TEST REPORT

FOR

ENVIRONMENTAL TEST

OF THE

406 MHZ SATELLITE PERSONAL LOCATOR BEACONS (PLBS)
MODEL NUMBER AK-451-PLB

AND

ANTENNA
PART NUMBER 451017

MANUFACTURED BY

AMERI-KING
17881 SAMPSON LANE
HUNTINGTON BEACH, CALIFORNIA 92648

PREPARED BY

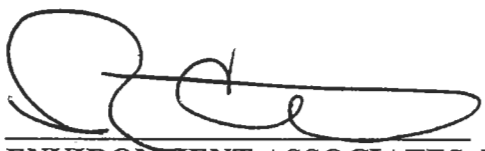
ENVIRONMENT ASSOCIATES
9604 VARIEL AVENUE
CHATSWORTH, CALIFORNIA 91311

The results of the testing reported herein relate only to the actual items tested.

Maintains Laboratory Accreditation to ISO/IEC 17025 and ISO 9001

APPROVAL SHEET

Environment Associates, Inc. hereby certifies that the information presented in this report, to the best of our knowledge, is true and correct in all respects.



ENVIRONMENT ASSOCIATES, INC.
Robert Coiteux, Laboratory Manager

Report written by Gerald Flippen on July 20, 2007

REVISION SHEET

REVISION LETTER	DESCRIPTION OF REVISION	DATE	APPROVAL
None	Original Issue	07/20/07	

ADMINISTRATIVE DATA

PURPOSE OF PROCEDURE:	**To describe the test conduct for environmental tests in accordance with the specification cited below**
ITEMS TO TEST:	**406 MHZ Satellite Personal Locator Beacons Model Number: AK-451-PLB Antenna Part Number 451017**
SPECIFICATION:	**RTCM Paper 76-2002/SC110-STD**
SUBMITTED BY:	**Ameri-King 17881 Sampson Lane Huntington Beach, CA 92648**
TESTING AGENCY:	**Environment Associates, Inc. 9604 Variel Avenue Chatsworth, California 91311**
DATES TESTING CONDUCTED:	**June 29 through July 9, 2007**
TEST AUTHORIZATION:	**Ameri-King Purchase Order Number 451061**

TABLE OF CONTENTS

SUMMARY OF TEST RESULTS

TEST	TEST SAMPLE	SAMPLE NO.	PASS/FAIL
2.0 Vibration	PLBS	C/S 09 & C/S 19	X
	Antenna	1B/2A/3A/4(AF)	X
3.0 Bump	PLBS	C/S 09 & C/S 19	X
	Antenna	1B/2A/3A/4(AF)	X
4.0 Salt Fog	PLBS	C/S 09 & C/S 19	X
	Antenna	1B/2A/3A/4(AF)	X
5.0 Drop	PLBS	C/S 09 & C/S 19	X
	Antenna	1B/2A/3A/4(AF)	X
6.0 Leakage-Immersion	PLBS	C/S 09 & C/S 19	X
	Antenna	1B/2A/3A/4(AF)	X
7.0 Spurious Emissions	PLBS	C/S 09 & C/S 19	X
	Antenna	1B/2A/3A/4(AF)	X

Note:

"Pass" in the column above indicates completion of the test.

GENERAL INFORMATION

1.0 GENERAL

1.1 TEST ITEM DESCRIPTION

406 MHZ Satellite Personal Locator Beacons (PLBS)
Model AK-451-PLB
Sample Number C/S 09 & C/S 19

Antenna
Part Number: 451017
Sample Number 1B/2A/3A/4(AF)

1.2 REFERENCE DOCUMENTS

Military

MIL-STD-831	Preparation of Test Reports

Radio Technical Commission for Maritime Services

RTCM Paper 76-2002/SC110-STD	RTCM Recommended Standards for 406 MHZ Satellite Personal Locator Beacons (PLBS), Version 1.1

1.3 TOLERANCES

Test Equipment

Test equipment utilized was calibrated to International Organization for Standards (ISO) 10012-1, "Quality Assurance Requirements for Measuring Equipment", Part 1: "Meteorological (sic) Confirmation System for Measuring Equipment"; American National Standards Institute (ANSI)/National conference of Standards Laboratories (NCSL) Z540-1, "General Requirements for Calibration Laboratories and Measuring and Test Equipment, latest revision and traceable to the National Institute for Standards and Technology.

Unless otherwise described in this report, the environmental test equipment was capable of controlling the test equipment within the following tolerances:

Temperature at the control sensor:	±2.0 degrees C
Sensor response time:	<20 seconds
Sinusoidal Vibration Amplitude:	±10%
Vibration Frequency:	1% or ±1/2 Hz below 25 Hz
Shock Amplitude:	±15%
Shock Frequency:	±10%
Time:	±5%

Laboratory Ambient Conditions

All laboratory ambient conditions were maintained as follows:

Temperature:	25 ±10 degrees C
Pressure:	30 ±2 inches Hg
Relative Humidity:	90% maximum

2.0 VIBRATION

2.1 REFERENCE

RTCM Paper 76-2002/SC110-STD, Paragraph A3.0

2.2 PROCEDURE

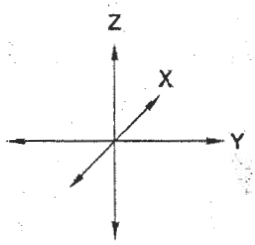
2.2.1 Test Parameters

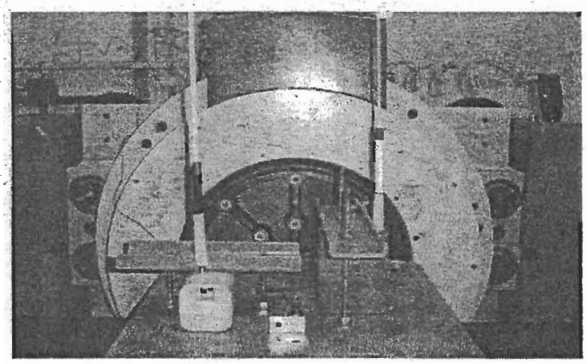
The vibration control system was programmed for the following sinusoidal conditions:

Frequency	Level
4 – 10 Hz	2.5mm single amplitude
10– 15 Hz	0.8mm single amplitude
15 – 25 Hz	0.4mm single amplitude
25 – 33 Hz	0.2mm single amplitude

(Logarithmic sweep, 4 Hz to 33 Hz, 5 minutes/cycle)

2.2.2 Axis Designation





2.2.3

The test samples listed below were mounted on the vibration exciter in the X axis. The test fixture was instrumented with one (1) control accelerometer. The test samples were operating and monitored for activation by Ameri-King personnel during the vibration test.

Test Sample	Sample Number
PLBS	C/S 09 & C/S 19
Antenna	1B/2A/3A/4(AF)

2.2.4

The test samples were subjected to six (6) cycles of vibration at the conditions specified in paragraph 2.2.1. Plot #1 shows the input vibration level recorded during the test. The test samples did not activate.

2.2.5

The test samples were reoriented on the vibration exciter in the Y axis. The test fixture was instrumented with one (1) control accelerometer. The test samples were operating and monitored for activation by Ameri-King personnel during the vibration test.

2.2.6

The test samples were subjected to six (6) cycles of vibration at the conditions specified in paragraph 2.2.1. Plot #2 shows the input vibration level recorded during the test. The test samples did not activate.

2.2.7

The test samples were reoriented on the vibration exciter in the Z axis. The test fixture was instrumented with one (1) control accelerometer. The test samples were operating and monitored for activation by Ameri-King personnel during the vibration test.

2.2.8

The test samples were subjected to six (6) cycles of vibration at the conditions specified in paragraph 2.2.1. Plot #3 shows the input vibration level recorded during the test. The test samples did not activate.

2.2.9

The test samples were removed from the vibration exciter and returned to Ameri-King Corporation personnel who performed an aliveness test. No anomalies were noted.

2.3 RESULTS

2.3.1

The vibration test was performed at the facility of Environment Associates, Inc., Chatsworth, California on June 29, 2007.

2.3.2

All inspection and operation of the test samples were by Ameri-King Corporation personnel who retained all data recorded.

2.3.3

The test log may be found in Appendix I. The list of equipment used during the test and test photographs may be found in Appendix II.

3.0 BUMP

3.1 REFERENCE

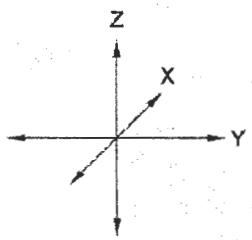
RTCM Paper 76-2002/SC110-STD, Paragraph A4.0

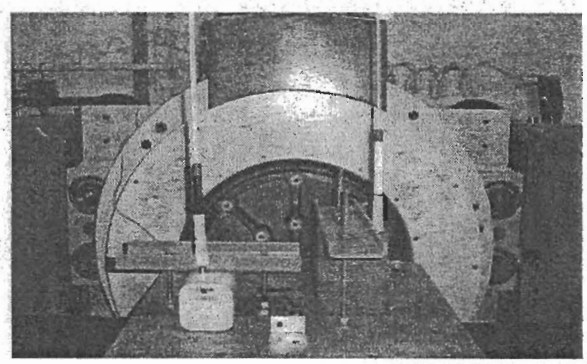
3.2 PROCEDURE

3.2.1 Test Parameters

The computer shock system was programmed for an 98 m/s^2 peak acceleration, 16 millisecond duration, halfsine shock pulse.

3.2.2 Axis Designation





3.2.3

The test samples listed below were mounted on the vibration exciter in the Z axis. The test fixture was instrumented with one (1) control accelerometer. The test samples were operating and monitored for activation by Environment Associates personnel during the bump test.

Test Sample	Sample Number
PLBS	C/S 09 & C/S 19
Antenna	1B/2A/3A/4(AF)

3.2.4

The test samples were subjected to four thousand (4000) bumps at the conditions specified in paragraph 3.2.1. Plot #1 shows the resultant shock pulse. The test samples did not activate.

3.2.5

The test samples were reoriented on the vibration exciter in the Y axis. The test fixture was instrumented with one (1) control accelerometer. The test samples were operating and monitored for activation by Environment Associates personnel during the bump test.

3.2.6

The test samples were subjected to four thousand (4000) bumps at the conditions specified in paragraph 3.2.1. Plot #2 shows the resultant shock pulse. The test samples did not activate.

3.2.7

The test samples were reoriented on the vibration exciter in the X axis. The test fixture was instrumented with one (1) control accelerometer. The test samples were operating and monitored for activation by Environment Associates personnel during the bump test.

3.2.8

The test samples were subjected to four thousand (4000) bumps at the conditions specified in paragraph 3.2.1. Plot #3 shows the resultant shock pulse. The test samples did not activate.

3.2.9

The test samples were removed from the vibration exciter.

3.3 RESULTS

3.3.1

The bump test was performed at the facility of Environment Associates, Inc., Chatsworth, California during the period of June 29 and June 30, 2007.

3.3.2

Unless otherwise noted, all inspection and operation of the test samples were by Ameri-King Corporation personnel who retained all data recorded.

3.3.3

The test log may be found in Appendix I. The list of equipment used during the test and test photographs may be found in Appendix II.

4.0 SALT FOG

4.1 REFERENCE

RTCM Paper 76-2002/SC110-STD, Paragraph A5.0

4.2 PROCEDURE

4.2.1

The test samples listed below were placed in a temperature chamber. The test chamber ambient temperature was stabilized at +35°C. The test samples were subjected to two (2) hours (minimum) conditioning at +35°C.

Test Sample	Sample Number
PLBS	C/S 09 & C/S 19
Antenna	1B/2A/3A/4(AF)

4.2.2

The test samples were removed from the temperature chamber and placed horizontally in the salt spray chamber, supported by a poly tray.

4.2.3

The test samples were subjected to a salt fog atmosphere consisting of 5% sodium chloride and 95% deionized water (by weight) for a period of forty eight (48) hours.

4.2.4

The volume, pH and specific gravity of the collected fallout solution were measured on a daily basis during the exposure period. The solution was collected in two (2) collection receptacles, one (1) placed next to the spraying nozzle and one (1) placed in a farthest corner of the chamber.

4.2.5

Upon completion of the forty eight (48) hour exposure, the test samples were removed from the chamber and dried at site ambient conditions for a period of twenty four (24) hours.

4.2.6

The test samples were returned to the salt spray chamber, placed horizontally and supported by a poly tray.

4.2.7

The test samples were subjected to a salt fog atmosphere consisting of 5% sodium chloride and 95% deionized water (by weight) for a minimum period of twelve (12) hours.

4.2.8

The volume, pH and specific gravity of the collected fallout solution were measured during the exposure period. The solution was collected in two (2) collection receptacles, one (1) placed next to the spraying nozzle and one (1) placed in a farthest corner of the chamber.

4.2.9

Upon completion of the twelve (12) hour minimum exposure, the test samples were removed from the chamber and returned to Ameri-King personnel for visual examination and aliveness test. No anomalies were noted.

4.3 RESULTS

4.3.1

The salt fog test was performed at the facility of Environment Associates, Inc. Chatsworth, California during the period of July 1 through July 6, 2007.

4.3.2

All inspection and operation of the test samples were by Ameri-King Corporation personnel who retained all data recorded.

4.3.3

The test log may be found in Appendix I. The list of equipment used during the test and test photographs may be found in Appendix II.

5.0 DROP

5.1 REFERENCE

RTCM Paper 76-2002/SC110-STD, Paragraph A6.0

5.2 PROCEDURE

5.2.1

The test samples listed below were subjected to the following drop test. The test sample was non-operating during the test.

Test Sample	Sample Number
PLBS	C/S 09 & C/S 19
Antenna	1B/2A/3A/4(AF)

5.2.2

The test samples were placed in a temperature chamber. The chamber temperature was decreased to -55°C. The test samples were subjected to a two (2) hour dwell at -55°C.

5.2.3

The chamber temperature was increased to -40°C. The test samples were subjected to a two (2) hour dwell at -40°C.

5.2.4

The test samples were removed from the chamber and subjected to drops from a height of 39.2 inches onto a solid wood surface backed by four (4) inch thick concrete. The drop test was completed within five (5) minutes after removal from the chamber

5.2.5 Drop Sequence

Drop #1, Side 3, Bottom Side
Drop #2, Side 5, Back Side
Drop #3, Side 6, Front Side
Drop #4, Side 2, Left Side
Drop #5, Side 4, Right Side
Drop #6, Side 1, Top Side

5.2.6

It was noted that the antenna at the BNC connector come off on contact during drop #6 (top side). Ameri-King personnel re-installed the antenna, the connector was okay.

5.2.7

The test sample was subjected to a functional test. No functional anomalies were noted.

5.3 RESULTS

5.3.1

The drop test was performed at the facility of Environment Associates, Inc., Santa Ana, California on July 6, 2007.

5.3.2

All inspection and operation of the test samples were by Ameri-King Corporation personnel who retained all data recorded.

5.3.3

The test log may be found in Appendix I. The list of equipment used during the test may be found in Appendix II.

