

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

IN THE MATTER OF APPROVING A NEW)
AIR CONTAMINANT SOURCE FOR)
SABEY INTERGATE QUINCY, LLC)
INTERGATE-QUINCY DATA CENTER)

Preliminary Determination
Draft ORDER No. 11AQ-E4xx

TO: John Ford, Vice President
Sabey Intergate Quincy, LLC
12201 Tukwila International Blvd
Seattle, WA 98168-5121

EQUIPMENT

The list of equipment that was evaluated for this order of approval consists of 44 Caterpillar Model 3516 diesel engines used to power emergency electrical generators. The forty-four 2.0 megawatt (MWe) generators will have a combined capacity of 88 MWe. Provisions for the use of smaller Caterpillar engines and engines supplied by other manufacturers are contained in this Approval Order. Annual operations and emissions will be restricted by 263,725 gallons per year of fuel consumption and 57.5 hours per year of operation. Each engine will operate for approximately 1.5 hour per month for required monthly maintenance testing, at an average electrical load of 50% of the standby rating. The generators will be installed in three construction phases. Phase 1 will consist of twelve 2.0 MWe generators that will be installed upon approval. Phase 2 and 3 will consist of sixteen 2.0 MWe generators each, and will be installed at the facility as independent companies contract for space at the Intergate-Quincy Data Center.

Table 1: 2.0 MWe Engine & Generator Serial Numbers					
Project	Unit ID	Capacity MWe	Engine SN	Generator SN	Build date
Phase 3	A01	2.0			
“	A02	2.0			
“	A03	2.0			
“	A04	2.0			
“	A05	2.0			
“	A06	2.0			
“	A07	2.0			
“	A08	2.0			
“	A09	2.0			
“	A10	2.0			
“	A11	2.0			
“	A12	2.0			
“	A13	2.0			
“	A14	2.0			
“	A15	2.0			
“	A16	2.0			
Phase 2	B01	2.0			
“	B02	2.0			

“	B03	2.0			
“	B04	2.0			
“	B05	2.0			
“	B06	2.0			
“	B07	2.0			
“	B08	2.0			
“	B09	2.0			
“	B10	2.0			
“	B11	2.0			
“	B12	2.0			
“	B13	2.0			
“	B14	2.0			
“	B15	2.0			
“	B16	2.0			
Phase 1	C01	2.0			
“	C02	2.0			
“	C03	2.0			
“	C04	2.0			
“	C05	2.0			
“	C06	2.0			
“	C07	2.0			
“	C08	2.0			
“	C09	2.0			
“	C10	2.0			
“	C11	2.0			
“	C12	2.0			
total	44	88.0			

The Intergate-Quincy Data Center relies on Munters Model PV-W35-PVT cooling units or equivalents to dissipate heat from electronic equipment at the facility.

	# Fans per Cooling Unit	# Cooling Units per engine	Total # Cooling Units
Total	3	4	176

PROJECT SUMMARY

The Intergate-Quincy Data Center Phase 1 construction will consist of Building C with 135,257 ft². Phase 2 and 3 construction will be Buildings A and B respectively, with 186,660 ft² each. The data center will be leased for occupancy by companies that require fully supported data storage and processing facility. Air contaminant emissions from the Intergate-Quincy Data Center project have been based primarily on operation of the 44 emergency generator engines. Table 2a contains criteria pollutant potential to emit for the Intergate-Quincy Data Center expansion project. Table 2b contains toxic air pollutant potential to emit for the Intergate-Quincy Data Center expansion project. Table 2c contains emissions from the cooling systems.

