hollow Energy 1 (HH1, existing engines 1/2) and Hidden Hollow Energy 2 (HH2, permitted engines 3/ 4 which have not yet

been constructed) are operating at a maximum feed rate of 600 scfm LFG in each engine, with the remaining LFG flared in Ada County's Flare 1 and Flare 2.

Because of the time-critical nature of this project and its close association with the modeling analyses needed to modify Ada County Landfill's existing permit, DEQ developed a final emissions inventory based on input from both HHE and Ada County Landfill and conducted the dispersion modeling analyses. [DEQ received HHE's concurrence on the emission estimates as part of their review of the draft permit and DEQ modeling report].

The analyses 1) utilized appropriate methods and models; 2) were conducted using reasonably accurate or conservative model parameters and input data; 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that predicted pollutant concentrations from emissions associated with the facility were below significant contribution levels (SCLs) or other applicable regulatory thresholds; or b) that predicted pollutant concentrations from emissions associated with the facility, when appropriately combined with background concentrations, were below applicable air quality standards at all locations outside of the facility's leased property boundary.

Key assumptions used in the modeling analyses and the impact of these assumptions on the compliance demonstration are shown in Table 1.

TABLE 1. KEY ASSUMPTIONS USED IN MODELING ANALYSES

Criteria/Assumption/Result	Explanation/Consideration
Hidden Hollow Energy 1 and 2 Maximum SO_2 emissions: From each generator = 1.09 lb/hr From all four generators = 4.36 lb/hr = 19.1 TPY* Based on: H_2S concentration in the landfill gas is 180 ppmv, and LFG feed rate to each engine is 600 scfm. *Assumes generator operations 8,760 hr/year	At these lb/hr emission rates, significant impacts occurred only at receptors located within the portion of the ACLF that is not accessible to the public. The maximum SO_2 ambient impact (design value) from HHE's four generators at any of these receptors was 99.0% of the 1-hour SO_2 NAAQS. At 180 ppmv H_2S, the increase in SO_2 emissions from all four HHE engine generators is: 0.17 lb/hr x 4 x 8760 hr/yr / 2000 = 3 TPY. The modeling threshold of 1.2 TPY is designed to ensure that the ambient impacts from this increase are less than significant. Based on this, and the very low annual impacts (~2.2% of the annual NAAQS) predicted for operating all four engines (2,400 scfm) and Flare 1 at 950 scfm, modeling was not conducted for the annual averaging period.
Ada County Landfill Flares 1 and 2 All LFG is combusted in the flare(s). Based on: H_2S concentration in the landfill gas is 600 ppmv, and LFG feed rate of 3,350 scfm is split evenly between Flare 1 and Flare 2.	If tuning the LFG collection system keeps the H_2S concentrations consistently below 600 ppmv, no further treatment of the LFG is required for ACLF to demonstrate compliance with the 1-hr SO_2 NAAQS for total LFG flow rates up to 3,350 scfm. The maximum ambient impact (design value) for this case is 93.9% of the 1-hour SO_2 NAAQS. Given the stringency of the 1-hr SO_2 NAAQS compared to the annual value, modeling was not conducted for the annual averaging period.
2,400 scfm of LFG is combusted in the four HHE engines, with the remainder combusted in the flare(s). Based on: H_2S concentration in the landfill gas is 600 ppmv, and Total LFG available is 3,350 scfm LFG feed rate to each of four engines is 600 scfm LFG feed rate to Flare 1 is 950 scfm.	If tuning the LFG collection system keeps the H_2S concentrations consistently below 600 ppmv, no further treatment of the LFG is required for ACLF to demonstrate compliance with the 1-hr SO_2 NAAQS for total LFG flow rates up to 3,350 scfm. The maximum ambient impact (design value) for this case is 73.0% of the 1-hour SO_2 NAAQS. Using a full receptor grid for on and off-site impacts, the maximum annual SO_2 impact is 2.2% of the NAAQS

2.0 Background Information

2.1 Applicable Air Quality Impact Limits and Modeling Requirements

This section identifies applicable ambient air quality limits and analyses used to demonstrate compliance for this facility located at the Ada County Landfill at 10300 Seamans Gulch Road in the foothills above Boise, Idaho. Approximate UTM coordinates for this parcel are 557.5 km Easting and 4838.6 km Northing, in UTM Zone 11 (Datum NAD83).

2.1.1 Area Classification

The Hidden Hollow Energy facility is located within northern Ada County which is designated as an attainment or unclassifiable area for lead (Pb), nitrogen dioxide (NO_2), ozone, particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers ($PM_{2.5}$), and sulfur oxides (SO_x). The area is in attainment but is being managed under a maintenance plan for carbon monoxide (CO) and particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}). There are no Class I areas within 10 kilometers of this location.

2.1.2 DEQ Modeling Thresholds

Modeling is typically not required if the changes in estimated criteria pollutant emission rates for a proposed project are below DEQ's modeling thresholds, shown in Table 2. "Case-by-case" thresholds may be used only with prior DEQ approval. The only pollutant of interest for this project is SO_2, and due to the relatively short stacks and the presence of elevated terrain, "Threshold I" values must be used for this project.

TABLE 2. DEQ CRITERIA POLLUTANT MODELING THRESHOLDS

Criteria Pollutant	Averaging Period	DEQ Modeling Threshold			
		Threshold I		Threshold II (case-by-case)	
SO_2	1-hr	0.21	lb/hr	2.5	lb/hr
	Annual	1.2	T/yr	14	T/yr

2.1.3 Significant and Cumulative NAAQS Impact Analyses

If estimated maximum pollutant impacts to ambient air from the emissions sources associated with the existing unpermitted facility exceed the significant contribution levels (SCLs) of Section 006 of IDAPA 58.01.01, Rules for the Control of Air Pollution in Idaho (Idaho Air Rules), then a cumulative impact analysis is necessary to demonstrate compliance with National Ambient Air Quality Standards (NAAQS) and Idaho Air Rules Section 203.02 for Permits to Construct and Section 204.02 for Tier II Operating Permits. A cumulative NAAQS impact analysis for attainment area pollutants involves adding ambient impacts from facility-wide emissions, and emissions from any nearby co-contributing sources, to DEQ-approved background concentration values that are appropriate for the criteria pollutant/averaging-time at the facility location and the area of significant impact. The resulting maximum pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 3. The SCLs and the modeled value that must be used for comparison to the NAAQS are also listed in Table 3.