6.0 LEAKAGE - IMMERSION

6.1 REFERENCE

RTCM Paper 76-2002/SC110-STD, Paragraph A7.0

6.2 PROCEDURE

6.2.1

The test samples listed below were placed in a temperature chamber.

Test Sample	Sample Number
PLBS	C/S 09 & C/S 19
Antenna	1B/2A/3A/4(AF)

6.2.2

The chamber temperature was increased to +65°C and stabilized.

6.2.3

The test sample were subjected to a one (1) hour dwell at +65°C.

6.2.4

The test samples were removed from the chamber and immersed in water at +20°C±3 °C to a depth of 100±5mm for a period of forty eight (48) hours.

6.2.5

Upon completion of the forty eight (48) hour immersion, the test samples were immersed in water to a depth of one (1) meter for a period of one (1) hour.

6.2.6

The test samples were removed from the water and dried off.

6.2.7

The test samples were returned to Ameri-King Corporation personnel who performed an aliveness test. No anomalies were noted.

6.3 RESULTS

6.3.1

The leakage-immersion test was performed at the facility of Environment Associates, Inc. Chatsworth, California during the period of July 7 through July 9, 2007.

6.3.2

All inspection and operation of the test samples were by Ameri-King Corporation personnel who retained all data recorded.

6.3.3

The test log may be found in Appendix I. The list of equipment used during the test and test photographs may be found in Appendix II.

7.0 SPURIOUS EMISSIONS

7.1 REFERENCE

RTCM Paper 76-2002/SC110-STD, Paragraph A8.0

7.2 PROCEDURE

7.2.1

The test samples listed below were placed in a temperature chamber.

Test Sample	Sample Number
PLBS	C/S 09 & C/S 19
Antenna	1B/2A/3A/4(AF)

7.2.2

The chamber temperature was decreased to -20°C and stabilized.

7.2.3

Ameri-King personnel performed spurious and harmonic emissions measurements at -20°C. No anomalies were noted.

7.2.4

The chamber temperature was increased to +55°C and stabilized.

7.2.5

Ameri-King personnel performed spurious and harmonic emissions measurements at +55°C. No anomalies were noted.

7.2.6

The chamber temperature was decreased to site ambient conditions.

7.2.7

The test samples were removed from the chamber and returned to Ameri-King Corporation personnel for visual examination and functional evaluation.

7.3 RESULTS

7.3.1

The spurious emissions test was performed at the facility of Environment Associates, Inc. Chatsworth, California on July 9, 2007.

7.3.2

All inspection and operation of the test samples were by Ameri-King Corporation personnel who retained all data recorded.

7.3.3

The test log may be found in Appendix I. The list of equipment used during the test and test photographs may be found in Appendix II.

APPENDIX I

TEST DATA

2.0 VIBRATION

The total number of pages in this subsection is 6

ENVIRONMENT ASSOCIATES

TEST DATA

DATE STARTED	CUSTOMER	TECHNICIAN (Signature)
June 29, 2007	Ameri-King Corporation	J. Talarico
DATE COMPLETED	SPECIMEN DESCRIPTION	ENGINEER (Signature)
June 29, 2007	Personal Locator Beacon	Martin R. Batty
TEMPERATURE (Laboratory)	TYPE OF TEST	ENGINEER
+74 Deg. F	Vibration	
HUMIDITY (Laboratory)	TEST SPECIFICATION / PARAGRAPH NUMBER	JOB NUMBER
49%	RTCM PAPER 76-2002/SC110-STD / A3.0	28061-0216905

SPECIMEN NUMBER

AK 451-PLB C/S 09 & C/S 19 Antenna 451017-1B/2A/3A/4(AF)

6/29

1230 Began Calibration And Set-Up Of Vibration System.

Computer Channel(s) Assignment(s):

Channel No.	C=Control R=Response	pC/g	mV/g	Accel. Serial No.	Notes:
1	C	30	50.4	FW20	On Fixture Base
2					
3					
4					

Monitoring Equipment Set-Up By: N/A — E.A. Slip Plate # S894-3

Fixtures Property Of E.A. — Head Expander # H894-1

Mounted Fixture In X Axis.

Specified Test Requirements: 6 Sinusoidal Vibration Cycles (4 - 33 - 4Hz.), 5 Minutes/Cycle, 2.5mm S.A. Max. Displacement, In Each Of Three Axes.

Set-Up Completed , [X] Photograph Taken. Samples Mounted In Z Axis.

1337 Began Sinusoidal Vibration Cycling (4 - 33 - 4Hz.).

1407 Completed 6 Cycles. Samples Did Not Activate.

Test Samples Remounted In Y Axis.

1413 Began Sinusoidal Vibration Cycling (4 - 33 - 4Hz.).

1443 Completed 6 Cycles. Samples Did Not Activate.

Test Samples Remounted In Z Axis.

1453 Began Sinusoidal Vibration Cycling (4 - 33 - 4Hz.).

1523 Completed 6 Cycles. Samples Did Not Activate.

1525 Customer Performed Aliveness Test, Samples Operating OK.

Vibration Test Completed.

ENVIRONMENT ASSOCIATES

TEST DATA

DATE STARTED	CUSTOMER	TECHNICIAN (Signature)
June 29, 2007	Ameri-King Corporation	J. Sabriola
DATE COMPLETED	**SPECIMEN DESCRIPTION**	**ENGINEER (Signature)**
June 29, 2007	Personal Locator Beacon	Martin R. Baptiste
TEMPERATURE (Laboratory)	**TYPE OF TEST**	**ENGINEER**
+74 Deg. F	Vibration	
HUMIDITY (Laboratory)	**TEST SPECIFICATION** / **PARAGRAPH NUMBER**	**JOB NUMBER**
49%	RTCM PAPER 76-2002/SC110-STD / A3.0	28061-0216905

SPECIMEN NUMBER

AK 451-PLB C/S 09 & C/S 19 Antenna 451017-1B/2A/3A/4(AF)

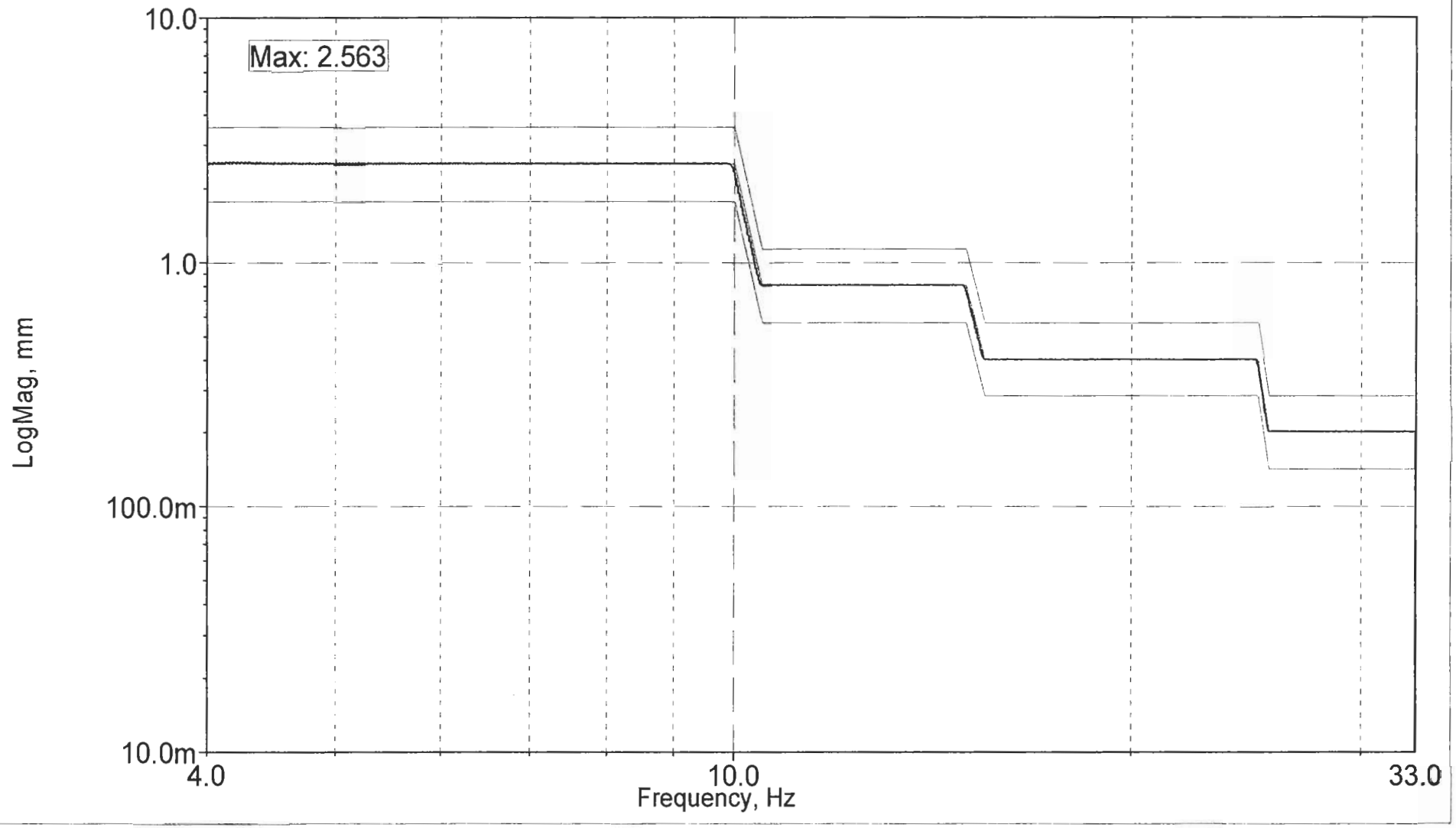
SPECIMEN NUMBER(S)	DATE	AXIS	START	STOP	TEST PARAMETERS	PLOT NUMBER	REMARKS
2 Pcs.	**6/29**	X	1337	1407	**Sinusoidal Vibration** 4 - 10Hz., 2.5mm S.A. 10 - 15Hz., 0.8mm S.A. 15 - 25Hz., 0.4mm S.A. 25 - 33Hz., 0.2mm S.A. (5 Minutes/Cycle)	1	Completed 6 Cycles
↓	↓	Y	1413	1443	↓	2	Completed 6 Cycles
↓	↓	Z	1453	1523	↓	3	Completed 6 Cycles

NOTES

1. SPECIMENS: NON-OPERATING [X] OPERATING [X] By: A-K Personnel
2. Samples To Be Monitored For Activation.

E.A. Job No. 28061-0216905, June 29, 2007
Ameri-King RTCM PAPER 76-2002/SC110-STD

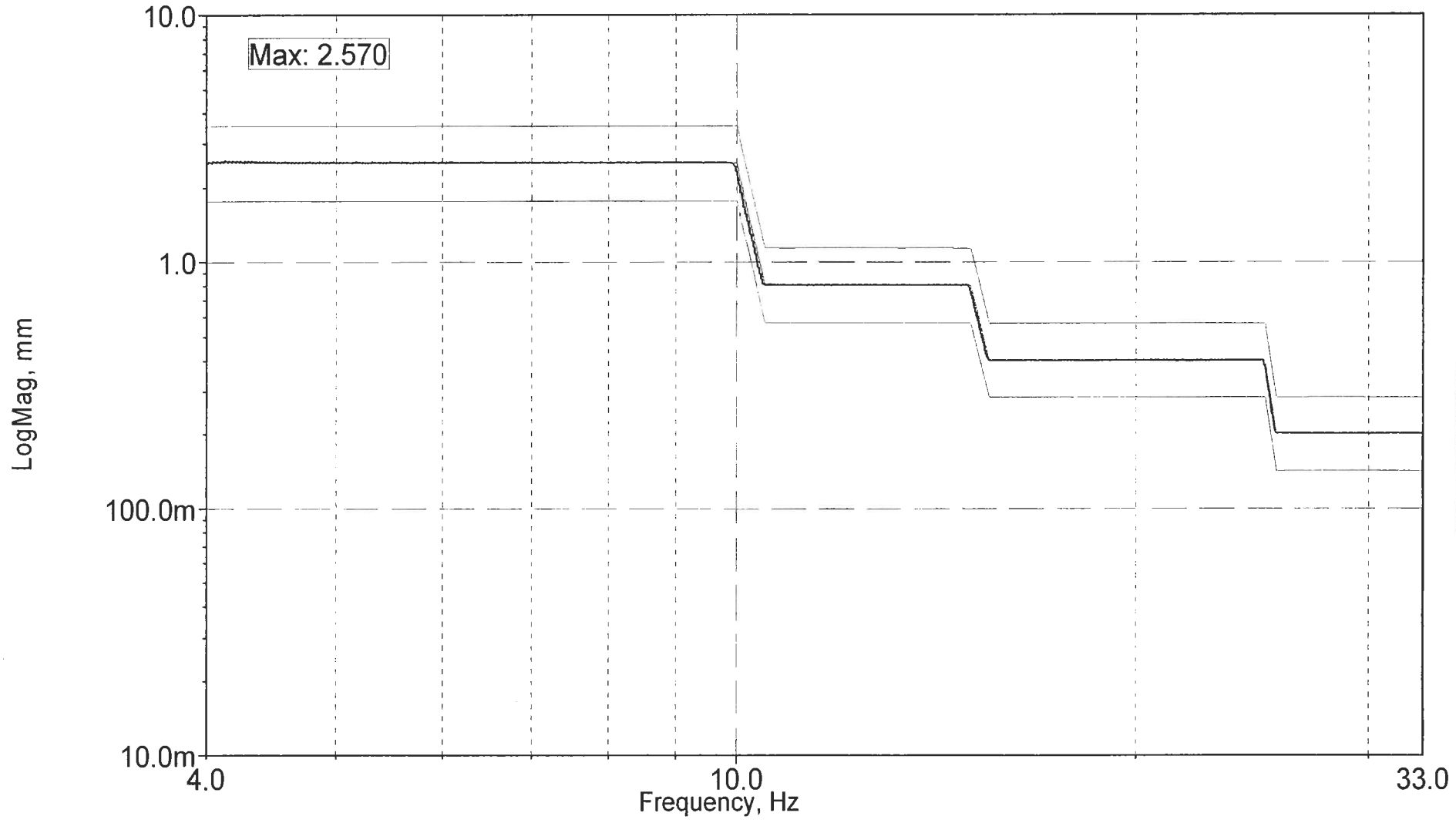
Control



X Axis Plot #1, Completed 6 Sweeps
Personal Locator Beacon AK 451-PLB C/S 09 & C/S 19, Antenna 451017-1B/2A/3A/4(AF)

E.A. Job No. 28061-0216905, June 29, 2007
Ameri-King RTCM PAPER 76-2002/SC110-STD

