STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Eastern Region Office
4601 North Monroe St., Spokane, WA 99205-1295 • 509-329-3400

August 16, 2022

Dave Buckner
Director of Engineering
Intergate Quincy
Sabey Data Center Properties
2200 M Street NE,
Quincy, WA 98848

Re: Intergate Quincy - Sabey Data Center Properties
Approval Order No. 22AQ-E016
AQPID No. A0250302

Dear Dave Buckner:

The Department of Ecology's Air Quality Program (Ecology) approves the installation of 27 new emergency backup engines and evaporative cooling units at Intergate Quincy – Sabey Data Center Properties. The Data Center is located at 2200 M Street NE, Quincy, Washington in Grant County.

Ecology's approval is based on the Notice of Construction application and supplemental information submitted on November 29, 2021 through April 26, 2022. The 30-day comment period required per Washington Administrative Code (WAC) 173-400-171, was completed. No comments were received.

Enclosed is Approval Order No. 22AQ-E016 for Intergate Quincy – Sabey Data Center Properties.

Thank you for your patience while we processed your application. If you have any questions, please contact me at jenny.filipy@ecy.wa.gov or 509-405-2487.

Sincerely,

Jenny Filipy, P.E.
Commercial/Industrial Unit
Regional Air Quality Program

JF:sg

Enclosures: Approval Order No. 22AQ-E016
Technical Support Document

Certified Mail: 7019 0140 0000 6495 6392

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Eastern Region Office
4601 North Monroe St., Spokane, WA 99205-1295 • 509-329-3400

August 16, 2022

Dave Buckner
Director of Engineering
Intergate Quincy
Sabey Data Center Properties
2200 M Street NE,
Quincy, WA 98848

Re: Intergate Quincy - Sabey Data Center Properties
Approval Order No. 22AQ-E016
AQPID No. A0250302

Dear Dave Buckner:

The Department of Ecology's Air Quality Program (Ecology) approves the installation of 27 new emergency backup engines and evaporative cooling units at Intergate Quincy – Sabey Data Center Properties. The Data Center is located at 2200 M Street NE, Quincy, Washington in Grant County.

Ecology's approval is based on the Notice of Construction application and supplemental information submitted on November 29, 2021 through April 26, 2022. The 30-day comment period required per Washington Administrative Code (WAC) 173-400-171, was completed. No comments were received.

Enclosed is Approval Order No. 22AQ-E016 for Intergate Quincy – Sabey Data Center Properties.

Thank you for your patience while we processed your application. If you have any questions, please contact me at jenny.filipy@ecy.wa.gov or 509-405-2487.

Sincerely,

Jenny Filipy

Jenny Filipy, P.E.
Commercial/Industrial Unit
Regional Air Quality Program

JF:sg

Enclosures: Approval Order No. 22AQ-E016
Technical Support Document

Certified Mail: 7019 0140 0000 6495 6392

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

In the matter of approving a new	)	**Approval Order No. 22AQ-E016**
Air Contaminant Source for	)	AQPID No. A0250302
INTERGATE-QUINCY	)	
SABEY DATA CENTER PROPERTIES	)	

Project Summary

Intergate-Quincy – Sabey Data Center Properties, herein referred to as the Permittee, is an existing data center located at 2200 M Street NE, Quincy, Washington, in Grant County.

The Permittee is classified as a Synthetic Minor 80 source for Nitrogen Oxides.

Equipment

The list of equipment for this approval order includes 96 diesel engines used to power emergency electrical generators. The ninety-six 2.5 megawatt (MWe) or less generators will have a combined capacity of up to 213 MWe using a combination of Caterpillar, Cummins, and Kohler engines. Provisions for the use of smaller engines supplied by these manufacturers are contained in Condition 2.g of this Approval Order.

The permittee's application provided Ecology with a combination of engine size ranges for the anticipated engines to be used, which will have ranges at or smaller than the following sizes:

Table 1: Emergency Engines Evaluated

Manufacturer	Model ID	Rated Capacity MWe (bhp)
Caterpillar	C9	0.30 (480)
Caterpillar	C32	1.0 (1,474)
Caterpillar	3512C	1.5 (2,206)
Caterpillar	3516C	2.0 (2,937) to 2.5 (3,634)
Cummins	DQDAC	0.30 (480)
Cummins	DQFAD	1.0 (1,490)
Cummins	DQGAB	1.5 (2,220)
Cummins	DQKAF	2.25 (3,239)
Kohler	KD1000	1.0 (1,494)
Kohler	KD1250	1.25 (1,865)
Kohler	KD1500	1.5 (2,218)
Kohler	KD2250	2.25 (3,352)
Kohler	KD2500	2.5 (3,621)

A list of equipment for this project is provided in Tables 2 and 3 below. Engine sizes listed in Tables 1 and 2 are in megawatt (MWe) units with the "e" indicating "electrical" based on generator power ratings listed on the engine specifications provided with the application.

