DAYTON T. BROWN INC.

ENGINEERING AND TEST DIVISION

CHURCH STREET, BOHEMIA, LONG ISLAND,
NEW YORK 11716 / (516) 589-6300

TEST REPORT / PROCEDURE No. DTB04R80-1077

DAYTON T. BROWN, INC. JOB No. 402871-00-000

CUSTOMER:	VALCOR ENGINEERING CORPORATION 2 LAWRENCE ROAD SPRINGFIELD, NEW JERSEY 07081
SUBJECT:	SEISMIC VIBRATION TEST PROGRAM PERFORMED ON ONE SOLENOID VALVE; PART NUMBER V70900-301, REVISION G, SERIAL NUMBER 1

ATTENTION: MR. E. NAMIOTKO

THIS REPORT CONTAINS: FIVE PAGES AND TWO ENCLOSURES

PREPARED BY	S. WIZEMANN
TEST ENGINEER	W. SCHAAF
STAFF ENGINEER	S. P. BENZA
DATE	20 SEPTEMBER 1980

THE DATA CONTAINED IN THIS REPORT WAS OBTAINED BY TESTING IN COMPLIANCE WITH THE APPLICABLE TEST SPECIFICATION AS NOTED

DAYTON T. BROWN INC

TABLE OF CONTENTS

1.0 ABSTRACT

This test report details the results of seismic vibration test program conducted on one solenoid valve, part number 70900-301, revision G, serial number 1, under reference (a) to the requirements of reference (c).

Results of the test are detailed in the following text.

The test item was operated during specified portions of testing.

The test item's operation was the sole responsibility of Valcor Engineering Corporation personnel, and all operational data was retained by same.

Test data pertinent to this program will remain on file at Dayton T. Brown, Inc. for 90 days.

2.0 REFERENCES

(a) Customer Purchase Order Number 45232

(b) Dayton T. Brown, Inc. Job Number 402871-00-000

(c) Test Specification Valcor Engineering Corporation - S-1424, as modified per Valcor Engineering Corporation

3.0 ADMINISTRATIVE INFORMATION

Customer: Valcor Engineering Corporation

Test Item Description: Solenoid Valve

Quantity Received: One

Part Number: V70900-301, Revision G

Serial Number: 1

Date Received: 27 August 1980

Date Shipped: 27 August 1980

Customer Representative Present During Portions of Test:

Name	Affiliation
Mr. E. Namiotko	Valcor Engineering Corporation

DAYTON T. BROWN INC

4.0 TEST PROGRAM OUTLINE

Test	Test Item Description	Results
Seismic Vibration	Solenoid Valve; Part Number V70900-301, Revision G, Serial Number 1	See Enclosure 1 for details

DAYTON T. BROWN INC

Enclosure 1

Seismic Vibration Test and Results

DAYTON T. BROWN INC

TEST REQUIREMENT

The seismic vibration test shall be conducted in accordance with reference (c).

TEST RESULTS

A pretest visual inspection of the test item revealed no anomalies.

All testing was performed in accordance with the referenced specification.

Refer to the seismic vibration test summary for tabulated results.

Seismic Vibration Test Summary

Sequence	Item	Axis	Condition	Frequency (Hz)	Duration (min.)	Remarks	Graph Page No. (Enc. 1)
1	Solenoid Valve; Part Number V70900-301, Revision G, Serial Number 1	Y	Survey	1-50	5.5	See Photograph Number 1 in Enclosure 2	4 - 7
2	Solenoid Valve; Part Number V70900-301, Revision G, Serial Number 1	Z	Survey	1-50	5.5	-	8 - 11
3	Solenoid Valve; Part Number V70900-301, Revision G, Serial Number 1	X	Survey	1-50	5.5	-	12 - 15
4	Solenoid Valve: Part Number V70900-301, Revision G, Serial Number 1	X-Z	Bi-axial Sine, In-phase	1-40	11.5	-	16, 17
5	Solenoid Valve; Part Number V70900-301, Revision G, Serial Number 1	X-Z	Bi-axial Sine, 180° out-of-phase	1-40	11.5	-	18, 19

Seismic Vibration Test Summary
(Continued)

Sequence	Item	Axis	Condition	Frequency (Hz)	Duration (min.)	Remarks	*Graph Page No. (Enc. 1)
6	Solenoid Valve; Part Number V70900-301, Revision G, Serial Number 1	Y-Z	Bi-axial Sine, 180° out-of-phase	1-40	11.5	-	20, 21
7	Solenoid Valve; Part Number V70900-301, Revision G, Serial Number 1	Y-Z	Bi-axial Sine, In-phase	1-40	11.5	-	22, 23

The test item completed all phases of testing.

A post-test visual inspection of the test item revealed no anomalies due to testing.