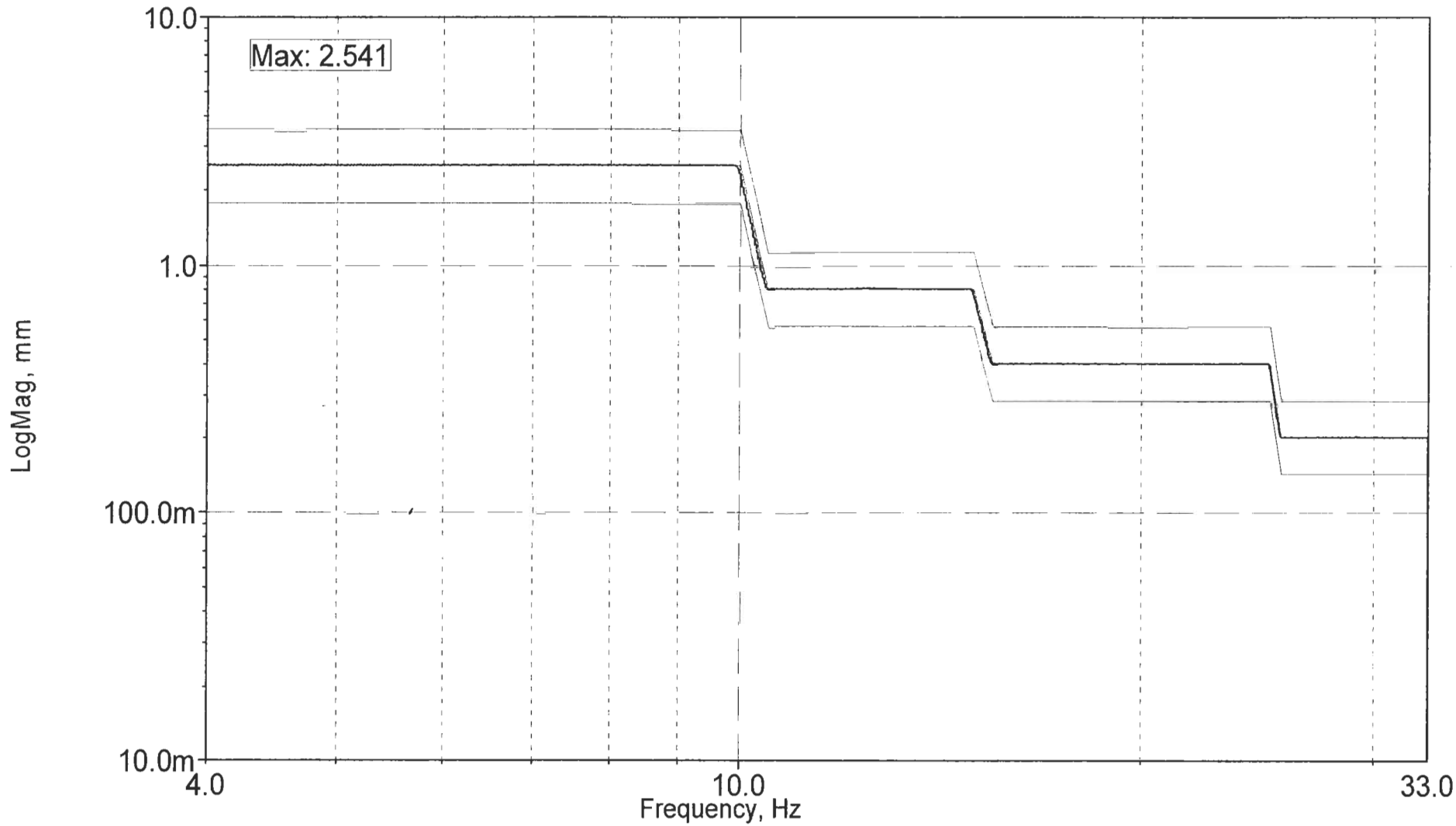
Control



Y Axis Plot #2, Completed 6 Cycles
Personal Locator Beacon AK 451-PLB C/S 09 & C/S 19, Antenna 451017-1B/2A/3A/4(AF)

E.A. Job No. 28061-0216905, June 29, 2007
Ameri-King RTCM PAPER 76-2002/SC110-STD

Control



Z Axis Plot #3, Completed 6 Cycles
Personal Locator Beacon AK 451-PLB C/S 09 & C/S 19, Antenna 451017-1B/2A/3A/4(AF)

3.0 BUMP

The total number of pages in this subsection is 6

ENVIRONMENT ASSOCIATES

TEST DATA

DATE STARTED	CUSTOMER	TECHNICIAN (Signature)
June 29, 2007	Ameri-King Corporation	J. Salinas
DATE COMPLETED	SPECIMEN DESCRIPTION	ENGINEER (Signature)
June 30, 2007	Personal Locator Beacon	Martin R. Batts
TEMPERATURE (Laboratory)	TYPE OF TEST	ENGINEER
+74 Deg. F	Bump	
HUMIDITY (Laboratory)	TEST SPECIFICATION / PARAGRAPH NUMBER	JOB NUMBER
49%	RTCM PAPER 76-2002/SC110-STD / A4.0	28061-0216905

SPECIMEN NUMBER
AK 451-PLB C/S 09 & C/S 19, Antenna 451017-1B/2A/3A/4(AF)

6/29

1530 Began Calibration And Set-Up Of Vibration System.

Computer Channel(s) Assignment(s):

Channel No.	C=Control R=Response	pC/g	mV/g	Accel. Serial No.	Notes:
1	C	30	50.4	FW20	On Fixture Base
2					
3					
4					

Monitoring Equipment Set-Up By: N/A — E.A. Slip Plate # S894-3
Fixtures Property Of E.A. — Head Expander # H894-1
Mounted Fixture In Z Axis.
Specified Test Requirements: 4000 1/2 Sine 16mS Bumps @ 98m/s^2, Operating, Non-Activating, In Each Of Three Axes.

1540 Set-Up Completed , [X] Photograph Taken. Samples Mounted In Z Axis.
1543 Began Bump Test.
1712 Completed 4000Bumps. Samples Did Not Activate.
Stopped Testing For The Day.

6/30

1400 Test Samples Remounted In Y Axis.
1415 Began Bump Test.
1544 Completed 4000Bumps. Samples Did Not Activate.
Test Samples Remounted In X Axis.
1550 Began Bump Test.
1719 Completed 4000Bumps. Samples Did Not Activate.
Test Completed.

ENVIRONMENT ASSOCIATES

TEST DATA

DATE STARTED	CUSTOMER	TECHNICIAN (Signature)
June 29, 2007	Ameri-King Corporation	J. Falcicola
DATE COMPLETED	SPECIMEN DESCRIPTION	ENGINEER (Signature)
June 30, 2007	Personal Locator Beacon	Martin R. Baptiste
TEMPERATURE (Laboratory)	TYPE OF TEST	ENGINEER
+74 Deg. F	Bump	
HUMIDITY (Laboratory)	TEST SPECIFICATION / PARAGRAPH NUMBER	JOB NUMBER
49%	RTCM PAPER 76-2002/SC110-STD / A4.0	28061-0216905

SPECIMEN NUMBER

AK 451-PLB C/S 09 & C/S 19, Antenna 451017-1B/2A/3A/4(AF)

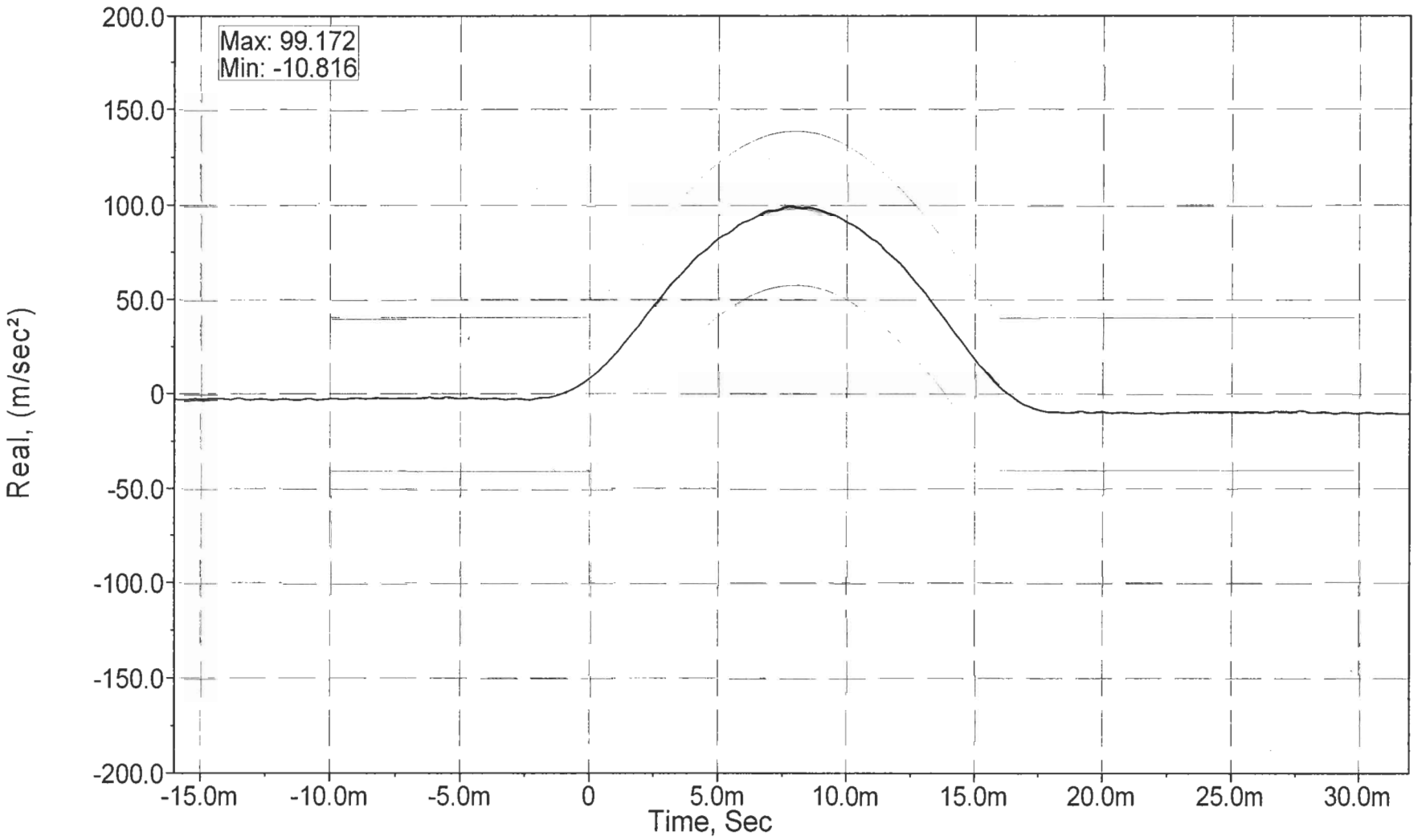
SPECIMEN NUMBER(S)	DATE	AXIS	START	STOP	TEST PARAMETERS	PLOT NUMBER	REMARKS
2 Pcs.	**6/29**	Z	1543	1712	**1/2 Cycle Sine Wave** 16.0 mS, 98m/s^2	1	Completed 4000 Bumps
↓	**6/30**	Y	1415	1544	↓	2	Completed 4000 Bumps
↓	**6/30**	X	1550	1719	↓	3	Completed 4000 Bumps

NOTES

1. SPECIMENS: NON-OPERATING ☐ OPERATING ☒ By: E.A. Personnel
2. Samples To Be Monitored For Activation.

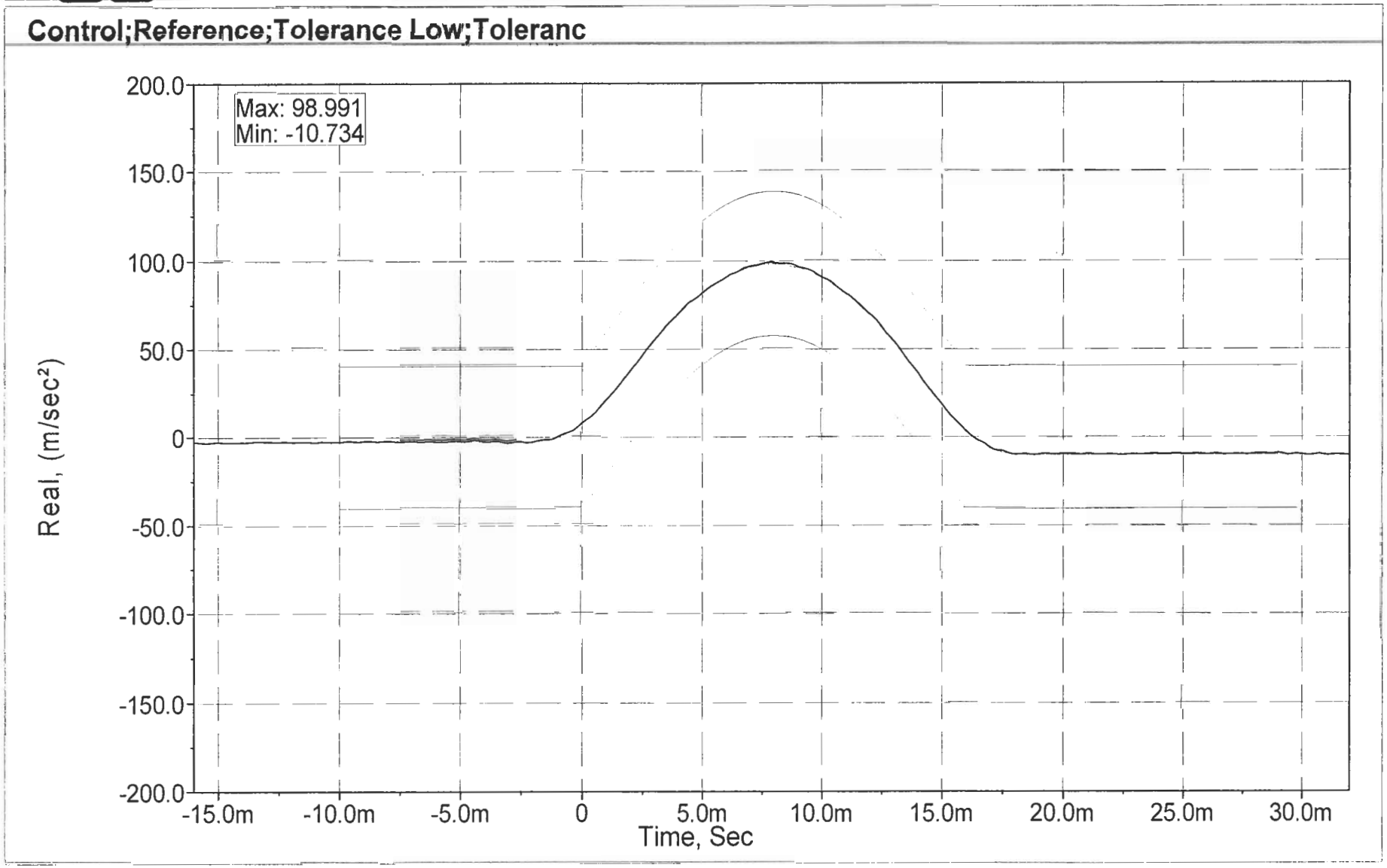
E.A. Job No. 28061-0216905, June 30, 2007
Ameri-King RTCM PAPER 76-2002/SC110-STD