Table 3. APPLICABLE REGULATORY LIMITS				
Pollutant	Averaging Period	Significant Contribution Levels[c] ($\mu g/m^3$)[d]	Regulatory Limit[e] ($\mu g/m^3$)	Modeled Value Used[h, i]
Sulfur Dioxide (SO_2)	Annual	1.0	80[f]	Maximum 1st highest
	1-hour[o]	EPA Interim: 3 ppb[n, p] (~7.8 $\mu g/m^3$)[q]	0.075 ppm[o, p] (~196 $\mu g/m^3$)[q]	Maximum 4th highest[o, p]

[c] SCLs are defined in Idaho Air Rules Section 006. Class II $PM_{2.5}$ SCLs (signed 9/30/10, 75 FR 64864, October 20, 2010).
[d] Micrograms per cubic meter.
[e] Federal NAAQS (see 40 CFR 50) in effect as of July 1 of each year are incorporated by reference during the legislative session the following spring. See Idaho Air Rules Section 107.
[f] Never expected to be exceeded in any calendar year.
[h] Concentration at any modeled receptor.
[i] The maximum 1st highest modeled value is always used for significant impact analyses.
[o] SO_2 concentration at any modeled receptor when using five consecutive years of meteorological data. Compliance is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. EPA Interim SIL, Page memo, dated August 23, 2010.
[p] EPA's February 10, 2010 1-hour NO_2 standard (75 FR 6474) and June 22, 2010 1-hour SO_2 standard (75 FR 35520) were incorporated by reference (IBR'd) in Idaho's NSR program when the Idaho Legislature adjourned *sine die* on April 7, 2011.

2.2 Background Concentrations

Background concentrations are used in the cumulative NAAQS impact analyses to account for impacts from sources not explicitly modeled.

Background concentrations were revised for all areas of Idaho by DEQ in March 2003[1] and are currently being updated. Background concentrations in areas where no monitoring data were available are based on monitoring data from areas with similar population density, meteorology, and emissions sources. Recommended background concentrations for this project are shown in Table 4.

TABLE 4. BACKGROUND CONCENTRATIONS			
Pollutant	Averaging Period	Background ($\mu g/m^3$)[a]	Source
Sulfur dioxide (SO_2)	Annual	2.6	Fargo ND/Moorhead MN monitoring data, 2004-2008, All non-zero values meeting 75% completeness criteria are 0.001 ppm = 2.6 $\mu g/m^3$
	1-hour	33.1	Fargo ND/Moorhead MN monitoring data, 2006-2008, 1st high value plus one standard deviation of values meeting 75% completeness criteria.

[a] Micrograms per cubic meter.

[1] Hardy, Rick and Schilling, Kevin. *Background Concentrations for Use in New Source Review Dispersion Modeling*. Memorandum to Mary Anderson, March 14, 2003.

3.0 Modeling Impact Assessment

3.1 Modeling Methodology

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

3.1.1 Overview of Analyses

A brief description of parameters used in the modeling analyses is provided in Table 5.

Table 5. MODELING PARAMETERS		
Parameter	**Description/Values**	**Documentation/Addition Description[a]**
Model	AERMOD	AERMOD with the PRIME downwash algorithm, version 11103.
Meteorological data	Boise: 2001-2005	National Weather Service surface data and upper air data from the Boise airport. Data processed through AERMET (version 06341) was used for this project.
Terrain	Considered	DEQ used AERMAP (version 11103) to extract building, emission source, and receptor elevations and determine the controlling hill height elevation from a National Elevation Dataset (NED) digital elevation model (DEM) 1- arc-second (30-meter resolution) tiff file. Default rural dispersion was used.
Building downwash	Considered	Building downwash parameters were calculated using the BPIP PRIME algorithm (version 04274).
Receptor Grid	Receptors	Receptor locations were defined in UTM coordinates (NAD83).
	Fenceline Grid	25-meter spacing along the leased property boundary.
	Grid 1	HHE: 50-meter spacing in a square grid out to 1,000 meters (1 kilometer (km)). ACLF: 50-meter spacing in a circular grid out to 2 km.
	Grid 2	HHE: 100-meter spacing in a square grid between 1 km and 2 km.
	Grid 3	HHE: 250--meter spacing in a square grid between 2 km and 3 km. ACLF: 100-meter spacing in a circular grid between 2 km and 3 km.
	Grid 4	HHE: 500--meter spacing in a square grid between 3 km and 4 km. ACLF: 500-meter spacing in a circular grid between 3 km and 4 km.
	Grid 5	HHE: 1000--meter spacing in a square grid between 4 km and 5 km. ACLF: 1000--meter spacing in a circular grid between 4 km and 10 km.
	Grid 6	50-meter spacing in the publicly-accessible area of the Ada County Landfill.

3.1.2 Modeling Protocol and Methodology

Modeling was generally conducted using data described in submissions received from HHE and ACLF and methods described in the *State of Idaho Air Quality Modeling Guideline*.

3.1.3 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. EPA provided a one-year transition period during which either ISCST3 or AERMOD could be used at the discretion of the permitting agency. AERMOD must be used for all air impact analyses, performed in support of air quality permitting, conducted after November 2006.

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 offers the following improvements over ISCST3:

- Improved dispersion in the convective boundary layer and the stable boundary layer.
- Improved plume rise and buoyancy calculations.
- Improved treatment of terrain effects on dispersion.
- New vertical profiles of wind, turbulence, and temperature.

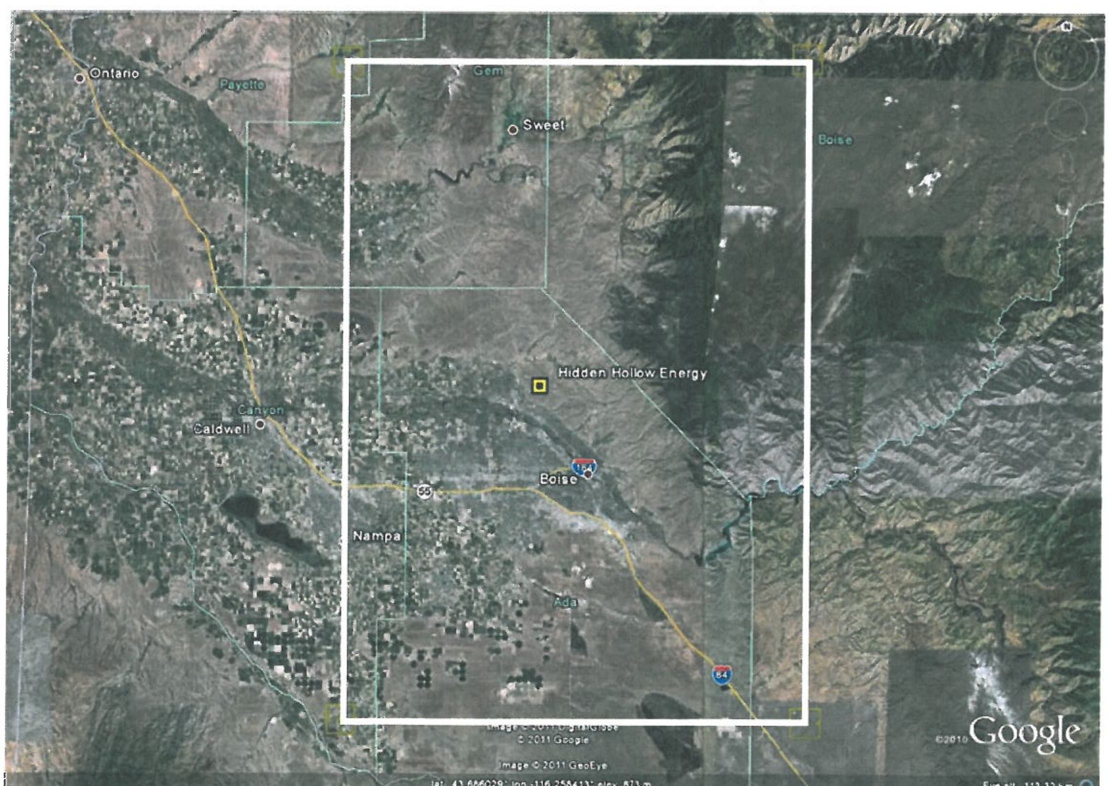
AERMOD was used for the submitted analyses for this project.