Table 2: Emergency Engine and Generator Serial Numbers

Building	Unit ID	Manufacturer and Model No.	Capacity MWe (bhp)	Engine SN	Generator SN	Build Date
A	QABC	Caterpillar C9	0.2504 (401)	S9P00927	CAT000C9CNGP00380	2015
A	QA2-D	Caterpillar 3516C	2.0 (2,937)	SFJ00723	G7G01453	8/5/15
A	QA4-R	Caterpillar 3516C	2.0 (2,937)	SFJ00719	G1G01451	8/5/15
A	QA1-A	Caterpillar 3516C	2.0 (2,937)	SFJ00796	G7G01592	2/11/16
A	QA1-B	Caterpillar 3516C	2.0 (2,937)	SFJ00795	G7G01591	2/11/16
A	QA1-C	Caterpillar 3516C	2.0 (2,937)	SFJ00789	G7G01595	2/11/16
A	QA4-B	Caterpillar 3516C	2.0 (2,937)	SFJ00895	G7G01722	7/21/16
A	QA2-C	Caterpillar 3516C	2.0 (2,937)	AFJ00853	G7G00219	4/14/17
A	A09					
A	A10					
A	A11					
B	QBC	Caterpillar C9	0.30 (480)	S9P02055	CAT000C9KNTX00648	2019
B	QB1-A	Caterpillar 3516C	2.0 (2,937)	LY500238	G2D00234	5/4/2019
B	QB1-B	Caterpillar 3516C	2.0 (2,937)	LY500239	G2D00235	5/4/2019
B	QB1-R	Caterpillar 3516C	2.0 (2,937)	LY500240	G2D00237	4/26/2019
B	QB2-A	Caterpillar 3516C	2.0 (2,937)	LY500241	G2D00236	5/4/2019
B	QB2-B	Caterpillar 3516C	2.0 (2,937)	LY500242	G2D00239	5/5/2019
B	QB2-R	Caterpillar 3516C	2.0 (2,937)	LY500243	G2D00244	5/8/2019
B	QB3-C	Caterpillar 3516C	2.0 (2,937)	LY500244	G2D00243	5/8/2019
B	QB3-D	Caterpillar 3516C	2.0 (2,937)	LY500246	G2D00242	5/8/2019
B	QB3-E	Caterpillar 3516C	2.0 (2,937)	LY500247	G2D00240	5/10/2019
B	QB4-C	Caterpillar 3516C	2.0 (2,937)	LY500248	G2D00241	5/9/2019

Building	Unit ID	Manufacturer and Model No.	Capacity MWe (bhp)	Engine SN	Generator SN	Build Date
B	QB4-D	Caterpillar 3516C	2.0 (2,937)	SBJ02146	G1Z00226	8/5/2017
B	QB4-E	Caterpillar 3516C	2.0 (2,937)	SBJ02147	G1Z00227	7/31/2017
C	IGQ	Caterpillar C9	0.22 (352)	S9C03885	G5A05022	2011
C	QC3-A	Caterpillar 3512C	1.5 (2,206)	EBG00972	G5Y00653	7/22/2011
C	QC3-B	Caterpillar 3512C	1.5 (2,206)	EBG00975	G5Y00652	7/22/2011
C	QC3-C	Caterpillar 3512C	1.5 (2,206)	EBG00973	G5Y00654	7/22/2011
C	QC1-A	Caterpillar 3516C	2.0 (2,935)	DD600363	G7F00178	11/24/2013
C	QC1-B	Caterpillar 3516C	2.0 (2,935)	DD600364	G7F00177	11/22/2013
C	QC4-A	Caterpillar 3512C	1.5 (2,206)	CT200132	G2N00529	3/5/2014
C	QC4-B	Caterpillar 3512C	1.5 (2,206)	CT200134	G2N00532	3/7/2014
C	QC4-C	Caterpillar 3512C	1.5 (2,206)	CT200133	G2N00531	3/5/2014
C	QC2-A	Caterpillar 3516C	2.0 (2,935)	DD600488	G7F00188	7/9/2014
C	QC2-B	Caterpillar 3516C	2.0 (2,935)	DD600490	G7F00187	7/9/2014
C	C11					
C	C12					
D	House					
D	D01					
D	D02					
D	D03					
D	D04					
D	D05					
D	D06					
D	D07					
D	D08					
D	D09					
D	D10					
D	D11					
D	D12					
D	D13					

Building	Unit ID	Manufacturer and Model No.	Capacity MWe (bhp)	Engine SN	Generator SN	Build Date
D	D14					
D	D15					
D	D16					
D	D17					
D	D18					
E	House					
E	E01					
E	E02					
E	E03					
E	E04					
E	E05					
E	E06					
E	E07					
E	E08					
E	E09					
E	E10					
E	E11					
E	E12					
E	E13					
E	E14					
E	E15					
E	E16					
E	E17					
E	E18					
E	E19					
E	E20					
E	E21					
E	E22					
E	E23					
E	E24					
E	E25					
E	E26					
E	E27					
E	E28					
E	E29					
E	E30					
E	E31					
E	E32					
E	E33					
E	E34					
E	E35					

Building	Unit ID	Manufacturer and Model No.	Capacity MWe (bhp)	Engine SN	Generator SN	Build Date
E	E36					
E	E37					
E	E38					
E	E39					

This approval order also includes 148 Munters Model PV-W35-PVT and 132 Munters Oasis Standard with indirect evaporative cooling units (or equivalent) to dissipate heat from electronic equipment at the facility. Cooling unit information is provided in Table 3.

Table 3: Cooling Units

Cooling Unit Model	Number of Fans per Cooling Unit	Number of Cooling Units per engine	Total Number Cooling Units
Munters Model PV-W35-PVT	3	4	148
Munters Oasis Standard with indirect evaporative cooling units	3	4	132

Legal Authority

The emissions from the proposed project have been reviewed under the legal authority of RCW 70A.15.2210 and the applicable rules and regulations adopted thereunder. The proposed project, if operated as specified, will be in accordance with applicable rules and regulations, as set forth in Chapters 173-400 WAC and 173-460 WAC and the operation thereof, at the location proposed, will not result in ambient air quality standards being exceeded.

This Notice of Construction (NOC) Approval Order rescinds and replaces NOC Approval Order No. 20AQ-E022; NOC Approval Order No. 20AQ-E022 is no longer in effect.