Table 2a: Criteria Pollutant Potential to Emit for Intergate-Quincy Data Center			
Pollutant	Emission Factor (EF) Reference	Emission Factors	Facility Emissions
Criteria Pollutant		g/kWm-hr	tons/yr
2.1.1 NOx Total			29.49
2.1.1a NOx <75% load	EPA Tier 2	6.12	na
2.1.1b NOx 75% load	Caterpillar	6.20	na
2.1.1c NOx 100% load	Caterpillar	8.68	na
2.1.2 CO Total	EPA Tier 2	3.50	14.15
2.1.2a CO 10% load	EPA Tier 2	3.50	na
2.1.2b CO 50% load	EPA Tier 2	3.50	na
2.1.2c CO 75% load	EPA Tier 2	3.50	na
2.1.2d CO 100% load	EPA Tier 2	3.50	na
2.1.3 SO ₂	Mass Balance	na	0.028
2.1.4 PM _{2.5} /DEEP Total	EPA Tier 2	0.20	0.809
2.1.4a DEEP 10% load	Caterpillar	0.67	na
2.1.4b DEEP 50% load	Caterpillar	0.108	na
2.1.4c DEEP 75% load	Caterpillar	0.0605	na
2.1.4d DEEP 100% load	Caterpillar	0.0477	na
2.1.5 VOC	EPA Tier 2	0.282	1.14

Table 2b: Toxic Air Pollutant Potential to Emit for Intergate-Quincy Data Center		
Pollutant	AP-42 Section 3.4 EF	Facility Emissions
Organic Toxic Air Pollutants	Lbs/MMbtu	tons/yr
2.1.6 Propylene	2.79E-03	4.2E-02
2.1.7 Acrolein	7.88E-06	1.42E-04
2.1.8 Benzene	7.76E-04	1.40E-02
2.1.9 Toluene	2.81E-04	5.08E-03
2.1.10 Xylenes	1.93E-04	3.49E-03
2.1.11 Napthalene	1.30E-04	1.96E-03
2.1.11 1,3 Butadiene	1.96E-05	3.53E-04
2.1.12 Formaldehyde	7.89E-05	1.43E-03
2.1.13 Acetaldehyde	2.52E-05	4.55E-04
2.1.14 Benzo(a)Pyrene	1.29E-07	2.32E-06
2.1.15 Benzo(a)anthracene	6.22E-07	1.12E-05
2.1.16 Chrysene	1.53E-06	2.76E-05
2.1.17 Benzo(b)fluoranthene	1.11E-06	2.01E-05
2.1.18 Benzo(k)fluoranthene	1.09E-07	1.97E-06
2.1.19 Dibenz(a,h)anthracene	1.73E-07	3.13E-06
2.1.20 Ideno(1,2,3-cd)pyrene	2.07E-07	3.74E-06

2.1.21 PAH (no TEF)	3.88E-06	7.01E-05
2.1.22 PAH (apply TEF)	4.98E-07	9.00E-06
State Criteria Pollutant Air Toxics		
2.1.23 DEEP/PM _{2.5}	EPA Tier 2	0.809
2.1.24 Carbon monoxide	EPA Tier 2	14.15
2.1.25 Sulfur dioxide	EPA Tier 2	0.028
2.1.26 Primary NO ₂ *	10% total NOx	2.95

*Assumed to be equal to 10% of the total NOx emitted.

The Intergate-Quincy Data Center relies on cooling systems to dissipate heat from electronic equipment at the facility. Cooling system particulate matter emissions were calculated based on design and operating parameters for 176 Munters Model PV-W35-PVT. The emission rate contained in Tabel 2.c has been estimated based on total water consumption (water evaporation plus sump bleed-down) and a maximum drift rate of 0.001% of water consumption. Actual water consumption from evaporation will be approximately 66% of total water consumption.

Pollutant	Water supply conc. Mg/l	Maximum Recirc. water conc. Mg/l	Emission rate Lbs/year
TDS* as PM _{2.5}	Na	7500	4,635.5

**"TDS" stands for Total Dissolved Solids.

The tenants at the Intergate-Quincy Data Center may use a variety of cooling systems to dissipate heat from electronic equipment at the facility. Evaluation of cooling system particulate matter emissions were based on utilization of up to 176 Munters Model PV-W35-PVT cooling units or equivalents at full buildout.

