

Annexure 3 – Biomass Calorific Value Test Reports



Industrial Testing & Analytical Laboratories
Surveyors, Samplers & Analysts

Italab Salem Private Limited An ISO 9001 : 2000 Certified Laboratory

REGD OFFICE : 4-A (New 36) Rajaji Road, Salem 636 007, T.Nadu
Tel: 0427 2319264 Fax: 0427 5030113 Mobile: 98940 31046
Website : www.italabs.com e-mail : italabsalem@eth.net

CERTIFICATE OF ANALYSIS

No. 23041

Lab Memo No.: 10361

Sample No: 0417

Date : 01/06/2005

Sample Submitted by the party
Received by us on 23/05/2005

We hereby certify that a sample described as: WOOD PIECES ၁၂၆

From: M/S.RAGHU RAMA RENEWABLE ENERGY LIMITED, PAMBOOR

with the following marks: # "NIL"

Quantity : about 200 gm

has been analyzed with the following results:

Analysed on Received Basis:

Net Calorific Value : 3840 Kcals/kg

»»» End of the report «««

Page 1 of 1

Checked by

Analyst

For Italab Salem Private Ltd.

Chief Chemist

ASSOCIATES :

ITALAB PVT LTD. MUMBAI + CHENNAI + KOLKATA + VIZAG + BELLARY JAMNAGAR + ITALAB (GOA) PVT. LTD. GOA + MANGALORE + ITALAB (JAPAN) LTD., JAPAN + POHANG (S.KOREA)

All work is carried out to the best of our ability, however, without any responsibility on our part and without affecting in any way the contractual rights of our principals. Our report is limited to the test samples identified herein. This report is strictly confidential. Its use for publicity, arbitration or as evidence in legal proceedings is prohibited.



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CERTIFICATE OF ANALYSIS

No. 30758

Lab Memo No.: 16605 Sample No: 0753 Date: 01/07/2006

We hereby certify that a sample described as: WOOD LEANE PIECES Sample Submitted by the party: Jf rate fixer
Received by us on 30/06/2006

From: M/S.RAGHU RAMA RENEWABLE ENERGY LIMITED, PAMBOOR

with the following marks: # "NIL "

Quantity : about 200 gm

has been analyzed with the following results:

Analysed on Received Basis:

Net Calorific Value : 3775 Kcals/kg

»»» End of the report «««

*Received
22/7/06
RUP*

Page 1 of 1

Checked by: [Signature] For Italab Salem Private Ltd.
Analyst: [Signature] Chief Chemist



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Surveyors Samplers & Analysts

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CERTIFICATE OF ANALYSIS

No. 17521

Lab Memo No.: 7677	Sample No: 0275	Date: 11/12/2004
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Sample Submitted by the party
Received by us on 01/12/2004

We hereby certify that a sample described as: WOOD PIECES ^{27f}
From: M/S.RAGHU RAMA RENEWABLE ENERGY LIMITED, PAMBOOR

with the following marks: # "NIL"

Quantity : about 500 gm

has been analyzed with the following results:

Analysed on Received Basis:

Net Calorific Value : 3920 Kcals/kg

»»» End of the report «««

Page 1 of 1

Checked by

Analyst

For Italab Salem Private Ltd.

Chief Chemist

ASSOCIATES :

ITALAB PVT LTD MUMBAI + CHENNAI + KOLKATA + VIZAG + BELLARY JAMNAGAR + ITALAB (GOA) PVT LTD GOA + MANGALORE + ITALAB (JAPAN) LTD, JAPAN + POHANG (S.KOREA)

All work is carried out to the best of our ability, however, without any responsibility on our part and without affecting in any way the contractual rights of our principals. Our report is limited to the test samples identified herein. This report is strictly confidential. Its use for publicity, arbitration or as evidence in legal disputes is strictly prohibited.



Hubert Enviro Care Systems (P) Ltd.

(An Associate of Hubert Stavoren B.V., Holland)



PHYSICO CHEMICAL DIVISION TEST REPORT

Name of the Client : M/s.RAGHU RAMA
Address of the Client : Beside Melakavanoor EB Sub Stn
Sample Mark : Juliflora
Sample Drawn by : Client
Sampling / Received Date : 28/10/04
Client's Reference : Nil
Sample Reference No : E-W-430/10 -PC
Analysis Commenced On : 30/10/04
Method of Sampling & Analysis: AS PER ASTM PROCEDURES D 2790 -78

Page 1 of 1
Report No. 0980
Report Date: 01/11/04

Famboor Village, Paramakudi, Ramnad District

S.No	Parameters	Units	Values
1	Moisture Content	% W/W	26.6
2	Net Calorific Value	Kcal/Kg	3090

Authorized By


A. Raghunathan
Manager (Laboratory)

Note: Results related to the items tested only

18, 92nd Street, Ashok Nagar, Chennai - 600 083.