Therefore, it is ordered that the project as described in the NOC application and more specifically detailed in plans, specifications, and other information submitted to the Washington State Department of Ecology (Ecology) is approved for construction and operation, provided the following conditions are satisfied:

Approval Conditions

1. Administrative Condition

a. The permittee will provide Quincy School District administrators with the facility telephone number and a 24 hour contact number for a manager. The permittee will notify the school whenever Ecology approved changes occur in the maintenance testing schedule. As decided by the school administrators and the permittee, an ongoing relationship must be established to facilitate future communications.

b. The permittee must make available information on diesel engine exhaust health risks and emergency generator operations to existing residents and commercial and industrial facilities within 0.25 miles of Sabey property boundaries. Information on diesel exhaust health risks and emergency generator operations must be provided to the City of Quincy Building and Planning Department for distribution to new homeowners and businesses that locate on undeveloped parcels within 0.25 miles of the Sabey property boundary. The health risk information may be, or should be similar to, Ecology Focus on Diesel Exhaust Health Risks dated February 2011, Publication Number 11-02-005. A copy of the materials to be used to comply with this condition must be provided to Ecology for review, and distributed prior to starting Phase 1 operations.

2. Equipment Restrictions

a. Any engine used to power the electrical generators must be operated in accordance with applicable 40 C.F.R. Part 60, Subpart IIII requirements including but not limited to: certification by the manufacturer to meet the 40 C.F.R. Part 89 EPA Tier 2 or Tier 3 (when less than 560 kWm, 751 hp) emissions levels as required by 40 C.F.R. 60.4202; and installed and operated as emergency engines, as defined in 40 C.F.R. 60.4219.

   i. At the time of the effective date of this permit, Tier 4 interim and Tier 4 final certified engines (as specified in 40 C.F.R. 1039.102 Table 7 and 40 C.F.R. 1039.101 Table 1, respectively), are not required for 1.5 to 2.5 MWe electrical generators used for emergency purposes as defined in 40 C.F.R. 60.4219 in attainment areas in Washington State. However, any engines installed at the facility after Tier 4 or other limits are implemented by EPA for emergency generators, must meet the applicable specifications as required by EPA at the time the emergency engines are installed.

b. The only engines and electrical generating units approved for operation are those listed by serial number in Table 2 of this permit, which must have equal or less emissions than the engine/generator models specified in the equipment section of this permit.

c. The installation of any new or replacement engines after February 28, 2024, will require notification to Ecology that includes engine manufacturer's specification sheets. Ecology will decide whether new source review is required based on various factors including whether the new or replacement engines will have either an increased emission rate or result in an emission concentration that may increase community impacts over those evaluated for this Approval Order, or if an update to the current BACT analysis is necessary.

d. All 96 engines must meet the exhaust stack parameters such as diameter, height listed in Table 4, and exhaust rate and velocity do not result in community emissions impacts greater than what was evaluated for this project.

Table 4: Engine Exhaust Stack Dimension Requirements

Building	Quantity	Engine Size	Minimum Stack Height (feet)	Maximum Stack Diameter (inches)
A, B, C	34	1.5 to 2.0 MWe	48’	16”
A, B, C	3	0.22 to 0.30 MWe	9.33’	4”
D, E	57	1.5 to 2.0 MWe	60’	18”
D	1	0.30 MWe	12’	6”
E	1	1.5 MWe	12’	12”

e. This Order only applies to the 96 engines, each with a rated full standby capacity of up to 2.5 MWe, which are consistent with the engines 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 or equal to 2.5 MWe that comply with the engine certification requirements contained in Conditions 2.a and 5 unless there is an increase in community emission impacts. On a case-by-case basis, Ecology may require additional ambient impacts analyses prior to installation of smaller engines.

f. In addition to meeting EPA Tier 2 or 3 (for 300 kW engines) certification requirements, the source must have written verification from the engine manufacturer that each engine of the same make, model, and rated capacity installed at the facility uses the same electronic Programmable System Parameters, i.e., configuration parameters, in the electronic engine control unit.

3. Operating Limitations

a. Fuel consumption must be limited to a total of 550,616 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 must be averaged over a 12-month period using monthly rolling totals.

b. The 37 engines located in buildings A, B, and C are restricted to the annual limit of 57.5 hours per engine averaged over a 12-month period using monthly rolling totals and averaged over all generators in service.

c. The 59 engines located in buildings D and E are restricted to the annual limit of 29 hours per engine averaged over a 12-month period using monthly rolling totals and averaged over all generators in service.

d. A load bank will be used for electrical energy dissipation whenever prescheduled monthly maintenance testing, corrective testing, or annual load bank testing occurs above zero electrical load.

e. The 96 engines require periodic scheduled operation. To mitigate engine emission impacts, the permittee will perform all engine testing during daylight hours. Engine testing may take place outside of these time restrictions upon coordination by the permittee with other data centers in northeast Quincy to minimize engine emissions

impacts to the community. The permittee must maintain records of the coordination communications with other data centers, and those communications must be available for review by Ecology upon request.

f. All of the cooling units must comply with the following conditions:

i. Each individual cooling unit must use a mist eliminator with a maximum drift rate of 0.001 percent of the circulating water flow rate. The drift rate must be guaranteed by the unit manufacturer.

ii. Chemicals containing hexavalent chromium cannot be used to pre-treat the cooling unit makeup water.

4. General Testing and Maintenance Requirements

a. The permittee will follow engine-manufacturer's recommended diagnostic testing and maintenance procedures to ensure that each engine (larger than 500 hp, 373 kW) will conform to Condition 5 emission limits and Tier 2 emission specifications as listed in 40 C.F.R. 89 throughout the life of each engine.

b. The permittee must measure emissions of particulate matter (PM), volatile organic compounds (VOC), nitric oxide (NO), nitrogen dioxide (NO_2), and carbon monoxide (CO) from engine exhaust stacks in accordance with Approval Condition 4.c. This testing will serve to demonstrate compliance with the g/kWm-hr emission limits contained in Section 5, and as an indicator of proper operation of the engines. The selection of the engines(s) to be tested must be in accordance with Conditions 4.b.i, 4.b.ii and 4.b.iii and must be defined in a source test protocol submitted to Ecology no less than 30 days in advance of any compliance-related stack sampling conducted. Additional testing as described in 40 C.F.R. 60.8 (g) may be required by Ecology at their discretion.

i. For new engines, at least one representative engine (greater than 500 hp, 373kW) from each manufacturer and each size engine from each manufacturer must be tested as soon as possible after commissioning and before it becomes operational.

ii. Every 60 months after the first testing performed in Condition 4.b.i, the permittee must test at least one engine (greater than 500 hp, 373 kW) from each manufacturer and each size engine from each manufacturer, including the engine with the most operating hours as long as it is a different engine from that which was tested during the previous 60 month interval testing.

iii. The testing protocol must include the following information:

A. The location and unit ID of the equipment proposed to be tested.

B. The operating parameters to be monitored during the test.

C. A description of the source including manufacturer, model number, design capacity of the equipment and the location of the sample ports or test locations.

