

**FCC – Test Report**Date: 2011-11-10

No. 55629-1

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**LABORATORY - REPORT**

**APPLICANT:** EB BRANDS (HK)

**ADDRESS:** Unit 705 & 706, Enterprise Square, Phase 1  
Tower III, 9 Sheung Yuet Road  
Kowloon Bay, Kowloon  
Hong Kong

**DATE OF SAMPLE RECEIVED:** 2011-11-03

**DATE OF TESTING:** 2011-11-04 to 2011-11-07

**DESCRIPTION OF SAMPLE:**

Product: 1:24 Hummer

Model number: 5857

Product class: Low Power Communication Device – Transmitter (49 MHz)

FCC ID number: XRB5857YE49TX

Rating: DC 3V (AA size battery x 2)

**CONDITION OF TEST SAMPLE:** The received sample was under good condition.

**INVESTIGATIONS REQUESTED:** Measurements to the relevant clauses of F.C.C. Rules and Regulations Part 15 Subpart C - Intentional Radiators.

**RESULTS:** See the attached sheets.

**CONCLUSIONS:** From the measurement data obtained, the tested sample was considered to have COMPLIED with the requirements for the relevant clauses of Federal Communications Commission Rules as specified above.



  
Stephen C.N. Wong  
Technical Manager

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### Test Location

International Electrical Certification Centre Ltd.  
Units 602-605, 31 Lok Yip Road, On Lok Tsuen, Fanling, N.T., Hong Kong  
Tel : +852 23052570  
Fax : +852 27564480  
Email : [info@iecc.com.hk](mailto:info@iecc.com.hk)

### Summary of Test Results

#### Radiated Emission:

Test result: O.K.  
Test data: See attached data sheet

#### Conducted Emission:

Test result: Not Applicable  
Test data: Not Applicable

#### Measurement of Emissions within Band Edges

Test result: O.K.  
Test data: See attached data sheet

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**TEST EQUIPMENT LIST**

Equipment	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Date
Test Receiver	Rohde & Schwarz	ESVS 30	828525/006	09/08/2011	08/08/2012
Antenna	Schaffner	CBL6111C	2791	30/09/2010	29/09/2012
Antenna Mast System	Schwarzbeck	AM9104	--	--	--
Turntable with Controller	Drehtisch	DT312	--	--	--
Spectrum Analyzer with Q. Peak	Advantest	R3132	140101852	09/08/2011	08/08/2012

