

Date: October 23<sup>rd</sup>, 2024  
To Perdomo Business Group

## **CERTIFICATION**

We hereby certify that the fiberglass tubes used to produced you all orders, have been electrically tested to ASTM F711 and OSHA 100KV withstand test requirements, and are within the mechanical tolerances as called for per their respective design drawings, and meet or exceed all ASTM F711 and OSHA standard in effect as of this date. All items produced by Hastings Fiber Glass Products Inc. meet or exceed all requirements and standards by ASTM F711 and OSHA. Items included in the below list that are not comprised of fiberglass, meet the specifications required for each product.

ITEMS: HV-240

On behalf of **Hastings Hot Line Tools & Equipment,**



Bill Wolfe  
Export Sales Manager  
October 23<sup>rd</sup>, 2024

## TEST REPORT

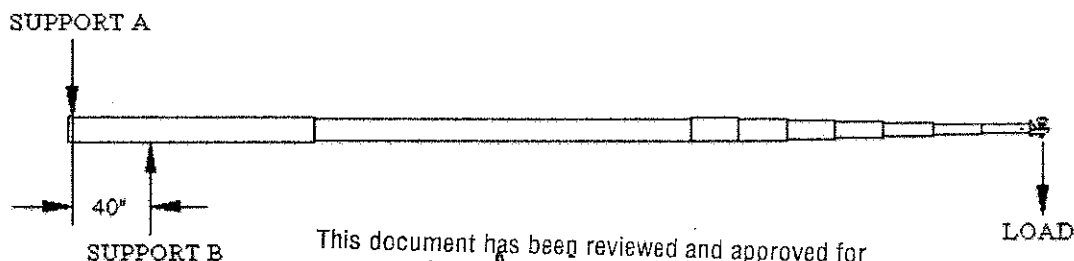
**ITEMS TESTED:** Round Tel-O-Poles as listed: ST-216, ST-220, ST-225, ST-230, ST-235, ST-240, SH-212, SH-216, SH-200, SH-250, and SH-230. HV Tel-O-Poles as listed: HV-208, HV-212, HV-216, HV-220, HV-225, HV-230, HV-235, and HV-240. Model ST -220 has a manufacturing date of 4-06, the remainder of the models have a manufacturing date of 8-06.

The Hastings ST model Tel-O-Poles are the same as the Hastings S model Tel-O-Poles, except that the ST models tip section will fully retract into the next larger section and lock. Therefore the S model Tel-O-Poles were not tested.

**DATE TESTED:** 7-24-07 (ST-216, ST-220, ST-225, ST-230, ST-235, ST-240, SH-212, SH-216, SH-200, SH-250, SH-230, HV-208, HV-212, HV-216, HV-220, HV-225, HV-230, HV-235) 8-28-07 (HV-240)

**SCOPE OF TEST:** Horizontal Deflection Test 9.3.1 per ASTM F1826-00

**TEST SETUP:** Test was setup per ASTM F1826-00 Horizontal Deflection Test. Support A was a clamp around the entire outside diameter of the pole, and Support B was a supporting cradle that was located 40" from Support A per ASTM F1826-00. The length of each support along the diameter of the poles was 2". Both supports A and B matched the outside diameter profiles of the test samples. All Tel-O-Poles were fully extended for the test.



This document has been reviewed and approved for release by Marty Kaiser on 9-24-07.  
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Report by: Marty Kaiser Date: 8-29-07  
Approved by: Len Sh Date: 9-24-07

## TEST REPORT

### TEST RESULTS:

#### Round Tel-O-Poles

Sample No.	Deflection Tested, 0 lbs.	Max. Deflection Per ASTM, 0 lbs.	Deflection Tested, 5 lbs	Max. Deflection Per ASTM, 5 lbs
ST-216	5 3/4"	10 1/2"	33 1/8"	35 1/4"
ST-220	17 1/4"	21"	59 1/4"	66 1/2"
ST-225	28"	37 1/2"	84 3/4"	96"
ST-230	43"	61"	114 3/4"	130 5/8"
ST-235	64 3/8"	91"	148 7/8"	172"
ST-240	88 7/8"	124"	184 1/8"	220"
SH-212	1 1/4"	3 3/4"	8 1/8"	15 5/8"
SH-216	5 3/4"	10 1/2"	26 1/2"	35 1/4"
SH-200	15 1/8"	21"	47"	66 1/2"
SH-250	26 1/4"	37 1/2"	72"	96"
SH-230	40 1/2"	61"	100 5/8"	130 5/8"