Plotted by: W

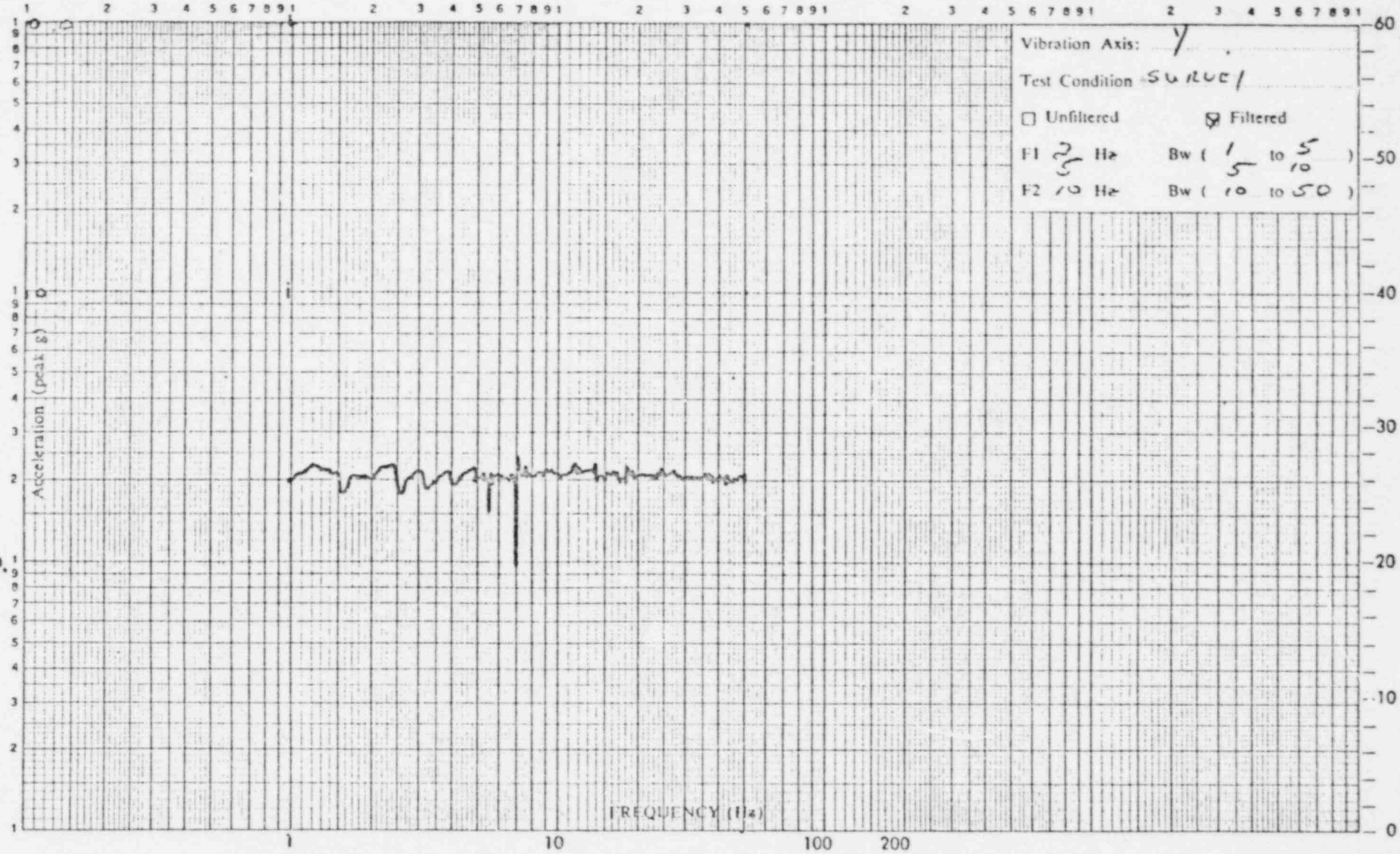
Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☒



