

Section I: AQMD BACT Determinations

Application No.: 418235

Equipment Category – I.C. Engine, Stationary, Non-Emergency

1. GENERAL INFORMATION		DATE: 7/23/2004
A. MANUFACTURER: Cummins		
B. TYPE: Diesell	C. MODEL: QSK78-G6	
D. STYLE: Turbocharged, aftercooled, lean-burn		
E. APPLICABLE AQMD RULES: 1110.2		
F. COST: \$ (NA)	SOURCE OF COST DATA:	
G. OPERATING SCHEDULE:	24 HRS/DAY	7 DAYS/WK
		16 WKS/YR

2. EQUIPMENT INFORMATION		APP. NO.: 418235
A. FUNCTION: Drives 2199 kW generator, which provides power for snow making equipment.		
B. MAXIMUM HEAT INPUT: 132.4 gph diesel	C. MAXIMUM THROUGHPUT: 2835 bhp	
D. BURNER INFORMATION: NO.: TYPE:		
E. PRIMARY FUEL: Diesel	F. OTHER FUEL:	
G. OPERATING CONDITIONS: Intermittent, steady-full load		

3. COMPANY INFORMATION		APP. NO.: 418235
A. NAME: Snow Summit, Inc.	B. SIC CODE: 7999	
C. ADDRESS: 880 Summit Blvd.		
CITY: Big Bear Lake	STATE: CA	ZIP: 92315
D. CONTACT PERSON: Robert Sokolowski	E. PHONE NO.: 909-866-5766	

4. PERMIT INFORMATION		APP. NO.: 418235
A. AGENCY: SCAQMD	B. APPLICATION TYPE: new construction	
C. AGENCY CONTACT PERSON: Roy Olivares	D. PHONE NO.: 909-396-2208	
E. PERMIT TO CONSTRUCT/OPERATE INFORMATION:	P/C NO.: 418235	ISSUANCE DATE: 8/26/2003
<input type="checkbox"/> CHECK IF NO P/C	P/O NO.:	ISSUANCE DATE:
F. START-UP DATE: December 2003		

5. EMISSION INFORMATION		APP. NO.: 418235
A. PERMIT		
A1. PERMIT LIMIT: RECLAIM Large Source. PPMVD@15%O2: NOx-50, CO-89, VOC-39. G/BHP-HR: VOC-0.15, PM10-.045. NH3-10 PPM. Sulfur in fuel purchased on/after June 1, 2004: 15 ppm (wt.). Operation restricted to 1600 hrs/yr. Source test initially and every 3 years. Annual ammonia test. Continuous NOx monitor (not CEMS). Particulate filter to be cleaned annually.		

5. EMISSION INFORMATION

APP. NO.: 418235

A2. BACT/LAER DETERMINATION: Permit limits were considered BACT except that VOC limit may be increased if engine cannot meet the 39 ppmvd@15%O₂ (0.15 g/bhp-hr).

A3. BASIS OF THE BACT/LAER DETERMINATION: The VOC BACT limit was requested by the applicant and supported by normal stack VOC estimated by the engine manufacturer and VOC removal guaranteed by the catalyst vendor. The NO_x, CO and PM₁₀ BACT limits were based on maximum emissions estimated by the catalyst vendor. The CO and .045 PM₁₀ limits were consistent with AQMD's BACT guidelines for those pollutants. The ammonia limit of 10 ppm was guaranteed by the catalyst vendor.

B. CONTROL TECHNOLOGY

B1. MANUFACTURER/SUPPLIER: Johnson Matthey

B2. TYPE: SCR system and diesel particulate filter

B3. DESCRIPTION: SCR catalyst: model No. 3030SS-2T-X, 2 layers, each layer 6' x 6' x 3.5", vanadium, operating temperatures (min/max/design) 600F/1000F/820F. Diesel particulate filter: model No. 4040SS-16CRT-X

B4. CONTROL EQUIPMENT PERMIT APPLICATION DATA: P/C NO.: 418237 ISSUANCE DATE: 8/25/2003
P/O NO.: ISSUANCE DATE:

B5. WASTE AIR FLOW TO CONTROL EQUIPMENT: FLOW RATE: 17,225 acfm (820F)
ACTUAL CONTAMINANT LOADING: BLOWER HP:

B6. WARRANTY: The following removals (and maximum of 10 ppm ammonia slip) were guaranteed by Johnson Matthey: NO_x-94.62%, CO-50%, HC-25%, PM-85%.

B7. PRIMARY POLLUTANTS: NO_x, CO, VOC, PM₁₀

B8. SECONDARY POLLUTANTS: Ammonia

B9. SPACE REQUIREMENT: SCR: 78"W x 76"H x 91"L; Filter: 58"W x 58"H x 90"L

B10. LIMITATIONS: B11. UNUSED

B12. OPERATING HISTORY: Was used during 2003-2004 ski season

B13. UNUSED B14. UNUSED

C. CONTROL EQUIPMENT COSTS

C1. CAPITAL COST: CHECK IF INSTALLATION COST IS INCLUDED IN EQUIPMENT COST

EQUIPMENT: \$ INSTALLATION: \$ (NA) SOURCE OF COST DATA:

C2. ANNUAL OPERATING COST: \$ (NA) SOURCE OF COST DATA:

D. DEMONSTRATION OF COMPLIANCE

D1. STAFF PERFORMING FIELD EVALUATION:

ENGINEER'S NAME: INSPECTOR'S NAME: DATE:

D2. COMPLIANCE DEMONSTRATION:

D3. VARIANCE: NO. OF VARIANCES: None DATES:
CAUSES:

D4. VIOLATION: NO. OF VIOLATIONS: None DATES:
CAUSES:

D5. MAINTENANCE REQUIREMENTS: D6. UNUSED

5. EMISSION INFORMATION

APP. NO.: 418235

D7. SOURCE TEST/PERFORMANCE DATA RESULTS AND ANALYSIS:

DATE OF SOURCE TEST: March 30, 2004

CAPTURE EFFICIENCY:

DESTRUCTION EFFICIENCY:

OVERALL EFFICIENCY:

SOURCE TEST/PERFORMANCE DATA:

	ppmvd@15%O2	g/bhp-hr
NOx	45	0.546
CO	5	
NMNEOC as CH4	49	0.21
NH3	0.6	
PM		.009 (including condensibles)
PM10		.003 (excluding condensibles)
O2, % (dry)	9.3	
Flow, acfm	19,379	
Stack Temp., F	840	

OPERATING CONDITIONS: 2814-2825 hp, 137-147 gph fuel,

TEST METHODS: AQMD Methods 100.1, 5.2, 25.3, 207.1; USEPA Method 201a (in-stack measurement of PM10, excludes condensibles). Test was approved by AQMD Monitoring & Source Test Engineering group.

6. COMMENTS

APP. NO.: 418235

AQMD's Clean Fuels Policy would normally require a stationary, non-emergency engine to be natural gas-fired. However, natural gas is not available in this mountain community.

The applicant requested the 0.15 g/bhp-hr (39 ppmvd@15%O2) limit on VOC, which was below the initial BACT determination of 0.2 g/bhp-hr, to stay below 4 tpy (threshold for offsets requirement). The 0.15 limit was supported by engine test data (0.14 g/bhp-hr) and the 25% VOC removal guaranteed by Johnson Matthey. In that the source test indicated a VOC emission rate of 0.21 g/bhp-hr, the engine will be adjusted and retested. The final limit may be increased above 0.15, but no higher than 0.2 g/bhp-hr, and the limit on hrs/yr may be reduced accordingly to stay below 4 tpy.