DETERMINATIONS

In relation to this project, the State of Washington Department of Ecology (Ecology), pursuant to Revised Code of Washington (RCW) 70.94.152, Washington Administrative Code (WAC) 173-460-040, and WAC 173-400-110, makes the following determinations:

1. The project, if constructed and operated as herein required, will be in accordance with applicable rules and regulations, as set forth in Chapter 173-400 WAC, and Chapter 173-460 WAC, and the operation thereof, at the location proposed, will not emit pollutants in concentrations that will endanger public health.
2. The proposed project, if constructed and operated as herein required, will utilize best available control technology (BACT) as defined below:

Pollutant(s)	BACT Determination
Particulate matter (PM), carbon monoxide and volatile organic compounds (VOC)	a. Use of good combustion practices; b. Use of EPA Tier 2 certified engines if the engines are installed and operated as

	<p>emergency engines, as defined at 40 CFR§60.4219; or applicable emission standards found in 40 CFR Part 89.112 Table 1 and 40 CFR Part 1039.102 Tables 6 and 7 if Model Year 2011 or later engines are installed and operated as non-emergency engines;</p> <p>c. Compliance with the operation and maintenance restrictions of 40 CFR Part 60, Subpart III; and</p> <p>d. Maintaining the water droplet drift rate from cooling systems and drift eliminators to a maximum drift rate of 0.001% of the circulating water flow rate.</p>
Nitrogen oxides (NOx)	<p>a. Use of good combustion practices;</p> <p>b. Use of an engine design that incorporates fuel injection timing retard, turbocharger and a low-temperature aftercooler;</p> <p>c. Use of EPA Tier 2 certified engines if the engines are installed and operated as emergency engines, as defined at 40 CFR§60.4219; or applicable emission standards found in 40 CFR Part 89.112 Table 1 and 40 CFR Part 1039.102 Tables 6 and 7 if Model Year 2011 or later engines are installed and operated as non-emergency engines; and</p> <p>d. Compliance with the operation and maintenance restrictions of 40 CFR Part 60, Subpart III.</p>
Sulfur dioxide	Use of ultra-low sulfur diesel fuel containing no more than 15 parts per million by weight of sulfur.

3. The proposed project, if constructed and operated as herein required, will utilize best available control technology for toxic air pollutants (tBACT) as defined below:

Table 4: Best Available Control Technology for Toxics Requirements	
Toxic Air Pollutant(s)	tBACT Determination
Acetaldehyde, carbon monoxide, acrolein, benzene, benzo(a)pyrene, 1,3-butadiene, diesel engine exhaust particulate, formaldehyde, propylene, toluene, total PAHs, xylenes	Compliance with the VOC BACT requirement.
Nitrogen dioxide	Compliance with the NOx BACT requirement.

Sulfur dioxide	Compliance with the SO ₂ BACT requirement.
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4. The modeled ambient concentrations of two toxic air pollutants – diesel engine exhaust particulate matter and nitrogen dioxide – exceed the Acceptable Source Impact Levels (ASILs) for those pollutants, as defined in Chapter 173-460 WAC. Ecology has evaluated the health risks associated with diesel engine exhaust particulate and nitrogen dioxide emissions from the proposed project, in accordance with WAC 173-460-090. Ecology has concluded that the health risks from the project are acceptable as defined in WAC 173-460-090(7). The technical analysis supporting this determination is hereby incorporated into this Notice of Construction Approval Order.

THEREFORE, IT IS ORDERED that the project as described in the Notice of Construction application and more specifically detailed in plans, specifications, and other information submitted to Ecology is approved for construction and operation, provided the following are met:

APPROVAL CONDITIONS

1. ADMINISTRATIVE CONDITION

- 1.1 Sabey Intergate shall schedule a meeting with Quincy School District officials by no later than July 19, 2011. The purpose of the meeting will be to both communicate, and better understand, any potential concerns or complaints that the Quincy School District may have regarding emergency generator maintenance testing and operation. In addition, Sabey Intergate will provide school administrators with the telephone number for the Intergate-Quincy Data Center and a 24 hour contact number for a Sabey Intergate manager. The school administrators shall also be provided a maintenance testing schedule as developed by Sabey Intergate. The Intergate-Quincy Data Center will notify the school whenever (Ecology) approved changes occur in the maintenance testing schedule. As decided by the school administrators and the Intergate-Quincy Data Center, an ongoing relationship shall be established to facilitate future communications.
- 1.2 Sabey-Intergate submitted a NOC application for the Intergate-Quincy Data Center to determine compliance with all applicable state and federal air quality regulations. At full build out of all three phases, the Intergate-Quincy Data Center is anticipated to be occupied by up to eight independent tenants. Each independent tenant will be issued an approval order based on the parameters established in this approval order. A NOC application (form only) and engine manufacturer’s specification sheets will be required from each independent tenant prior to occupancy. Ecology will review the NOC application form to determine whether the proposed project conforms to the parameters contained in this approval order. If the proposed project conforms to the approval order, Ecology will issue an administrative approval order to the applicant without further review. If the proposed project does not conform to this approval order, Ecology will require new source review (NSR) under Chapters 173-400 WAC and 173-460 WAC. The purpose of the administrative approval orders for each independent tenant is to establish responsibility for their individual operations, and to ensure conformity to this approval Order.