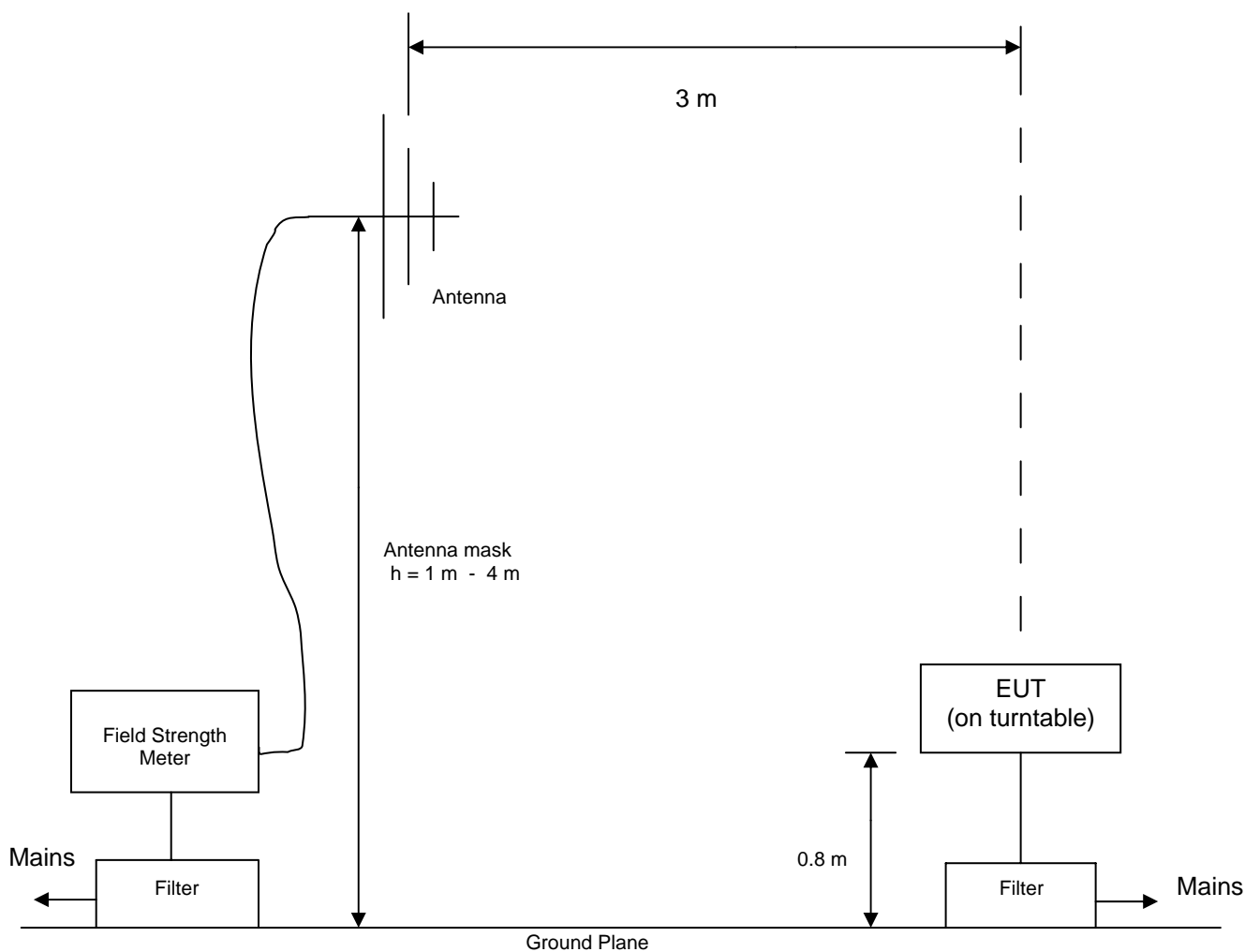
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### Radiated Emission Test Setup (3 m distance) (> 30MHz)



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IECC a wholly-owned subsidiary of SGS Group

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## Test Procedure

### Radiated Emission :

The EUT was tested according to ANSI 63.4-2003 for the requirements of FCC Part 15 Subpart C Section 15.209 and 15.235.

During the test, the sample was placed on a turn table and operated with new batteries. The table is 0.8 meter above the reference ground plane on the Open Area Test Site and can rotate 360 degrees to determine the position of the maximum emission level. A broad-band antenna for the frequency range 30 - 1000 MHz, connected with 10 meters coaxial cable to the test receiver was used for measurement. The antenna is capable of measuring both horizontal and vertical polarizations. The antenna was raised from 1 to 4 meters to find out the maximum emission level from the EUT.

An initial pre-scan was performed to find out the maximum emission level of the sample placed at 3 orthogonal planes. Final measurement (30 MHz –1000 MHz) was then performed to record the data for the emissions under worst-case condition for combination of the antenna orientation / height and turn table position.

Note : 1. Fundamental emission for this pulse modulated device was measured with the peak detector function of the test receiver and was properly adjusted for the duty cycle correction factor as pulse desensitization to calculate the average emission value.

2. The Open Area Test Site located at IECC was placed on file with the FCC Pursuant to Section 2.948 of the FCC Rules (FCC Registration No. : 97774).