Pickup Serial Number: 246

Pickup Location: CONT

Pickup Sensing Axis: Y

Pickup Sensitivity: 100 mv peak / g peak

Sweep Speed: 1.0 oct/minute

☒ Live ☐ Tape

Job Number: 402871

Date: 27 AUG 80

Time: 1035

1077 Enc 1 Pg 4

Lab Form D-24

Plotted by: L. Stoulein

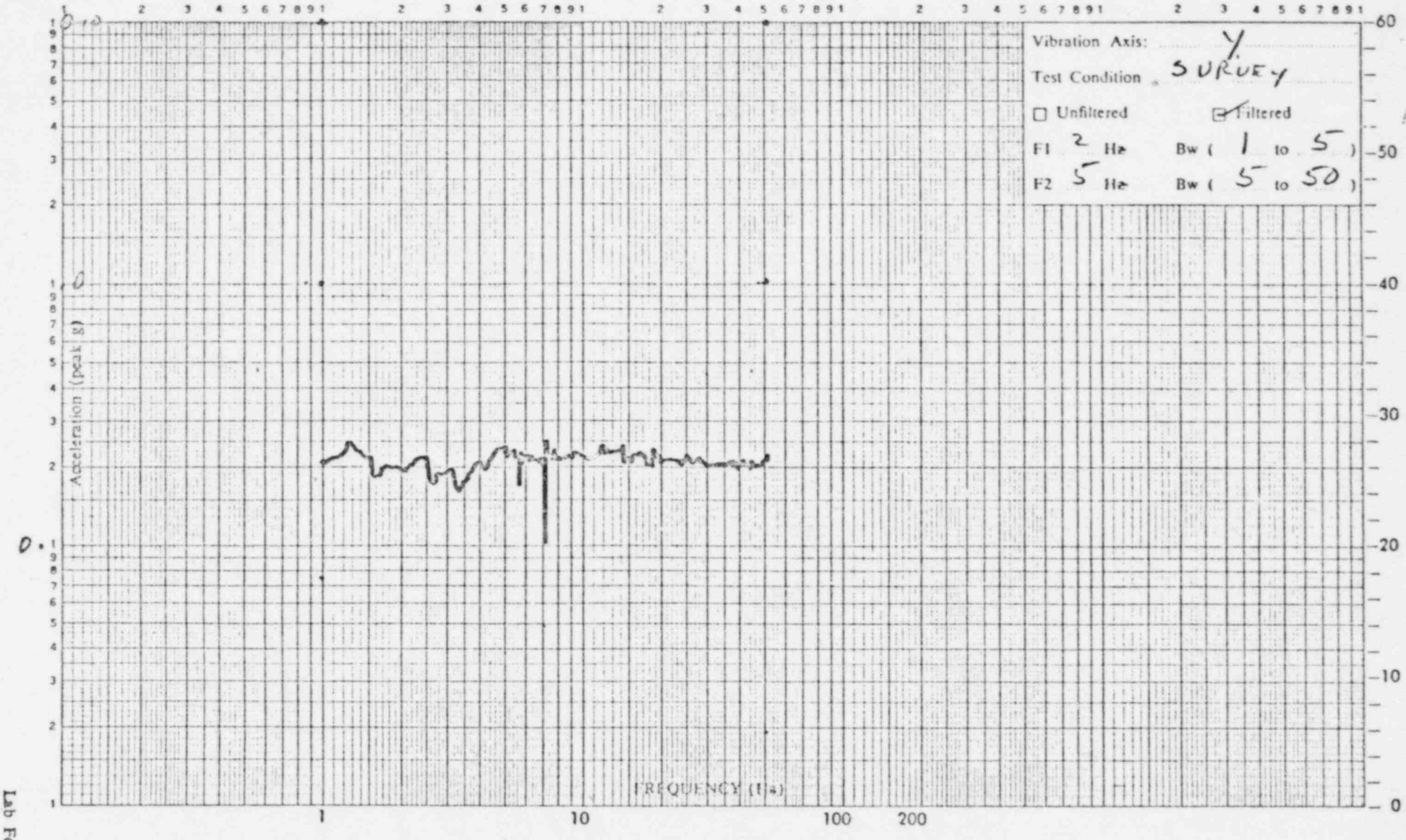
Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☑



Pickup Serial Number: TB702

Pickup Location: TP1

Pickup Sensing Axis: Y

Pickup Sensitivity: 100.0 mv peak / g peak

Sweep Speed: 1.0 oct/minute

☑ Live ☐ Tape

Job Number: 402871

Date: 27 AUG 80

Time: 1025

1077 Enc 1 Pg 5

Lab Form D-24

Plotted by: B. Rankin

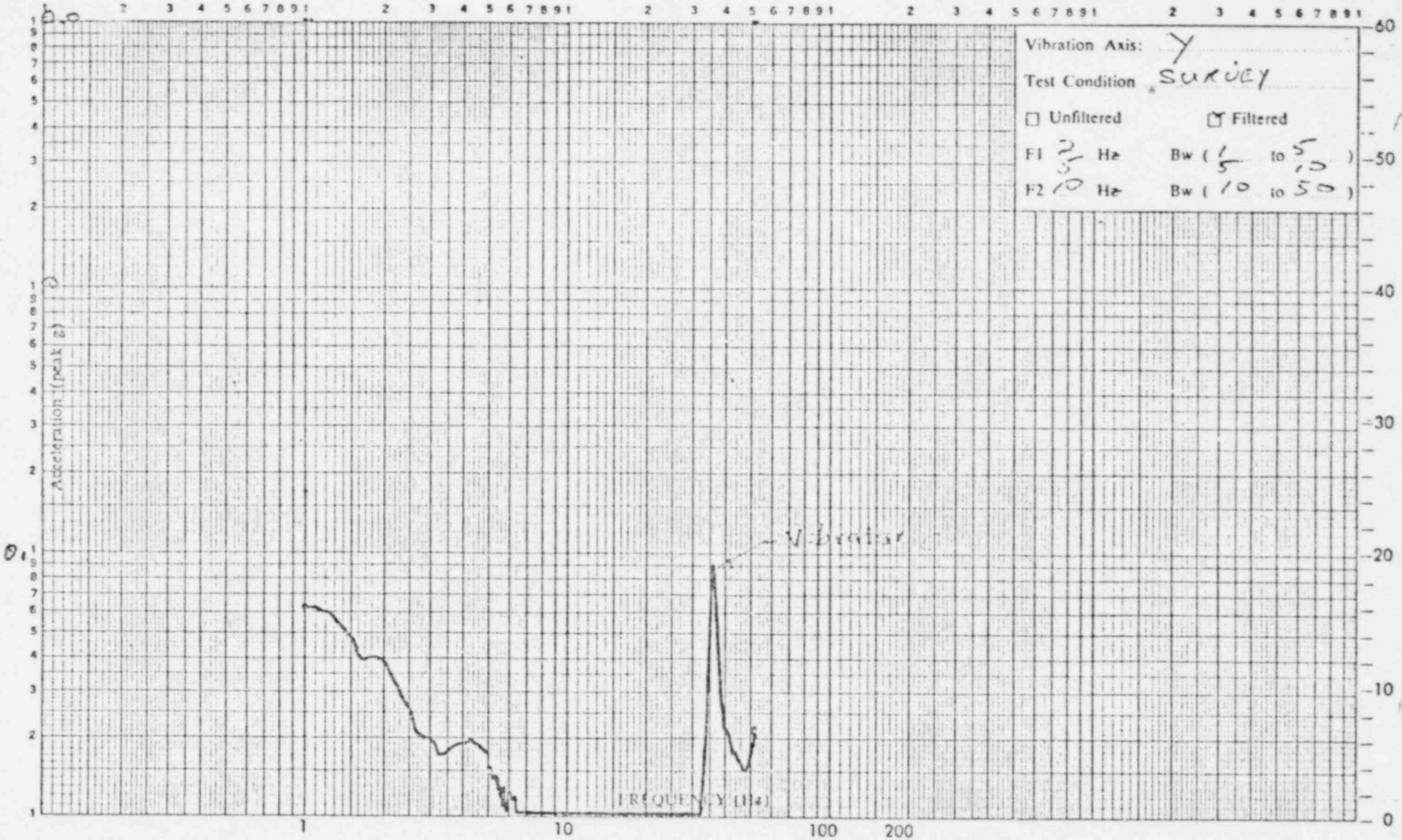
Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☒