#### HV Tel-O-Poles

Sample No.	Deflection Tested, 0 lbs.	Max. Deflection Per ASTM, 0 lbs.	Deflection Tested, 5 lbs	Max. Deflection Per ASTM, 5 lbs
HV-208*	1/2"	1/2"	1 7/8"	3 5/8"
HV-212	2 1/2"	3 3/4"	11 1/4"	15 5/8"
HV-216	5 3/4"	10 1/2"	23 3/4"	35 1/4"
HV-220*	15 3/8"	21"	49 1/8"	66 1/2"
HV-225*	30 7/8"	37 1/2"	81 1/2"	96"
HV-230*	52 1/2"	61"	121 5/8"	130 5/8"
HV-235*	81 7/8"	91"	165"	172"
HV-240*	118 1/4"	124"	212 7/8"	220"

\*The deflection measurements on these models were taken with Tape Measure 91-624, Tape Measure 85-663 was used for the remainder of the models.

All samples passed the ASTM F1826-00 requirements.

**TESTED BY:** Mark Kaiser, Matt Courtright  
 Mark Kaiser, Mark Schmidt (HV-240 only)

## TEST REPORT

**ITEMS TESTED:** Round Tel-O-Poles SH-212, SH-216, SH-200, SH-250, SH-230, ST-216, ST-220, ST-225, ST-230, ST-235, and ST-240. HV Tel-O-Poles HV-208, HV-210, HV-212, HV-216, HV-220, HV-225, HV-230, HV-235, and HV-240.

**DATE TESTED:** 9-20-06

**SCOPE OF TEST:** Visual Inspection 9.1 and Dimensional Values 9.2 per ASTM F1826-00

**TEST SETUP:** For Visual Inspection 9.1: each Tel-O-Pole was fully extended and checked for visual defects, fit and operation of all mechanical components.

For Dimensional 9.2: each Tel-O-Pole was measured in the collapsed and fully extended positions. The 'ST' model Tel-O-Poles were also measured with the tip section locked into the next larger mating section (tip retracted). All measurements were taken from the bottom of the Tel-O-Pole (bottom of base cap) to the top of the Tel-O-Pole (top of the universal head).

### TEST RESULTS:

Visual Inspection 9.1: There were no visible defects in any of the Tel-O-Poles and all Tel-O-Poles operated without any mechanical defects.

Dimensional Inspection 9.2: The dimensional values observed are listed in the following table.

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Report by: Mark Kauer Date: 9-25-06  
Approved by: Len Jha Date: 9-26-06



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## TEST REPORT

Sample No.	Collapsed Length	Extended Length	Tip Retracted Length ('ST' Models only)
HV-208	27 3/8"	7' 7 1/2"	
HV-210	30 3/8"	9' 6 1/2"	
HV-212	58 3/16"	12' 6 5/8"	
HV-216	60 1/4"	16' 9"	
HV-220	62 1/8"	21' 1 3/4"	
HV-225	64"	25' 6"	
HV-230	66"	30' 1/4"	
HV-235	68"	34' 8 1/2"	
HV-240	69"	39' 5 1/8"	
SH-212	44 5/8"	12' 2 1/2"	
SH-216	59"	16' 11 1/4"	
SH-200	60 7/8"	21' 5"	
SH-250	62 1/2"	26' 1/2"	
SH-230	63 1/2"	30' 9 3/8"	
ST-216	57 3/8"	16' 3 7/8"	12' 7 1/2"
ST-220	63 1/8"	20' 7 5/8"	16' 11 1/2"
ST-225	61"	25' 1 1/2"	21' 5"
ST-230	62 1/2"	29' 8 3/4"	26' 1/2"
ST-235	63 1/2"	34' 5 5/8"	30' 9 1/2"
ST-240	65 1/4"	39' 4 3/4"	35' 8 1/2"

The 'S' model Tel-O-Poles were not measured since the collapsed and extended lengths are exactly the same as the 'ST' models.