- 1.3 The administrative approval orders issued to each independent tenant will contain conditions that will require coordination of operations with other tenants to provide for compliance with this approval order with the intent to minimize community impacts.

2. EQUIPMENT RESTRICTIONS

- 2.1. Any engine used to power the electrical generators shall be certified by the manufacturer to meet 40 CFR 89 Tier II emission levels or other specifications as required by the EPA at the time the engines are installed. Each engine to be installed must be permanently labeled by the manufacturer as an emergency engine in accordance with 40 CFR § 60.4210(f). Each engine approved in this Order must operate as an emergency engine as defined at WAC 173-400-930(3).
- 2.2. The only engines and electrical generating units approved for operation at the Intergate-Quincy Data Center are those listed by serial number in Table 1 above.
- 2.3. Replacement of failed engines with identical engines (same manufacturer and model) requires notification prior to installation but will not require new source review unless there is an increase in emission rates or community impacts.
- 2.4. The installation of any new engines after July 1, 2014 will require notification to Ecology that includes engine manufacturer's specification sheets. Ecology will decide whether new source review (NSR) is required based on whether the new engines will have either an increased emission rate or emission concentration that may increase community impacts over those evaluated for this approval Order.
- 2.5. The forty-four (44) Caterpillar Model 3516 engines exhaust stack heights shall be greater than or equal to 48 feet above ground level and will be no more than 16 inches in diameter. All engines that may be used for this project shall be required to verify that exhaust stack parameters such as diameter, height, and exhaust rate and velocity do not result in community emissions impacts greater than what was evaluated for this project.
- 2.6. The manufacture and installation of the forty-four (44) engine/generator sets proposed for Building A, Building B and Building C of the project shall occur by January 1, 2014. If the manufacture and installation of the engines has not been completed within the above schedule, new source review may be required prior to installation, and community impacts will be re-evaluated if new source review is required. Sabey Intergate may request an extension of this time schedule, and Ecology may approve of an extension without revision to this Order.
- 2.7. This Order only applies to the forty-four (44) Caterpillar Model 3516 engines, each with a rated full standby capacity of 2937 hp that were evaluated in the Notice of Construction application and second tier review. New source review will not be required for engines with a rated full standby capacity of less than 2937 hp that comply with the engine certification requirements contained in Approval Condition 2.1 unless there is an increase in community impacts. On a case-by-case basis, Ecology may require additional ambient impacts analyses prior to installation of smaller engines.

3. OPERATING LIMITATIONS

- 3.1. The fuel consumption at the Intergate-Quincy Data Center facility shall be limited to a total of 263,725 gallons per year of diesel fuel equivalent to on-road specification No. 2

distillate fuel oil (less than 0.00150 weight percent sulfur). Total annual fuel consumption by the facility may be averaged over a three (3) year period using monthly rolling totals.

- 3.2 Except as provided in Approval Condition 3.5, the forty-four (44) Intergate-Quincy Data Center engines are limited to the following average hours of operation, averaging period, total fuel limit, and number of engines operating concurrently:

Operating Activity	Average hours/year per engine, 3-year monthly rolling totals	Average Operating Loads (%)	Diesel fuel gallons/year, 3-year monthly rolling totals	# Operating Concurrently
Monthly Testing	16.5	Idle to 50%		4
Annual Load Bank Testing	6	100%		4
Electrical Bypass	15	75%		16
Corrective Tests	12	50%		1
Power Outage	8	75%		44
Total	57.5		263,725	

