Pursuant to the authority vested in California Air Resources Board by the Health and Safety Code, Division 26, Part 5, Chapters 1 and 2; and

Pursuant to the authority vested in the undersigned by Health and Safety Code Sections 39515 and 39516 and Executive Order G-14-012;

IT IS ORDERED AND RESOLVED: That the following new large spark-ignition engines and emission control systems produced by the manufacturer are certified for use in off-road equipment as described below. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL ENGINE FAMILY YEAR NAME		ENGINE DISPLACEMENT (liters)	FUEL TYPE		
2018	JWGCB02.4HMC	2.4	LPG and Gasoline-LPG Dual Fuel		
		IAL FEATURES & CONTROL SYSTEMS	TYPICAL EQUIPMENT USAGE		
5000	Heate	ay Catalytic Converter, d Oxygen Sensor, Port Fuel Injection (Gasoline)	Forklift, Aerial Lift and Sweeper		
ENC	GINE MODELS wer in kilowatt, kW)	Se	ee Attachment		

The following are the hydrocarbon plus oxides of nitrogen (HC+NOx) and carbon monoxide (CO) exhaust certification emission standards (Title 13, California Code of Regulations, (13 CCR) Section 2433(b)(1)) and certification emission levels for this engine family in grams per kilowatt-hour (g/kW-hr). Engines within this engine family shall have closed crankcases in conformance with 13 CCR Section 2433(b)(3).

(g/kW-hr)	HC+NOx	со
Exhaust Standards	0.8	20.6
Certification Levels	0.4	0.6

The following is the evaporative hydrocarbon emission standard (13 CCR Section 2433(b)(4)) and certification emission level for this engine family in grams per gallon of fuel tank capacity (g/gallon).

Evaporative Certification Method	HC Certification Level (g/gallon)	HC Certification Standard (g/gallon)		
Design Based	N/A	0.2		

BE IT FURTHER RESOLVED: That for the listed engines for the aforementioned model-year, the manufacturer has submitted, and the Executive Officer hereby approves, the information and materials to demonstrate certification compliance with 13 CCR Section 2433(c) (certification and test procedures), 13 CCR Section 2434 (emission control labels), and 13 CCR Sections 2435 and 2436 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this \_\_\_\_\_ day of December 2017.

Annette Hebert, Chief Emissions Compliance, Automotive Regulations and Science Division

ATTACHMENT BLOFF

Model Year: 2018 Manufacturer Name: <u>Woodward</u>, Inc. Engine Family: <u>JWGCB02.4HMC</u> OFF-ROAD LSI ENGINE SUPPLEMENTAL INFORMATION

S12. MODEL SUMMARY (Use an asterisk (\*) to identify worst-case engine model used for certification testing.)

S13. Engine Model	S14. Engine Code	S15. Sales Codes (Check ALL appropriate)		S16. Eng. Displ. (Liters)	S17. Rated Power (kW)	S18. Rated Speed (RPM)	S19. Peak Torque (N-m)	S20. Peak Torque Speed	
		Calif. Only	49- State	50- State	(Lices)	(1444)		((()))	(RPM)
HMC 2.4L LPG	Theta 2.4L			х	2.4	48.7	2600	186	1900
HMC 2.4L LPG De-rated	Theta 2.4L			x	2.4	33.9	2450	147.8	1600
HMC 2.4L Dual	Theta 2.4L			x	2.4	48.7	2600	186	1900
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