**TESTED BY:** Mark Schmidt, Mark Kaiser

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## TEST REPORT

**ITEMS TESTED:** Round Tel-O-Poles as listed: ST-216, ST-220, ST-225, ST-230, ST-235, ST-240, SH-212, SH-216, SH-200, SH-250, and SH-230. HV Tel-O-Poles as listed: HV-208, HV-212, HV-216, HV-220, HV-225, HV-230, HV-235, and HV-240. Model ST -220 has a manufacturing date of 4-06, the remainder of the models have a manufacturing date of 8-06.

The Hastings ST model Tel-O-Poles are the same as the Hastings S model Tel-O-Poles, except that the ST models tip section will fully retract into the next larger section and lock. Therefore the S model Tel-O-Poles were not tested.

**DATE TESTED:** 9-22-06 (ST-216, SH-212, SH-216, HV-208, HV-212, HV-216, HV-220) 7-23-07 (ST-220, ST-225, ST-230, ST-235, ST-240, SH-200, SH-250, SH-230, HV-225, HV-230, HV-235, HV-240)

**SCOPE OF TEST:** Vertical Deflection Test 9.3.4 per ASTM F1826-00

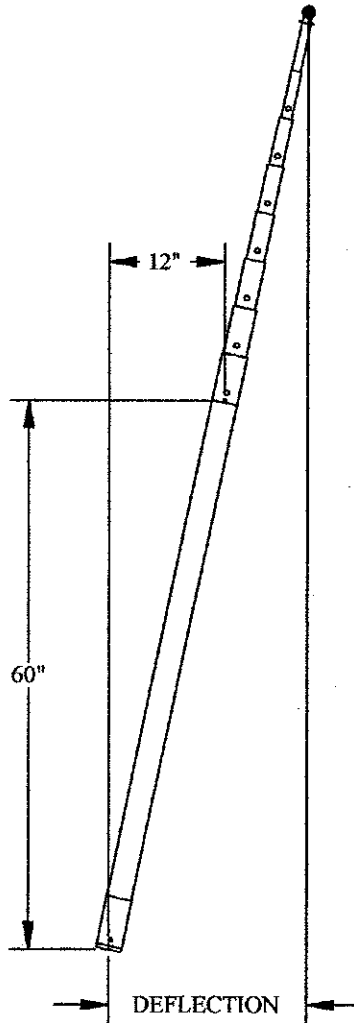
**TEST SETUP:** Test was setup per ASTM F1826-00 Vertical Deflection Test. The tilt was 12" from vertical at 60" from the bottom of the pole. The Tel-O-Poles were fully extended for the deflection measurements.

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Report by: Mark Vayer Date: 8-29-07  
Approved by: Len. Sh Date: 9-24-07

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**TEST REPORT**



## TEST REPORT

### TEST RESULTS:

#### Round Tel-O-Poles

Sample No.	Deflection Tested	Max. Deflection Per ASTM
ST-216	42 5/8"	44 1/2"
ST-220	53 7/8"	64 1/2"
ST-225	68 1/4"	80"
ST-230	83 1/2"	98"
ST-235	103 7/8"	121 1/2"
ST-240	124"	147"
SH-212	32 1/4"	32 1/2"
SH-216	44"	44 1/2"
SH-200	55 1/2"	64 1/2"
SH-250	70 1/2"	80"
SH-230	85 1/2"	98"

#### HV Tel-O-Poles

Sample No.	Deflection Tested	Max. Deflection Per ASTM
HV-208	19 3/4"	21"
HV-212	32 1/4"	32 1/2"
HV-216	43 1/2"	44 1/2"
HV-220	52 7/8"	64 1/2"
HV-225	65"	80"
HV-230	86 1/2"	98"
HV-235	104 3/4"	121 1/2"
HV-240	129"	147"

Tape Measure 85-663 was used to measure deflection for all samples.

All samples passed the ASTM F1826-00 requirements.

**TESTED BY:** Mark Schmidt, Mark Kaiser (models tested 9-22-06)  
Mark Kaiser, Matt Courtright (models tested 7-23-07)

## TEST REPORT

**ITEMS TESTED:** Round Tel-O-Poles as listed: ST-230 and ST-240. HV Tel-O-Poles as listed: HV-235, and HV-240. All models have a manufacturing date of 8-06.

