

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

IN THE MATTER OF APPROVING A )                   **Proposed Decision Regarding**  
NEW CONTAMINANT SOURCE FOR )                   **A Notice of Construction ORDER**  
SES AMERICOM, INC. )                   **No. 09AQ-C085**

To:   **SES Americom, Inc.**  
      **Brewster Teleport Facility**  
      **PO Box 430**  
      **Brewster, Washington 98812**

1.0   PROJECT SUMMARY

SES Americom, Inc. (“SES Americom”) operates satellite and teleport facilities in various locations around the world. On May 30, 2008, SES Americom submitted a Notice of Construction application to operate five existing diesel-fired back-up internal combustion engines at their teleport facility near Brewster, Okanogan County, Washington.

The Department of Ecology proposes to APPROVE this proposal by issuing this ORDER. The project location is 66C Teleport Drive, Brewster, Okanogan County, Washington, which is defined by parcel numbers 3125331001 and 3125331005.

In relation to the above, the Department of Ecology, State of Washington, pursuant to Revised Code of Washington (RCW) 70.94.152, makes the following determinations:

- 1.1   The proposed source qualifies as a new source of air contaminants under Washington Administrative Code (WAC) 173-400-110, and a new source of toxic air pollutants under WAC 173-460-040.
- 1.2   The proposed source is not a new major stationary source or major modification to a major stationary source that is subject to the Prevention of Significant Deterioration permitting requirements of WAC 173-400-700 through 750.
- 1.3   The proposed source will be located in an area which is in attainment or unclassifiable for all criteria pollutants.
- 1.4   The proposed source, if constructed and operated as herein required, will not delay the attainment date for an area not in attainment, nor cause or contribute to a violation of any ambient air quality standard. Potential emissions from the source were modeled using SCREEN3, a screening dispersion model recommended by the United States Environmental Protection Agency (EPA). All potential criteria and toxic air pollutant emissions comply with the ambient air quality standards and the requirements of Chapter 173-460 WAC, New Sources of Toxic Air Pollutants, respectively.

- 1.5 The proposed source, 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 comply with all applicable new source performance standards, national emission standards for hazardous air pollutants, national emission standards for hazardous air pollutants for source categories, and emission standards adopted under Chapter 70.94 RCW.
- 1.6 The proposed source, if constructed and operated as herein required, will employ Best Available Control Technology (BACT) to control emission of criteria pollutants, and Best Available Control Technology for Toxics (T-BACT) to control emission of toxic air pollutants.
- 1.7 The project has satisfied the environmental review requirements of the State Environmental Policy Act (SEPA). A *Determination of Nonsignificance* (DNS) was issued by Washington State Department of Ecology, acting as lead agency, on July 22, 2008.

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

2.0 APPROVAL CONDITIONS

2.1 LAWS AND REGULATIONS

The source shall comply with all state laws and regulations, including Chapter 70.94 RCW, Washington Clean Air Act; Chapter 173-400 WAC, General Regulations for Air Pollution Sources; and Chapter 173-460 WAC, Controls for New Sources of Toxic Air Pollutants.

2.2 ESTIMATED EMISSIONS

SES Americom may produce up to the following estimated annual emissions under the ordered physical and operational conditions:

Pollutant	Emissions	
<i>Criteria Pollutants</i>		
Nitrogen Oxides (NO <sub>x</sub> )	10.7	tons per year
Carbon Monoxide (CO)	1.1	tons per year
Sulfur Dioxide (SO <sub>2</sub> )	1.1	tons per year
Particulate Matter (PM <sub>10</sub> )	0.3	tons per year
Particulate Matter (PM <sub>2.5</sub> )	0.3	tons per year
Volatile Organic Compounds (VOC)	0.2	tons per year

<b>Pollutant</b>	<b>Emissions</b>	
<i>Toxic Air Pollutants</i>		
Acetaldehyde	1.3	pounds per year
Acrolein	0.2	pounds per year
Benzene	8.2	pounds per year
Benzo(a)pyrene	0.003	pounds per year
1,3-Butadiene	0.4	pounds per year
Formaldehyde	2.3	pounds per year
Nitric Oxide (NO)	7.0	tons per year
Polycyclic aromatic hydrocarbons (PAH), total	0.04	pounds per year
Toluene	3.1	pounds per year
Xylenes	2.1	pounds per year

2.3 BACT

As required by WAC 173-400-113(2), this project shall use Best Available Control Technology (BACT) to control emission of particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide and volatile organic compounds. The following control technologies and limitations are determined to satisfy the BACT requirement:

2.3.1 The use of EPA on-road specification No. 2 distillate fuel oil meeting the following specifications, in all engines:

2.3.1.1 Low sulfur fuel containing 0.05 weight percent or less of sulfur, when used on or before June 30, 2009;

2.3.1.2 Ultralow sulfur fuel containing 0.0015 weight percent or less, when used on or after July 1, 2009.

2.3.2 The use of engines that comply with 40 CFR part 89 emission standards for NO<sub>x</sub>, CO, Non-methane Hydrocarbons, and Particulate Matter, for the appropriate engine's model year, as specified in approval condition 2.6.1.