Control;Reference;Tolerance Low;Toleranc



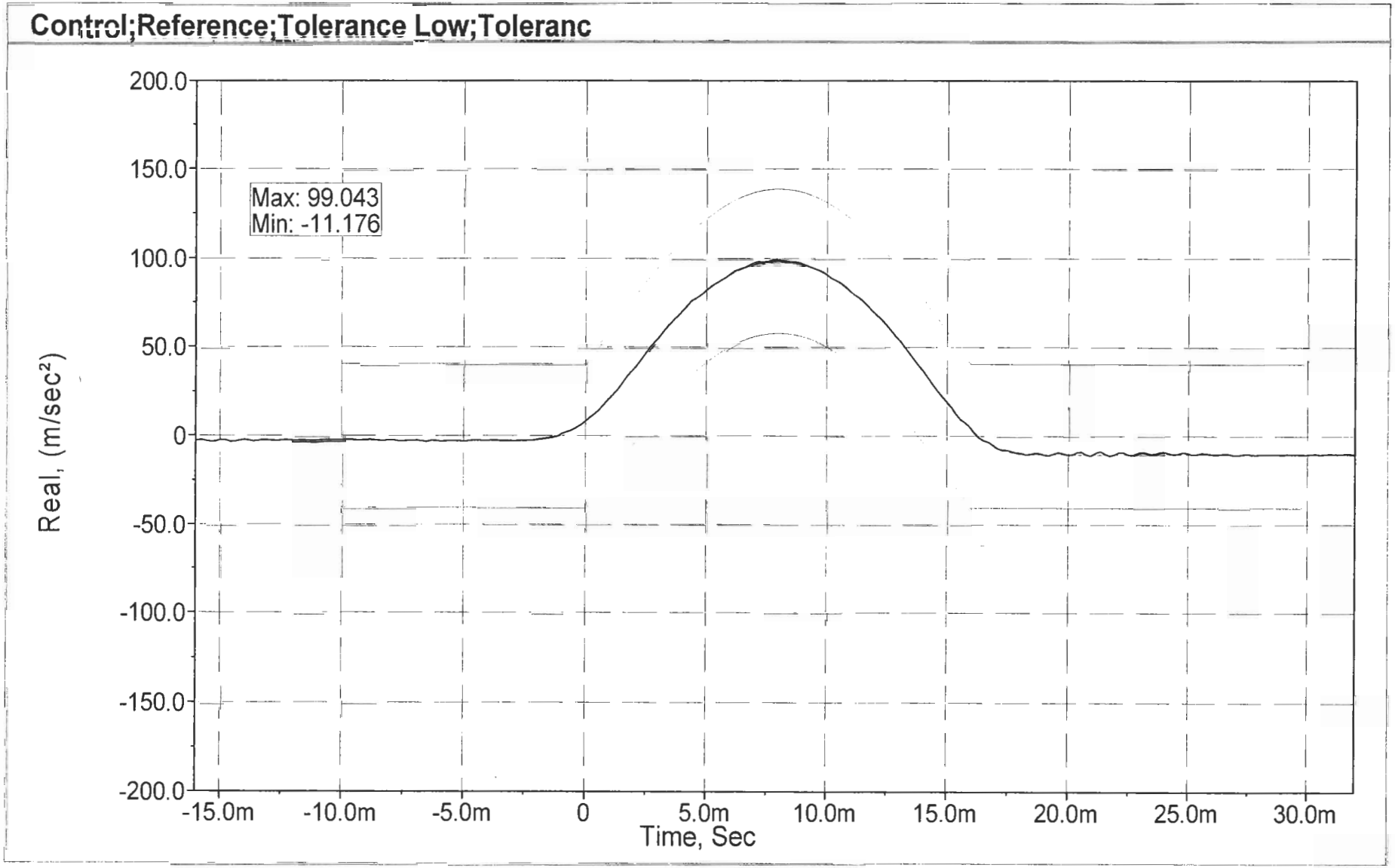
+Z Axis Plot #1, Completed 4000 Bumps
Personal Locator Beacon AK 451-PLB C/S 09 & C/S 19, Antenna 451017-1B/2A/3A/4(AF)

E.A. Job No. 28061-0216905, June 30, 2007
Ameri-King RTCM PAPER 76-2002/SC110-STD



+Y Axis Plot #2, Completed 4000 Bumps
Personal Locator Beacon AK 451-PLB C/S 09 & C/S 19, Antenna 451017-1B/2A/3A/4(AF)

E.A. Job No. 28061-0216905, July 1, 2007
Ameri-King RTCM PAPER 76-2002/SC110-STD



+X Axis Plot #3, Completed 4000 Bumps
Personal Locator Beacon AK 451-PLB C/S 09 & C/S 19, Antenna 451017-1B/2A/3A/4(AF)

4.0 SALT FOG

The total number of pages in this subsection is 4

ENVIRONMENT ASSOCIATES

TEST DATA

DATE STARTED	CUSTOMER	TECHNICIAN (Signature)
July 1, 2007	Ameri-King Corporation	J. Salvisola
DATE COMPLETED	**SPECIMEN DESCRIPTION**	**ENGINEER (Signature)**
July 6, 2007	Personal Locator Beacon	Martin R. Baltz
TEMPERATURE (Laboratory)	**TYPE OF TEST**	**ENGINEER**
+74 Deg. F	Salt Fog	
HUMIDITY (Laboratory)	**TEST SPECIFICATION** / **PARAGRAPH NUMBER**	**JOB NUMBER**
49%	RTCM PAPER 76-2002/SC110-STD / A5.0	28061-0216905

SPECIMEN NUMBER

AK 451-PLB C/S 09 & C/S 19 Antenna 451017-1B/2A/3A/4(AF)

7/01	
0715	Test Samples Completed Vibration And Bump Testing.
0727	Samples Placed Into Pre-conditioning Temp. Chamber.
0735	Temp. Chamber Is Now Stable At +95ºF/+35ºC. Beginning Preconditioning
7/02	
0850	Completed At least 2 Hours Temperature Preconditioning. Sample Removed From Chamber And Placed In Salt Fog Chamber. Beginning 48 Hour Exposure.
	Test Conditions: 5%+/-1% Salt Solution At +95ºF/+35ºC For 48 Hours, Followed By 24 Hour Drying Time And Returned To Complete An Additional 12 Hours Of Salt Fog Exposure. Sample Shall Be Inspected By Customer For Corrosion, Peeling Paint And Other Signs Of Deterioration Followed By A Aliveness Test. Note: Samples Successfully Passed Aliveness Test Following Vibration And Bump tests.
1700	Chamber Operation OK, Continuing Exposure.
7/03	
0900	Completed 24 Hours Exposure. Collected Solution Measurements Recorded And Are Within Specified Limits. Continuing Exposure.
1330	Chamber Operation OK, Continuing Exposure.
1655	Chamber Operation OK, Continuing Exposure.
7/04	
0910	Completed 48 Hour Exposure, Samples Removed From Chamber. Beginning 24 Hour Drying Period. Collected Solution Measurements Recorded And Are Within Specified Limits.
7/05	
1715	Completed 24 Hours (Minimal) Drying Period. Test Samples returned To Salt Fog Chamber. Beginning 12 Hour Exposure.
7/06	
0700	Completed 12 Hour (Minimum) Salt Fog Exposure. Test Samples Removed From Chamber For Inspection And Aliveness Test By Customer. Collected Solution Measurements Recorded And Are Within Specified Limits.
1000	Customer Reported No Functional Faults Or Deterioration Following Aliveness Test And Visual Inspection.

SALT SPRAY DATA SHEET

Environment Associates, Inc.

TEST SETUP

CUSTOMER Ameri-King Corp. JOB NO. 28061-0216905 DATE 7/- Thru 7/6/2007

SPECIMEN Personal Location Beacon PART NO. AK451-PLB SERIAL NO. C/S 09 & C/S 19

SPECIFICATION NO. RTCM PAPER 76-2002/SC110-STD REV. NO. — PARAGRAPH NO. Antenna 451017-1B/2A/3A/4(AF) A5.0

PREPARATION OF SPECIMENS Prepared By Customer

PROTECTION FOR NON-TESTED PARTS N/A

VENTS, PORTS, CONNECTORS CAPPED: YES ✓ NO ___ COMMENT: Silicon Sealed By Customer

SUPPORT METHOD Poly Tray ORIENTATION OF SPECIMENS Horizontal

SOLUTION: SALT 5 % H20 95 % (by weight) pH 6.8 AT 68 °F CHAMBER TEMPERATURE +95 °F

SPECIFIC GRAVITY 1.031 AT 68 °F WATER COLUMN TEMPERATURE 118 °F NOZZLE PRESSURE 17 PSIG

TEST RECORD

ELAPSED TIME (HOURS)	CHAMBER TEMP. (°F)	SOLUTION VOLUME PER 80 CM² AREA (1) (ml/HR)	SOLUTION VOLUME PER 80 CM² AREA (2) (ml/HR)	SOLUTION VOLUME PER 80 CM² AREA (3) (ml/HR)	SOLUTION VOLUME PER 80 CM² AREA (4) (ml/HR)	COLLECTED SOLUTION SPECIFIC GRAVITY	COLLECTED SOLUTION pH VALUE	COLLECTED SOLUTION TEMP. (°F)
24 7/03	+95	1.9	1.7	1.4	2.3	Meas. 1.030 Corr. .004 Actual 1.034	6.8	+82
48 7/04	+95	2.4	2.1	1.6	2.5	Meas. 1.026 Corr. .005 Actual 1.031	6.8	+87
12 7/06	+95	2.3	2.2	1.4	2.7	Meas. 1.023 Corr. .0045 Actual 1.0275	6.8	+85
___	___	___	___	___	___	Meas. ___ Corr. ___ Actual ___	___	___

STOP DATE AND TIME 7/6/07 07:00 TEST DURATION 48 & 12 HOURS PHOTOGRAPH TAKEN: YES ✓ NO ___

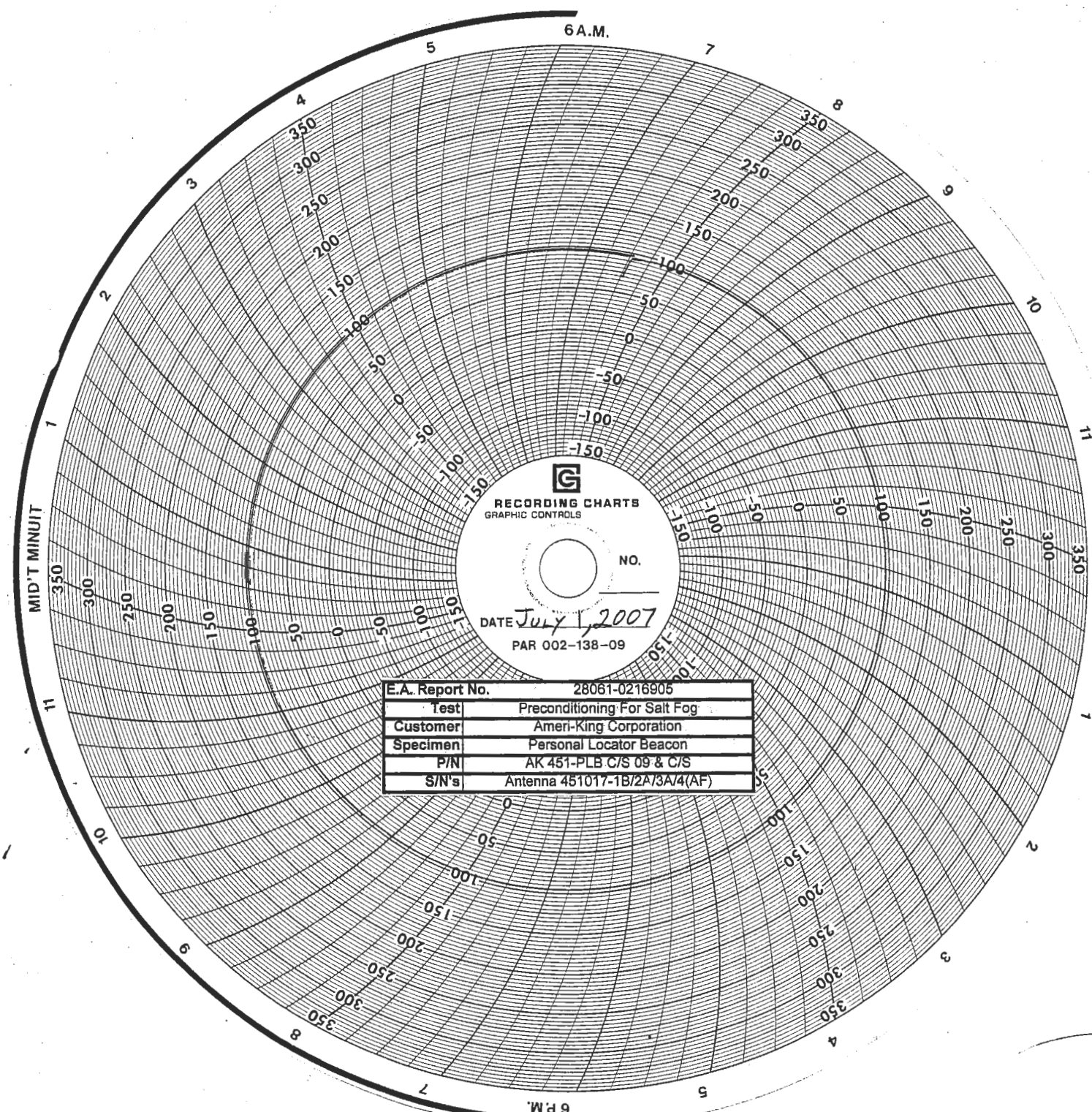
COMMENTS: ___

RESULTS OF TEST: Sample Passed

TEST TECHNICIAN Jo Taberiola TEST ENGINEER Martin R. Baptiu

(1), (2), (3), (4) Check the Specification and Revision for the number and location of collection receptacles. Describe on the log sheet.

DS1-7-03


6 A.M.
NOON MIDI
6 P.M.
MID'T MINUIT
RECORDING CHARTS
GRAPHIC CONTROLS
NO.
DATE July 1, 2007
PAR 002-138-09
E.A. Report No. 28061-0216905
Test Preconditioning For Salt Fog
Customer Ameri-King Corporation
Specimen Personal Locator Beacon
P/N AK 451-PLB C/S 09 & C/S
S/N's Antenna 451017-1B/2A/3A/4(AF)

5.0 DROP

The total number of pages in this subsection is 3

ENVIRONMENT ASSOCIATES

TEST DATA

TE STARTED	CUSTOMER	TECHNICIAN (SIGNATURE)
7-6-07	AMERI-KING CORP	
DATE COMPLETED	SPECIMEN DESCRIPTION	ENGINEER (SIGNATURE)
7-6-07	PERSONAL LOCATOR BEACONS	Martin R. Barton
TEMPERATURE (LAB)	TYPE OF TEST	ENGINEER
74°F	DROP	
HUMIDITY (LAB)	TEST SPECIFICATION / PARAGRAPH NO.	JOB NUMBER
44% RH	RTCM. PAPER 76-2002/ SC110-STD A6.0	28061-0216905
SPECIMEN NUMBER	SN: CS09, CS19	PHOTO TAKEN
AK451-PLB		

ANTENNAS 451017. 1B, 2A, 3A, 4AF

AFTER PRECONDITIONING AT -55°C FOR TWO HOURS AND -40°C FOR A TWO HOUR SOAK. THE DROP TEST SHOULD BE COMPLETED WITHIN FIVE MINUTES. SAMPLES ARE TO BE DROPED ON ALL 6 FLAT SIDES FROM A HEIGHT OF 1000 ± 10mm (39.3) INCHES. THE TEST SURFACE WILL BE SOLID WOOD BACKED BY 4' THICK CONCRETE. CUSTOMER TO DO FUNCTIONAL TEST UPON COMPLETION OF THE DROP TEST.