### Conducted Emission :

Not Applicable

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## Test Results

### Radiated Emission :

Test Requirement:	FCC Part 15 Subpart C Section 15.209 and 15.235
Test Method:	ANSI C63.4 : 2003
Deviations from Standard Test Method:	Nil
Frequency Range:	30MHz – 1000MHz
Measurement Distance:	3 m
Detector:	Peak (for fundamental frequency) Quasi-Peak (for frequencies outside the operation band)

Refer to page 9-13 for measurement data.

### Conducted Emission :

Not Applicable



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**Radiated Emission**Measurement of Radiated Emissions  
FCC Part 15 Subpart C (15.235)

IECC Ref:	55629-1
Model:	5857
Applicant:	EB BRANDS (HK)
Sample No.:	1
Set under test:	1:24 Hummer
Connected sets:	-
Operating mode:	Operate (forward)

Test Equipment  
Receiver: Rohde & Schwarz ESVS 30  
Antenna: Schaffner CBL8111C

**Radiation Measurement****a. Fundamental Frequency**

Frequency (MHz)	Maximum Test Result (dB(μV/m))		FCC Limit (dB(μV/m))	
	Peak	Average *	Peak	Average
49.8775	64.4	58.9	100	80

Note : (1) The above peak value is the maximum value of the measurement in 3 orthogonal planes

(2) \* Calculation for radiation (average) :

Formula :

$$\text{Duty cycle} = (N1L1 + N2L2 + \dots + Nn-1Ln-1 + NnLn) / 100 \text{ or } T$$

where N1 is number of type 1 pluse, L1 is length of type 1 pulse, etc.  
T is the period of the pulse train (if less than 100 ms)

According to the time domain plots shown in page 11 & 12 :

$$\text{Duty cycle of the EUT} = (1 \times 0.98 + 2 \times 0.66 + 26 \times 0.34) / 20.96 = 0.53$$

$$\begin{aligned} \text{Av correction factor} &= 20 \times \log(0.53) \text{ dB} \\ &= -5.5 \text{ dB} \end{aligned}$$

$$\text{Radiation (average)} = \text{Radiation (peak)} + \text{Av correction factor}$$

$$\begin{aligned} \text{Radiation (average) of the EUT} &= 64.4 - 5.5 \text{ dB(}\mu\text{V/m)} \\ &= 58.9 \text{ dB(}\mu\text{V/m)} \end{aligned}$$

b. The measured radiation outside the operation band were checked and found to comply with 15.235(b).  
(refer to page 12 and 13 for measurement data)