Only the models listed above were tested because the round models use like components, and the HV models use like components, except for the following exceptions. The ST-230 uses a different base cap assembly than the ST-240, with the remainder of the models using base cap assemblies like the ST-230. The HV-235 uses a different base cap assembly than the HV-240, with the remainder of the models using base cap assemblies like the HV-235.

The Hastings ST model Tel-O-Poles are the same as the Hastings S model Tel-O-Poles, except that the ST models tip section will fully retract into the next larger section and lock. Therefore the S model Tel-O-Poles were not tested.

**DATE TESTED:** 8-31-07

**SCOPE OF TEST:** Free Fall Impact Test 9.3.2 per ASTM F1826-00

**TEST SETUP:** Test was setup per ASTM F1826-00 Free Fall Impact Test. The Tel-O-Poles were fully extended and placed vertically with their base 24" above concrete, then were released without any restriction of their downward movement.

**TEST RESULTS:** All Tel-O-Poles were fully disassembled and inspected for damage after testing. There was no cracking of the FRP tubes, and no damage visible to the lock devices.

All samples passed the ASTM F1826-00 requirements.

**TESTED BY:** Mark Kaiser, Matt Courtright

Report by: Mark Kaiser Date: 9-10-07  
Approved by: Len Shy Date: 9-28-07

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## TEST REPORT

**ITEMS TESTED:** Round Tel-O-Pole ST-240, and HV Tel-O-Pole HV-240. All models have a manufacturing date of 8-06.

Only the models listed above were tested because all of the round models use like components, and all of the HV models use like components.

The Hastings ST model Tel-O-Poles are the same as the Hastings S model Tel-O-Poles, except that the ST models tip section will fully retract into the next larger section and lock. Therefore the S model Tel-O-Poles were not tested.

**DATE TESTED:** 8-31-07

**SCOPE OF TEST:** Tension Test 9.3.3 per ASTM F1826-00

**TEST SETUP:** Test was setup per ASTM F1826-00 Tension Test. The Tel-O-Poles were fully extended and had a 300 lb. load placed along their axis for a time period of 10 minutes.

**TEST RESULTS:** All Tel-O-Poles were fully disassembled and inspected for damage after testing. There was no cracking of the FRP tubes and no damage visible to the lock devices.

All samples passed the ASTM F1826-00 requirements.

**TESTED BY:** Mark Kaiser, Matt Courtright

Report by: Mark Kaiser Date: 9-6-07  
Approved by: Lee Sh Date: 9-28-07

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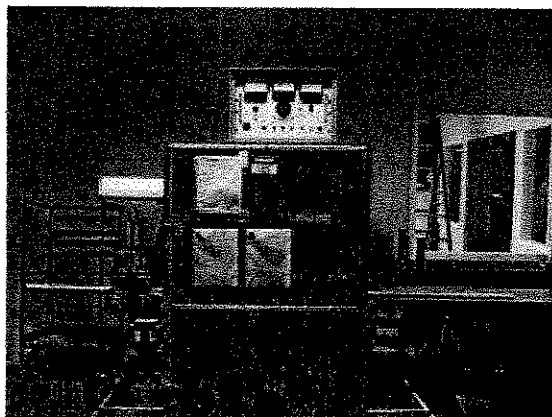
## TEST REPORT

**ITEMS TESTED:** Tel-o-pole round sections as listed: P21575 HS-1, P20643 HS-SH2, P20003 HS-2, P20004 HS-3, P20005 HS-4, P20006 HS-5, P20007 HS-6, P20008 HS-7, P21586 HS-8, and P21589 HS-9. These are all of the sections from an S-240 Tel-o-pole and a tip section from the 'SH' Tel-O-Poles (P20643). Tel-o-pole HV sections as listed: P21214 HV-1, P21215 HV-2, P21216 HV-3, P21217 HV-4, P21218 HV-5, P21219 HV-6, P21220 HV-7, P21221 HV-8, and P21222 HV-9. These are all of the sections from an HV-240 Tel-o-pole.