2.3.3 Limiting use of the engines to on-site emergency situations and required testing and maintenance checks.

2.4 T-BACT

As required by WAC 173-460-040(4)(b), this project shall use Best Available Control Technology for Toxics (T-BACT). Compliance with BACT conditions in section 2.3 above is determined to satisfy the T-BACT requirement.

2.5 EQUIPMENT RESTRICTIONS

2.5.1 This project is limited to five diesel-powered engines, as specified in the following table:

<b>Engine Description</b>	<b>Engine ID</b>	<b>Installation Date</b>	<b>Power Rating (kW)</b>
Caterpillar OPS Tech Power SR4 Model 3412CDIT	G1	November, 1994	500
Cummins Onan FAA WAAS Model C8.3-G	G2	September, 1997	125
Caterpillar ICO Global Model 3412C	G3	October, 1998	750
Cummins Astrolink Model KTA19-G4	G4	May, 2000	500
Cummins GCCS Model 6BTAA5.9-G1	G5	November, 2005	125

2.5.2 Installation of additional engines, or any modifications to the approved engines that increase emissions of any regulated air pollutant, may require approval by Ecology of separate Notice of Construction applications.

2.5.3 Relocation of engines that results in an increase in fence-line concentrations of any regulated air pollutant may require a Notice of Construction application.

2.5.4 Replacement of failed engines with like engines (same manufacturer and model family) or equivalent engines requires notification prior to installation.

2.5.5 Fuel consumption shall not exceed the quantities in the following table:

<b>Engine Description</b>	<b>Maximum Fuel Use in Gallons Per Hour</b>	<b>Maximum Fuel Use in Gallons Per Year (12 Consecutive Months)</b>
Caterpillar OPS Tech Power SR4	40	20,000
Cummins Onan FAA WAAS	10	5,000
Caterpillar ICO Global	54.5	27,250
Cummins Astrolink	35.9	17,950
Cummins GCCS	10.2	5,100
<b>Total for all engines</b>	<b>155.1</b>	<b>75,300</b>

2.5.6 All fuel used shall be on-road specification No. 2 distillate fuel oil, as specified in condition 2.3.1. Oil blends that meet ASTM D 6751 specifications for biodiesel

blends may be used in the diesel engines only if no condition in this Order will be violated.

2.5.7 Exhaust stack dimensions and operating parameters shall be in accordance with plans and specifications submitted as part of the Notice of Construction application. As currently permitted, stack dimensions shall be as shown in the following table:

Unit ID	Minimum Stack Height Above Ground Level (feet)	Maximum Stack Inside Diameter (inches)
Caterpillar OPS Tech Power SR4	26	7.9
Cummins Onan FAA WAAS	20	4.7
Caterpillar ICO Global	36	11.4
Cummins Astrolink	36	9.4
Cummins GCCS	20	2.4

2.5.8 Each engine shall be equipped with a properly installed and maintained non-resettable hour meter to track the number of hours operated during any type of operation.

2.6 EMISSION LIMITS

2.6.1 The following engines shall comply with the exhaust emission limitations specified below:

Unit ID	Pollutant	Emission Limit (g/kW-hr)	40 CFR part 89 Tier Rating
Cummins Onan FAA WAAS Model C8.3-G	NOx	9.2	Tier 1
Cummins Astrolink Model KTA19-G4	NOx	9.2 (24-hr average) 12.0 (1-hr average)	Tier 1
	CO	11.4	
	Particulate Matter	0.54	
	Hydrocarbons (HC)	1.3	
Cummins GCCS Model 6BTAA5.9-G1	NOx + Non-methane Hydrocarbons (NMHC)	6.6	Tier 2
	CO	5.0	
	Particulate Matter	0.3	

2.6.2 Visible emissions from any engine’s exhaust stack shall not exceed 5 percent opacity, based on a 6-minute average, with the exception of a ten (10) minute period after unit start-up. Visible emissions shall be measured by EPA Method 9, 40 CFR part 60, Appendix A.