D. Time and date of the test and identification and qualifications of the personnel involved.

E. A description of the test methods or procedures to be used.

c. The following procedure must be used for each test for the engines as required by Condition 4.b unless an alternate method is proposed by the permittee and approved in writing by Ecology prior to the test.

i. Periodic emissions testing should be combined with other pre-scheduled maintenance testing and annual load bank engine testing.

ii. PM (filterable fraction only), VOC, NO, NO_2, and CO emissions measurement must be conducted at five individual generator electrical loads of 100 percent 75 percent, 50 percent, 25 percent, and 10 percent using weighting factor averaging according to Table 2 of Appendix B to Subpart E of 40 C.F.R. Part 89.

iii. EPA Reference Methods and test procedures from 40 C.F.R. Part 60, 40 C.F.R. Part 51, and/or 40 C.F.R. Part 89 as appropriate for each pollutant must be used including Method 5 or 40 C.F.R. Part 1065 for PM. A test plan will be submitted for Ecology approval at least 30 days before any testing is conducted and must include the criteria used to select the engine for testing, as well as any modifications to the standard test procedure contained in the above references.

iv. 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 Condition 4.e, shall be included in the test report, along with the emissions calculations.

v. In the event that any source test shows non-compliance with the emission limits in Condition 5, the permittee must repair or replace the engine and repeat the test on the same engine plus two additional engines of the same make and model as the engine showing non-compliance. Test reports must be submitted to Ecology as provided in Condition 9.e of this Order.

d. Each engine must be equipped with a properly installed and maintained non-resettable meter that records total operating hours.

e. Each engine must be connected to a properly installed and maintained fuel flow monitoring system (either certified physical or generator manufacturer provided software) that records the amount of fuel consumed by that engine during operation.

5. Emission Limits

a. Engines larger than 560 kW (751 hp) in this Order must meet the emission rate limitations contained in Table 5. The emission limit for particulate matter in Table 6 applies in the event that the permittee optionally installs Kohler engines with diesel particulate filters. Unless otherwise approved by Ecology in writing, compliance with

emission limits for those pollutants that are required to be tested under Conditions 4.b and 4.c must be based on emissions test data as determined according to those approval conditions.

b. To demonstrate compliance with 40 C.F.R. 89.112 and 89.113 g/kW-hr weighted average emission limits through stack testing, the permittee must conduct exhaust stack testing as described in Conditions 4.b and 4.c according to Table 2 of Appendix B to Subpart E of 40 C.F.R. Part 89, or any other applicable EPA requirement in effect at the time the engines are installed.

Table 5: Emission Limits and Testing Requirements for Engines

Pollutant	Load Test	Test Method*	Emission Limits
PM	Five-load weighted avg.	EPA Method 5, or 40 C.F.R. Part 1065	0.2 g/kWm-hr
NOx + NMHC/VOC	Five-load weighted avg.	EPA Method 7E, or 40 C.F.R. Part 1065	6.4 g/kWm-hr
CO	Five-load weighted avg.	EPA Method 10, or 40 C.F.R. Part 1065	3.5 g/kWm-hr

*In lieu of these requirements, the permittee may propose an alternative test protocol to Ecology in writing for approval.

Table 6: PM Limit and Testing Requirements for Engines with Diesel Particulate Filters

Pollutant	Load Test	Test Method*	Emission Limits
PM	Five-load weighted avg.	EPA Method 5, or 40 C.F.R. Part 1065	0.05 g/kWm-hr

*In lieu of these requirements, the permittee may propose an alternative test protocol to Ecology in writing for approval.

c. Total annual facility-wide emissions must not exceed the 12-month rolling average emissions for PM_{10}, $PM_{2.5}$, CO, NO_X, VOC, SO_2, DEEP, and NO_2 as listed in Table 7.

Table 7: Criteria Pollutant and Toxic Air Pollutant Emission Limits for Total Facility Sabey Intergate-Quincy Buildings A, B, C, D, and E (Tons/Year)

Pollutant	Annual Emissions
PM smaller than 10 microns in diameter (PM_{10})	5.04
PM smaller than 2.5 microns in diameter ($PM_{2.5}$)[(a)]	5.04

Pollutant	Annual Emissions
Carbon monoxide (CO)	14.29
Nitrogen oxides (NO_X)	91.67
Volatile organic compound (VOC)	4.10
Sulfur dioxide (SO_2)	0.16
Diesel Engine Exhaust Particulate (DEEP)*	0.794
DEEP from Buildings A, B, and C	0.408
DEEP from Buildings D and E	0.386
Nitrogen Dioxide (NO_2)**	9.17

*All PM emissions from the generator engines are $PM_{2.5}$, and all filterable $PM_{2.5}$ from the generator engines is considered Diesel Engine Exhaust Particulate (DEEP).

**NO_2 is assumed to be equal to 10 percent of the total NOx emitted.

d. Visual emissions from each diesel electric generator exhaust stack must be no more than ten percent, with the exception of a two minute period after unit start-up. Visual emissions must be measured by using the procedures contained in 40 C.F.R. Part 60, Appendix A, Method 9.