Ph.: 43054091 - 43054095

Fax : 43054096 & 24891007

E-mail : mosess@md3.vsnl.net.in Website : www.hecs.co.in





Hubert Enviro Care Systems (P) Ltd.



(An Associate of Hubert Stavoren B.V., Holland)

PHYSICO CHEMICAL DIVISION TEST REPORT

Name of the Client : M/s.RAGHU RAMA
Address of the Client : Beside Melakavanoor EB Sub Stn
Sample Mark : Juliflora
Sample Drawn by : Client
Sampling / Received Date : 30/07/05
Client's Reference : Nil
Sample Reference No : E-W-420/07 -PC
Analysis Commenced On : 01/08/05
Method of Sampling & Analysis: AS PER ASTM PROCEDURES D 2790 -78

Page 1 of 1

Report No. 0588

Report Date: 03/08/05

Pamboor Village, Paramakudi, Ramnad District

Completed On: 01/08/05

S.No	Parameters	Units	Values
1	Moisture Content	% W/W	26.5
2	Net Calorific Value	Kcal/Kg	3090

Authorized By

A.Ragunathan
Manager (Laboratory)

Note: Results related to the items tested only

18, 92nd Street, Ashok Nagar, Chennai - 600 083.

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Fax : 43054096 & 24891007

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Hubert Enviro Care Systems (P) Ltd.

(An Associate of Hubert Stavoren B.V., Holland)



PHYSICO CHEMICAL DIVISION TEST REPORT

Name of the Client : M/s.RAGHU RAMA
Address of the Client : RENEWABLE ENERGY LIMITED
Beside Melakavanoor EB Sub Stn
Pamboor Village, Paramakudi, Ramnad District
Sample Mark : Juliflora
Sample Drawn by : Client
Sampling / Received Date : 06/09/06
Client's Reference : Nil
Sample Reference No : E-W-070/09 -PC
Analysis Commenced On : 08/09/06
Method of Sampling & Analysis: AS PER ASTM PROCEDURES D 2790 -78

Page 1 of 1

Report No. 0880

Report Date: 10/09/06

Completed On: 08/09/06

S.No	Parameters	Units	Values
1	Moisture Content	% W/W	26.0
2	Net Calorific Value	Kcal/Kg	3042

Authorized By

A. Raghunathan
Manager (Laboratory)

Note: Results related to the items tested only

18, 92nd Street, Ashok Nagar, Chennai - 600 083.

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Hubert Enviro Care Systems (P) Ltd.



(An Associate of Hubert Stavoren B.V., Holland)

PHYSICO CHEMICAL DIVISION TEST REPORT

Name of the Client : M/s.RAGHU RAMA
Address of the Client : RENEWABLE ENERGY LIMITED
Sample Mark : Juliflora
Sample Drawn by : Client
Sampling / Received Date : 06/12/06
Client's Reference : Nil
Sample Reference No : E-W-068/12 -PC
Analysis Commenced On : 08/12/06
Method of Sampling & Analysis: AS PER ASTM PROCEDURES D 2790 -78

Page 1 of 1
Report No. 1250
Report Date: 10/12/06
Pamboor Village, Paramakudi, Ramnad District

Completed On: 08/12/06

S.No	Parameters	Units	Values
1	Moisture Content	% W/W	10.9
2	Net Calorific Value	Kcal/Kg	3840

Authorized By

A. Raghunathan
Manager (Laboratory)

Note: Results related to the items tested only

18, 92nd Street, Ashok Nagar, Chennai - 600 083.
Ph.: 43054091 - 43054095
Fax : 43054096 & 24891007
E-mail : business@md3.vsnl.net.in Website : www.hecs.co.in





Hubert Enviro Care Systems (P) Ltd.

(An Associate of Hubert Stavoren B.V., Holland)



PHYSICO CHEMICAL DIVISION TEST REPORT

Name of the Client : M/s.RAGHU RAMA
Address of the Client : Beside Melakavanoor EB Sub Stn
Sample Mark : Juliflora
Sample Drawn by : Client
Sampling / Received Date : 09/09/05
Client's Reference : Nil
Sample Reference No : E-W-090/09 -PC
Analysis Commenced On : 11/09/05
Method of Sampling & Analysis: AS PER ASTM PROCEDURES D 2790 -78

Page 1 of 1
Report No. 0675
Report Date: 13/09/05
Completed On: 11/09/05

S.No	Parameters	Units	Values
1	Moisture Content	% W/W	26.9
2	Net Calorific Value	Kcal/Kg	3108

Authorized By

A.Ragunathan
Manager (Laboratory)

Note: Results related to the items tested only

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Fax : 43054096 & 24891007

E-mail : moses@md3.vsnl.net.in Website : www.hecs.co.in





Hubert Enviro Care Systems (P) Ltd.