- 3.3. A load bank will be used for electrical energy dissipation whenever prescheduled monthly maintenance testing, corrective testing or annual load bank testing occurs above idle.
- 3.4. The forty-four (44) Caterpillar Model 3516 engines at the Intergate-Quincy Data Center require periodic scheduled operation. To mitigate engine emission impacts, Intergate-Quincy Data Center will perform all scheduled engine maintenance testing, bypass operations, and load testing during daylight hours. The Intergate-Quincy Data Center shall develop an operating schedule for tenants of the facility, and that schedule shall be available for review by Ecology upon request. Changes to the operating schedule will not trigger revision or amendment of this Order as long as the engines operating concurrently do not exceed Table 3.2 in this Order.
- 3.5. Initial start-up (commissioning) testing for the forty-four (44) Caterpillar Model 3516 engines at the Intergate-Quincy Data Center is restricted to an average of 30 hours per generator and 2309 gallons of fuel per generator, averaged over all generators installed during any consecutive 3 year period.
- 3.5.1 Except during site integration testing as specified below, only one engine shall be operated at any one time during start-up testing.
- 3.5.2 During a site integration test, no more than sixteen (16) generator engines may operate concurrently for up to four hours.
- 3.5.3 All startup and commissioning testing shall be conducted during daylight hours.

- 3.5.4 Fuel use limits contained in Approval Conditions 3.1 and emission limits contained in Approval Conditions 5, remain in effect during initial start-up testing.
- 3.6. The Intergate-Quincy Data Center will utilize up to 176 Munters PV-W35-PVT or equivalent cooling units. Each individual unit shall maintain a maximum drift rate to no more than 0.001 percent of the circulating water rate.

4. GENERAL TESTING AND MAINTENANCE REQUIREMENTS

- 4.1. The Intergate-Quincy Data Center will follow engine-manufacturer's recommended diagnostic testing and maintenance procedures to ensure that each engine will conform to 40 CFR 89 emission specifications throughout the life of each engine.
- 4.2. Within 12 months of installation of any new proposed engine approved in this Order, the Intergate-Quincy Data Center shall measure concentrations of nitric oxide (NO), nitrogen dioxide (NO₂), carbon monoxide (CO), and oxygen (O₂) leaving that engine's exhaust stack in accordance with Approval Condition 4.3. This testing will serve to demonstrate compliance with the emission limits contained in Section 5, and as an indicator of proper operation of the engines. Periodic testing shall be conducted at the conclusion, or upon termination, of the manufacturer's warranty term for each engine, on a frequency of every 60 months from warranty expiration date, or 3,000 hours of operation, whichever occurs first.
- 4.3. The following procedure shall be used for each test for the engines as required by Approval Condition 4.2 unless an alternate method is proposed by the Intergate-Quincy Data Center and approved in writing by Ecology prior to the test.
 - 4.3.1 Initial emissions testing should be combined with start-up and commissioning testing. Subsequent periodic emissions testing should be combined with pre-scheduled maintenance testing and annual load bank engine testing. Additional operation of the engines for the purpose of emissions testing beyond the operating hours allowed in this Order may be allowed by Ecology upon request.
 - 4.3.2 NO, NO₂, and CO emissions measurement shall be conducted for each engine at each of the proposed average engine loads of 10% (idle), 50%, 75%, and 100% that correspond to scheduled engine testing scenarios in Approval Conditions 3.2.
 - 4.3.3 EPA Reference Methods from 40 CFR 60 and/or 40 CFR 89 as appropriate for each pollutant shall be used for no less than two engines from each manufacturer and each size engine from each manufacturer. A test plan will be submitted for Ecology approval at least 30 days before any testing is conducted.
 - 4.3.4 The Intergate-Quincy Data Center may propose using a portable emissions instrument analyzer after compliance is verified under Approval Condition 4.3.3. The analyzer model must be approved in writing by Ecology prior to testing. The analyzer shall be calibrated using EPA Protocol 1 gases according to the procedures for drift and bias limits outlined in EPA Methods 7E and

Method 10. Alternate calibration procedures may be approved in advance by Ecology.