6. Operation and Maintenance (O&M) Manuals

A site-specific O&M manual for equipment must be developed and followed. Manufacturer's operating instructions and design specifications for the engines, generators, and associated equipment must be included in the manual. The O&M manual must include the manufacturer's recommended protocols for extended low-load operation. The O&M manual must 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 must at a minimum include:

a. Manufacturer's testing and maintenance procedures that will ensure that each individual engine will conform to the EPA Tier Emission Standards appropriate for that engine throughout the life of the engine.

b. Normal operating parameters and design specifications.

c. Operating maintenance schedule.

7. Submittals

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

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

Electronic Annual Report Submittals: emissions.inventory@ecy.wa.gov

OR AS DIRECTED

8. Recordkeeping

All records, O&M manual, and procedures developed under this Order must be organized in a readily accessible manner and cover a minimum of the most recent 60-month period except as required for stack testing in Condition 4. Any records required to be kept under the provisions of this Order must be provided within 30 days to Ecology upon request. The following records are required to be collected and maintained.

a. Fuel receipts with amount of diesel and sulfur content for each delivery to the facility.

b. Monthly and annual fuel usage.

c. Monthly and annual hours of operation for each diesel engine. The cumulative hours of operation for each engine must be maintained for the life of the engine, and must include which engines have been stack tested, and the report information from Condition 9.e.

d. Purpose, electrical load and duration of runtime for each diesel engine period of operation.

e. Annual gross power generated by each independent building quadrant at the facility, and total annual gross power for the facility.

f. Upset condition log for each engine and generator that includes date, time, duration of upset, cause, and corrective action.

g. Any recordkeeping required by 40 C.F.R. Part 60 Subpart IIII.

h. Air quality complaints received from the public or other entity, and the affected emissions units.

9. Reporting

a. The serial number, manufacturer make and model, standby capacity, and date of manufacture must be submitted to Ecology prior to installation for each engine and generator.

b. The following information will be submitted to Ecology at the address in Condition 7 by January 31 of each calendar year. This information may be submitted with annual emissions information requested by Ecology's Air Quality Program (AQP).

   i. Monthly and 12-month rolling annual total summary of fuel usage compared to Condition 3.a.

ii. Monthly and 12-month rolling annual total summary of the air contaminant emissions for pollutants above the WAC 173-400-110(5) and WAC 173-460-150 de minimis levels.

iii. Monthly and 12-month rolling hours of operation with annual rolling total.

iv. Monthly and 12-month rolling gross power generation with annual total as specified in Condition 8.d.

v. A listing of each start-up of each diesel engine that shows the purpose, fuel usage, and duration of each period of operation.

c. Any air quality complaints resulting from operation of the emissions units or activities must be promptly assessed and addressed. A record must 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 must be notified within three days of receipt of any such complaint.

d. The permittee must 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 or other unscheduled operation. This notification does not alleviate the permittee from annual reporting of operations contained in any section of Condition 9.

e. Stack test reports of any engine must be submitted to Ecology within 45 days of completion of the test and must include, at a minimum, the following information:

i. Location, unit ID, manufacturer and model number of the engine(s) tested, including the location of the sample ports.

ii. A summary of test methods, results (reported in units and averaging periods consistent with the applicable emission standard or limit), field and analytical laboratory data, quality assurance/quality control procedures and documentation.

iii. A summary of operating parameters for the diesel engines being tested.

iv. Engine electronic operational data during testing.

v. Copies of field data and example calculations.

vi. Chain of custody information.

vii. Calibration documentation.

viii. Discussion of any abnormalities associated with the results.

ix. A statement signed by the senior management official of the testing firm certifying the validity of the source test report.

10. General Conditions

a. **Activities Inconsistent with this Order** – Any activity undertaken by the Permittee, or others, in a manner that is inconsistent with the data and specifications submitted as part of the NOC application or this NOC Approval Order, will be subject to Ecology enforcement under applicable regulations.

b. **Availability of Order** – Legible copies of this NOC Approval Order and any O&M manual(s) must be available to employees in direct operation of the equipment described in the NOC application and must be available for review upon request by Ecology.

c. **Compliance Assurance Access** – Access to the source by representatives of Ecology or the United States Environmental Protection Agency (EPA) must be permitted upon request. Failure to allow 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 NOC Approval Order.

d. **Discontinuing Construction or Operation** – This NOC Approval Order will become invalid if construction of the equipment described in the NOC application and this NOC Approval Order does not commence within 18 months after receipt of this NOC Approval Order.

   If construction or operation is discontinued for 18 months or longer on a portion or all of the equipment described in the NOC application and this NOC Approval Order, the portion of the NOC Approval Order regulating the inactive equipment will become invalid. Ecology may extend the 18-month period upon request by the Permittee and a satisfactory showing that an extension is justified.

e. **Equipment Operation –** Operation of the facility must be conducted in compliance with all data and specifications submitted as part of the NOC application and in accordance with O&M manuals, unless otherwise approved in writing by Ecology.

f. **Registration** – Periodic emissions inventory and other information may be requested by Ecology. The requested information must be submitted within 30 days of receiving the request, unless otherwise specified. All fees must be paid by the date specified.

g. **Testing** – When information obtained by Ecology indicates the need to quantify emissions, Ecology may require the Permittee to conduct material analysis or air emissions testing under WAC 173-400-105. This testing requirements is in addition to any testing required by Ecology in this Order, other permits, or other state or federal requirements.

h. **Violation Duration** – If the Permittee violates an approval condition in this NOC Approval Order, testing, recordkeeping, monitoring, or credible evidence will be used to establish the starting date of the violation. The violation will be presumed to continue until testing, recordkeeping, monitoring, or other credible evidence indicates compliance. A violation of an approval condition includes, but is not limited to, failure of

air pollution control equipment, failure of other equipment resulting in increased emissions, or a failed source test indicating an exceedance of an emission limit.

i. **Obligations Under Other Laws or Regulations** – Nothing in this NOC Approval Order will be construed so as to relieve the Permittee of its obligations under any state, local, or federal laws or regulations.

j. **Maintaining Compliance** – It must not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the operation in order to maintain compliance with the conditions of this NOC Approval Order.

k. **Visible Emissions** – No visible emissions from the source are allowed beyond the property line, as determined by 40 C.F.R. Part 60, Appendix A, Test Method 22.

l. **Changes in Operations** – Any changes in operation contrary to information submitted in the NOC application must be reported to Ecology at least 60 days before the changes are implemented. Such changes in operation may require a new or amended NOC Approval Order.