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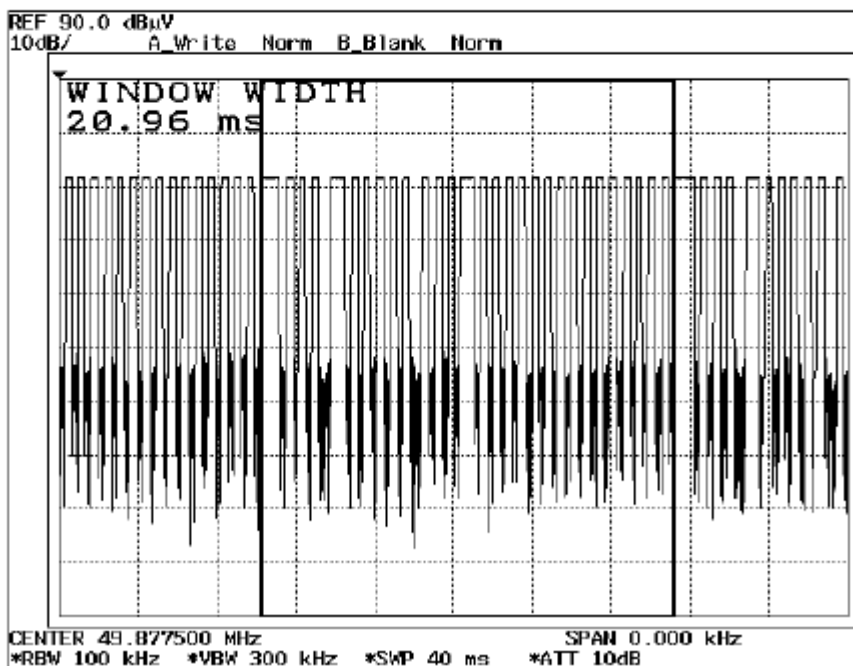
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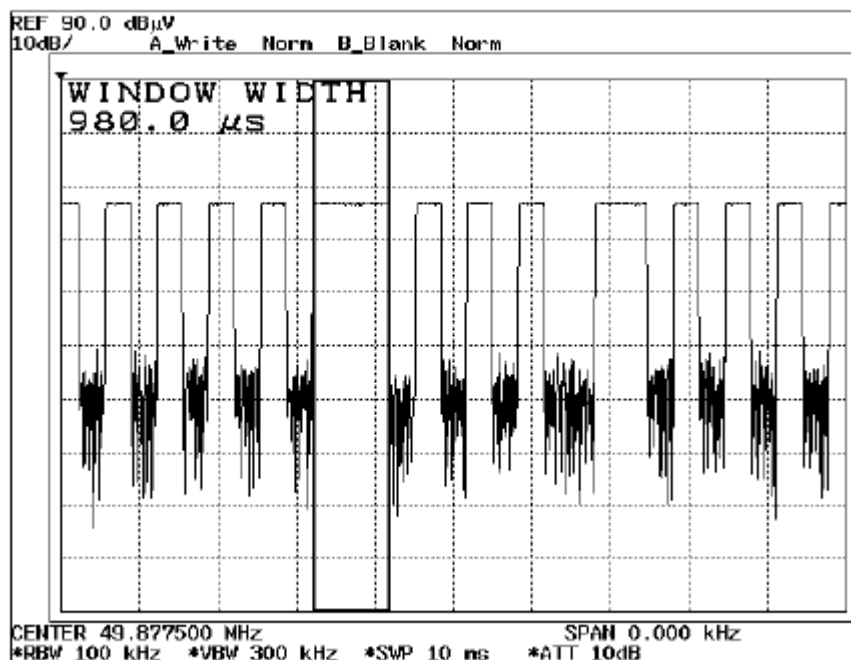
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## Radiated Emission

### Transmitter Emission - Time Domain Plots



Pulse cycle period = 20.96 ms



Pulse width = 0.98 ms (total number of pulse : 1)