Pickup Serial Number: D538

Pickup Location: TP1

Pickup Sensing Axis: X

Pickup Sensitivity: 100 mv peak / g peak

Sweep Speed: 1.0 oct/minute

☐ Live ☒ Tape

Job Number: 402871

Date: 27 Aug 80

Time: 10:05

1077 Enc 1 Pg 6

Lab Form D-24

Plotted by: D. Rankin

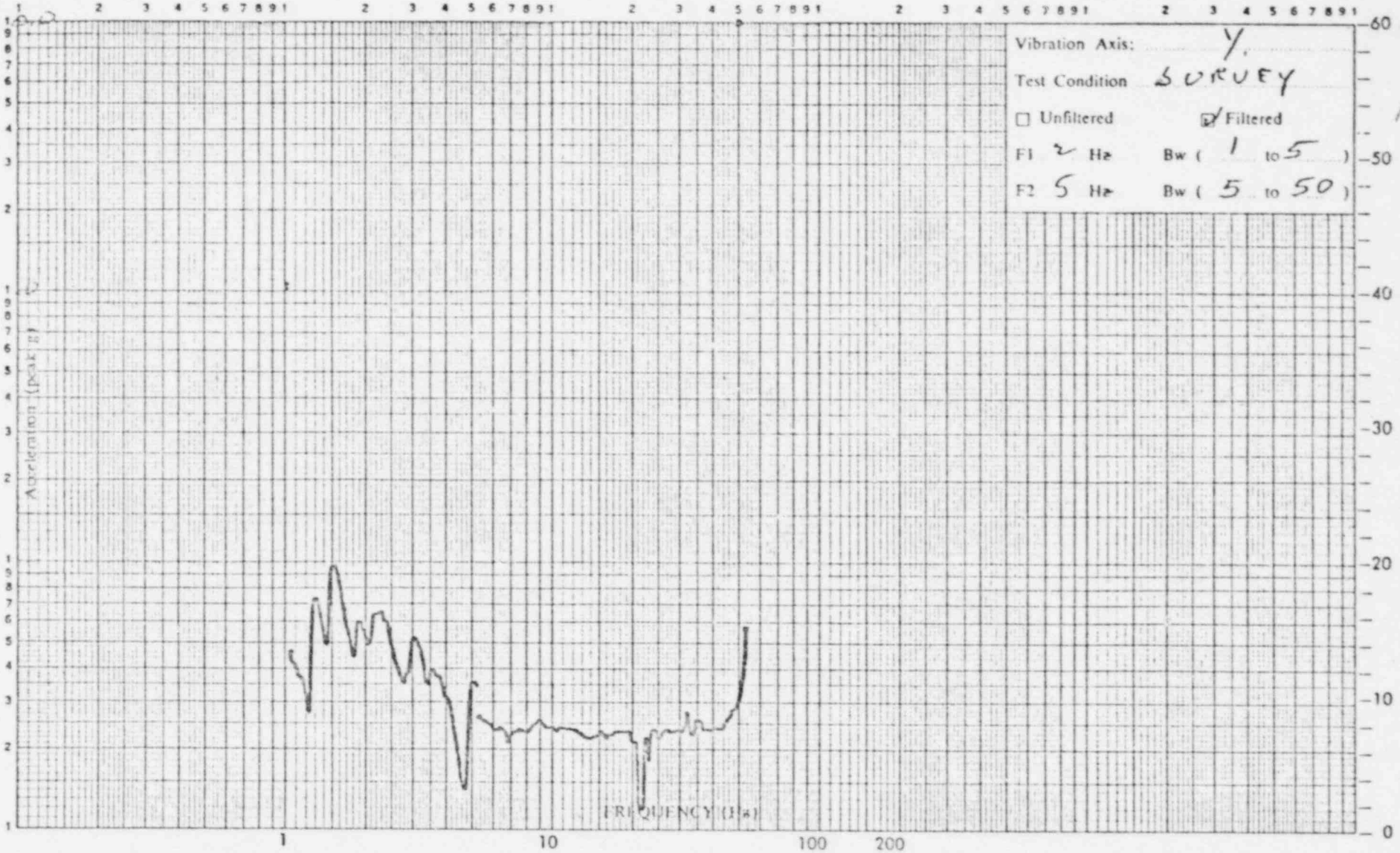
Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☑



Pickup Serial Number: TB10

Pickup Location: TP1

Pickup Sensing Axis: Z

Pickup Sensitivity: 100.0 mv peak / g peak

Sweep Speed: 1.0 oct/minute

☐ Live ☑ Tape

Job Number: 402871

Date: 27AUG80

Time: 1025

1077 Enc 1 Pg 7

Lab Form D-24

Plotted by: [illegible]

Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☒

Pickup Serial Number: 367

Pickup Location: CONT

Pickup Sensing Axis: Z

Pickup Sensitivity: 100 mv peak / g peak

Sweep Speed: 10 oct/minute

☒ Live ☐ Tape

Job Number: 402871

Date: 27 May 80

Time: 1058

1077 Enc 1 Pg 8

Lab Form D-24

Plotted by: W. [illegible]

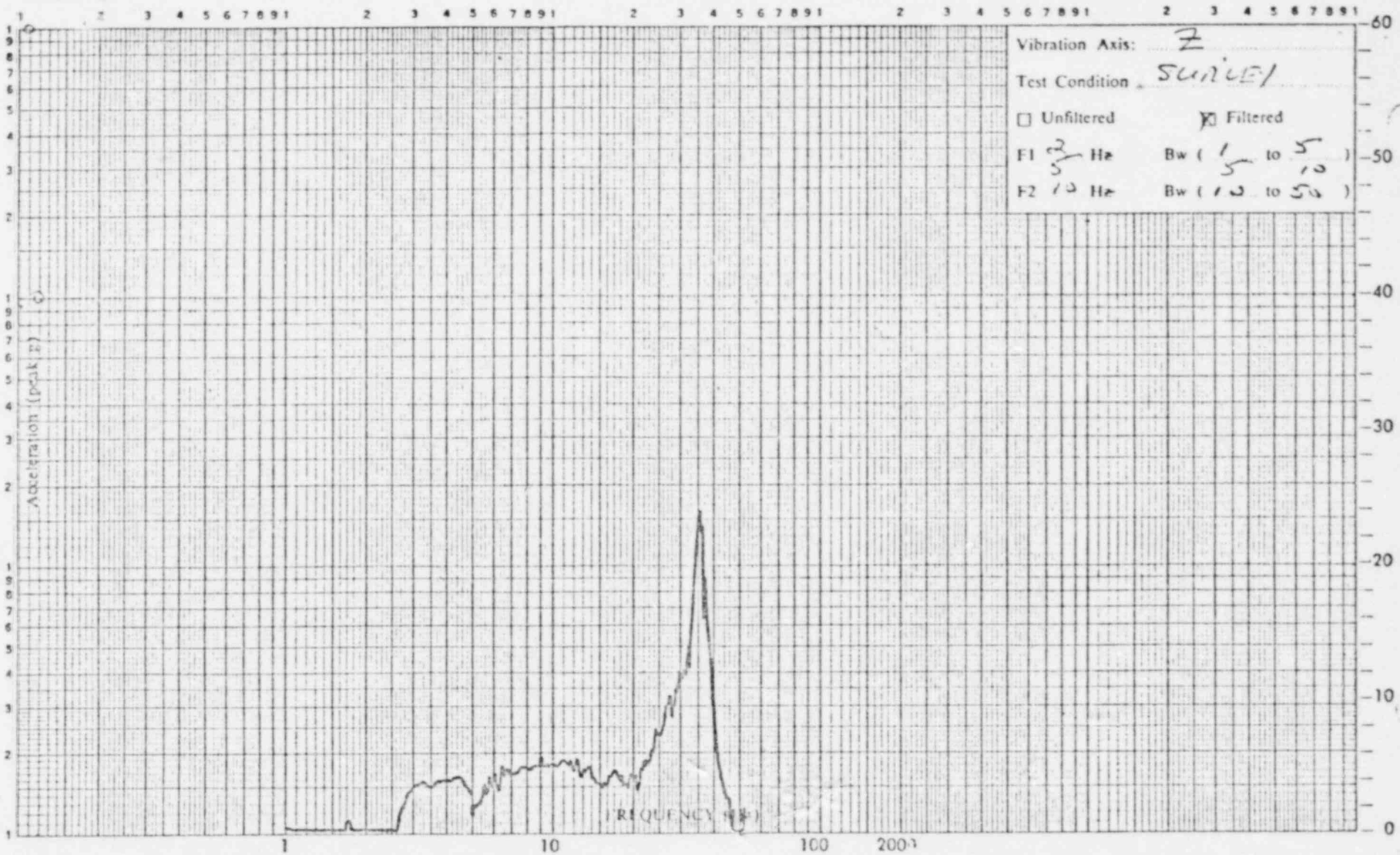
Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☒



Pickup Serial Number: 1738

Pickup Location: TP1

Pickup Sensing Axis: X

Pickup Sensitivity: 100 mv peak / g peak

Sweep Speed: 1.0 oct/minute

☐ Live ☒ Tape

Job Number: 40 2871

Date: 27 Aug 80

Time: 1023

1077 Enc 1 Pg 9

0.