(An Associate of Hubert Stavoren B.V., Holland)



PHYSICO CHEMICAL DIVISION TEST REPORT

Name of the Client : M/s.RAGHU RAMA
 Address of the Client : RENEWABLE ENERGY LIMITED
 : Beside Melakavanoor EB Sub Stn
 : Pamboor Village, Paramakudi, Ramnad District
 Sample Mark : Juliflora
 Sample Drawn by : Client
 Sampling / Received Date : 10/05/05
 Client's Reference : Nil
 Sample Reference No : E-W-125/05 -PC
 Analysis Commenced On : 12/05/05
 Method of Sampling & Analysis: AS PER ASTM PROCEDURES D 2790 -78

Page 1 of 1
 Report No. 0382
 Report Date: 14/05/05
 Completed On: 12/05/05

S.No	Parameters	Units	Values
1	Moisture Content	% W/W	27.5
2	Net Calorific Value	Kcal/Kg	3180

Authorized By

A.Raghunathan
 A.Raghunathan
 Manager (Laboratory)

Note: Results related to the items tested only

18, 92nd Street, Ashok Nagar, Chennai - 600 083.
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 Fax : 43054096 & 24891007
 E-mail: enquiries@md3.vsnl.net.in Website : www.hecs.co.in





Hubert Enviro Care Systems (P) Ltd.



(An Associate of Hubert Stavoren B.V., Holland)

PHYSICO CHEMICAL DIVISION TEST REPORT

Name of the Client : M/s.RAGHU RAMA
Address of the Client : Beside Melakavanoor EB Sub Stn
Sample Mark : Rice Husk
Sample Drawn by : Client
Sampling / Received Date : 29/06/06
Client's Reference : Nil
Sample Reference No : E-W-480/06 -PC
Analysis Commenced On : 01/07/06
Method of Sampling & Analysis: AS PER ASTM PROCEDURES D 2790 -78

Page 1 of 1
Report No. 0600
Report Date: 03/07/06
Completed On: 01/07/06

S.No	Parameters	Units	Values
1	Moisture Content	% W/W	8.6
2	Net Calorific Value	Kcal/Kg	3274

Authorized By

A. Raghunathan
Manager (Laboratory)

Note: Results related to the items tested only

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Fax : 43054096 & 24891007
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Hubert Enviro Care Systems (P) Ltd.

(An Associate of Hubert Stavoren B.V., Holland)



PHYSICO CHEMICAL DIVISION TEST REPORT

Name of the Client : M/s.RAGHU RAMA
Address of the Client : Beside Melakavanoor EB Sub Stn
Sample Mark : Rice Husk
Sample Drawn by : Client
Sampling / Received Date : 21/12/05
Client's Reference : Nil
Sample Reference No : E-W-350/12 -PC
Analysis Commenced On : 23/12/05
Method of Sampling & Analysis: AS PER ASTM PROCEDURES D 2790 -78

Page 1 of 1

Report No. 1240

Report Date: 23/12/05

Completed On: 23/12/05

S.No	Parameters	Units	Values
1	Moisture Content	% W/W	9.4
2	Net Calorific Value	Kcal/Kg	3318

Authorized By


A. Raghunathan
Manager (Laboratory)

Note: Results related to the items tested only

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Hubert Enviro Care Systems (P) Ltd.



(An Associate of Hubert Stavoren B.V., Holland)

PHYSICO CHEMICAL DIVISION TEST REPORT

Name of the Client : M/s.RAGHU RAMA
 Address of the Client : Beside Melakavanoor EB Sub Stn
 Pamboor Village, Paramakudi, Ramnad District
 Sample Mark : Rice Husk
 Sample Drawn by : Client
 Sampling / Received Date : 21/09/06
 Client's Reference : Nil
 Sample Reference No : E-W-370/09 -PC
 Analysis Commenced On : 23/09/06
 Method of Sampling & Analysis: AS PER ASTM PROCEDURES D 2790 -78

Page 1 of 1
 Report No. 0980
 Report Date: 24/09/06
 Completed On: 23/09/06

S.No	Parameters	Units	Values
1	Moisture Content	% W/W	9.0
2	Net Calorific Value	Kcal/Kg	3320

Authorized By

A.Raghunathan
 Manager (Laboratory)

Note: Results related to the items tested only

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ISO 9001:2000 Registered Company
 Certified by BUREAU VERITAS

Internal Lab
Report

Raghu Rama Renewable Energy Ltd.
Pamboor Village.
Paramakudi.

Fuel Analysis Report

Date	:	01.07.2004
IGP No	:	1549
Name	:	Ganesan
Fuel Name	:	Juliflora
Veh.No	:	TN 59 Z 3
Gross wt	:	12.24
Tr Wt	:	5.77
Net wt	:	6.47
Moisture %	:	28.99
Ash %	:	0.83
NCV / Kcal / Kg	:	3156