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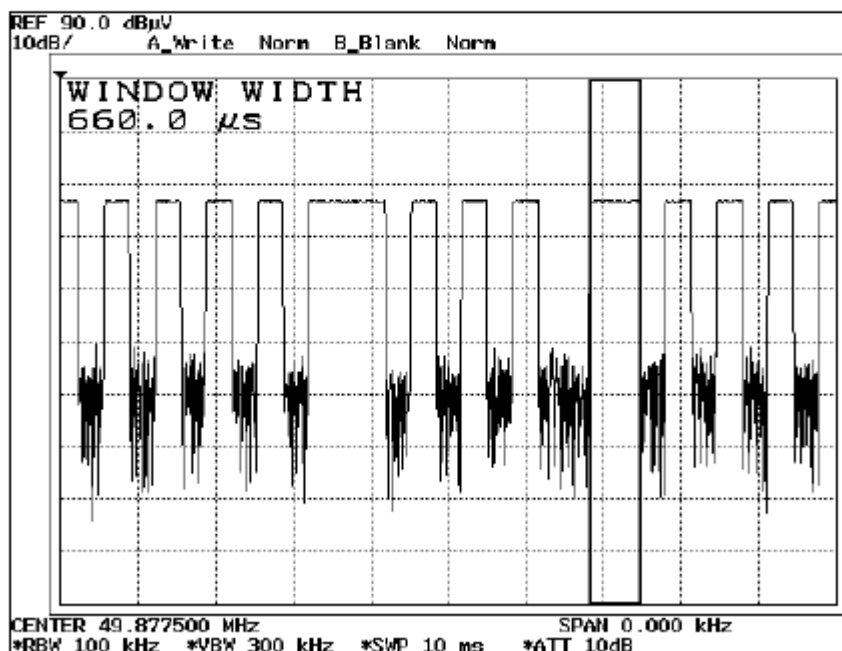
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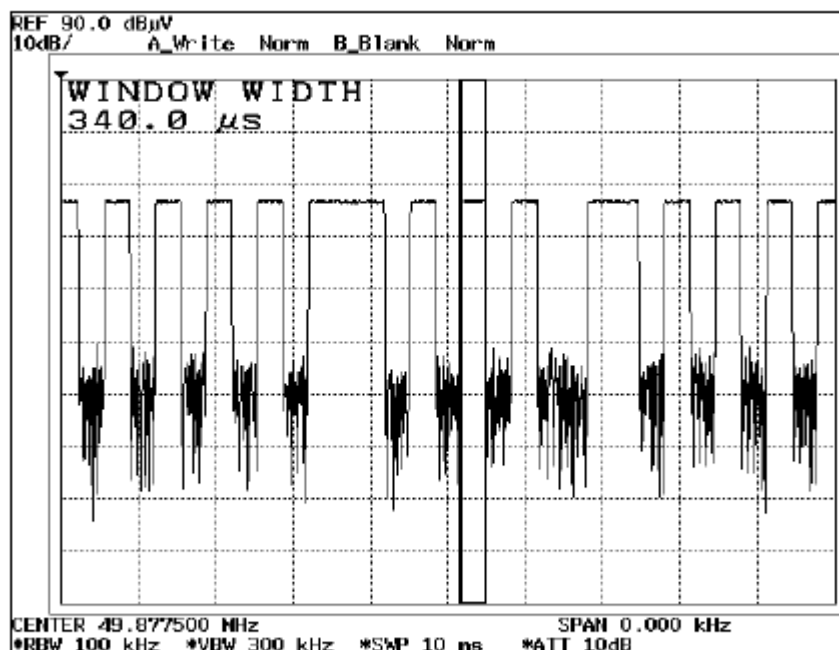
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## Radiated Emission

### Transmitter Emission - Time Domain Plots



Pulse width = 0.66 ms (total number of pulse : 2)



Pulse width = 0.34 ms (total number of pulse : 26)

Operator : WH

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## Radiated Emission

Measurement of Radiated Emissions  
Acc: FCC Part 15 Subpart C (15.235 & 15.209)

IECC Ref: 55629-1  
Model: 5857  
Applicant: EB BRANDS (HK)  
Sample No.: 1  
Set under test: 1:24 Hummer  
Connected sets: -  
Operating mode: Operate (forward)

Test Equipment  
Receiver: Rohde & Schwarz ESVS 30  
Antenna: Schaffner CBL8111C

Frequency (MHz)	Horz. Reading dB(μV)	Vert. Reading dB(μV)	Corr. Factor (dB)	Horiz. Test Result dB(μV/m)	Vert. Test Result dB(μV/m)	Limit dB(μV/m)
30	< 16	< 16	20.5	< 36.5	< 36.5	40.0
99.75	16.5	19.5	12.0	28.5	31.5	43.5
149.63	< 16	< 16	13.4	< 29.4	< 29.4	43.5
199.51	< 16	< 16	10.9	< 26.9	< 26.9	43.5
249.39	18.5	< 16	14.8	33.3	< 30.8	46.0
299.27	23.5	< 16	15.8	39.3	< 31.8	46.0
349.14	< 16	< 16	17.0	< 33.0	< 33.0	46.0
399.02	< 16	< 16	18.6	< 34.6	< 34.6	46.0
500	< 16	< 16	20.6	< 36.6	< 36.6	46.0
700	< 16	< 16	23.8	< 39.8	< 39.8	46.0
1000	< 16	< 16	28.0	< 44.0	< 44.0	54.0

- Note : 1. Unless otherwise indicated, the recorded readings are in quasi-peak values.  
2. The above results were the worst case results with the sample positioned in all 3 axis during the test.  
The sample was positioned vertically and horizontally on the table for vertical and horizontal measurement respectively. The antenna of the sample was fully extended during the test.