3.1.4 Meteorological Data

The Hidden Hollow Energy facility is located within the Ada County Landfill, which is about 10.1 miles north-northwest of the National Weather Service station at the Boise airport. For the refined AERMOD analyses, DEQ determined that the existing AERMOD-ready data set based on National Weather Service surface and upper air meteorological data collected from 2001 through 2005 at the Boise airport were the best representative data available at this time. These meteorological data were previously processed through AERSURFACE version 08009 and AERMET version 06341.

3.1.5 Terrain Effects

Terrain effects on dispersion were considered in these site-specific analyses. DEQ used AERMAP (version 11103) to extract building, emission source, and receptor elevations and determine the controlling hill height elevation from a National Elevation Dataset (NED) digital elevation model (DEM) 1 arc-second (30-meter resolution) tiff file. The domain included the area between 43.3528 and 44.0450 degrees latitude and -116.5656 to -115.8947 degrees longitude (NAD83), as shown in Figure 3-1. Default rural dispersion was used.



3.1.6 Facility Layout

The facility layout is shown in Figure 3-2, along with the estimated leased property boundary for all four HHE engine generators.

3.1.7 Building Downwash

Plume downwash effects caused by structures present at the facility were accounted for in the submitted modeling analyses. The Building Profile Input Program with Plume RIse Model Enhancements (BPIP-PRIME) was used to calculate direction-specific building dimensions and Good Engineering Practice (GEP) stack height information from building dimensions/configurations and emission release parameters for input to AERMOD. Building parameters are summarized in Table 6.

Table 6. BUILDING PARAMETERS

Building	Building Height	Base Elevation (m)	UTM Zone 11 (NAD83)		UTM Zone 11 (NAD83)	
			Easting, X (m)	Northing, Y (m)	Easting, X (m)	Northing, Y (m)
HHBLDG1 (HHE 1)	12 ft	873	557482.9	4838604.1	557486.0	4838611.7
			557484.4	4838607.7	557487.5	4838615.5
	3.66 m		557481.8	4838608.7	557476.1	4838620.2
			557483.4	4838612.6	557471.2	4838609.0
HHBLDG2 (HHE 2)	12 ft	873	557475.3	4838586.4	557478.4	4838594.0
			557476.8	4838590.0	557479.9	4838597.8
	3.66 m		557474.2	4838591.0	557468.5	4838602.5
			557475.8	4838594.9	557463.6	4838591.3
CGENCTRL HH Generator Control Pad	12 ft	874	557481.0	4838626.0	557484.0	4838622.0
	3.66 m		557480.0	4838624.0	557485.0	4838624.0
ACLFCTRL Flare Control Bldg	10 ft	874	557523.5	4838627.0	557521.0	4838634.9
	3.048 m		557524.9	4838634.4	557519.6	4838627.6
CFLRSKID Flare Skid	8 ft	873	557495.0	4838643.0	557509.0	4838645.0
	2.4384 m		557497.0	4838639.0	557507.0	4838649.0

3.1.8 Ambient Air Boundary

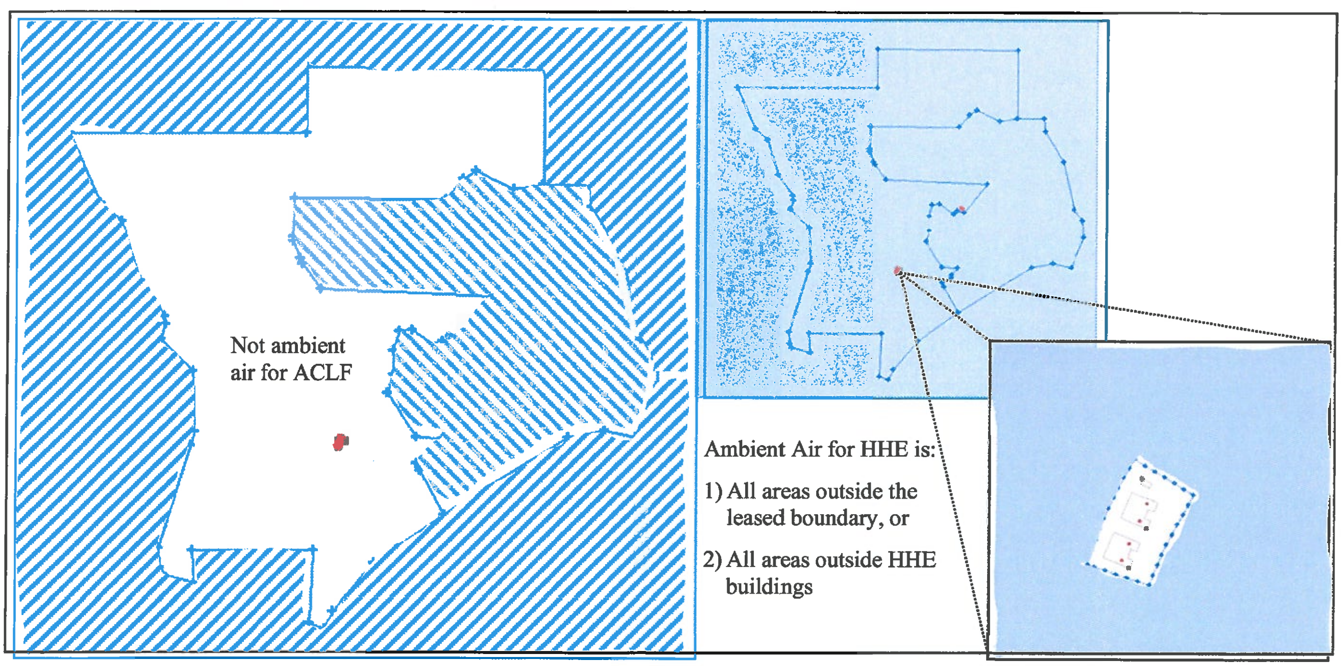
Ambient air is defined in Section 006 of the Idaho Air Rules as "that portion of the atmosphere, external to buildings, to which the general public has access". The Hidden Hollow Energy facility is located on a small leased parcel within the Ada County Landfill. In situations involving leased land, the EPA has interpreted "ambient air" to mean the following:[2]

"When two (or more) companies operate separate sources on property owned by one company and leased in part to the other, and the lessor retains control over public access to the entire property and actually maintains a physical barrier around it to preclude public access:

- The air over the entire property (including the leased portion) is not ambient air to the lessor.
- The air over the non-leased portion of the property is ambient air to the lessee.
- The air over the leased portion is ambient air to the lessee unless the lessee undertakes its own separate action to preclude public access."