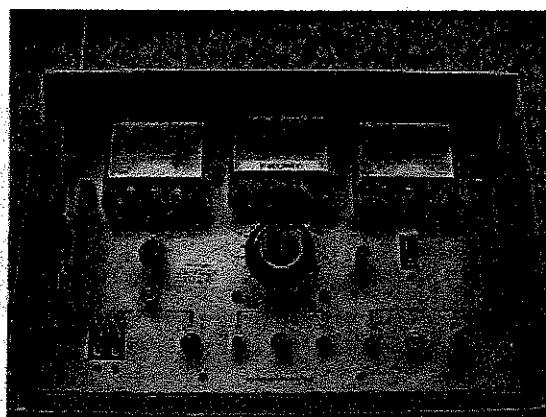
**DATE TESTED:** 9-1-06

**SCOPE OF TEST:** Electrical Withstand Test 11.3 per ASTM F1826-00

**TEST SETUP:** Test was setup per ASTM F1826-00 appendix X1, Alternative Electrical Withstand Test. The test machine was #027.



Test Machine #027



Meters on Test Machine #027

This document has been reviewed and approved for release by Mark Vaiper on 9-24-07.

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Report by: Mark Vaiper

Date: 9-25-06

Approved by: Les. My

Date: 9-26-06

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## TEST REPORT

### TEST RESULTS:

#### Round HS Sections

#### HV Sections

Sample No.	$I_1(\mu A)$ Tested	Max. $I_1(\mu A)$ Per ASTM	Sample No.	$I_1(\mu A)$ Tested	Max. $I_1(\mu A)$ Per ASTM
HS-1A*	.5	5	HV-1A*	0	6
HS-1B*	.5	5	HV-1B*	0	6
HS-1C*	.5	5	HV-1C*	0	6
HS-2A	.5	6	HV-2A	0	8
HS-2B	.5	6	HV-2B	0	8
HS-2C	.5	6	HV-2C	0	8
HS-SH2A*	.5	6	HV-3A	0	9
HS-SH2B*	.5	6	HV-3B	0	9
HS-SH2C*	.5	6	HV-3C	0	9
HS-3A	0	8	HV-4A	.5	9
HS-3B	0	8	HV-4B	.5	9
HS-3C	0	8	HV-4C	0	9
HS-4A	0	9	HV-5A	.5	10
HS-4B	0	9	HV-5B	.5	10
HS-4C	0	9	HV-5C	.5	10
HS-5A	.5	10	HV-6A	.5	10
HS-5B	.5	10	HV-6B	.5	10
HS-5C	1	10	HV-6C	.5	10
HS-6A	.5	12	HV-7A	0	12
HS-6B	.5	12	HV-7B	0	12
HS-6C	.5	12	HV-7C	0	12
HS-7A	.5	12	HV-8A	1	12
HS-7B	1	12	HV-8B	1	12
HS-7C	.5	12	HV-8C	1	12
HS-8A	.5	14	HV-9A	1	12
HS-8B	.5	14	HV-9B	1	12
HS-8C	.5	14	HV-9C	1	12
HS-9A	1	14			
HS-9B	1	14			
HS-9C	1	14			

All samples passed the ASTM F1826-00 requirements.

\*These sections are foam filled.