- 4.3.5 Three test runs shall be conducted for each engine when using a portable emissions instrument analyzer. Each run must last at least 15 minutes. Analyzer data shall be recorded at least once every minute during the test. Engine run time and fuel usage shall be recorded during each test run for each load and shall be included in the test report.
- 4.3.6 The F-factor method, as described in EPA Method 19, may be used to calculate exhaust flow rate through the exhaust stack. The fuel meter data, as measured according to Approval Condition 4.6, shall be included in the test report, along with the emissions calculations.
- 4.3.7 If the measured NO, NO₂ and CO emission rates from the first 4 engines of each make, size, and model number are found to be consistent and less than the emission limits contained in this order, the Intergate-Quincy Data Center may request approval from Ecology to discontinue initial compliance emission testing on the remainder of the engines of that make and model number.
- 4.4 Each engine shall be equipped with a properly installed and maintained non-resettable meter that records total operating hours.
- 4.5 Each engine shall be connected to a properly installed and maintained fuel flow monitoring system that records the amount of fuel consumed by that engine during each operation.
- 4.6 Ecology may relax the frequency of periodic testing under Approval Condition 4.2 if the manufacturer's warranty term for each engine is extended. Periodic testing will be required upon conclusion or termination of the manufacturer's warranty.

5 EMISSION LIMITS

The forty-four (44) engines shall meet the following emission rate limitations. Unless otherwise approved by Ecology in writing, compliance with emission limits for those pollutants that are required to be tested under Approval Conditions 4.2 and 4.3 shall be based on emissions test data as determined according to those approval conditions.

- 5.1 If required to demonstrate compliance with the g/kW-hr EPA Tier 2 average emission limits through stack testing, the Intergate-Quincy Data Center shall conduct exhaust stack testing and average emission rates for 5 individual operating loads (10%, 25%, 50%, 75% and 100%) according to 40 CFR §89.410, Table 2 of Appendix B to 40 CFR Part 89, Subpart E, and 40 CFR Part 60, Subpart IIII, or any other applicable EPA requirement in effect at the time the engines are installed.
- 5.2 Nitrogen oxide (NO_x) emissions from each of the forty-four (44) Caterpillar Model 3516 engines rated at 2937 brake horse power shall not exceed the following emission rates at the stated loads, based on emission factors provided by the engine manufacturer:

	Operating Scenario	Operating Load	Emissions Limit per engine in lb/hr ¹
5.2.1	Annual Load Testing	100%	41.9
5.2.2	Electrical Bypass	100%	41.9
5.2.3	Monthly Maintenance	50% 10%	15.3 6.49
5.2.4	Corrective Testing	50%	15.3
5.2.5	Power Outages	75%	22.5

¹ Caterpillar “Not To Exceed” or EPA Tier-2 (6.12 g/kw-hr) whichever is higher

5.3 Nitrogen dioxide (NO₂) emissions from each of the forty-four (44) Caterpillar Model 3516 engines rated at 2937 brake horse power shall not exceed the following emission rates at the stated loads, based on emission factors provided by the engine manufacturer:

	Operating Scenario	Operating Load	Emissions Limit per engine in lb/hr ¹
5.3.1	Annual Load Testing	100%	4.19
5.3.2	Electrical Bypass	100%	4.19
5.3.3	Monthly Maintenance	50% 10%	1.53 0.65
5.3.4	Corrective Testing	50%	1.53
5.3.5	Power Outages	75%	2.25

¹ 10% of total NOx emission limits

5.4 Carbon monoxide emissions from each of the forty-four (44) Caterpillar Model 3516 engines rated at 2937 brake horse power shall not exceed the following emission rates at the stated loads, based on emission factors provided by the engine manufacturer:

	Operating Scenario	Operating Load	Emissions Limit per engine in lb/hr ¹
5.4.1	Annual Load Testing	100%	16.9
5.4.2	Electrical Bypass	100%	16.9
5.4.3	Monthly Maintenance	50% 10%	8.75 2.35
5.4.4	Corrective Testing	50%	8.75
5.4.5	Power Outages	75%	12.7

¹ Caterpillar Not To Exceed ” or EPA Tier-2 (3.5 g/kw-hr) whichever is higher

5.5 Diesel Engine Exhaust Particulate (DEEP) emissions from each of the forty-four (44) Caterpillar Model 3516 engines rated at 2937 brake horse power shall not exceed the following emission rates at the stated loads, based on emission factors provided by the engine manufacturer:

Table 5.5: Diesel Engine Exhaust Particulate (DEEP) emission rate limits			
	Operating Scenario	Operating Load	Emissions Limit per engine in lb/hr ¹
5.5.1	Annual Load Testing	100%	0.23
5.5.2	Electrical Bypass	100%	0.23
5.5.3	Monthly	50%	0.27
	Maintenance	10%	0.45
5.5.4	Corrective Testing	50%	0.27
5.5.5	Power Outages	75%	0.22

¹ Caterpillar “Not-to-Exceed” data

- 5.6 Particulate matter emissions from all 44 engines combined shall not exceed 0.809 tons/yr (1618 lbs/yr). All PM emissions shall be considered diesel engine exhaust particulate (DEEP) and PM_{2.5} emissions.
- 5.7 Nitrogen dioxide (NO₂) emissions from all 44 engines combined shall not exceed 99 lbs/hr and 2.95 tons/yr.
- 5.8 Volatile organic compound (VOC) emissions from all 44 engines combined shall not exceed 1.14 tons/yr (2280 lbs/yr).
- 5.9 Sulfur dioxide emissions from all 44 engines combined shall not exceed 0.028 tons/yr (56 lbs/yr).
- 5.10 Visual emissions from each diesel electric generator exhaust stack shall be no more than 5 percent, with the exception of a two (2) minute period after unit start-up. Visual emissions shall be measured by using the procedures contained in 40 CFR 60, Appendix A, Method 9.

6 OPERATION AND MAINTENANCE MANUALS

A site-specific O&M manual for the Intergate-Quincy Data Center facility equipment shall be developed and followed. Manufacturers’ operating instructions and design specifications for the engines, generators, and associated equipment shall be included in the manual. The O&M manual shall be updated to reflect any modifications of the equipment or its operating procedures. Emissions that result from failure to follow the operating procedures contained in the O&M manual or manufacturer's operating instructions may be considered proof that the equipment was not properly installed, operated, and/or maintained. The O&M manual for the diesel engines and associated equipment shall at a minimum include:

- 6.1 Manufacturer’s testing and maintenance procedures that will ensure that each individual engine will conform to the EPA Tiered Emission Standards appropriate for that engine throughout the life of the engine.
- 6.2 Normal operating parameters and design specifications.
- 6.3 Operating maintenance schedule.

7 SUBMITTALS

All notifications, reports, and other submittals shall be sent to:

Washington State Department of Ecology
Air Quality Program
4601 N. Monroe Street
Spokane, WA 99205-1295

8 RECORDKEEPING

All records, Operations and Maintenance Manual, and procedures developed under this Order shall be organized in a readily accessible manner and cover a minimum of the most recent 60-month period. The following records are required to be collected and maintained.

- 8.1 Fuel receipts with amount of diesel and sulfur content for each delivery to the facility.
- 8.2 Monthly and annual hours of operation for each diesel engine, including reasons for each type of operation.
- 8.3 Purpose, electrical load and duration of each operation of each diesel engine.
- 8.4 Annual gross power generated by the electric generation station.
- 8.5 Upset condition log for each engine and generator that includes date, time, duration of upset, cause, and corrective action.
- 8.6 Any recordkeeping required by 40 CFR Part 60 Subpart IIII.
- 8.7 Air quality complaints received from the public or other entity, and the affected emissions units.

9 REPORTING

- 9.1 Within 10 business days after entering into a binding agreement with an independent tenant, Sabey-Intergate shall provide Ecology with the company and the name and contact information of the company representative. Information on the Phase 2 and 3 engine/generator sets for Equipment Table 1.1 above will be the responsibility of the independent tenants of the Intergate-Quincy Data Center. The serial number, manufacturer make and model, standby capacity, and date of manufacture will be submitted prior to installation for each Phase 1, 2, and 3 engine and generator.
- 9.2 The following information will be submitted to the AQP at the address in Condition 7 above by January 31 of each calendar year. This information may be submitted with annual emissions information requested by the AQP.
 - 9.2.1 Monthly rolling annual total summary of air contaminant emissions, monthly rolling hours of operation with annual total, and monthly rolling gross power generation with annual total, and a listing of each start-up of each diesel engine that shows the purpose, fuel usage, and duration of each type of operation.
 - 9.2.2 Written notification that the O&M manual has been developed and updated within 60 days after the issuance of this Order.
- 9.3 Any air quality complaints resulting from operation of the emissions units or activities shall be promptly assessed and addressed. A record shall be maintained by each tenant of the action taken to investigate the validity of the complaint and what, if any,

corrective action was taken in response to the complaint. Ecology shall be notified within three (3) days of receipt of any such complaint.