For the purposes of air quality permitting, DEQ has determined that Ada County Landfill and Hidden Hollow Energy are two separate facilities.[3] ACLF maintains fencing and signage around the perimeter of the landfill property, allows public access only through the main gate off Seamans Gulch Road, and limits public access within the landfill during operating hours by means of gates, signs, and monitoring by ACLF staff. The landfill is open to the public during the hours from 7:00 a.m. to 6 p.m., Monday through Friday, and Saturdays from 8 a.m. to 6 p.m.

Areas considered "ambient air" for Ada County Landfill and for Hidden Hollow Energy are shown in Figure 3-3. Modeling for Hidden Hollow Energy presumed that ambient air was all areas outside the



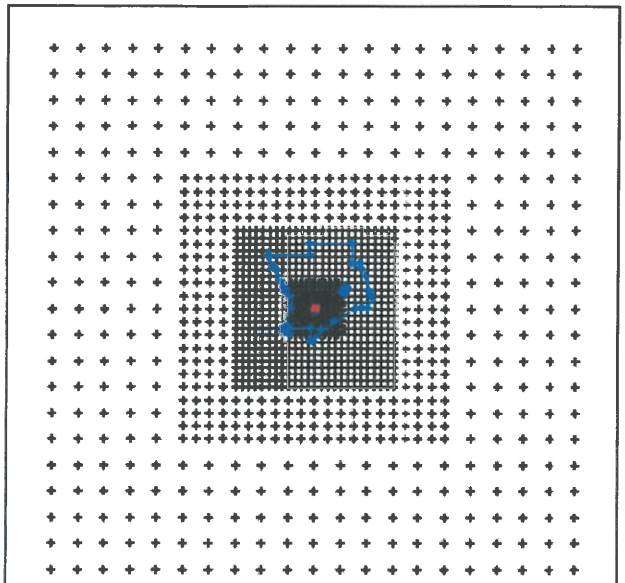
[2] Interpretation of "Ambient Air" in Situations Involving Leased Land Under the Regulations for Prevention of Significant Deterioration (PSD), Memorandum from Steven D. Page, EPA Office of Air Quality Planning and Standards, to Regional Air Division Directors, EPA Regions I-X, June 22, 2007, accessible at http://www.epa.gov/region7/air/nsr/nsrmemos/leaseair.pdf

[3] Ada County Landfill and Hidden Hollow Energy, LLC, Facility Decision, August 12, 2011, Idaho DEQ TRIM Document No. 2011AAG4372.

leased property boundary, because HHE maintains a fence around its engine generator buildings except for a space near the flares. Because of the elevated terrain, maximum ambient impacts do not occur at the leased property, but occur up the hill from the HHE facility. It is reasonable to presume that the modeling results would not be different had ambient air been defined as all areas outside of HHE structures.

3.1.9 Receptor Network

The receptor grids used for the significance modeling analyses are summarized in Table 3 and shown graphically in Figure 3-4 for Hidden Hollow Energy and Figure 3-5 for Ada County Landfill. The grid receptor spacing meets the recommended spacing criteria in the *State of Idaho Air Quality Modeling Guideline*. Only receptors with high 1st high ambient impacts greater than or equal to the EPA Interim significant contribution level (SCL) of 3 parts per billion (ppb), equivalent to about 7.8 μg/m^3, were carried forward for the full impact analyses.



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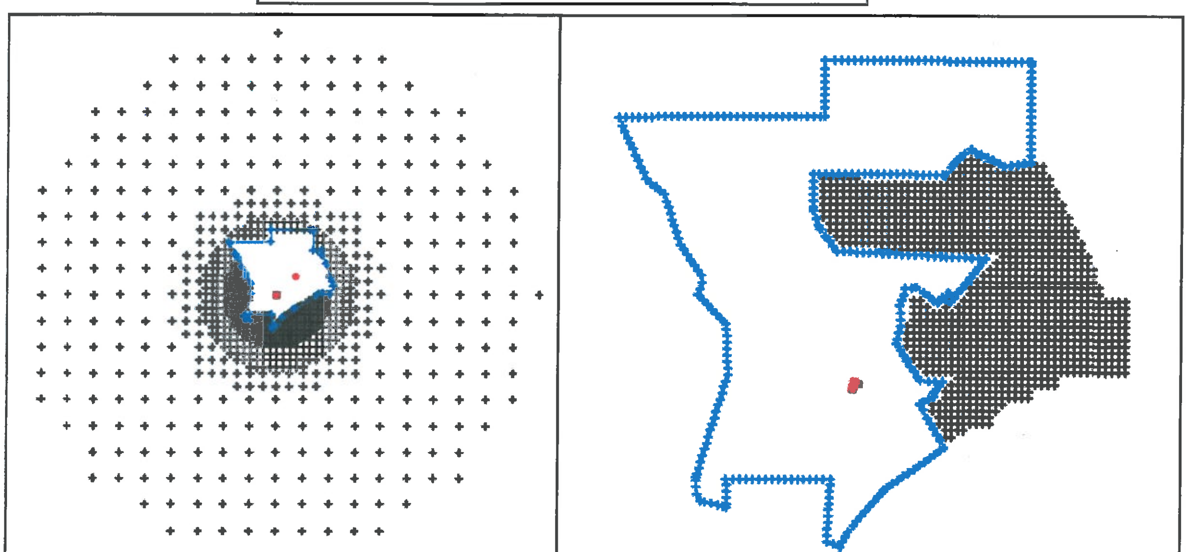

3.2 Emission Release Parameters

The stack parameters for the HHE engine generators and ACLF enclosed flares are shown in Table 7. The exit velocities for the flares are dependent upon the LFG feed rate to each flare. All stacks were modeled as vertical and uncapped.

Table 7. EMISSION RELEASE PARAMETERS

Source ID	Source Description	UTM Zone 11 (NAD83)		Base Elev. (m)	Stack Height (ft)[b]	Stack Temp. (°F)[c]	Stack Diameter (ft)	Exit Velocity (m/s)[d]
		Easting (X, m)[a]	Northing (Y, m)[a]					
HGEN1	HHE1 – Gen1	557482.925	4838615.043	873	14.4 (4.39 m)	898 (754.2 K)	1.2 (0.366 m)	56
HGEN2	HHE1 – Gen1	557479.776	4838607.429	873	14.4 (4.39 m)	898 (754.2 K)	1.2 (0.366 m)	56
HGEN3	HHE2 – Gen3	557475.196	4838597.178	873	14.4 (4.39 m)	898 (754.2 K)	1.2 (0.366 m)	56
HGEN4	HHE2 – Gen4	557472.064	4838589.827	873	14.4 (4.39 m)	898 (754.2 K)	1.2 (0.366 m)	56
FLARE1	ACLF Flare 1	557489.99	4838641.83	873.88	40 (12.2 m)	1455.5 (1064 K)	10 (3.048m)	Varies
FLARE2	ACLF Flare 2	557494.64	4838635.18	872.9	40 (12.2 m)	1448.3 (1060 K)	10 (3.048m)	Varies
CCHIPGEN	ACLF Chipper Generator	558217	4839332	991	6 (1.83 m)	370 (460.9 K)	8-in (0.2033 m)	50
CSCRNGEN	ACLF Screener Generator	558236	4839310	991	6 (1.83 m)	248 (393.2 K)	3-in (0.076 m)	50

[a] m = meters [b] ft = feet [c] °F = degrees Fahrenheit, K = Kelvin [d] m/sec = meters per second

3.3 Sulfur Dioxide (SO2) Emissions Rates

Calculations of SO_2 emissions for previous HHE and ACLF permitting actions were done separately by different consultants, using different assumptions for landfill gas methane concentrations and gas heating values. For the purposes of this project, total SO_2 emissions were calculated based on the total LFG flow rate and H_2S concentration, then apportioned to each source based on the LFG feed rate for that source. This ensures that the emissions rates used for full impact analyses have all been calculated using a consistent set of assumptions.

