

CHINCO FIRESIDE TREATMENT CC

CK 95/56226/23



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APRIL 2015

THE BRITISH AMERICAN TOBACCO COMPANY, SOUTH AFRICA, RECENTLY ARRANGED FOR ASHREQ A GOVT CERTIFIED ENVIRONMENTAL CONSULTANT TO CARRY OUT A FULL ISOKINETIC STACK EMISSION TEST WITH REPORT ON 6TH FEBRUARY 'BEFORE' AND THEN THE 18TH FEBRUARY 2015 'AFTER' ADDING THE CHINCO COMBUSTION CATALYST TO THE COAL.

WE ATTACH HERETO TWO REPORT PAGES PERTAINING TO THE 'BEFORE' AND 'WITH' RESULTS FOR BOILER NUMBER 3 INDICATING A POSITIVE DROP IN POISONOUS EMISSIONS 'AFTER' ADDING THE CHINCO CATALYST ON 18TH FEBRUARY 2015.

A SUMMARY OF THOSE RESULTS WERE:

- 1) THE TOTAL PARTICULATE MATTER (RATED 50) REDUCED FROM 84,897 MG/NM³ (EXCEEDS SET LIMIT) TO A MERE 28,035MG/NM³ !
- 2) SO₂ (RATED 500) WAS REDUCED FROM 409.227 DOWN TO 156.111MG/NM³ (DOWN BY 63%!)
- 3) NOX (RATED 750) DROPPED FROM 156.86 MG/NM³ TO 150.28 MG/NM³.
- 4) CO₂ (RATED 50) REMAINED AT 7.31 IN BOTH TESTS. [HAD THE CO ITSELF BEEN TESTED IT WOULD HAVE REDUCED, AS INDICATED IN SIMILAR TESTS CARRIED OUT IN THE UK.]

A FULL 8 MB REPORT IS AVAILABLE ON REQUEST SHOWING THE EPA METHODS FOLLOWED AND CERTIFICATION OF, THE EXAMINER WITH GOVT ACCEPTANCE.

WE TRUST THAT THESE RESULTS ARE INTERESTING TO YOU AS WELL!

REGARDS

TOM ROBERTS CEO.

MEMBERS: MR. TP ROBERTS CEO; MR. A ROBERTS: MR. L ROBERTS.

RESULTS CONTINUATION

SOURCE NAME		BOILER 3 STACK			
Run Number		RUN 1	RUN2	RUN3	AVERAGES
Sampling Date		06-02-2015	06-02-2015	06-02-2015	
Stack Temperature (°C)		165.000	180.000	181.000	175.333
Volumetric Flow Rate (m³/s)		3.429	4.258	4.279	3.989
Volumetric Flow Rate (m³/min)		205.754	255.461	256.721	239.312
Volumetric Flow Rate (Nm³/hr.)		12345.252	15327.683	15403.279	14358.738
Stack Gas Velocity (m/s)		4.838	6.007	6.036	5.627
DETERMINANTS	Emission Rate[mg/Nm³]	RUN 1	RUN 2	RUN 3	Averages
TPM					
[mg/Nm³]	50	100.135	89.665	64.890	84.897*
[mg/dsm³]		111.277	89.732	69.988	90.332
SO₂					
[mg/Nm³]	500	224.408	574.767	428.506	409.227
[mg/dsm³]		241.041	617.371	460.170	439.527
NOx					
[mg/Nm³]	750	98.504	221.061	151.016	156.860
[mg/dsm³]		114.960	237.447	162.175	171.527
CO₂					
[mg/Nm³]	50	6.094	8.531	7.314	7.313
[mg/dsm³]		6.545	9.164	7.854	7.854
COMMENTS	The average concentration of total particulate matter exceeded the emission limit. The remainder of constituents were in compliance with the legal limits specified.				

END of RESULTS

Legend:

- * : Exceeds guideline emission limit
- kg/h : kilograms per hour
- mg/Nm³ : milligrams per normal cubic metre (0°C and 101.3kPa)
- m : metre
- °C : degrees Celsius
- BDL : Below Detection Limits
- mg/dsm³ : milligrams per dry standard cubic metre
- m/s : meters per second

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WITHOUT CATALYST

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15-3128-01	7	15	British American Tobacco (Pty) Ltd	FINAL

RESULTS CONTINUATION

SOURCE NAME		BOILER 3 STACK			
Run Number		RUN 1	RUN2	RUN3	AVERAGES
Sampling Date		18-02-2015	18-02-2015	18-02-2015	
Stack Temperature (°C)		172.000	172.000	172.000	172.000
Volumetric Flow Rate (m3/s)		3.815	4.193	4.647	4.218
Volumetric Flow Rate (m3/min)		228.930	251.569	278.828	253.109
Volumetric Flow Rate (Nm3/hr.)		13735.799	15094.133	16729.706	15186.546
Stack Gas Velocity (m/s)		5.383	5.915	6.556	5.951
DETERMINANTS	Emission Rate[mg/Nm3	RUN 1	RUN 2	RUN 3	Averages
TPM	50				
[mg/Nm³]		56.264	12.037	15.805	28.035
[mg/dsm³]		62.550	12.044	17.491	30.695
SO₂	500				
[mg/Nm³]		109.099	178.284	180.949	156.111
[mg/dsm³]		117.186	191.499	194.357	167.681
NOx	750				
[mg/Nm³]		156.515	164.362	129.963	150.280
[mg/dsm³]		182.704	176.545	139.594	166.281
CO₂	50				
[mg/Nm³]		5.484	7.312	9.141	7.312
[mg/dsm³]		5.891	7.854	9.818	7.854
COMMENTS					

END of RESULTS

Legend:

*	: Exceeds guideline emission limit
kg/hr	: kilograms per hour
mg/Nm ³	: milligrams per normal cubic metre (0°C and 101.3kPa)
m	: metre
°C	: degrees Celsius
BDL	: Below Detection Limits
mg/dsm ³	: milligrams per dry standard cubic metre
m/s	: meters per second

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With Chanco
Catalyst

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15-3175-01	7	16	British American Tobacco (Pty) Ltd	FINAL

ANNEXURES



**DEPARTMENT
OF LABOUR**

Certificate

This is to certify that

**ASHREQ ENVIRONMENTAL AND OCCUPATIONAL
HYGIENECONSILTANTS (Pty) Ltd**

has been approved as an

**TYPE A: APPROVED INSPECTION AUTHORITY: OCCUPATIONAL
HEALTH AND HYGIENE**

in terms of the Occupational Health and Safety Act, 85 of 1993,
for the monitoring of

**Asbestos (Regulation 8 & 18), Lead (Regulation 7 & 14), Hazardous
Chemical Substances (Regulation 6 & 12), Noise Induced Hearing Loss
Regulations (Regulation 7)**



CHIEF INSPECTOR

Effective date: 23 October 2014

Expiry date: 29 August 2018

OH0107-CI-021

CERTIFICATE NUMBER



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15-3175-01	13	16	British American Tobacco (Pty) Ltd	FINAL