7-6-07

1045 SAMPLES PLACED IN CHAMBER AT -55°C FOR TWO HOURS

1245 RAMP CHAMBER TO -40°C FOR FINAL TWO HOUR SOAK.

1445 REMOVE SAMPLES FOR DROP TEST

1447 STARTS DROPS 1-6

1500 DROPS COMPLETE

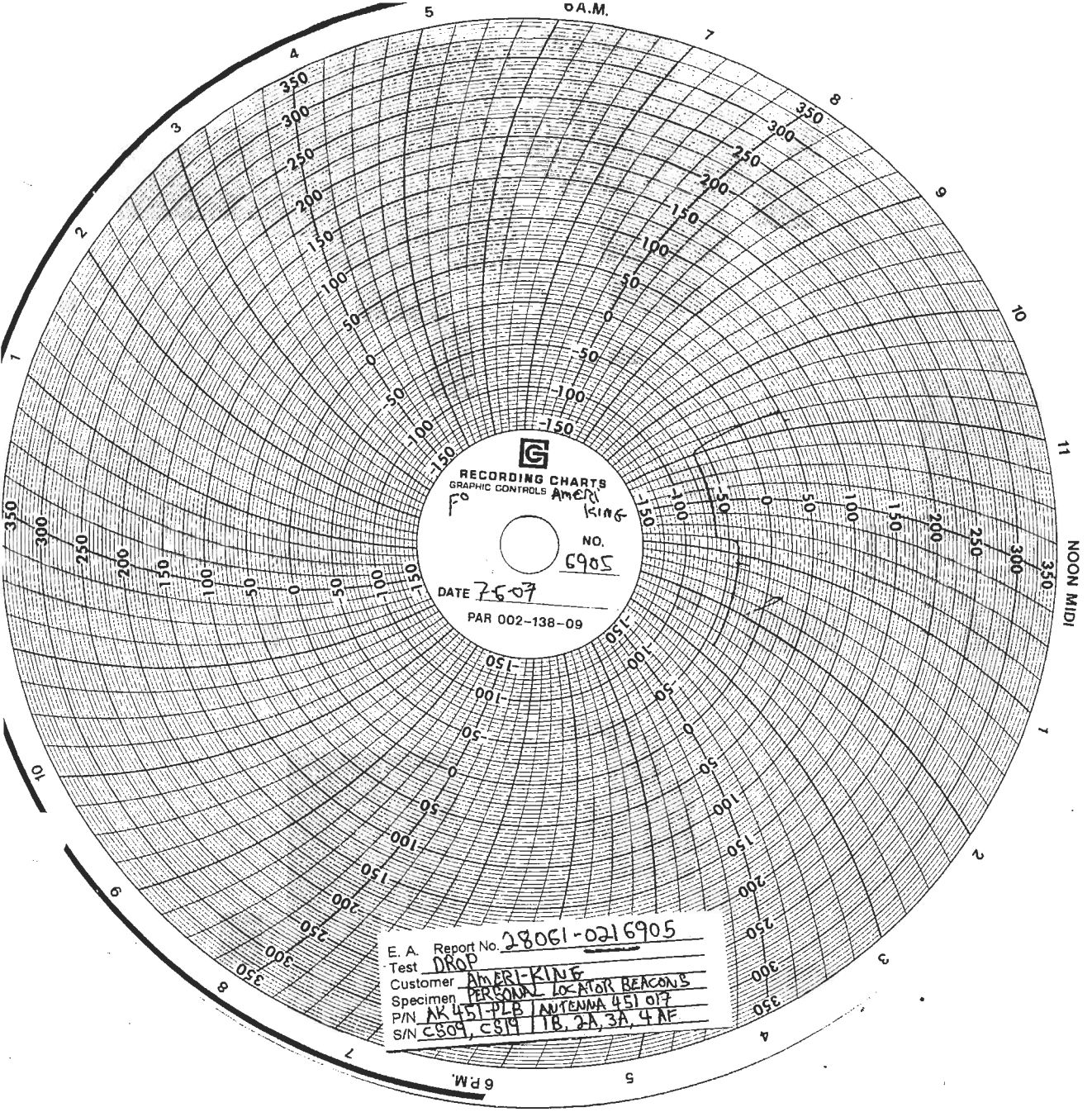
DROP SEQUENCE.

#1, SIDE 3, BOTTOM SIDE
#2 SIDE 5, BACK SIDE
#3, SIDE 6, FRONT SIDE
#4, SIDE 2, LEFT SIDE
#5, SIDE 4, RIGHT SIDE
#6, SIDE 1, TOP SIDE

OBSERVATIONS

DROP #6, SIDE 1 TOP SIDE.

ANTENNA AT THE BNC CONNECTOR CAME OFF ON IMPACT, CUSTOMER DID REINSTALL ANTENNA. TNC CONNECTOR IS OK SAMPLE WORKING OK.


6 A.M.
NOON MIDI
6 P.M.
RECORDING CHARTS
GRAPHIC CONTROLS
AmeriKing
NO.
6905
DATE 7-07
PAR 002-138-09
E. A. Report No. 28061-0216905
Test DROP
Customer AMERI-KING
Specimen PERSONAL LOCATOR BEACONS
P/N AK 451-PLB | ANTENNA 451 017
S/N C509, C519 | 1B, 2A, 3A, 4A

6.0 LEAKAGE - IMMERSION

The total number of pages in this subsection is 4

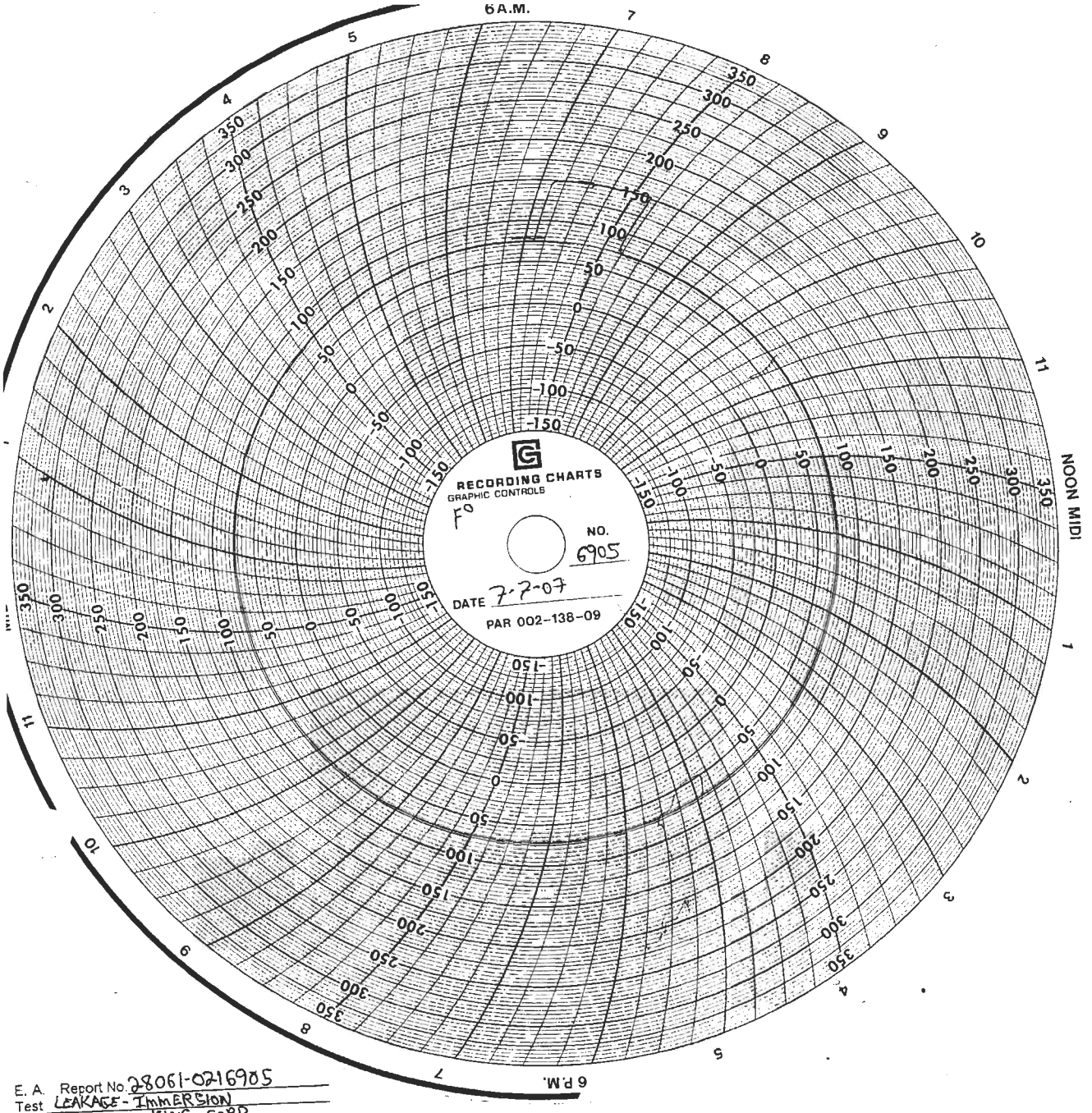
ENVIRONMENT ASSOCIATES

TEST DATA

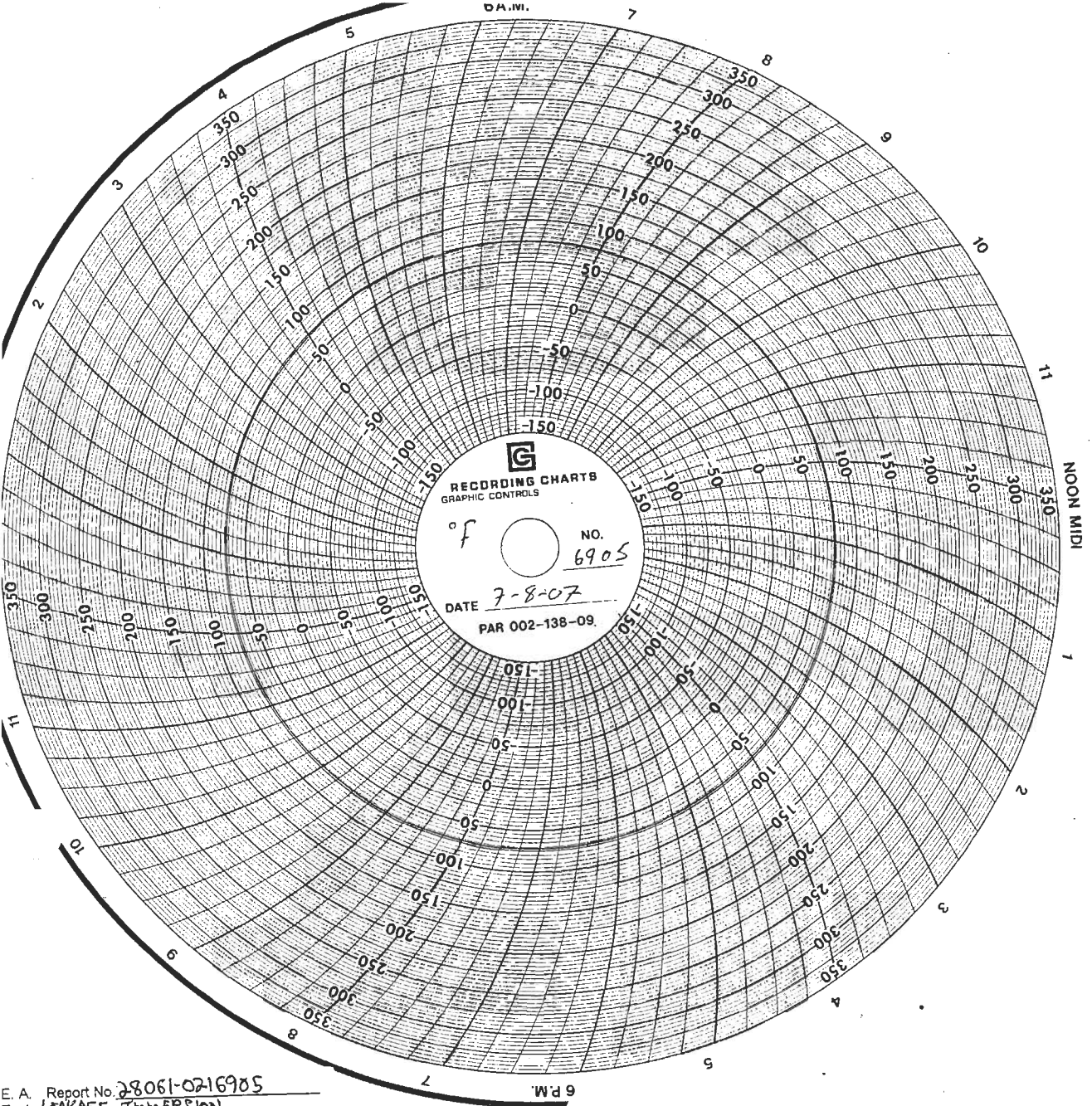
TE STARTED	CUSTOMER	TECHNICIAN (SIGNATURE)
7-7-07	AMERI-KING CORP	
DATE COMPLETED	SPECIMEN DESCRIPTION	ENGINEER (SIGNATURE)
7-9-07	PERSONAL LOCATOR BEACON	Martin R. Baptiste
TEMPERATURE (LAB)	TYPE OF TEST	ENGINEER
74°F	LEAKAGE-IMMERSION	
HUMIDITY (LAB)	TEST SPECIFICATION PARAGRAPH NO.	JOB NUMBER
44%	RTCM PAPER 76-2002/SC 110 STD A 7.0	28061-021605
SPECIMEN NUMBER		
AK451-PLB	SN: C809, C819	PHOTO TAKEN