The difference or "delta" for each HHE engine generator was calculated based on the difference between the previously modeled emission rate of 0.92 lb/hr and the "full impact analysis" emission rate calculated based on the H_2S concentration presuming a 600 scfm LFG feed rate to each engine. Modeled emission rates for the HHE engine generators are shown in Table 8.

Table 8. SO_2 EMISSION RATES – HHE ENGINE GENERATORS

Emissions Unit	Full Impact Analyses				Delta (lb/hr)	Significant Impact Analyses			
	HGEN1 (lb/hr)	HGEN2 (lb/hr)	HGEN3 (lb/hr)	HGEN4 (lb/hr)		HGEN1 (lb/hr)	HGEN2 (lb/hr)	HGEN3 (lb/hr)	HGEN4 (lb/hr)
Base Case	0.92	0.92	0.92	0.92	---	---	---	---	---
H_2S = 180 ppmv	1.09	1.09	1.09	1.09	1.09 – 0.92 =	0.17	0.17	0.17	0.17
H_2S = 200 ppmv	1.22	1.22	1.22	1.22	1.22 – 0.92 =	0.30	0.30	0.30	0.30
H_2S = 600 ppmv	3.65	3.65	3.65	3.65	3.65 – 0.92 =	2.73	2.73	2.73	2.73

The previously modeled emission rates for ACLF Flares 1 and 2 were 0.13 lb/hr and 0.15 lb/hr, respectively. These values represented the estimated SO_2 emission rates when operating with LFG feed rates of 2,320 scfm to Flare 1 and 2,379 scfm to Flare 2. Because 1) the previously modeled emission rates are small compared to the "full impact analysis" emission rates, 2) exhaust parameters for flares may vary considerably depending on the LFG flow rate and quality, and 3) the ambient air boundary for the flares is some distance away, the "full impact analysis" SO_2 emission rates were also used for the significance analyses for the flares. Except for cases run using the current allowable LFG collection rate of 4,699 scfm, LFG flow was split evenly between the two flares. Modeled SO_2 emission rates and exhaust velocities for the flares are shown in Table 9.

Table 9. SO_2 EMISSION RATES – ALL LFG ROUTED TO THE ACLF FLARES

H_2S Concentration (ppmv)	Total LFG (scfm)	LFG Flow Rate		Exhaust Velocity		Full Impact Analyses		Significant Impact Analyses	
		Flare 1 (scfm)	Flare 2 (scfm)	Flare 1 (m/sec)	Flare 2 (m/sec)	Flare 1 (lb/hr)	Flare 2 (lb/hr)	Flare 1 (lb/hr)	Flare 2 (lb/hr)
Base Case	4,699	2,320	2,379	0.78	0.80	---	---	---	---
H_2S = 180 ppmv	3,350	1,675	1,675	0.566	0.564	3.06	3.06	3.06	3.06
H_2S = 600 ppmv	2,700	1,350	1,350	0.456	0.455	8.21	8.21	8.21	8.21
H_2S = 600 ppmv	3,350	1.675	1.675	0.566	0.564	10.2	10.2	10.2	10.2
H_2S = 600 ppmv	4,699	2,320	2,320	0.78	0.80	14.1	14.5	14.1	14.5

For full impact analyses, each of the generators is presumed to use 600 scfm of the available LFG, with any remaining LFG combusted in the flare(s). SO_2 emission rates for operating two or four of the HHE engines at various total LFG flow rates and H_2S concentrations are shown in Table 10.

Table 10. SO_2 EMISSION RATES – HHE ENGINES, ACLF FLARES, AND ACLF DIESEL ENGINES

H_2S Concentration (ppmv)	Total LFG (scfm)	Total SO_2 (lb/hr)	HGEN1	HGEN2	HGEN3	HGEN4	Flare1		Flare2	
			(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(m/sec)	(lb/hr)	(m/sec)
Operate HHE Generators 1 and 2 at full load with remaining LFG combusted in the flare(s)										
H_2S = 180 ppmv	3,350	6.11	1.09	1.09	---	---	3.92	0.73	---	---
H_2S = 200 ppmv	3,350	6.79	1.22	1.22	---	---	4.36	0.73	---	---
H_2S = 600 ppmv	2,400	14.59	3.65	3.65	---	---	7.30	0.41	---	---
H_2S = 600 ppmv	2,700	16.42	3.65	3.65	---	---	9.12	0.51	---	---
H_2S = 600 ppmv	3,350	20.37	3.65	3.65	---	---	13.07	0.73	---	---
H_2S = 600 ppmv	4,699	28.57	3.65	3.65	---	---	10.6	0.59	10.6	0.59
Operate HHE Generators 1, 2, 3, 4 at full load with remaining LFG combusted in the flare(s)										
H_2S = 180 ppmv	3,350	6.11	1.09	1.09	1.09	1.09	1.73	0.32	---	---
H_2S = 200 ppmv	3,350	6.79	1.22	1.22	1.22	1.22	1.93	0.32	---	---
H_2S = 600 ppmv	2,400	14.59	3.65	3.65	3.65	3.65	---	---	---	---
H_2S = 600 ppmv	2,700	16.42	3.65	3.65	3.65	3.65	1.82	0.10	---	---
H_2S = 600 ppmv	3,350	20.37	3.65	3.65	3.65	3.65	5.78	0.32	---	---
H_2S = 600 ppmv	4,699	28.57	3.65	3.65	3.65	3.65	6.99	0.39	6.99	0.39
ALCF Non-Emergency Diesel Engine Generators										
CCHIPGEN	---	0.00101	---	---	---	---	---	---	---	---
CSCRNGEN	---	0.00013	---	---	---	---	---	---	---	---

3.4 Results for Significance Analyses

The first step in the modeling analyses for increases in SO_2 emissions from the HHE engines and the ACLF flares is to determine where the high 1st high ambient impacts associated with the increase exceed the EPA interim significant concentration level (SCL) of 3 parts per billion (ppb) or about 7.8 µg/m^3. As noted above, only receptors with high 1st high ambient impacts greater than or equal to the EPA Interim significant contribution level (SCL) of 3 parts per billion (ppb)—equivalent to about 7.8 µg/m^3—were carried forward for the full impact analyses.