- 9.4 Each tenant shall notify Ecology by e-mail or in writing within 24 hours of any engine operation of greater than 60 minutes if such engine operation occurs as the result of a power outage. This notification does not alleviate the tenant from annual reporting of operations contained in any section of Approval Condition 9.

10 GENERAL CONDITIONS

- 10.1 **Commencing/Discontinuing Construction and/or Operations:** This approval shall become void if the construction or operation of this diesel electric generation facility is discontinued for a period of eighteen (18) months, or as restricted in this Order.
- 10.2 **Compliance Assurance Access:** Access to the source by representatives of Ecology or the EPA shall be permitted upon request. Failure to allow such access is grounds for enforcement action under the federal Clean Air Act or the Washington State Clean Air Act, and may result in revocation of this Approval Order.
- 10.3 **Availability of Order and O&M Manual:** Legible copies of this Order and the O&M manual shall be available to employees in direct operation of the diesel electric generation station, and be available for review upon request by Ecology.
- 10.4 **Equipment Operation:** Operation of the 44 Caterpillar Model 3516 diesel engines used to power emergency electrical generators and related equipment shall be conducted in compliance with all data and specifications submitted as part of the NOC application and in accordance with the O&M manual, unless otherwise approved in writing by Ecology.
- 10.5 **Modifications:** Any modification to the generators or engines and their related equipment's operating or maintenance procedures, contrary to information in the NOC application, shall be reported to Ecology at least 60 days before such modification. Such modification may require a new or amended NOC Approval Order.
- 10.6 **Activities Inconsistent with the NOC Application and this Approval Order:** Any activity undertaken by the permittee or others, in a manner that is inconsistent with the NOC application and this determination, shall be subject to Ecology enforcement under applicable regulations.
- 10.7 **Obligations under Other Laws or Regulations:** Nothing in this Approval Order shall be construed to relieve the permittee of its obligations under any local, state or federal laws or regulations.
- 10.8 **Fees:** Per WAC 173-455-120, this Approval Order and related regulatory requirements have a fee associated for review and issuance. This Order is effective upon Ecology's receipt of the fee, for which Ecology's fiscal office will provide a billing statement.

All plans, specifications, and other information submitted to the Department of Ecology relative to this project and further documents and any authorizations or approvals or denials in relation thereto shall be kept at the Eastern Regional Office of the Department of Ecology in the "Air Quality Controlled Sources" files, and by such action shall be incorporated herein and made a part thereof.

Nothing in this approval shall be construed as obviating compliance with any requirement of law other than those imposed pursuant to the Washington Clean Air Act and rules and regulations thereunder.

Authorization may be modified, suspended or revoked in whole or part for cause including, but not limited to the following:

- a. Violation of any terms or conditions of this authorization;
- b. Obtaining this authorization by misrepresentation or failure to disclose fully all relevant fact.

The provisions of this authorization are severable and, if any provision of this authorization, or application of any provision to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this authorization, shall not be affected thereby.

YOUR RIGHT TO APPEAL

You have a right to appeal this Approval Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Approval Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do the following within 30 days of the date of receipt of this Approval Order:

- File your appeal and a copy of this Approval Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Approval Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel RD SW STE 301 Tumwater, WA 98501	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

For additional information visit the Environmental Hearings Office Website:
<http://www.eho.wa.gov>

To find laws and agency rules visit the Washington State Legislature Website:
<http://www1.leg.wa.gov/CodeReviser>

DATED this 27th day of June, 2011, at Spokane, Washington.

Reviewed By:

Approved By:

David Ogulei, P.E.
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Department of Ecology
State of Washington

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