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## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

September 29, 2008

Mr. Nick Economides  
Executive Vice President  
Commercial Products and Technology Management  
ORYXE Energy International, Inc.  
9805 Research Drive  
Irvine, CA 92618

Re: Alternative Diesel Fuel Formulation Approval Notification

Dear Mr. Economides:

The Texas Commission on Environmental Quality (TCEQ) has approved in accordance with the TCEQ regulations specified under Title 30 Texas Administrative Code (30 TAC) §114.315(c) the alternative diesel fuel formulation for Texas low emission diesel fuel (TxLED) consisting of a biodiesel/diesel fuel blend comprised of 20 percent or less by volume of ASTM D6751-compliant B100 biodiesel and 80 percent or more by volume of diesel fuel as defined under 30 TAC §114.6 that is compliant with the TxLED regulations specified under 30 TAC §114.312 or §114.318 treated with a minimum of 0.85 milliliters (ml) of the ORYXE Energy International, Inc., ORYXE™ LED+5510 diesel additive per gallon of the biodiesel/diesel fuel blend. This approval is based upon the following findings:

- The emissions testing performed by the National Center for Alternative Fuels, Engines and Emissions at West Virginia University (WVU) in Morgantown, West Virginia, was conducted in accordance with the procedures specified under 30 TAC §114.315(c).
- The emissions of nitrogen oxides (NO<sub>x</sub>) and particulate matter (PM) from the nine eligible candidate fuel emissions tests were less than the NO<sub>x</sub> and PM emissions from the six TxLED reference fuel emissions tests as determined in accordance with the emissions comparison calculations specified under 30 TAC §114.315(c)(5). In addition, the average emissions of total hydrocarbons (THC) and non-methane hydrocarbons (NMHC) recorded during the candidate fuel testing did not exceed the test engine's applicable emission standards.
- The comparative analysis of the emission test data from the testing of the ORYXE™ LED+5510 additive treated formulation indicate it has met the conditions specified under

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30 TAC §114.315(c)(5) to be approved by the Texas Commission on Environmental Quality as an alternative diesel formulation for TxLED.

This approval only applies to the alternative diesel fuel formulation consisting of a biodiesel/diesel fuel blend comprised of 20 percent or less by volume of ASTM D6751-compliant B100 biodiesel and 80 percent or more by volume of TxLED-compliant diesel fuel treated with a minimum of 0.85 ml of the ORYXE™ LED+5510 diesel additive per gallon of the biodiesel/diesel fuel blend, and as described in the TCEQ's Approval Notification issued under the following notice number:

- TCEQ assigned identification number: TXLED-A-00019.

As a TCEQ approved alternative diesel fuel formulation, diesel fuel producers may use an ORYXE™ LED+5510 diesel additive treated biodiesel/diesel fuel blend comprised of 20 percent or less by volume of ASTM D6751-compliant B100 biodiesel and 80 percent or more by volume of TxLED-compliant diesel fuel for compliance with the TxLED fuel content requirements as provided in the TCEQ regulations under 30 TAC §114.312(f). Producers using this product will be required to comply with the registration requirements specified in the TCEQ regulations under 30 TAC §114.314 and the appropriate monitoring, recordkeeping, and reporting requirements specified in the TCEQ regulations under 30 TAC §114.316.

This approval is subject to the actual emissions performance of diesel-powered engines using an ORYXE™ LED+5510 diesel additive treated biodiesel/diesel fuel blend comprised of 20 percent or less by volume of ASTM D6751-compliant B100 biodiesel and 80 percent or more by volume of TxLED-compliant diesel fuel. Evidence that an ORYXE™ LED+5510 diesel additive treated biodiesel/diesel fuel blend comprised of 20 percent or less by volume of ASTM D6751-compliant B100 biodiesel and 80 percent or more by volume of TxLED-compliant diesel fuel does not result in emissions that are equivalent to or better than diesel fuel meeting the cetane number and aromatic hydrocarbons content requirements of TxLED may result in the revocation of this approval or other appropriate enforcement action. This approval is also subject to proper treatment and storage of an ORYXE™ LED+5510 diesel additive treated biodiesel/diesel fuel blend comprised of 20 percent or less by volume of ASTM D6751-compliant B100 biodiesel and 80 percent or more by volume of TxLED-compliant diesel fuel.

ORYXE Energy International, Inc., is required to provide detailed written instructions regarding the specific storage requirements, blending methods, and treatment rate to any producer using this approved alternative diesel fuel formulation for compliance with the TxLED requirements that are necessary to ensure proper emissions performance of the ORYXE™ LED+5510 diesel additive treated biodiesel/diesel fuel blend comprised of 20 percent or less by volume of ASTM D6751-compliant B100 biodiesel and 80 percent or more by volume of TxLED-compliant diesel fuel. Improper storage, blending, and/or additive treatment rate of an ORYXE™ LED+5510 diesel additive treated biodiesel/diesel fuel blend comprised of 20 percent or less by volume of

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ASTM D6751-compliant B100 biodiesel and 80 percent or more by volume of TxLED-compliant diesel fuel may result in enforcement action.

Enclosed with this letter is the Approval Notification documenting the TCEQ's approval of the formulation consisting of an ORYXE™ LED+5510 diesel additive treated biodiesel/diesel fuel blend comprised of 20 percent or less by volume of ASTM D6751-compliant B100 biodiesel and 80 percent or more by volume of TxLED-compliant diesel fuel.

This letter and the Approval Notification document will be posted to the TCEQ website for public notice at the following link:

<http://www.tceq.state.tx.us/implementation/air/sip/cleandiesel.html>.

If you have any additional questions or need further assistance in regards to this process, please contact Mr. Morris Brown in the TCEQ's Air Quality Planning Section at (512) 239-1438 or [mbrown@tceq.state.tx.us](mailto:mbrown@tceq.state.tx.us).

Sincerely,



David C. Schanbacher, P.E.  
Chief Engineer  
Texas Commission on Environmental Quality

DS/MB/sy

Enclosure