DAVID SMITH

David Smith St Ives Ltd.,
Marley Road, St Ives, Huntingdon, Cambs. PE17 6EX
Telephone 01480 462323 Fax 01480 494832

Mr C Watkin
Huntingdonshire District Council
Pathfinder House
St Mary's Street
Huntingdon
Cambs
PE18 6TN

30th June, 1999

Dear Mr Watkin

Further to your letter dated 14th May 1999, we are pleased to be able to enclose the results of the Emission Monitoring of the Boiler Plant Carried out on 14th June 1999

Yours Sincerely

Charlie Stocker
Health and Safety Officer

REPORT ON STACK EMISSION MONITORING FOR DAVID SMITH ST. IVES LIMITED MARLEY ROAD ST. IVES HUNTINGDON CAMBRIDGESHIRE PE17 6EX

JOB No: 99/1034

REPORT No: 1381

Prepared by: D. F. Evans B.Sc., C.Chem., FRSC, DMS.

Signed: David F. Evans

Date: 28 June 1999

Evans Environmental Consultancy
22, Russell Gardens, Chelmsford, Essex. CM2 8DB
Telephone / Fax: 01245 260783; E-mail: evans.encon@lineone.net

1. INTRODUCTION

1.1 Evans Environmental Consultancy was instructed by David Smith St. Ives Limited to monitor the emissions from the stack of the wood burning furnace at their factory in St. Ives.

1.2 The monitoring was carried out by Mr. D. F. Evans on Monday 14 June 1999 and was covered by order number PO/70 22516.

1.3 Tests were carried out to measure:

- 1.3.1 Particulates
- 1.3.2 Oxygen
- 1.3.3 Carbon monoxide
- 1.3.4 Moisture

1.4 Two 4 inch BSP sample ports complying with the requirements of BS 3405 are provided in a horizontal part of the stack, but the upper port is so close to the roof of the boiler house that there was no room to insert the probes.

1.5 The stack was of small diameter which meant that the sample point at 15% of the diameter could not be used with the filter holder within the stack, so sample points at 45% and 85% of the diameter were used. In addition, to make up for the fact that the second sample port could not be used, duplicate samples were taken from the first port.

2. SUMMARY OF RESULTS

	Corrected to N.T.P.	Corrected to 11% O_2
Particulates, mg/m^3	109	93
Oxygen, % O_2	9.3	11.0
Carbon monoxide, mg/m^3 CO	616	526

Note: these results are all on dry gas.

Moisture 28 mg/litre

The guidance note limits for this type of burner are:

Particulates	200 mg/m^3
Carbon monoxide	individual limits set for existing processes

3. SOURCE TESTING ASSOCIATION

Required Reporting Criteria

A) Objectives of the test

To measure the incinerator emissions for comparison with guidance limits.

B) The methods used

Particulates measured isokinetically.
Oxygen and carbon monoxide by means of electrochemical cells.

C) The *operational* protocol followed

Particulates measured according to BS 3405 using an Aquaria sampling system.
Oxygen and carbon monoxide to an in-house protocol using a Testo 33 combustion efficiency analyser.

D) Any deviations from the standard method

None.

E) Identity of the equipment used

Particulates: Aquaria system on hire from Associated Laboratory Services Limited.
Oxygen and carbon monoxide: Test 33 analyser, serial number 0405.

F) Person who carried out the test

D. F. Evans.

G) The conditions in the duct

Temperature, °C	127
Static pressure, Pascals	not measured
Velocity pressure, Pascals	121
Linear velocity, m/s	15.6
Moisture content, mg/l	28

H) The plant operating conditions

The plant was operating under normal conditions and was under full load during the tests.

I) Accuracy

BS 3405 quotes an accuracy of ± 25% on the figures for particulates.
Testo Limited quote ± 10% for the measurements with their instrument.

4.3 MOISTURE

Gas from the stack, filtered through a glass fibre plug to remove particulates, was drawn through a tube containing indicating silica gel. The tube was weighed before and after the sampling and the volume of gas was determined from the sampling time and the sampling rate.

Sample number	3792
Time on	10.43
Time off	13.05
Sampling rate, *l/min*	1.28
Volume sampled, litres	181:8
Weight water, g. H_2O	5
Concentration, mg/l	27.5

Source Test Observance Report

Contractor EVANS ENVIRONMENTAL CONSULTANCY	**STA Endorsement N°** P10012
Customer DAVID SMITH ST. IVES LTD	**Tel N°** 01480 462323
Contact CHARLIE STOCKER	**Fax N°** 01480 496632
Site Location MARLEY ROAD ST. IVES HUNTINGDON CAMBS. PE17 6EX	**Process** WOOD BURNING BOILER
Site Contact CHARLIE STOCKER	**Safety Contact**

Description and purpose of test

EMISSION TESTS ON BOILER STACK FOR PARTICULATES, OXYGEN, CARBON MONOXIDE & MOISTURE FOR REGULATORY PURPOSES

PARTICULATES TO BS 3405

Risk & COSHH assessment carried	Yes	~~No~~	Date 14/6/99 ON SITE ON ARRIVAL
Site inspection prior to test	~~Yes~~	No	Date .....
Process / flue gas data obtained	Yes	~~No~~	Stack gas moisture 28 mg/l Stack gas temperature 140 °C

Deviation from test specification and/or standard

THE UPPER SAMPLE PORT WAS TOO CLOSE TO THE ROOF TO ALLOW ENTRY OF THE PROBES — READINGS COULD ONLY BE TAKEN FOR PARTICULATES THROUGH THE LOWER PORT. THE STACK WAS SMALL DIAMETER SO PARTICULATE READINGS COULD ONLY BE TAKEN AT 45% & 85% OF DIAMETER (INSTEAD OF 16.7% & 85%). DUPLICATE TESTS WERE TAKEN HERE TO ALLOW FOR UPPER PORT

Test Carried out by	DFEvans	**Customer Signature**	C Stocker
Print Name	D F EVANS	**Print Name**	C STOCKER
Date	14 June 1999	**Date**	14.6.99