3.4.1 Hidden Hollow Energy Significant Impacts

Receptors with significant impacts for operating two (HH12) or four (HH1234) HHE engine generators are shown in Figure 3-6.

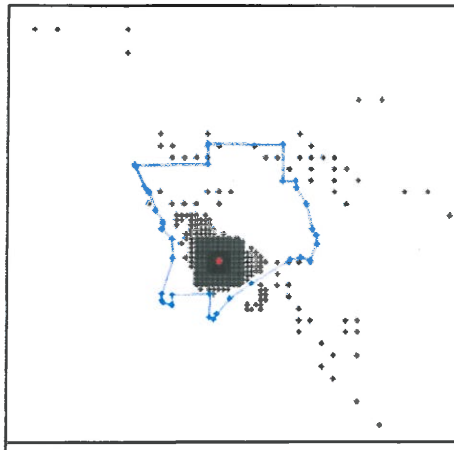

Fig. 3-6a. HH12, 600 ppmv H_2S

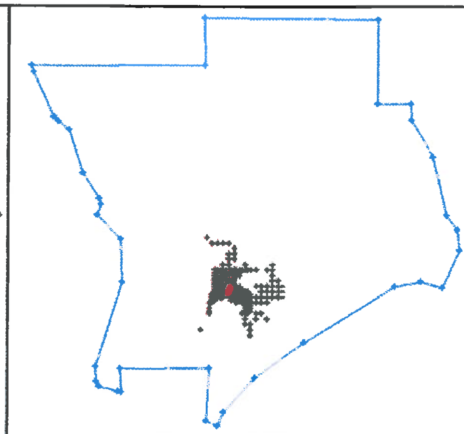

Fig. 3-6b. HH12, 200 ppmv H_2S

Case not modeled.

Fig. 3-6c. HH12, 180 ppmv H_2S

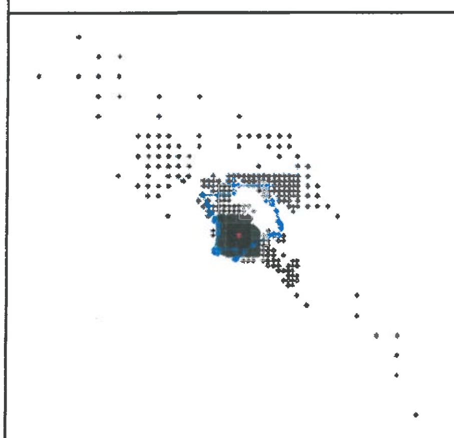

Fig. 3-6d. HH1234, 600 ppmv H_2S

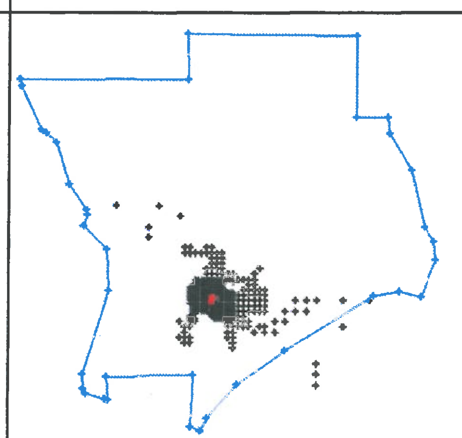

Fig. 3-6e. HH1234, 200 ppmv H_2S

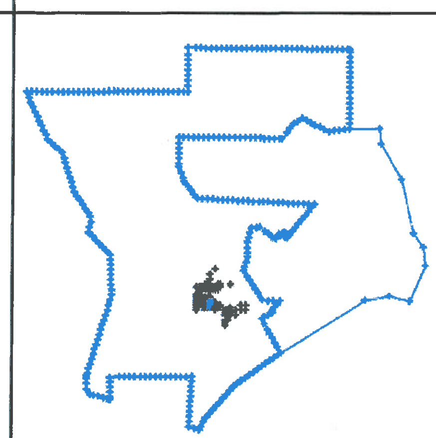

Fig. 3-6f. HH1234, 180 ppmv H_2S

3.4.2 ACLF Flare Significant Impacts – Combust All LFG in the Flare(s)

Receptors with significant impacts for combusting all LFG in the ACLF Flares are shown in Figure 3-7. Note that for the flares, modeling for significant impacts was split into two runs: 1) Receptors outside of the ACLF property boundary (OFFACLF), and 2) Receptors located in the areas of the ACLF that are accessible to the public (ACLFPUBL). Flare SO_2 emissions were presumed to impact OFFACLF receptors 24 hours per day, all year. Flare SO_2 emissions were presumed to impact the public areas of the landfill from 7 a.m. to 7 p.m. LST, Monday through Saturday. The average start and end dates of daylight savings time during 2001-2005 were April 4th and October 28th, respectively. AERMOD does not account for the shifts between MST and MDT during the year. Modeled hours for the publicly accessible portion of ACLF were set to 7 a.m. to 7 p.m. from November through March, and 6 a.m. to 6 p.m. from April through October of each year.

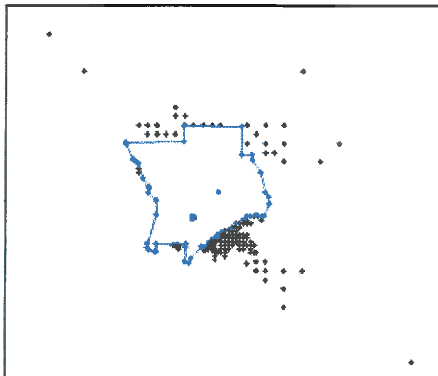

Fig. 3-7a. Flare12, 180 ppmv H_2S, OFFACLF 3,350 scfm LFG

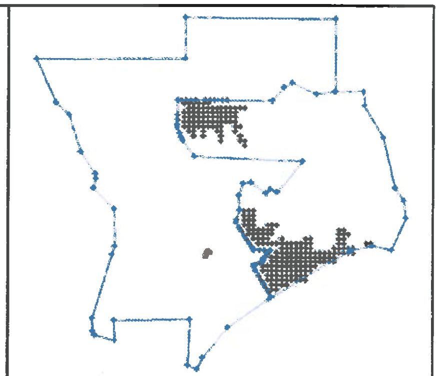

Fig. 3-7b. Flare12, 180 ppmv H_2S, ACLFPUBL 3,350 scfm LFG

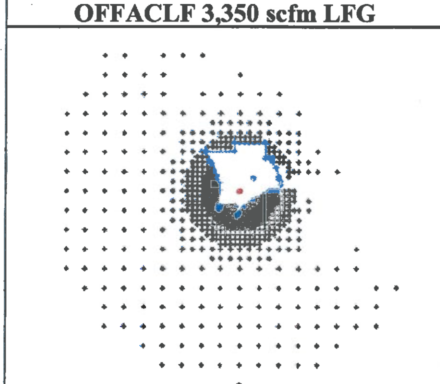

Fig. 3-7c. Flare12, 600 ppmv H_2S, OFFACLF 3,350 scfm LFG

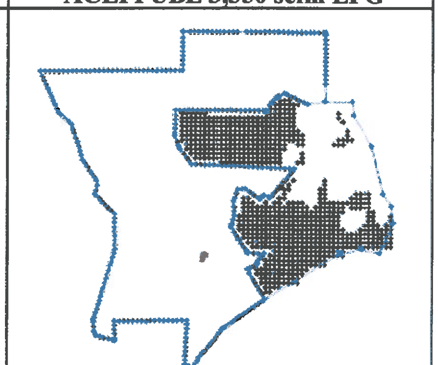

Fig. 3-7d. Flare12, 600 ppmv H_2S, ACLFPUBL 3,350 scfm LFG

Case not modeled.