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

- Violation of any terms or conditions of this authorization.
- Obtaining this authorization by misrepresentation or failure to disclose full all relevant facts.

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, must 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

Americans with Disabilities Act Information

Accommodation Requests

To request ADA accommodation including materials in a format for the visually impaired, call Ecology at 360-407-7668 or visit https://ecology.wa.gov/accessibility. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.

DATED at Spokane, Washington this 16th day of August 2022.

Prepared By:

_____

Jenny Filipy, P.E.
Commercial/Industrial Unit
Air Quality Program
Eastern Regional Office

Approved By:

_____

David T. Knight
Section Manager
Air Quality Program
Eastern Regional Office

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

Americans with Disabilities Act Information

Accommodation Requests

To request ADA accommodation including materials in a format for the visually impaired, call Ecology at 360-407-7668 or visit https://ecology.wa.gov/accessibility. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.

DATED at Spokane, Washington this 16th day of August 2022.

Prepared By:

JENNY MAY FILIPY STATE OF WASHINGTON 54393 REGISTERED PROFESSIONAL ENGINEER

Jenny Filipy, P.E.
Commercial/Industrial Unit
Air Quality Program
Eastern Regional Office

Approved By:

David T. Knight
Section Manager
Air Quality Program
Eastern Regional Office

Technical Support Document

Notice of Construction Approval Order No. 22AQ-E016

Intergate-Quincy Sabey Data Center Properties
AQPID No. A0250302

Quincy, WA

Prepared by: Jenny Filipy, P.E.

1. Project Summary

Intergate-Quincy Sabey Data Center Properties (the source) is data center classified as a Synthetic Minor 80 with 37 existing generators and evaporative cooling emissions units. This review is for a project to add 59 new emergency generators and additional indirect evaporative cooling units.

An initial Notice of Construction (NOC) application dated December 24, 2021, with update on January 6, 2022, was submitted by Intergate-Quincy Sabey Data Center Properties for Building D and E revised project. The Washington State Department of Ecology (Ecology) reviewed the initial application and found it incomplete per WAC 173-400-111 on March 15, 2022. Amended requirements were received by Ecology on April 26, 2022, found to be complete on April 26, 2022. The source has accepted a limit of 29 hours operation per generator for Buildings D and E based the Health Impact Assessment Recommendation. Emission calculations in this technical support document reflect the reduction in allowable generator hours.

2. Application Processing

a. Public Notice

This project is subject to a mandatory 30-day public comment period per WAC 173-400-171(3)(b) and (k) for a project that exceeds an acceptable source impact level and an order issued under WAC 173-400-091 that establishes limitations on a source's potential to emit. The comment period was held June 29 through August 3, 2022. No comments were received.

b. State Environmental Policy Act

City of Quincy issued a determination of nonsignificance (DNS) on July 1, 2019.

3. Applicable Regulations

a. State Regulations

i. Minor New Source Review Applicability

Per WAC 173-400-110, a NOC application and an order of approval must be issued by the permitting authority prior to the establishment of a new source or modification.

As stated in the NOC application and consistent with Ecology's review, the new generators are being constructed for this project and therefore are subject to minor new source review (NSR).

ii. Potential to Emit (Potential Emissions)

The potential emissions from the project are greater than the exemption levels listed under WAC 173-400-110(5) as shown below in Tables 1 and 2.

Table 1. Potential emissions for pollutants listed under WAC 173-400-110(5),NSR Exemption Levels

Pollutant	New Generators (tons/year)	Minor NSR Exemption (tons/year)
Carbon Monoxide (CO)	173.7	5.0
Lead (Pb)	0.000	0.005
Nitrogen Oxides (NOX)	899.0	2.0
Particulate Matter, PM10	22.64	0.75
PM2.5	22.64	0.5
Total Suspended Particulates (TSP)	6.76	1.25
Sulfur Dioxide (SO2)	0.83	2.0
Volatile Organic Compounds (VOC), total	17.33	2.0
Ozone Depleting Substances, total	0.000	1.0
Greenhouse Gases (GHG)	61,684	N/A

Table 2. Potential TAP emissions and de minimis emission values

Pollutant	Potential Emissions from Project (lb/Averaging Period)	De Minimis Emission Values	Averaging Period
Nitrogen Dioxide, (NO2)	541	0.46	1-hour
Carbon Monoxide (CO)	888	1.10	1-hour
Sulfur Dioxide (SO2)	4.64	0.46	1-hour
Diesel Engine Exhaust	13,283	2.70E-02	Year
Acetaldehyde	18.17	3.00	Year
Acrolein	0.26	1.30E-03	24-hour
Benz(a)anthracene	0.5	4.50E-02	Year
Benzene	521.3	1.00	Year
Benzo(a)pyrene	0.17	8.20E-03	Year
Benzo(b)fluoranthene	0.67	4.50E-02	Year
Benzo(k)fluoranthene	0.15	4.50E-02	Year
1,3-Butadiene	0.06	0.27	Year
Chrysene	1.00	0.45	Year

Pollutant	Potential Emissions from Project (lb/Averaging Period)	De Minimis Emission Values	Averaging Period
Dibenz(a,h)anthracene	0.23	4.10E-03	Year
Formaldehyde	54.67	1.40	Year
Indeno(1,2,3-cd)pyrene	0.33	4.50E-02	Year
Naphthalene	87.17	0.24	Year
Propylene	5.23	11.00	24-hour
Toluene	9.07	19.00	24-hour
Xylenes	6.23	0.82	24-hour

iii. Prevention of Significant Deterioration

PSD does not apply to this project, based on approval order limited PTE or allowable emissions.

iv. Other Applicable Requirements

In accordance with WAC 173-400-113, the proposed new sources must comply with all applicable emission standards adopted under Chapter 70A.15 RCW. The following applicable emission standards are associated with the proposed project:

A. WAC 173-400-040 General standards for maximum emissions: limits visible emissions from all sources to no more than three minutes of 20 percent opacity, in any hour, of an air contaminant from any emission unit.