ANTENNA 451 017, 1B, 2A, 3A, 4AF

	SAMPLE IN THE POWER OFF MODE. PRECONDITION SAMPLE AT +65°C FOR ONE HOUR. IT SHOULD THEN BE IMMERSED IN WATER AT +20 ± 3°C IN A DEPTH OF 100 ± 5 mm (4 1/8") INCHES FOR A PERIOD OF 48 HOURS. THEN SHOULD BE SUBMERGED AT A DEPTH OF ONE METER OF WATER FOR ONE HOUR. AT THE END OF THE TEST SAMPLE TO BE DRYED AND CUSTOMER TO INSPECT AND DO ALIVENESS TEST.
7-7-07	
0715	SAMPLE IN CHAMBER FOR ONE HOUR AT +65°C
0815	SAMPLE IMMERSED IN WATER AT +20°C FOR 48 HOURS
7-9-07	
0815	SAMPLES REMOVED FROM CHAMBER. AND SUBMERGED AT 1 METER (IN WATER) FOR ONE HOUR.
0915	EXPOSURE COMPLETE, REMOVE SAMPLES AND DRY FOR CUSTOMER TO DO ALIVENESS TEST



E. A. Report No. 28061-0216905
Test LEAKAGE - IMMERSION
Customer AMERI-KING CORP
Specimen PERSONAL LOCATOR BEACON
P/N AK451-PLB | ANTENNA 451017
S/N C509, C519. | 1B, 2A, 3A, 4AF



E. A. Report No. 28061-0216905
Test LEAKAGE - IMMERSION
Customer AMERI-KING CORP
Specimen PERSONAL LOCATOR BEACON
P/N AK451-PLB | ANTENNA 451017
S/N C509, C519. | 1B, 2A, 3A, 4AF

7.0 SPURIOUS EMISSIONS

The total number of pages in this subsection is 3

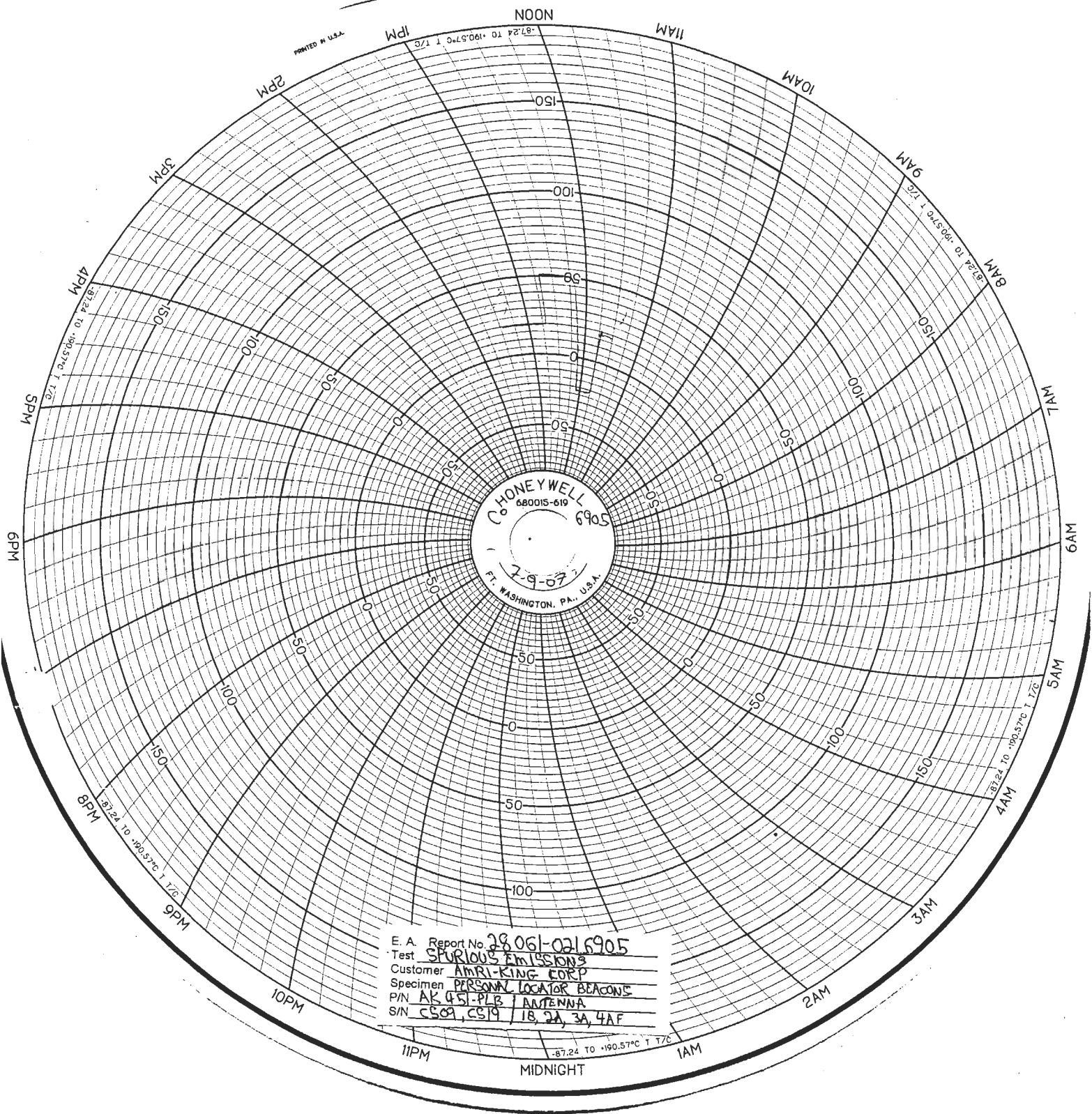
ENVIRONMENT ASSOCIATES

TEST DATA

ATE STARTED	CUSTOMER	TECHNICIAN (SIGNATURE)
7-9-07	AMERI-KING CORP	
DATE COMPLETED	SPECIMEN DESCRIPTION	ENGINEER (SIGNATURE)
7-9-07	PERSONAL LOCATOR BEACONS	Martin R. Baptiste
TEMPERATURE (LAB)	TYPE OF TEST	ENGINEER
73°F	SPURIOUS EMISSIONS	
HUMIDITY (LAB)	TEST SPECIFICATION / PARAGRAPH NO.	JOB NUMBER
42% RH	A 8.0	28061-021905
SPECIMEN NUMBER	SN: C809, C819	PHOTO TAKEN
AK 451-PLB		

ANTENNA 451017. 1B, 2A, 3A, 4AF

	THE SPURIOUS AND HARMONIC EMISSIONS MEASUREMENTS FOR THE 406 MHZ AND 121.5 MHZ SIGNALS SHOULD BE PERFORMED WITH THE EUT AT THE MINIMUM, MAXIMUM, AND AMBIENT TEMPERATURES. THESE ARE -20°C, +55°C AND 23°C.
7-9-07	
1140	RAMP CHAMBER TO -20°C AND STABILIZE.
1205	RAMP CHAMBER TO +55°C AND STABILIZE.
1240	RETURN TO AMBIENT AND STABILIZE.
1300	TEST COMPLETE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3PM
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7PM
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9PM
10PM
11PM
MIDNIGHT
1AM
2AM
3AM
4AM
5AM
6AM
7AM
8AM
9AM
10AM
11AM
-87.24 TO +190.57°C T T/C
HONEYWELL
6800015-619
6905
7-9-07
FT. WASHINGTON, PA., U.S.A.
PRINTED IN U.S.A.
E. A. Report No. 28061-026905
Test SPURIOUS EMISSIONS
Customer AMRI-KING CORP
Specimen PERSONAL LOCATOR BEACONS
P/N AK 451-PLB | ANTENNA
S/N CS09, CS19 | 1B, 2A, 3A, 4AF

APPENDIX II

TEST EQUIPMENT LISTS

AND

TYPICAL TEST SETUP PHOTOS

The total number of pages in this Appendix is 18

ENVIRONMENT ASSOCIATES

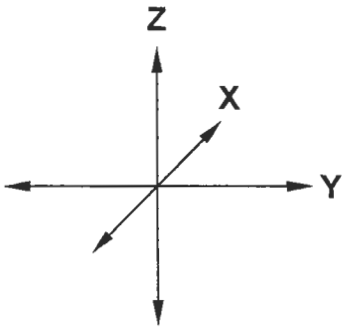
TEST DATA

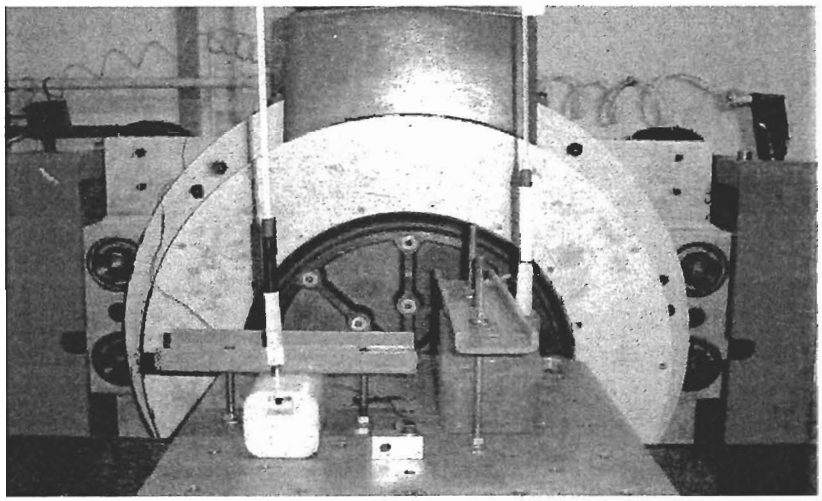
DATE STARTED	CUSTOMER		TECHNICIAN (Signature)
June 29, 2007	Ameri-King Corporation		J. Talmola
DATE COMPLETED	**SPECIMEN DESCRIPTION**		**ENGINEER (Signature)**
June 29, 2007	Personal Locator Beacon		Martin R. Battin
TEMPERATURE (Laboratory)	**TYPE OF TEST**		**ENGINEER**
+74 Deg. F	Vibration		
HUMIDITY (Laboratory)	**TEST SPECIFICATION**	**PARAGRAPH NUMBER**	**JOB NUMBER**
49%	RTCM PAPER 76-2002/SC110-STD	A3.0	28061-0216905

SPECIMEN NUMBER

AK 451-PLB C/S 09 & C/S 19 Antenna 451017-1B/2A/3A/4(AF)

Definition of Axes





Equipment List

Equipment Description	Manufacturer	Model Number	I.D. Number	Calibration Last	Calibration Due
Vibration Controller	Data Physics	DP 550	1342	6/4/2007	12/4/2007
Shaker	LDS	V894	130	Prior To Test	
Amplifier	LDS	SPA56K	SP8166-00V1	Prior To Test	
Accelerometer	Endevco	7702-50	FW20	2/23/2007	8/23/2007
Charge Amp.	Endevco	2721B	CE02	3/14/2007	9/14/2007

ENVIRONMENT ASSOCIATES

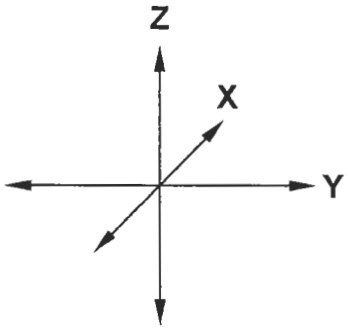
TEST DATA

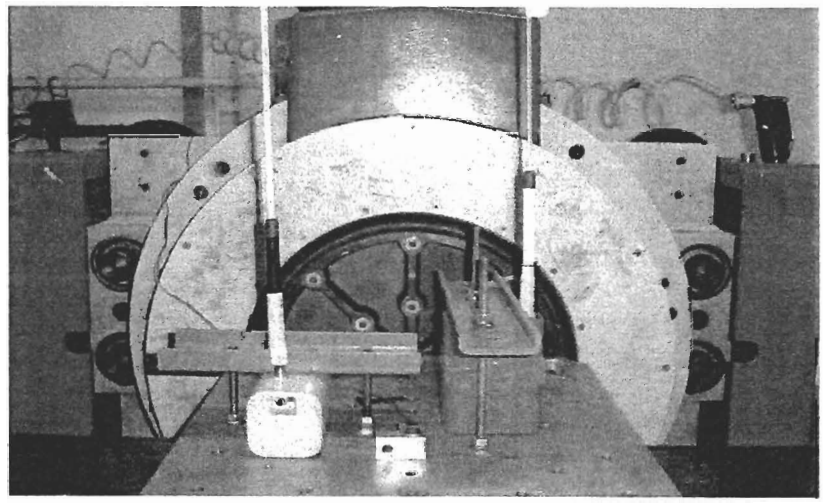
DATE STARTED	CUSTOMER		TECHNICIAN (Signature)
June 29, 2007	Ameri-King Corporation		J. Talerico
DATE COMPLETED	SPECIMEN DESCRIPTION		ENGINEER (Signature)
June 30, 2007	Personal Locator Beacon		Martin R. Baptiste
TEMPERATURE (Laboratory)	TYPE OF TEST		ENGINEER
+74 Deg. F	Bump		
HUMIDITY (Laboratory)	TEST SPECIFICATION	PARAGRAPH NUMBER	JOB NUMBER
49%	RTCM PAPER 76-2002/SC110-STD	A4.0	28061-0216905

SPECIMEN NUMBER

AK 451-PLB C/S 09 & C/S 19, Antenna 451017-1B/2A/3A/4(AF)

Definition of Axes





Equipment List

Equipment Description	Manufacturer	Model Number	I.D. Number	Calibration Last	Calibration Due
Vibration Controller	Data Physics	DP 560	1234	4/9/2007	10/9/2007
Shaker	LDS	V894	130	Prior To Test	
Amplifier	LDS	SPA56K	SP8166-00V1	Prior To Test	
Accelerometer	Endevco	7702-50	FW20	2/23/2007	8/23/2007
Charge Amp.	Endevco	2721B	CE02	3/14/2007	9/14/2007

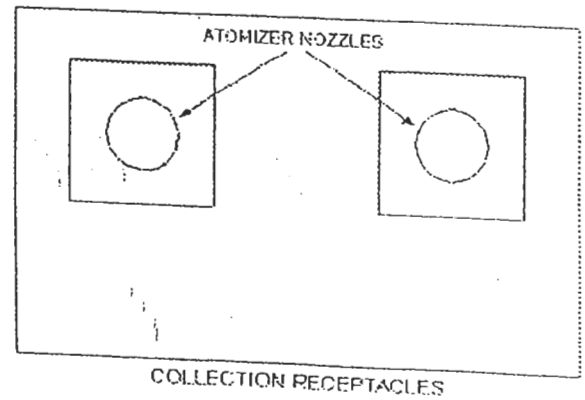
EQUIPMENT LIST

ENVIRONMENT ASSOCIATES

TEST DESCRIPTION: SALT FOG

JOB NUMBER 28061-0216905

EQUIPMENT DESCRIPTION	MANUFACTURER	MODEL NUMBER	I.D. NUMBER	CALIBRATED LAST:	CALIBRATION DUE:
CHAMBER	SINGLETON	SCCH-23	0486	REFERENCE	
DIGITAL THERMOMETER	OMEGA	HH23	T-234520	6/01/2007	12/01/2007
URINOMETER	SQUIBB	421521	LOT 100092996	FACTORY SET	
BROMOTHYMOL BLUE	EMD CHEMICAL	BX 1562-1	LOT 60886	EXP 31 MAR 08	
BI-COLOR TEST KIT	LaMOTTE CHEMICAL	PP-BTB	NSN		
THERMOMETER	HB-USA	-50 TO +120F	1241	11/02/2006	11/02/2007
GRADUATED CYLINDER	PYREX	25ml			



ENVIRONMENT
ASSOCIATES

JOB NUMBER 28061-021690S

EQUIPMENT LIST

TEST DESCRIPTION **SHOCK (DROP)**

EQUIPMENT DESCRIPTION	MANUFACTURER	MODEL NUMBER	I.D. NUMBER	CALIBRATED LAST:	CALIBRATION DUE:
FREE FALL DROP TESTER	M/RAD	3636/(200)DT	A/N-701	PER ASTM D 5276-98	
MEASURING TAPE	LUFKIN	HV1023-CME,10FT/3M	NSN	FACTORY SET	
CHAMBER	ENVIROTRONICS	ET8-2-3	32	REFERENCE	
CHART RECORDER	PARTLOW	4100-000-301-211-00	0332A	7-2-07	1-2-08

ENVIRONMENT ASSOCIATES, INC.

