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Lubrication Engineers, Inc.
Mr. Eric Ndegwa
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Our reference	PIT/2010/0329
Date	December 8, 2010

**Turbine Oil Approval according to Siemens TLV 901304 and TLV 901305
"6461 Monolec Turbine Oil"**

Dear Mr. Ndegwa,

We carried out approval testing on the product "6461 Monolec Turbine Oil" according to Siemens turbine oil specifications TLV 9013 04 and TLV 901305. The results are in accordance with these specifications. They are listed in the enclosed test certificate.

Herewith we give the formal approval for "6461 Monolec Turbine Oil" for use in Siemens turbosets with and without gearbox.

The product will be published in the list of approved turbine oils.

Sincerely yours,

Enclosure
Test Certificate



Dr. Ludger Quick

Siemens AG
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Fossil Power Generation Division; Management: Michael Suess
Products; Management: Roland Fischer

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Registered offices: Berlin and Munich, Germany; Commercial registries: Berlin Charlottenburg, HRB 12300, Munich, HRB 6684
WEEE-Reg.-No. DE 23691322

SIEMENS**Test Certificate**

Lube Oil Analysis

No. S3059

13501

Code word:	Approval TLV 9013	Customer:	Eric Ndegwa
Turbine type:		Department:	Lubrication Engineers
Serial No:		Telephone:	
Oil type:	6461 Monolec Turbine Oil	SAP account no:	
Manufacturer/Supplier:	Lubrication Engineers	Date of receipt:	2010-10-04
Sampling date:		Sampling:	sample for approval

Test Results:

Air release at 50°C	DIN ISO 9120	2 min
Neutralization Number	DIN 51558-1	0.11 mg KOH/g
Water content	DIN 51777-1	< 0.01 %
Foaming tendency at 25°C	ISO 6247	0 ml
Foam stability at 25°C	ISO 6247	0 s
Rest after 600 s at 25°C	ISO 6247	0 ml
Water separability	DIN 51589-1	110 s
Viscosity at 40°C	DIN 51562-1	29.7 mm ² /s
Density at 15°C	DIN 51757	0.865 g/ml
Colour (ASTM scale)	DIN ISO 2049	L 0.5
Flash point (Cleveland open cup)	DIN EN ISO 2592	206 °C
Pour point	DIN ISO 3016	< -12 °C
Cleanliness code	ISO 4406	16/13/11
Corrosiveness to copper	DIN EN ISO 2160	passed

Comments:

Failure load stage (FZG test, DIN ISO 14635-1): 8 (test carried out by TÜV NORD Systems GmbH)

Elaborator: **Henrichs**Testing date: **2010-12-02**Counter-signature: **sgd. Quick**