B. WAC 173-400-050 and 060 Emission standards for combustion and incineration units: limits emissions of particulate matter from combustion and general process units to 0.23 gram per dry cubic meter at standard conditions (0.10 grains per dry standard cubic foot) of exhaust gas.

C. WAC 173-400-115 Standards of performance for new sources: adopts by reference 40 C.F.R. Part 60, Subpart IIII. See more below.

b. Federal Regulations

In accordance with WAC 173-400-113, the proposed new source must comply with all applicable New Source Performance Standards (NSPS) included in 40 C.F.R. Part 60, National Emission Standards for Hazardous Air Pollutants (NESHAPs) included in 40 C.F.R. Part 61, and NESHAPs for source categories included in 40 C.F.R. Part 63. The following applicable emission standards are associated with the proposed project:

i. Standards of Performance for New Stationary Sources

The ICE NSPS (40 C.F.R. Part 60, Subpart IIII) applies to each emergency generator. The regulation specifies: criteria for classification as emergency engines, Tier-2 emission standards for the engines; and fuel, monitoring, compliance, and notification requirements for the Permittee.

ii. National Emission Standards for Hazardous Air Pollutants for Source Categories

The RICE NESHAP applies to each engine. However, each engine is also subject to the ICE NSPS (see above). At 40 C.F.R. 63.6590(c), the NESHAP specifies that compliance must be met by meeting the requirements of the NSPS; therefore, no further requirements apply to the engines.

4. Emissions

a. Emission Factors

Emission factors for the emergency generator engines were provided as Not-to-Exceed-Limits by the manufacturer Caterpillar, Cummins and Kohler for NOx, CO, PM, and hydrocarbons (HC). The following was assumed for the emergency generators:

i. DEEP is assumed to be manufacturer-measured PM

ii. HCs were assumed to be equivalent to VOC and non-methane HC

iii. The sum of PM and HC (assumed to all condense) and be equivalent PM10 and PM2.5 for the engines.

The emission factor for SO2 was calculated based on sulfur content of the ultra-low sulfur fuel and an average heating value of diesel fuel. All sulfur was assumed to convert to SO2.

An additional factor was added for cold-start emissions (PM, CO, total VOC, and volatile TAPs). These factors are based on short-term concentration trends for VOC and CO emission observed immediately after startup of a large diesel backup generator. These observations were documented in the California Energy Commission's report "Air Quality Implications of Backup Generators in California" (Lents et al. 2005).

All the remaining emission rates for toxic air pollutants from the generators were calculated using emission factors from EPA's AP-42, Volume 1, and Chapter 3.4, which provides emission factors for HAPs from large internal combustion diesel engines (EPA 1995).

Potential to Emit calculations were based on uncontrolled primary use generators running 500 hours per year. **Allowable emissions** are based on the Buildings D and E generators with order limited hours of operation.

b. Best Available Control Technology | Best Available Control Technology for Toxics

In the analysis, the consultant proposed and successfully demonstrated that Tier-4 engines are cost prohibitive. Therefore, the consultant proposed uncontrolled Tier-2 engines as BACT and tBACT. I agree that the proposal meets or exceeds: BACT for emissions of NOx, CO, VOC and PM; and tBACT for emissions listed in Table 2.

c. Additional Voluntary Emission Controls

The Permittee and applicant proposed voluntary installation of Diesel Oxidation Catalyst DOC for potentially Cummins engines if installed and DOC and diesel particulate filters (DPF), if they install Kohler engines. DOC's control carbon monoxide, volatile organic compounds and some particulate matter, and DPF's control particulate matter.

d. Allowable Emissions

The allowable emissions from the project, considering all emission and operational limits contained in the approval order, are shown in the tables below.

Table 3. Allowable emissions for pollutants listed under WAC 173-400-110(5)

Pollutant	New Generators (tons/year)
CO	10.11
NOX	52.14
PM10	1.59
PM2.5	1.59
TSP	0.67
SO2	0.05
VOC	2.01
GHG	3,578

Table 4. Allowable TAP emissions

Pollutant	New Generators (lbs/Averaging Period)	Averaging Period
NO2	541	1-hour
CO	888	1-hour
SO2	4.64	1-hour
DEEP	771	Year
Acetaldehyde	1.05	Year

Pollutant	New Generators (lbs/Averaging Period)	Averaging Period
Acrolein	0.26	24-hour
Benz(a)anthracene	0.02	Year
Benzene	30.24	Year
Benzo(a)pyrene	0.01	Year
Benzo(b)fluoranthene	0.04	Year
Benzo(k)fluoranthene	8.49E-03	Year
1,3-Butadiene	3.58E-03	Year
Chrysene	0.06	Year
Dibenz(a,h)anthracene	1.35E-02	Year
Formaldehyde	3.17	Year
Indeno(1,2,3-cd)pyrene	0.02	Year
Naphthalene	5.06	Year
Propylene	9.17	24-hour
Toluene	9.07	24-hour
Xylenes	6.23	24-hour

Table 5 presents the potential emissions and allowable emissions for Intergate-Quincy Sabey Data Center Properties with the emissions from the project included. The facility is considered a Synthetic Minor 80 as it has taken limits to stay under Title V thresholds.