EQUIPMENT LIST

JOB NUMBER 28061-0216905

TEST DESCRIPTION: LEAKAGE - IMMERSION

EQUIPMENT DESCRIPTION	MANUFACTURER	MODEL NUMBER	ASSET/ID NUMBER	CALIBRATED LAST:	CALIBRATION DUE:
CHAMBER	ENVIROTRONICS	ET8-2-3	0332	REFERENCE	
CHART RECORDER	PARTLOW	4100-000-301-211-00	0332A	7-2-07	1-2-08

EQUIPMENT DESCRIPTION	MANUFACTURER	MODEL NUMBER	I.D. NUMBER		
VESSEL	EA	1.3 C+3		REFERANCE	
GAUGE	OMEGA	DPG 1100B	1298	3-12-07	9-12-07
WATCH	ACCUSPLIT	725MX TURBO	1454	5-9-07	11-9-07

ENVIRONMENT
ASSOCIATES

JOB NUMBER 28061-021605

EQUIPMENT LIST

TEST DESCRIPTION: SPURIOUS EMISSIONS

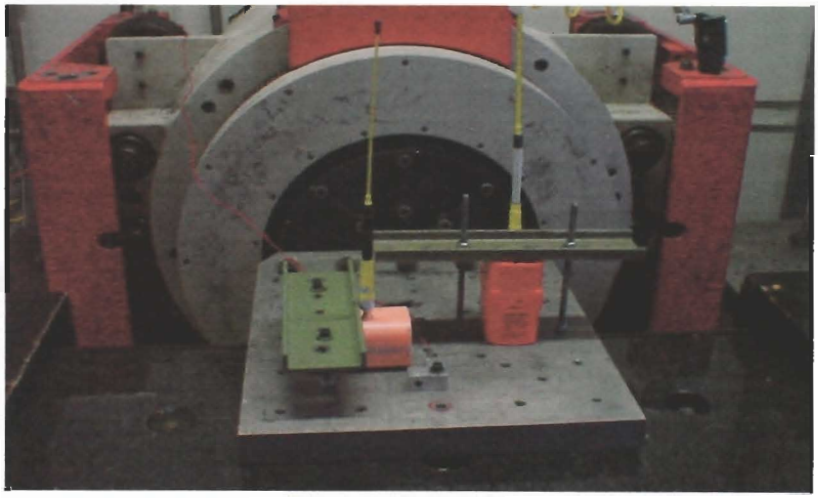
EQUIPMENT DESCRIPTION	MANUFACTURER	MODEL NUMBER	I.D. NUMBER	CALIBRATED LAST:	CALIBRATION DUE:
CHAMBER	THERMOTRON	F-32-CHV-15-15	319	REFERENCE	
CHART RECORDER	HONEYWELL	DR45A-1-1000	C-664	6-1-07	12-1-07

ENVIRONMENT ASSOCIATES

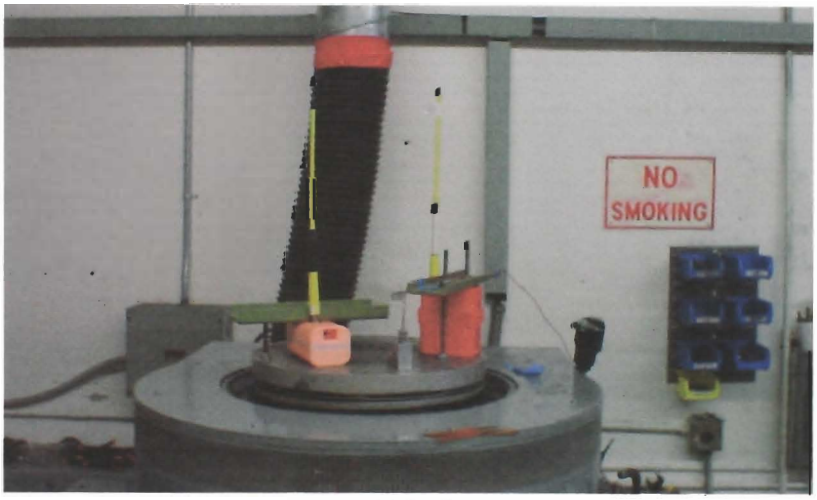
Customer:	Ameri-King corp.
E.A. Report No.:	28061-0216905
Date:	June 29, 2007
	Vibration Test

TYPICAL TEST SETUP

X Axis



Y Axis



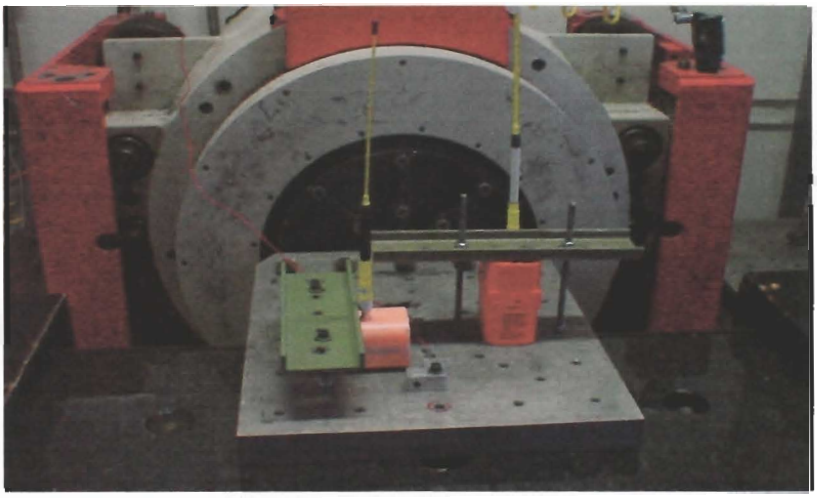
Z Axis

ENVIRONMENT ASSOCIATES

Customer:	Ameri-King corp.
E.A. Report No.:	28061-0216905
Date:	June 29 - 30, 2007
	Bump Test

TYPICAL TEST SETUP

X Axis



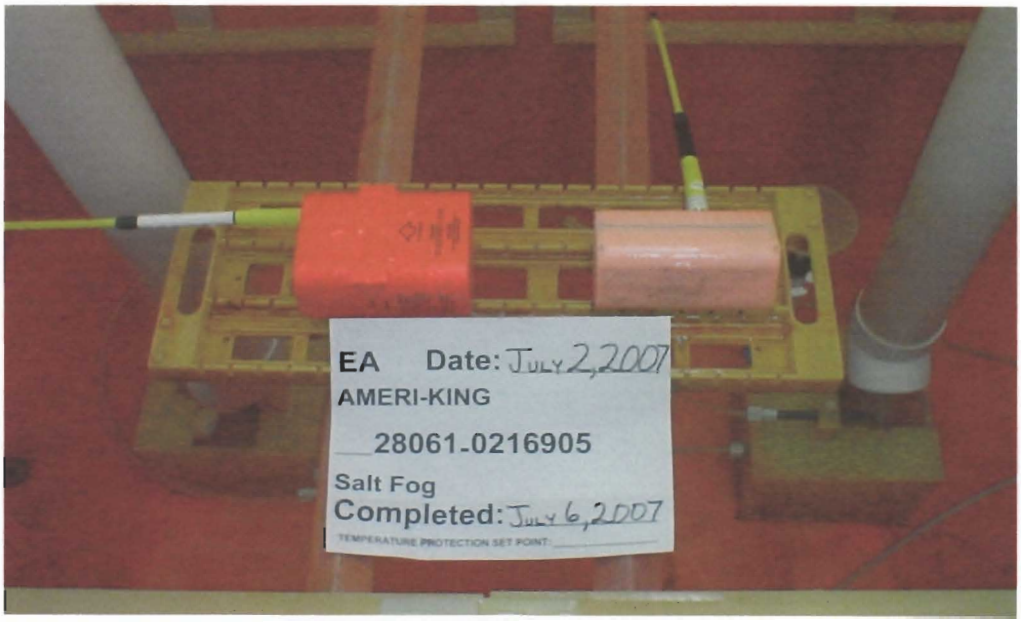
Y Axis

Z Axis

ENVIRONMENT
ASSOCIATES

Customer:	Ameri-King corp.
E.A. Report No.:	28061-0216905
Date:	July 1- 6, 2007
	Salt Fog