Lab Form D-24

Plotted by: R. Rankin

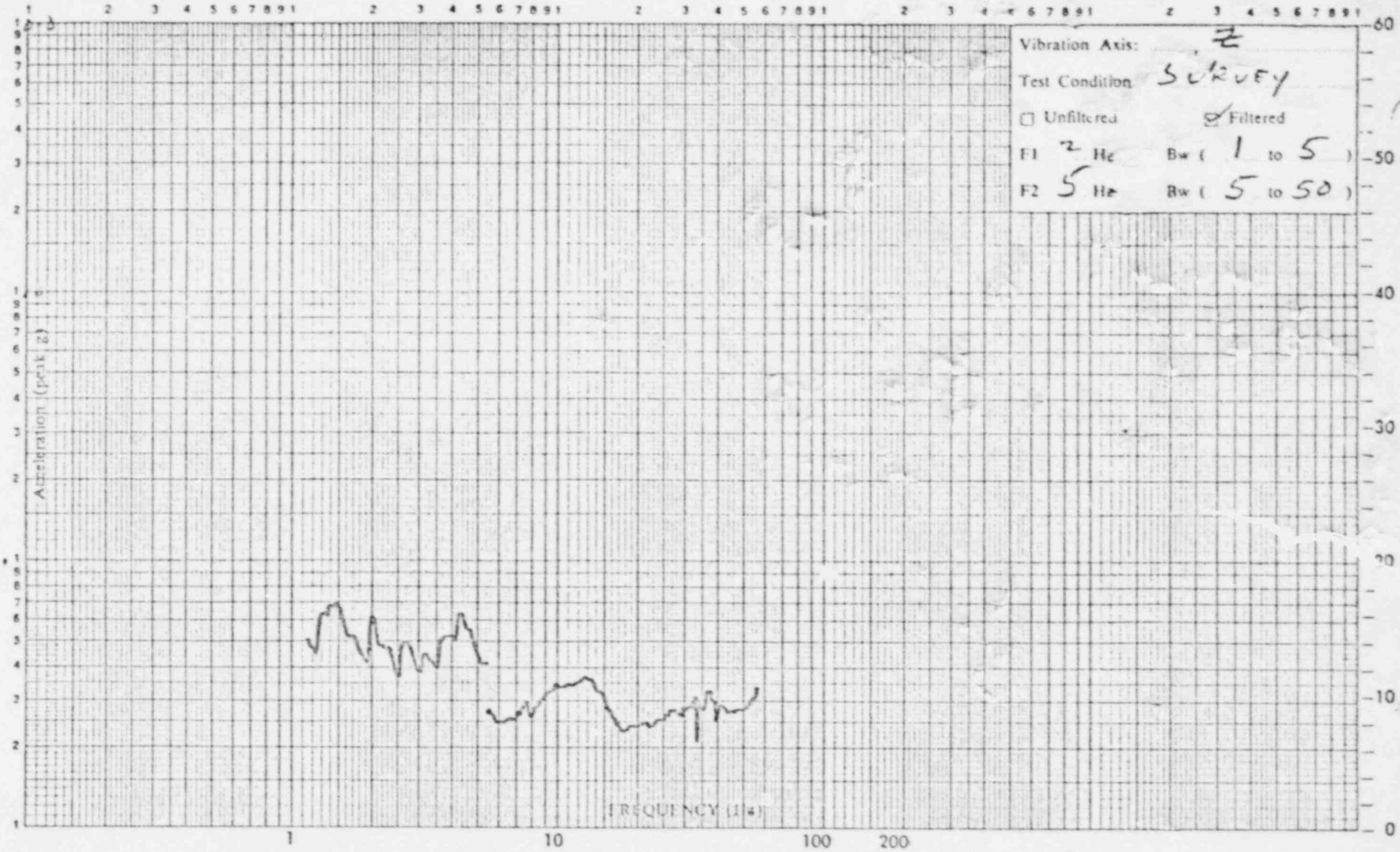
Checked by:

DAYTON T. BROWN INC
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☑



Pickup Serial Number: TB70Z

Pickup Location: TP1

Pickup Sensing Axis: Y

Pickup Sensitivity: 100.0 mv peak / g peak

Sweep Speed: 1.0 oct/minute

☐ Live ☑ Tape

Job Number: 402871

Date: 27 JUL 80

Time: 1038

1077 Enc 1 Pg 10

Lab Form D-24

Plotted by: W. [illegible]

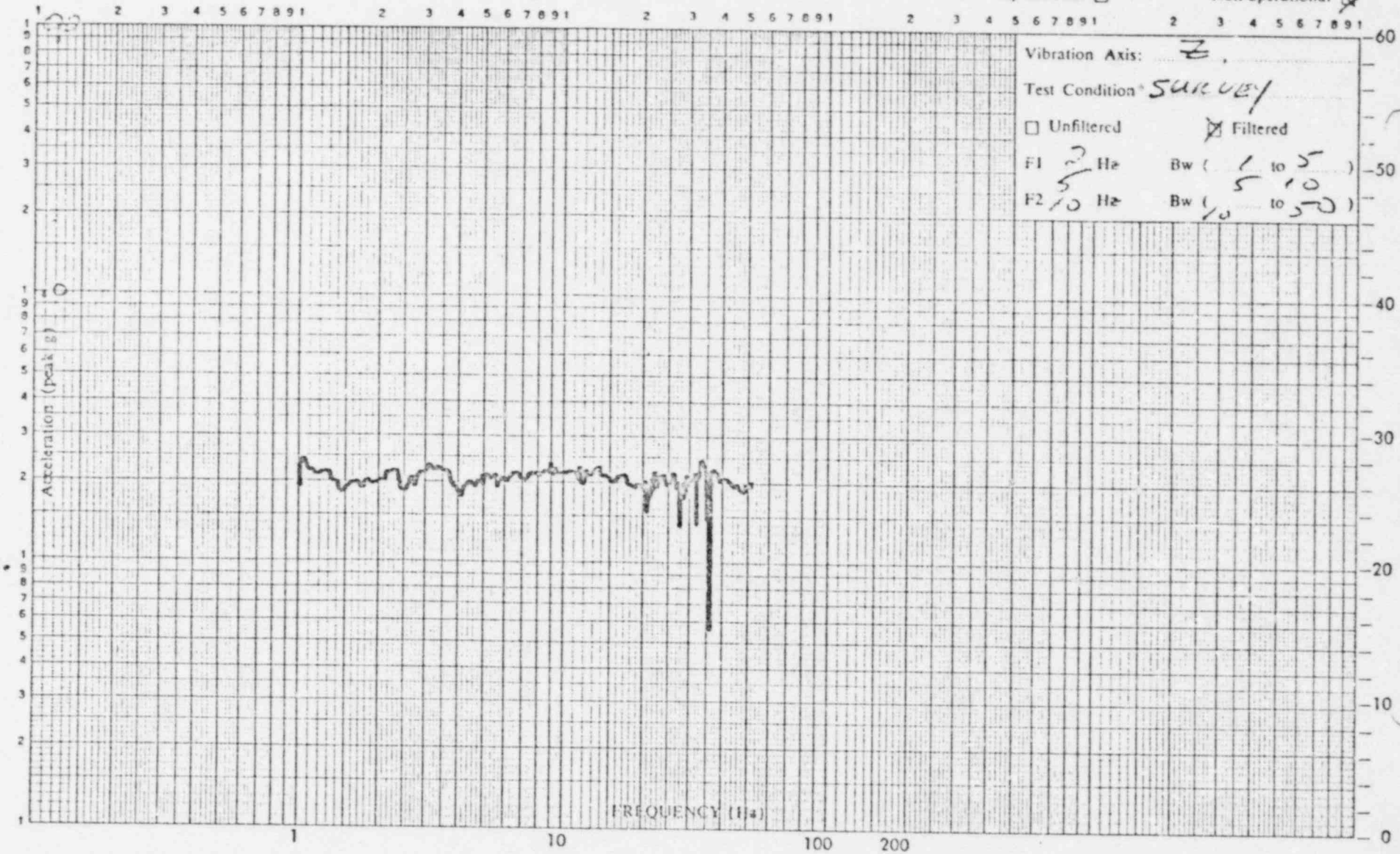
Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☒