**TESTED BY:** Mark Schmidt, Mark Kaiser

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## TEST REPORT

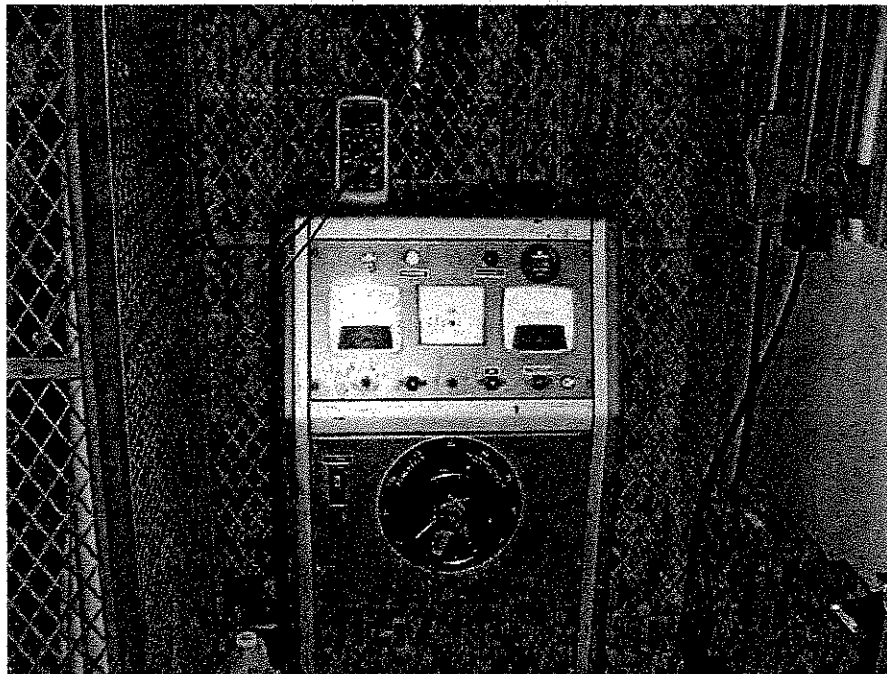
**ITEMS TESTED:** Tel-o-pole round sections as listed: P21575 HS-1, P20643 HS-SH2, P20003 HS-2, P20004 HS-3, P20005 HS-4, P20006 HS-5, P20007 HS-6, P20008 HS-7, P21586 HS-8, and P21589 HS-9. These are all of the sections from an S-240 Tel-o-pole and a tip section from the 'SH' Tel-O-Poles (P20643). Tel-o-pole HV sections as listed: P21214 HV-1, P21215 HV-2, P21216 HV-3, P21217 HV-4, P21218 HV-5, P21219 HV-6, P21220 HV-7, P21221 HV-8, and P21222 HV-9. These are all of the sections from an HV-240 Tel-o-pole.

**DATE TESTED:** 9-5-06

**SCOPE OF TEST:** Electrical Leakage Current Test 10.0 & 11.0 per ASTM F1826-00

**TEST SETUP:** Test was setup per ASTM F1826-00 Electrical Leakage Current Test. The test machine was #157 100 kV test set. Samples were tested dry then they entered the humidity chamber. The samples were pulled from the humidity chamber after 7 days, wiped dry and tested to get the wet test results.

### TEST SETUP PICTURES



Report by: Mende Kaver Date: 1-25-06

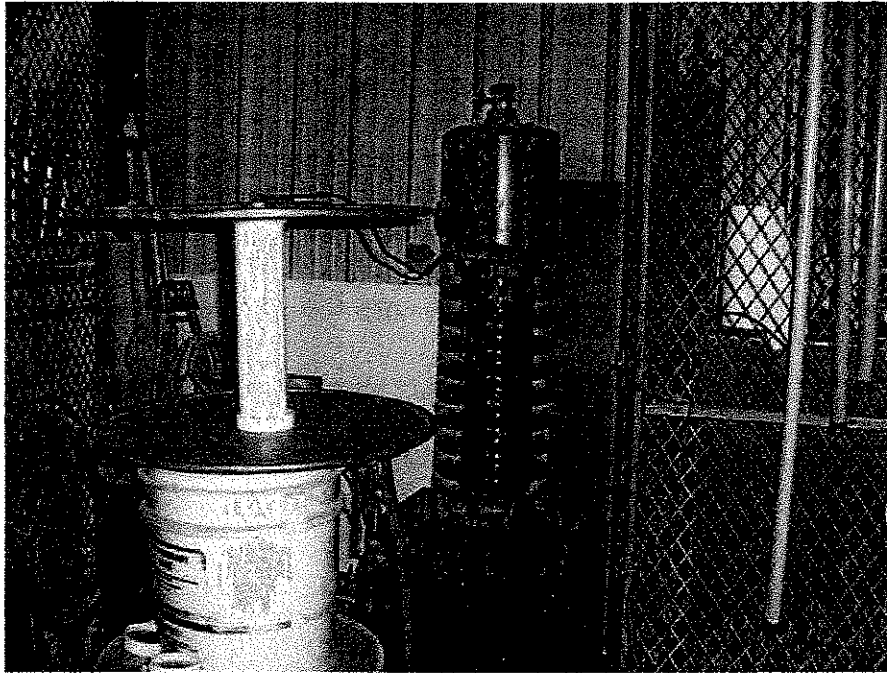
Approved by: [Signature] Date: 9-26-06

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## TEST REPORT



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