Operator : WH

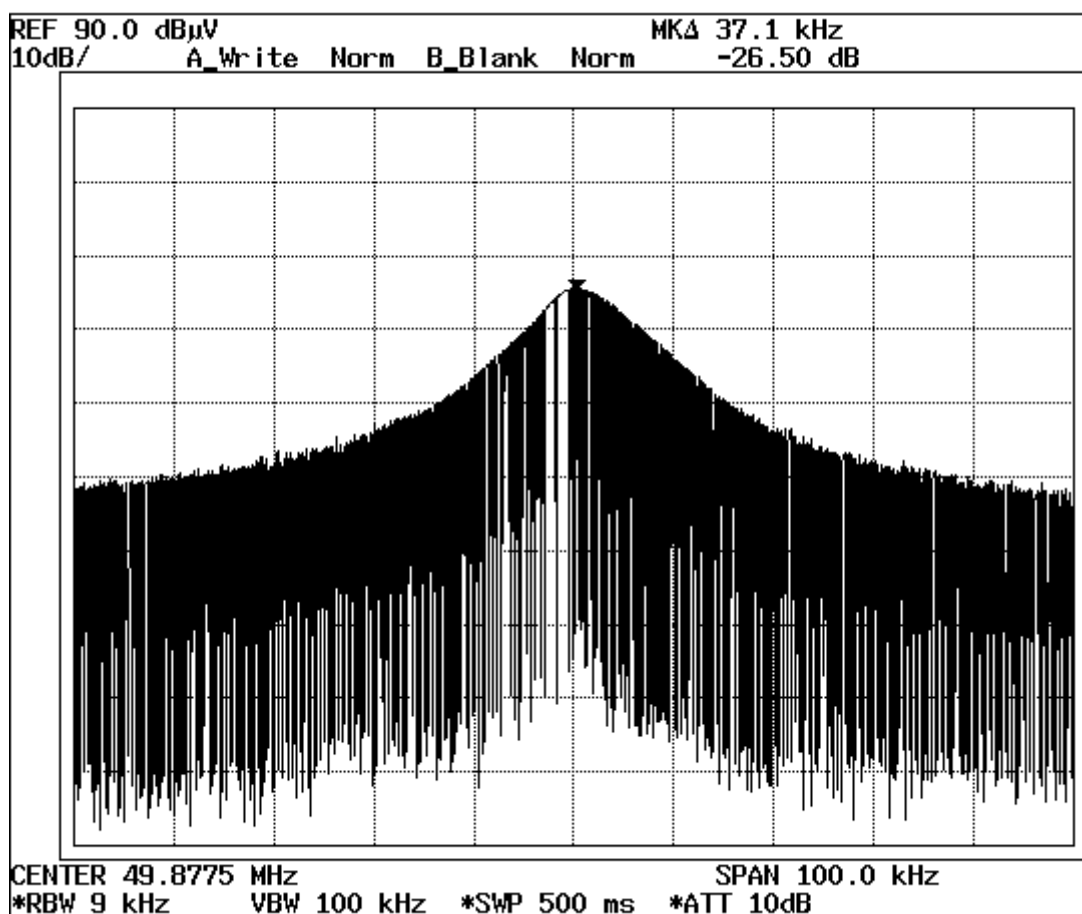
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## Measurement Data of Emissions within Band Edges



Result : The field strength of any emission within the operation band did not exceed 80 dB( $\mu$ V/m) for average value or 100 dB( $\mu$ V/m) for peak value. Refer to page 9 for the recorded value for the emission at the fundamental frequency.

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## Photo of Sample



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