Table 5. Potential and Allowable Emissions for Total Source

Pollutant	Total Source Potential Emissions (tons/year)	Total Source Allowable Emissions (tons/year)
CO	210.1	14.29
NOX	1,242.7	91.67
PM10	36.0	5.04
PM2.5	36.0	5.04
TSP	12.6	3.03
SO2	1.8	0.16
VOC	35.5	4.10
GHG	93,741	7,262

5. Ambient Air Quality Standards

As specified in WAC 173-400-113, the proposed new or modified source(s) must not cause or contribute to a violation of any ambient air quality standard. This includes the ambient air quality standards for both criteria and toxic air pollutants.

a. Pollutants Listed Under WAC 173-400-110 (Except TAPs)

For NO2, CO, PM10, PM2.5, modeling was performed to satisfy the requirements of Chapter 173-476 WAC. The modeling demonstrates that the emissions increases as a result of the project will not exceed the ambient air quality standards. The modeling results are included in the table below.

Table 6. Criteria Pollutant Modeling Results.

Criteria Pollutant	Averaging Period	Modeled Concentration (µg/m3)	Modeled Concentration with Background (µg/m3)	Ambient Air Quality Standard (µg/m3)
*NO2	1-hr	--	183.46	188
NO2	Annual	2.9	9.9	100
CO	1-hr	4985.2	6,547.8	40,000
CO	8-hr	2,040.8	3,022.1	10,000
*PM10	24-hr	--	132.50	150
*PM2.5	24-hr	--	27.12	35
PM2.5	Annual	0.18	6.6	12

*Monte Carlo analysis used for comparison to these standards.

b. Toxic Air Pollutants

In accordance with WAC 173-460-040, new TAP sources must meet the requirements of Chapter 173-460 WAC, unless they are exempt by WAC 173-400-110(5).

As shown in Table 2, minor NSR is required for the new generators. As such, the new emission unit must comply with WAC 173-460-070 (ambient impact requirement). The facility may demonstrate compliance with the ambient impact requirement by either showing that the emissions increase is less than the Small Quantity Emissions Rates (SQER) or through dispersion modeling. The table below includes the estimated emissions increases associated with the project and the applicable SQER.

Table 7. TAP Analysis

TAP	Allowable Emissions - Increase	SQER	Modeling Required?
NO2	541	0.87	Yes
CO	888	43.00	Yes
SO2	4.64	1.20	Yes
DEEP	771	0.54	Yes
Acetaldehyde	1.05	60	No

TAP	Allowable Emissions - Increase	SQER	Modeling Required?
Acrolein	0.26	2.60E-02	Yes
Benz(a)anthracene	0.02	0.89	No
Benzene	30.24	21.00	Yes
Benzo(a)pyrene	0.01	0.16	No
Benzo(b)fluoranthene	0.04	0.89	No
Benzo(k)fluoranthene	8.49E-03	0.89	No
Chrysene	0.06	8.90	No
Dibenz(a,h)anthracene	0.014	8.2E-02	No
Formaldehyde	3.17	27.0	No
Indeno(1,2,3-cd)pyrene	0.02	0.89	No
Naphthalene	5.06	4.80	Yes
Xylenes	6.23	16.00	No

For NO2, CO, SO2, DEEP, acrolein, benzene, and naphthalene that require modeling, modeling was performed to satisfy the requirements of Washington's state toxics rule in Chapter 173-460 WAC. The modeling demonstrates that the emissions increases as a result of the project will not exceed the Acceptable Source Impact Level (ASIL) screening thresholds, except for NO2 and DEEP. The modeling results are included in the table below.

Table 8. TAP Modeling Results.

TAP	Averaging Period	Maximum Modeled Concentration (µg/m3)	ASIL (µg/m3)	Percent of ASIL
NO2	1-hour	2,400	470	511.6%
CO	1-hour	5,050	23,000	22.0%
SO2	1-hour	88.0	660	13.3%
DEEP	1-Year	0.0511	0.0033	1549.4%
Acrolein	24-hr	0.0135	0.350	3.9%
Benzene	Annual	0.00101	0.13	0.8%
Naphthalene	Annual	1.60E-04	0.029	0.6%

As shown in Table 8, all TAPs except NO2 and DEEP are below the associated ASIL. A Second Tier Health Impact Assessment (HIA) was conducted for NO2 and DEEP and submitted separately from the NOC application, per WAC 173-460-090. Ecology reviewed the assessment and recommended approval of the project with reduction of operating hours from 30 hours per generator to 29 hours per generator. With this change, "the health hazards are considered to be acceptable." Ecology's analysis and

recommendations are included in the document titled, Health Impact Assessment Recommendation for: Sabey Intergate Quincy Data Center, June, 2022.

Appendix A – Federal Rule Applicability

1. 40 C.F.R. Part 60, Subpart IIII

The ICE NSPS (40 C.F.R. Part 60, Subpart IIII) applies to each engine. The applicable portions the rule appear to be:

Citation	Subject	Notes
60.4202(a)(2)	Manufacturer emission standards	Specifies that 2007 model year and later emergency stationary CI ICE with a maximum engine power ≥ 37 kW and ≤ 2,237 KW be certified to the emission standards specified in 40 C.F.R. 1039, Appendix I.
60.4205(b)	Owner/Operator emission standards	Directs owners and operators of 2007 model year and later emergency stationary CI ICE to comply with the emission standards for new nonroad CI engines in §60.4202.
60.4209(a)	Owner/Operator monitoring requirements	Requires installation install a non-resettable hour meter prior to startup of each engine, since the engines do not meet the standards applicable to non-emergency engines.
Table 8 to Subpart IIII of Part 60	Applicability of General Provisions to Subpart IIII	The table lists what portions of 40 C.F.R. 60 Subpart I are applicable, including notification and recordkeeping requirements.

2. 40 C.F.R. Part 63, Subpart ZZZZ

The RICE NESHAP applies to each engine. Condition 1 of the Order requires general compliance with this regulation. However, each engine is also subject to the ICE NSPS (see above). At 40 C.F.R. 63.6590(c), the NESHAP specifies that compliance must be met by meeting the requirements of the NSPS; therefore, no further requirements apply to the engines.