## 2.7 OPERATION RESTRICTIONS

- 2.7.1 SES Americom shall follow all recommended installation, configuration, operation, and maintenance provisions supplied by the permitted units' manufacturers.
- 2.7.2 The engines shall only be operated for reliability or maintenance testing and to provide emergency backup electrical power. Under no circumstances shall the engines be utilized to satisfy a financial arrangement with any entity (e.g. curtailment rate structures, load shedding, distributed power generation), or to provide electrical power to any electric power provider or user without first submitting a Notice of Construction application and receiving prior approval from Ecology.
- 2.7.3 The Cummins Astrolink engine shall be operated for no more than 18 hours, for any reason, in any consecutive 24-hour period.
- 2.7.4 The Caterpillar OPS Tech Power engine (aka G1) shall not operate while the Cummins FAA WAAS (aka G2) or the Cummins GCCS (aka G5) engines are operating. This means that if G1 is operating, neither G2 nor G5 shall be operating. Under no circumstances shall all three engines (G1, G2 and G3) be in operation at the same time.
- 2.7.5 Total engine operation shall not exceed 500 hours per engine in any consecutive 12-month period, including periods of testing and maintenance.
- 2.7.6 The source will be operated and maintained in accordance with a site-specific operation and maintenance (O&M) manual, to be prepared by the permittee.
- 2.7.6.1 Manufacturer's instructions may be referenced during O&M manual development;
- 2.7.6.2 The O&M manual shall reflect standard operating procedures to be followed by all equipment operators, including a description of normal operating parameters, a maintenance or inspection schedule for each emission unit, monitoring and recordkeeping requirements and procedures, symptoms of abnormal unit operation, and corrective actions to be followed in case of malfunction;
- 2.7.6.3 The O&M manual shall be updated to reflect any modifications to the source or operating procedures;

- 2.7.6.4 Failure to follow the requirements of the O&M manual, or the adequacy of the O&M manual, may be considered proof that the equipment was not properly operated and maintained;
- 2.7.6.5 A legible copy of the O&M manual shall be displayed on-site at all times in a place known to facility employees;
- 2.7.6.6 In accordance with WAC 173-400-101, the O&M manual shall be reviewed and updated by the permittee at least annually. O&M records shall be available for inspection by Ecology, organized in a readily accessible manner, and retained for at least five (5) years.

## 2.8 TESTING REQUIREMENTS

- 2.8.1 Throughout the life of the engines identified in approval condition 2.6.1 above, the permittee shall follow all recommended diagnostic testing procedures supplied by the engine manufacturer(s), to ensure compliance with the emission limits listed in condition 2.6.1.
- 2.8.2 At the conclusion of the manufacturer's warranty term for any engine listed in approval condition 2.6.1 (i.e., 3,000 hours of total individual engine operation, or 5 years of use, whichever occurs first), SES Americom shall pursue one of the following options:
  - 2.8.2.1 Emission testing of the engine for NO<sub>x</sub>, CO, non-methane hydrocarbons (NMHC), and particulate matter to determine continuing compliance with the emission limits listed in condition 2.6.1 for that engine. Testing shall be conducted using the procedures in 40 CFR §89.119, or an alternate procedure proposed by the permittee and approved by Ecology prior to testing. Thereafter, testing shall be repeated every 3,000 hours of engine operation; or
  - 2.8.2.2 Re-evaluate BACT, T-BACT, and health risks of the project's operations; or
  - 2.8.2.3 Satisfy the engine manufacturer's requirements to renew or extend the emissions control equipment warranty; or
  - 2.8.2.4 Any combination of the above options.
- 2.8.3 To demonstrate compliance, Ecology may order additional performance testing for any regulated air contaminant, in accordance with EPA or other Ecology approved methods.

## 2.9 RECORDKEEPING AND REPORTING

SES Americom shall maintain sufficient records to enable Ecology to verify that the engines are operating in compliance with this Order. Records of all data required by this Order shall be maintained in a readily retrievable manner for a period of five (5) years or more, and be made available on-site to authorized representatives of Ecology during any site inspection. At a minimum, the permittee shall maintain the following records:

- 2.9.1 The quantity and specifications of each fuel used in the engines. Records must demonstrate that each supplier's fuel shipment conforms to the specifications for sulfur contained in this Order.
- 2.9.2 Hours of operation of each engine, and the reason the unit was in operation during that time.
- 2.9.3 Upset condition log for the permitted units that includes date, time, duration of upset, cause, and corrective action.
- 2.9.4 Results from all emission testing conducted on the permitted emission units.
- 2.9.5 All air quality complaints received from the public, Ecology, or any other entity. Any complaints resulting from operation of the permitted emission units shall be promptly assessed and addressed. A record shall be maintained of the permittee's action 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 complaint.