Fig. 3-7e. Flare12, 600 ppmv H_2S, OFFACLF 4,699 scfm LFG

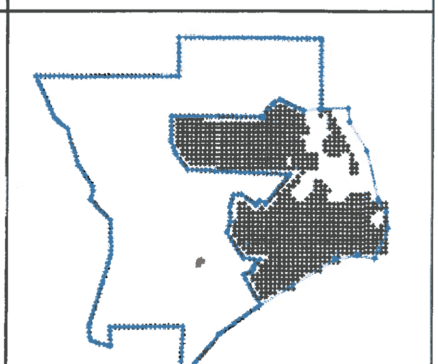

Fig. 3-7f. Flare12, 600 ppmv H_2S, ACLFPUBL 4,699 scfm LFG

3.4.3 ACLF Flare Significant Impacts – Running HHE Generators

Receptors with significant impacts when running the HHE engine generators at full capacity with the remaining LFG combusted in the ACLF Flares are shown in Figure 3-8. Note that for the flares, modeling for significant impacts was split into two runs: 1) Receptors outside of the ACLF property boundary (OFFACLF), and 2) Receptors located in the areas of the ACLF that are accessible to the public (ACLFPUBL). Flare SO_2 emissions were presumed to impact OFFACLF receptors 24 hours per day, all year. Flare SO_2 emissions were presumed to impact the public areas of the landfill from 7 a.m. to 7 p.m. LST, Monday through Saturday. The average start and end dates of daylight savings time during 2001-2005 were April 4th and October 28th, respectively. AERMOD does not account for the shifts between MST and MDT during the year. Modeled hours for the publicly accessible portion of ACLF were set to 7 a.m. to 7 p.m. from November through March, and 6 a.m. to 6 p.m. from April through October of each year.

Fig. 3-8a. Flare1, 600 ppmv H_2S, ACLFPUBL 950 scfm LFG

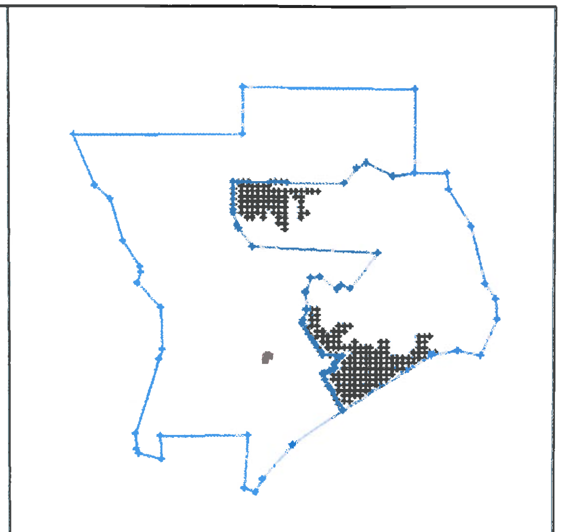

Fig. 3-8b. Flare1, 600 ppmv H_2S, ACLFPUBL 950 scfm LFG

3.5 Results for Full Impact Analyses

The determination of co-contributing sources for full impact analyses for HHE's engine generators and for ACLF's flares reflect the definition of "ambient boundary" discussed above. Modeled co-contributing sources for each analysis are summarized in Table 11.

Table 11. CO-CONTIRBUTING SOURCES FOR FULL IMPACT ANALYSES

Full Impact Analysis for:	Modeled Sources			
	OFFACLF Public Access 8760 hr/yr	**ONACLF No Public Access 8760 hr/yr**	**ONACLF12 No Public Access 7 p.m. – 7 a.m. LST, Mon – Sat and all day Sunday**	**ACLFPUBL12 Public Access 7 a.m. – 7 p.m. LST, Mon - Sat**
HGEN12	HHGEN12, Flare(s) and ACLF non-emergency generators	HHGEN12	HHGEN12	HHGEN12, Flare(s) and ACLF non-emergency generators

Table 11. CO-CONTIRBUTING SOURCES FOR FULL IMPACT ANALYSES				
	Modeled Sources			
Full Impact Analysis for:	**OFFACLF Public Access 8760 hr/yr**	**ONACLF No Public Access 8760 hr/yr**	**ONACLF12 No Public Access 7 p.m. – 7 a.m. LST, Mon – Sat and all day Sunday**	**ACLFPUBL12 Public Access 7 a.m. – 7 p.m. LST, Mon - Sat**
HGEN1234	HHGEN1234, Flare(s) and ACLF non-emergency generators	HHGEN123	HHGEN123	HHGEN1234, Flare(s) and ACLF non-emergency generators
FLARES	Flares, HGEN12 or HGEN1234 and ACLF non-emergency generators	None	None	Flares, HGEN12 or HGEN1234 and ACLF non-emergency generators

The landfill also has installed two new diesel generators to provide emergency power for the scale and at the hazardous waste handling building. Each of these generators is subject to 40 CFR 60, Subpart IIII (an NSPS), and area source MACT provisions contained in 40 CFR 63 Subpart ZZZZ. These generators are allowed to burn only ultra-low sulfur diesel fuel with maximum 0.0015% sulfur by weight. Modeling for these two sources would be limited to negligible amounts of SO_2 emitted during routine testing and maintenance. Based on the negligible modeled ambient impacts associated with operating the non-emergency generators serving the wood chipper and screening unit, emissions from the emergency generators were not included in the modeling analyses.

Three cases were run to characterize the ambient impacts to personnel working at the landfill if all the LFG is combusted in the flares rather than feeding LFG first to HHE's engine generators and combusting any remaining LFG in the flare(s) prior to installing an H_2S treatment system. The full impact results—using a full receptor grid within the ACLF property boundary—are shown in Table 12.

Table 12. FULL IMPACT WITHIN ACLF BOUNDARY FOR FLARES BURNING 600 PPM H_2S LFG							
Total LFG (scfm)	**LFG Flow Rate, Each Flare (scfm)**	**Full Impact Analysis: SO2 Emissions, Each Flare (lb/hr)**	**Stack Height (ft)**	**Ambient Impact (4th High) (μg/m³)**	**Background Concentration (μg/m³)**	**Total Ambient Impact (μg/m³)**	**Percent of 196 μg/m³ NAAQS**
2,700	1,350	8.21	40	1,160	33.1	1193	609%
3,350	1,675	10.19	40	1,310	33.1	1343	685%
4,699	2,320 / 2,379	14.1 / 14.5	40	1,580	33.1	1613	823%

Full impact analysis results for increased SO_2 emissions from Hidden Hollow Energy's engine generators and from ACLF's flares are shown in Table 13 and Table 14, respectively.