Pickup Serial Number: TB70 Y

Pickup Location: TP1

Pickup Sensing Axis: Z

Pickup Sensitivity: 100 mv peak / g peak

Sweep Speed: 1.0 oct/minute

☒ Live ☐ Tape

Job Number: 402871

Date: 27 Aug 80

Time: 10:?

1077 Enc 1 Pg 11

Lab Form D-24

Plotted by: [illegible]

Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☒

Pickup Serial Number: 246

Pickup Location: CENT

Pickup Sensing Axis: X

Pickup Sensitivity: 100 mv peak / g peak

Sweep Speed: 1.0 oct/minute

☒ Live ☐ Tape

Job Number: 402871

Date: 27 Aug 80

Time: 1058

1077 Enc 1 Pg 12

Lab Form D-24

Plotted by: R. Rankin

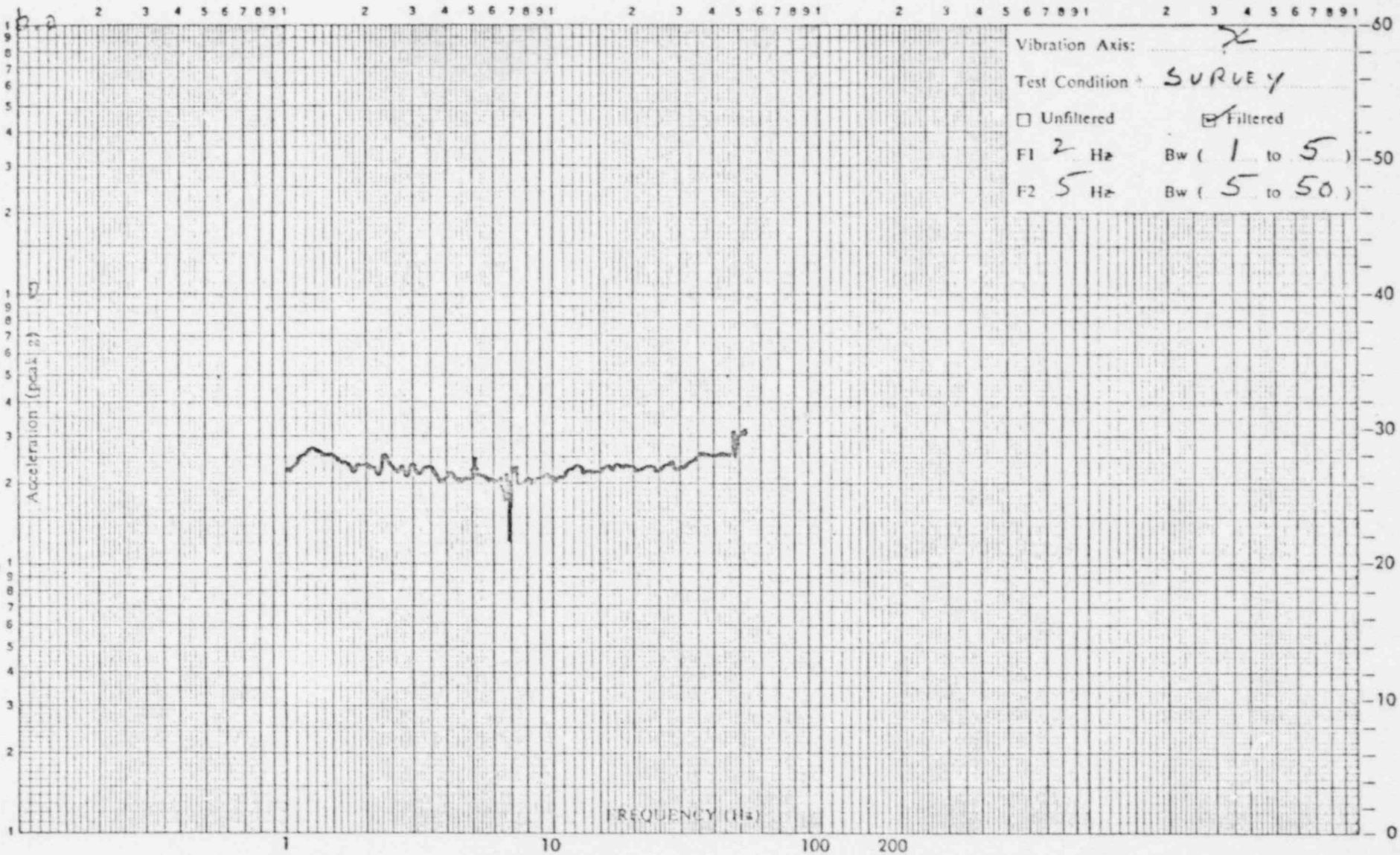
Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☑