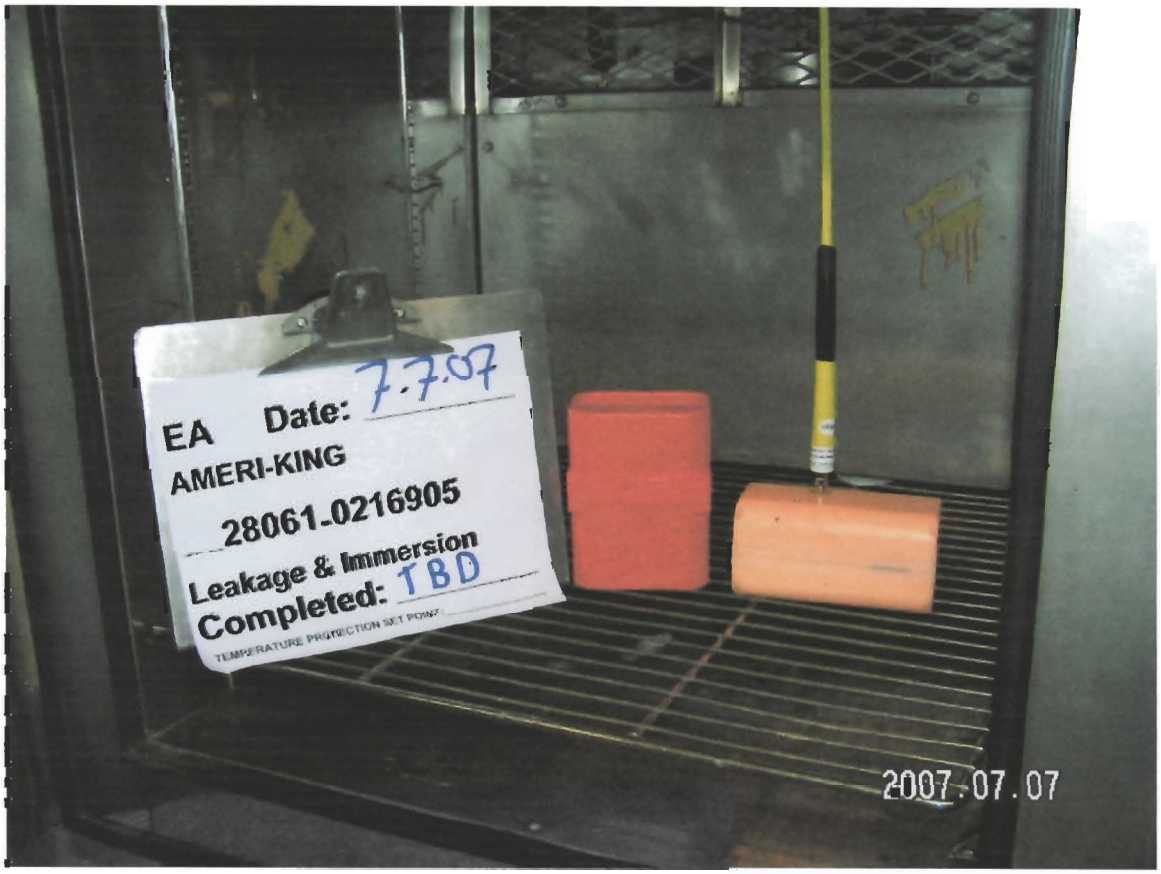
TYPICAL TEST SETUP



ENVIRONMENT
ASSOCIATES

JOB # 28061-0216905

TYPICAL TEST SET UP



PRECONDITIONING

7/9/2007

ENVIRONMENT
ASSOCIATES

JOB # 28061-0216905

TYPICAL TEST SET UP

7/9/2007

ENVIRONMENT
ASSOCIATES

JOB # 28061-0216905

TYPICAL TEST SET UP

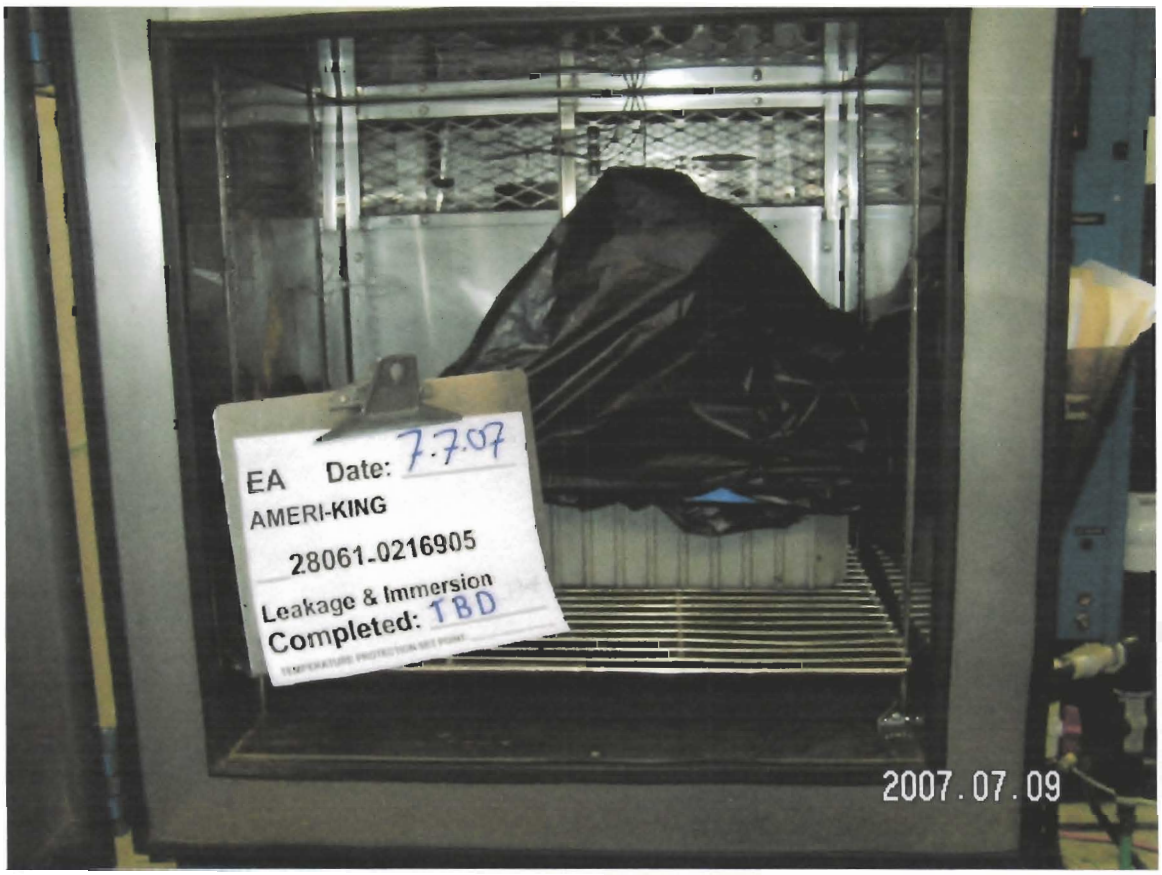
IMMERSION

7/9/2007

ENVIRONMENT
ASSOCIATES

JOB # 28061-0216905

TYPICAL TEST SET UP



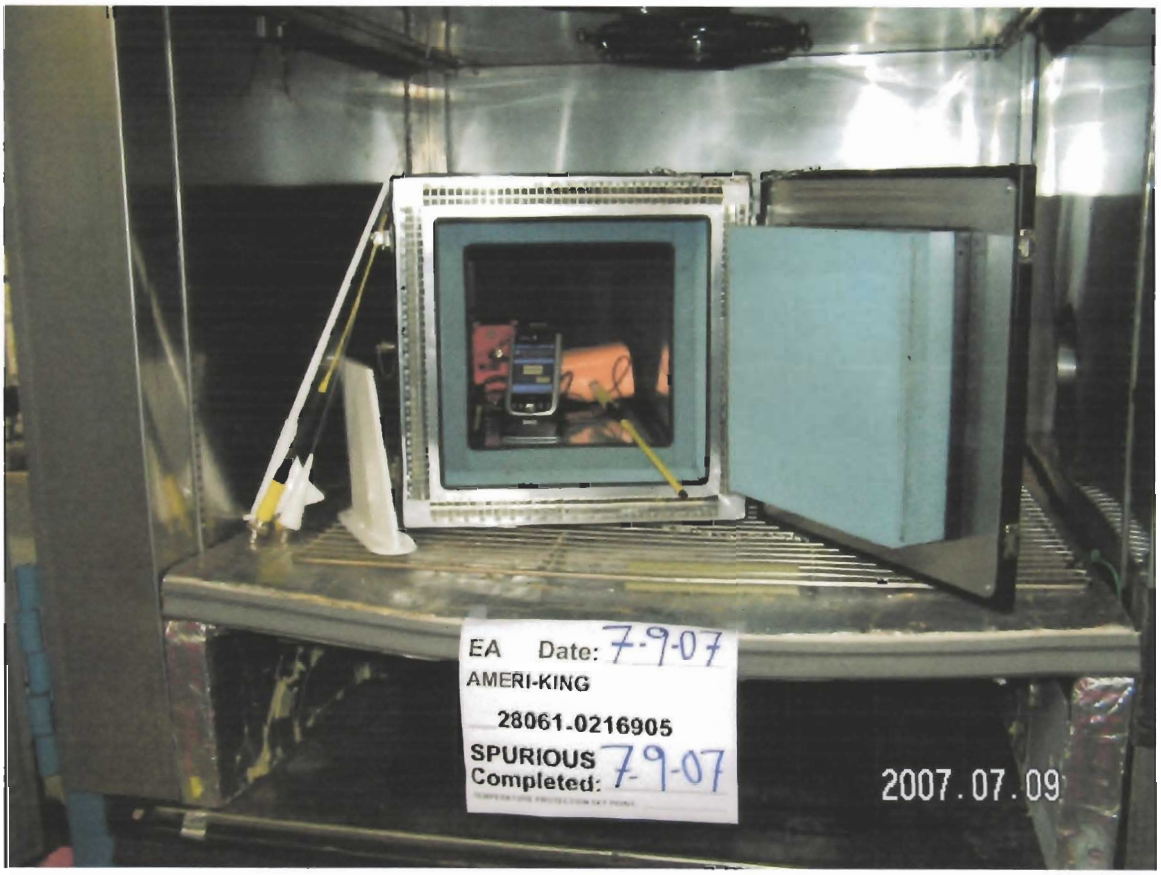
LEAKAGE

7/9/2007

ENVIRONMENT
ASSOCIATES

JOB # 28061-0216905

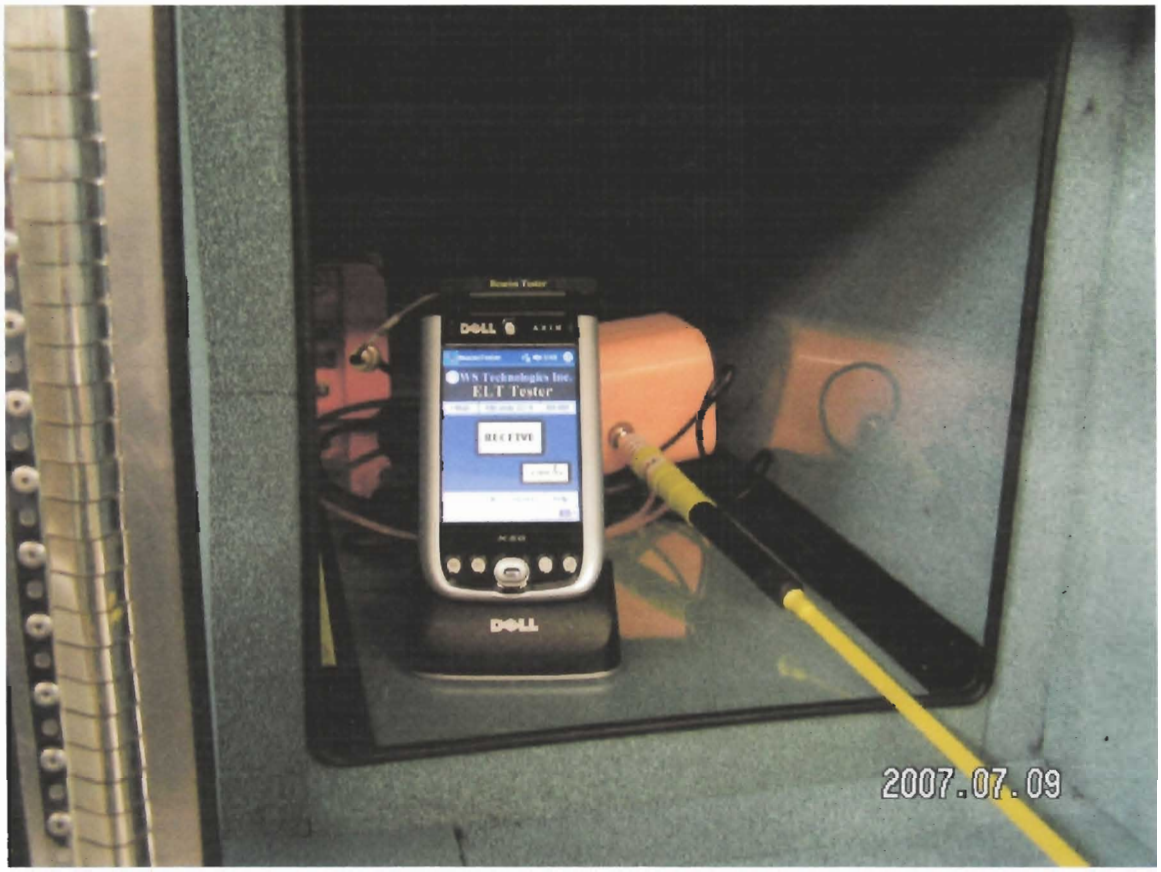
TYPICAL TEST SET UP



ENVIRONMENT
ASSOCIATES

JOB # 28061-0216905

TYPICAL TEST SET UP



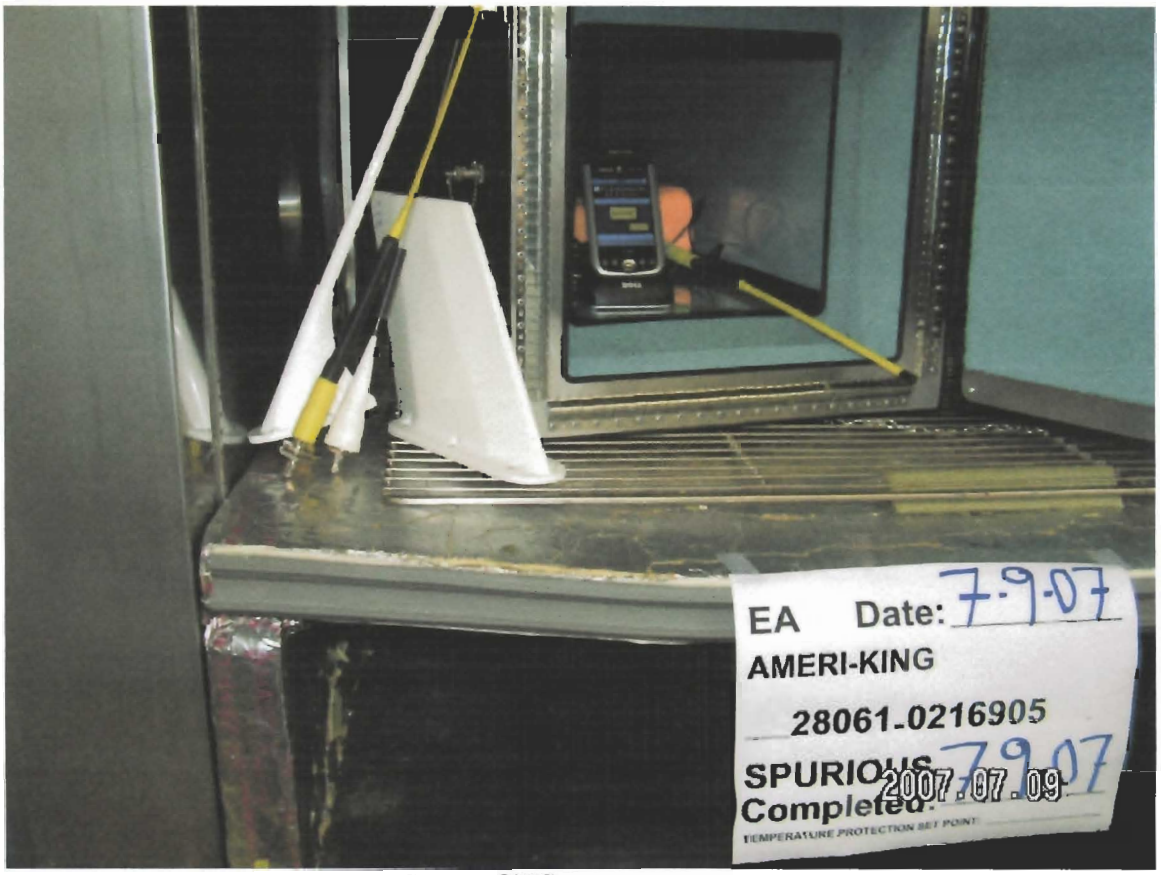
SPURIOUS

7/9/2007

ENVIRONMENT
ASSOCIATES

JOB # 28061--0216905

TYPICAL TEST SET UP



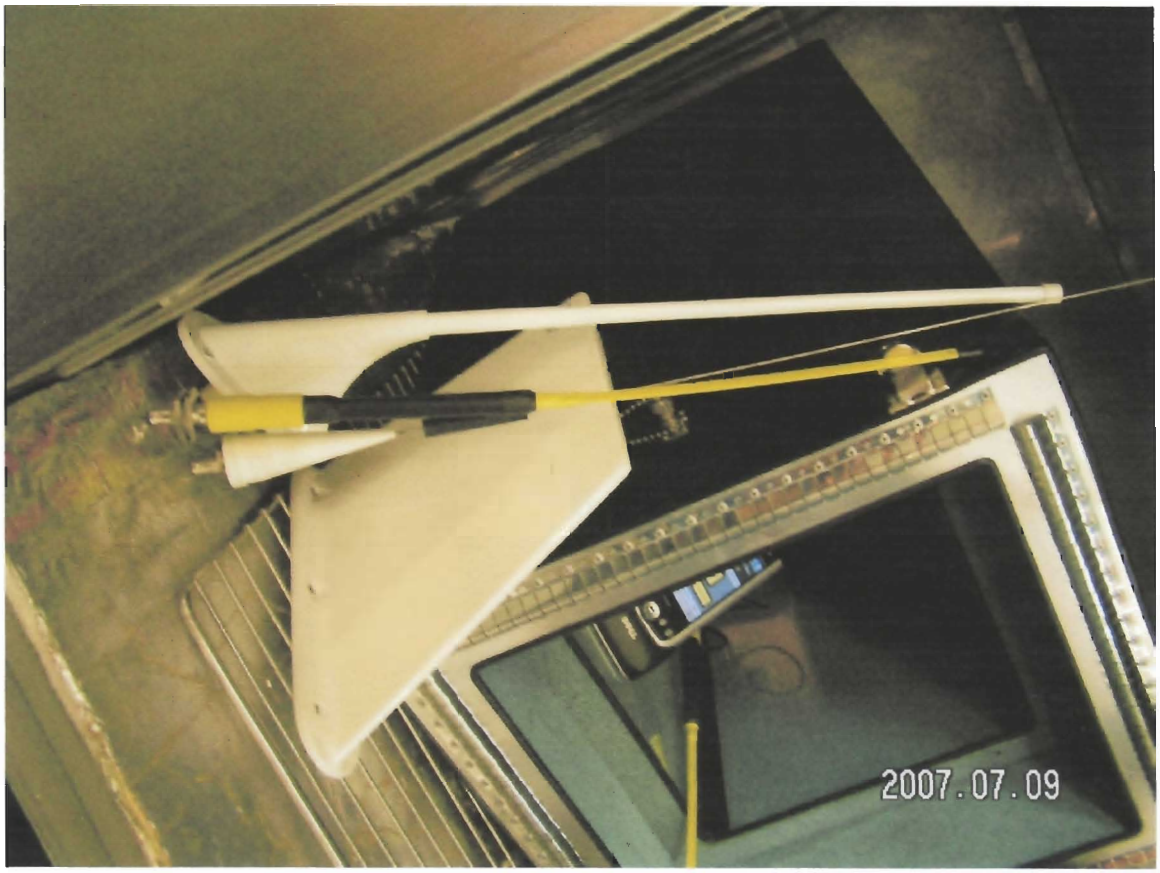
SPURIOUS

7/9/2007

ENVIRONMENT
ASSOCIATES

JOB #28061-0216905

TYPICAL TEST SET UP



7/9/2007