Table 13. RESULTS OF FULL IMPACT ANALYSES FOR HHE ENGINE GENERATORS

H_2S Concen-tration (ppmv)	Total LFG (scfm)	SO_2 Emissions from Each Engine (lb/hr)	SO_2 Modeled Ambient Impact (μg/m³)				Back-ground Conc. (μg/m³)	Total Ambient Impact (μg/m³)				Percent of 196 μg/m³ NAAQS			
			Off-ACLF*	On-ACLF	On-ACLF12	ACLF-PUBL12*		Off-ACLF*	On-ACLF	On-ACLF12	ACLF-PUBL12*	Off-ACLF*	On-ACLF	On-ACLF12	ACLF-PUBL12*
HHE Base Case															
150	---	0.92	---	---	---	---	---	---	---	---	---	---	---	---	---
Run just the two existing Hidden Hollow Energy engine generators, "OnACLF" means all significant receptors located within the ACLF boundary.															
180	3,350	1.09	*Not run*	*Not run*			33.1	*Not run*	*Not run*			*Not run*	*Not run*		
200	3,350	1.22	*Not run*	146			33.1	*Not run*	179			*Not run*	91%		
600	2,700	3.65	108	437			33.1	141	470			72.0%	240%		
600	3,350	3.65	139	437			33.1	172	470			87.8%	240%		
600	4,699	3.65	188	437			33.1	221	470			113%	240%		
Run all four Hidden Hollow Energy engine generators, "OnACLF" means the significant receptors located where public access is denied 24/7															
180	**3,350**	**1.09**	nr	**161**	nr	nr	**33.1**	nr	**194**	nr	nr	nr	**99.0%**	nr	nr
200 14.4 ft	3,350	1.22	41.9	181	*Not run*	*Not run*	33.1	75	214	*Not run*	*Not run*	38.3%	109%	*Not run*	*Not run*
200 35 ft**	3,350	1.22	*Not run*	160/ 178	*Not run*	*Not run*	33.1	---	211	*Not run*	*Not run*	*Not run*	107%	*Not run*	*Not run*
600	2,700	3.65	102	541	*Not run*	*Not run*	33.1	135	574	*Not run*	*Not run*	68.9%	293%	*Not run*	*Not run*
600	3,350	3.65	125	541	*Not run*	*Not run*	33.1	158	574	*Not run*	*Not run*	80.7%	293%	*Not run*	*Not run*
600	4,699	3.65	171	541	179	129	33.1	204	574	212	162	104%	293%	108%	83%

* Includes ACLF co-contributions: Flare(s)and two non-emergency generators in the wood chipping/recycling area of the landfill

** The as-built stack height is 14.4 feet. This case was run to determine the potential reduction in ambient impacts for a 35-foot stack height.

nr = no significant receptors

Table 14. RESULTS OF FULL IMPACT ANALYSES FOR ACLF FLARES												
H_2S Concentration (ppmv)	Total LFG (scfm)	LFG Flow Rate (scfm)		SO_2 Emissions (lb/hr)		SO_2 Modeled Ambient Impact (μg/m³)		Background Conc. (μg/m³)	Total Ambient Impact (μg/m³)		Percent of 196 μg/m³ NAAQS	
		Flare 1	Flare 2	Flare 1	Flare 2	Off-ACLF*	ACLF-PUBL12*		Off-ACLF*	ACLF-PUBL12*	Off-ACLF*	ACLF-PUBL12*
ACLF Base Case												
46.9	4,699	2,320	2,379	0.13	0.15	---	---	---	---	---	---	---
All LFG Combusted in ACLF Flares												
180	**3,350**	**1,675**	**1,675**	**3.06**	**3.06**	**45.3**	**32.5**	**33.1**	**78.4**	**65.6**	**40.0%**	**33.5%**
600	2,700	1,350	1,350	8.21	8.21	*Not run*	*Not run*	33.1	*Not run*	*Not run*	*Not run*	*Not run*
600	3,350	1,675	1,675	10.2	10.2	151	108	33.1	184.1	141.1	93.9%	72.0%
600	4,699	2,320	2,379	14.1	14.5	259	149	33.1	292.1	182.1	149.0%	92.9%
Run all four Hidden Hollow Energy engine generators (2,400 scfm LFG), with remaining gas routed to ACLF Flare(s)												
600	3,350	950	- 0 -	5.78	- 0 -	56.2	110	33.1	89.3	143.1	45.6%	73.0%
600 ANNUAL	3,350	950	- 0 -	5.78	- 0 -	Full Grid 1.68	Full Grid 1.09	2.6	4.3	3.69	2.2%	1.9%

* Includes ACLF and HHE co-contributions: HHE Engine Generators and two non-emergency generators in the wood chipping/recycling area of the landfill.
nr = no significant receptors

4.0 Conclusions

The ambient air impact analyses demonstrated to DEQ's satisfaction that increasing the SO_2 emissions from each HHE engine generator to 1.09 lb/hr for a total of 4.36 lb/hr from all four permitted engine generators will not cause or significantly contribute to a violation of any SO_2 NAAQS, for total LFG collection rates of 3,350 scfm. This SO_2 emission rate corresponds to an H_2S concentration in the LFG of about 180 ppmv.

The ambient air impact analyses demonstrated to DEQ's satisfaction that SO_2 emissions from combusting all LFG in the ACLF flares will not cause or significantly contribute to a violation of any SO_2 NAAQS, for total LFG collection rates of 3,350 scfm and H_2S concentrations of 600 ppmv or less..

The ambient air impact analyses demonstrated to DEQ's satisfaction that SO_2 emissions from combusting most of the LFG in HHE's engine generators, with remaining LFG combusted in the ACLF flare(s) will not cause or significantly contribute to a violation of any SO_2 NAAQS, for total LFG collection rates of 3,350 scfm and H_2S concentrations of 600 ppmv or less

APPENDIX C – FACILITY DRAFT COMMENTS

The following comments were received from the facility on January 24, 2012:

Facility Comment #1: There is only one small error in the Draft SOB. Page 26: the horse-power for the wood chipper should be 700 hp not the stated 650.

DEQ Response #1 : The 700 hp was updated as requested.

APPENDIX D – PROCESSING FEE

PTC Fee Calculation

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: Ada County Solid Waste Management
Address: 10300 N. Seasmans Gulch Road
City: Boise
State: Idaho
Zip Code: 83702
Facility Contact: Ted Hutchinson
Title: Director
AIRS No.: 001-00195

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	0.0	25.79	-25.8
SO_2	76.2	0	76.2
CO	0.0	6.49	-6.5
PM10	0.0	14.08	-14.1
VOC	0.1	0	0.1
TAPS/HAPS	0.0	0.02	0.0
Total:	0.0	46.38	**29.9**
Fee Due	**$ 5,000.00**		

Comments: This processing fee of $5000 is in accordance with IDAPA 58.01.01.224.