## 2.10 GENERAL CONDITIONS

- 2.10.1 No visible emissions shall be allowed beyond the property line.
- 2.10.2 All outdoor burning shall be performed according to Chapter 173-425 WAC, Outdoor burning.
- 2.10.3 Legible copies of this Order approving the Notice of Construction application shall be displayed on-site in a location known by and available to employees in direct operation of the described unit, and available to Ecology upon request.
- 2.10.4 It shall be grounds for rescission of this approval if any of the approved engines is not physically operated for a period of eighteen (18) months or more. Ecology may extend the 18-month period upon a satisfactory showing that an extension is justified.
- 2.10.5 Emissions inventory information and other information may be requested by Ecology. Unless otherwise specified, emissions information requested by Ecology shall be submitted within 30 days of receiving the request. Ecology

will supply the necessary forms to use for reporting emissions inventory information.

- 2.10.6 Access to the source by the United States Environmental Protection Agency or authorized representatives of Ecology shall be permitted upon request for the purpose of compliance assurance inspections. Failure to allow access is grounds for revocation of the Order approving the Notice of Construction application.
- 2.10.7 An emergency spill plan shall be in place during operation of the engines, and all operations personnel shall be familiar with this plan. The plan shall be posted at the source. Any petroleum spills shall be reported immediately to the Department of Ecology, Central Regional Office, (509) 575-2490.
- 2.10.8 Operation of the engines must be conducted in compliance with all data and specifications submitted as part of the Notice of Construction application unless otherwise approved by Ecology. Any activity undertaken by the permittee or others, in a manner which is inconsistent with the application and this determination, shall be subject to Ecology enforcement under applicable regulations.
- 2.10.9 It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order.
- 2.10.10 Nothing in this Order shall be construed so as to relieve the permittee of its obligations under any local, state, or federal laws or regulations including, but not limited to, Local Zoning and Building Codes.
- 2.10.11 This Order is valid only after payment of appropriate new source review fee(s) required pursuant to WAC 173-455-120.

All plans, specifications and other information submitted to Ecology relative to this project and further documents and any further authorizations or approvals or denials in relation thereto shall be kept at the Central 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 hereof.

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

- I. Violation of any terms or conditions of this authorization;
- II. Obtaining this authorization by misrepresentation or failure to disclose fully 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, shall not be affected thereby.

**APPEAL INFORMATION:**

You have a right to appeal this permit. To appeal this you must:

- File your appeal with the Pollution Control Hearings Board within 30 days of the “date of receipt” of this document. Filing means actual receipt by the Board during regular office hours.
- Serve your appeal on the Department of Ecology within 30 days of the “date of receipt” of this document. Service may be accomplished by any of the procedures identified in WAC 371-08-305(10). “Date of receipt” is defined at Revised Code of Washington (RCW) 43.21B.001(2).

Be sure to do the following:

- Include a copy of (1) the permit you are appealing and (2) the application for the permit.
- Serve and file your appeal in paper form; electronic copies are not accepted.

**1. To file your appeal with the Pollution Control Hearings Board**

Mail appeal to:

The Pollution Control Hearings Board  
PO Box 40903  
Olympia, WA 98504-0903

OR

Deliver your appeal in person to:

The Pollution Control Hearings Board  
4224 – 6th Ave SE Rowe Six, Bldg 2  
Lacey, WA 98503

**2. To serve your appeal on the Department of Ecology**

Mail appeal to:

The Department of Ecology  
Appeals Coordinator  
P.O. Box 47608  
Olympia, WA 98504-7608

OR

Deliver your appeal in person to:

The Department of Ecology  
Appeals Coordinator  
300 Desmond Dr SE  
Lacey, WA 98503

**3. And send a copy of your appeal to:**

Susan Billings  
Department of Ecology  
Central Regional Office  
15 West Yakima Avenue, Suite 200  
Yakima, Washington 98902-3452

*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 at Yakima, Washington this 28<sup>th</sup> day of January, 2009.**

**Prepared By:**

*Proposed Decision*  
David Ogulei, Ph.D., P.E.  
Air Quality Engineer  
Department of Ecology

**Approved By:**

*Proposed Decision*  
Susan M. Billings  
Air Quality Section Manager  
Department of Ecology

PROPOSED