Pickup Serial Number: DJ 38

Pickup Location: TP1

Pickup Sensing Axis: X

Pickup Sensitivity: 100.0 mv peak / g peak

Sweep Speed: 1.0 oct/minute

[x] Live [ ] Tape

Job Number: 402871

Date: 27 AUG 80

Time: 1058

1077 Enc 1 Pg 13

Lab Form D-24

Plotted by: W. Clark

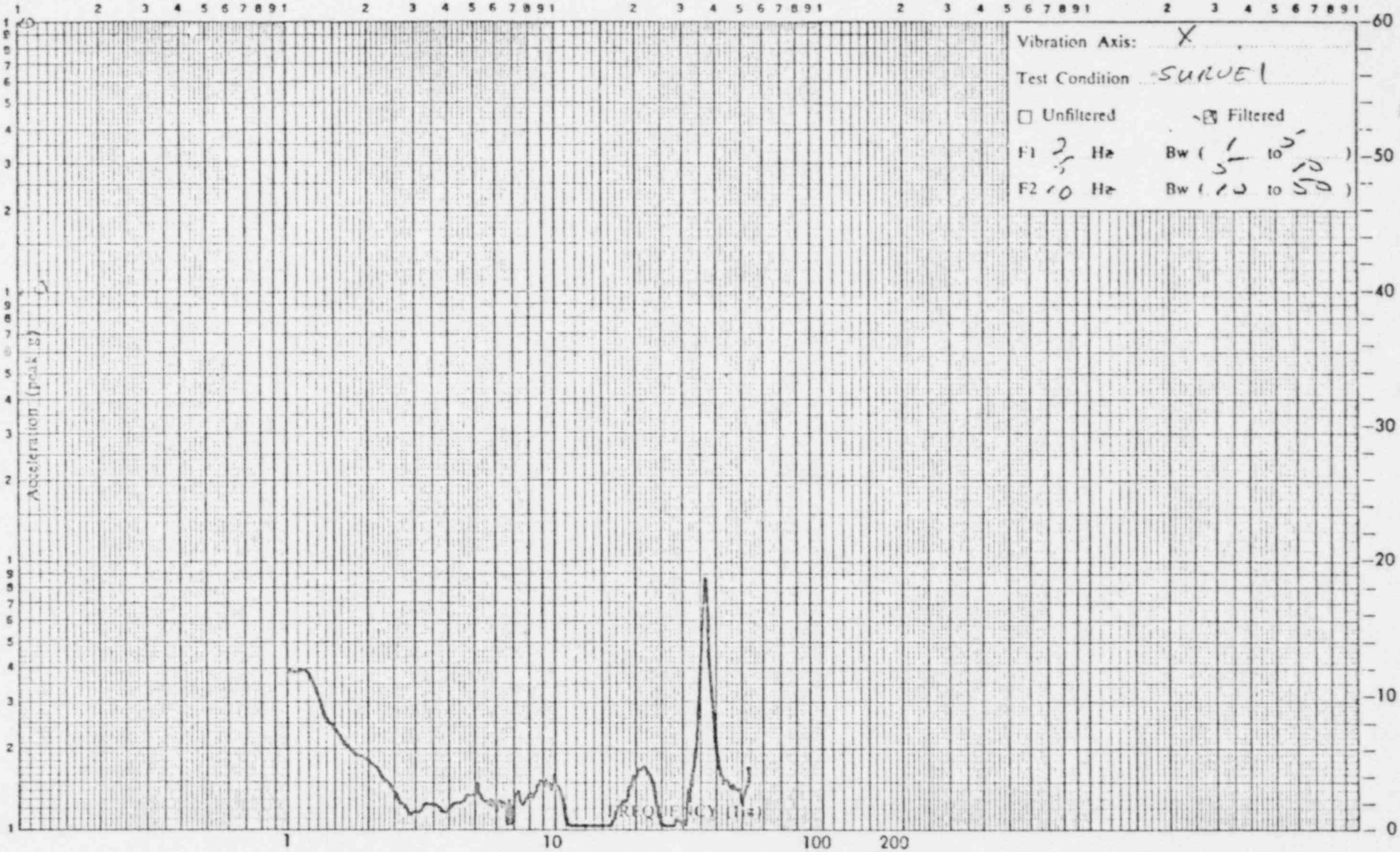
Checked by:

DAYTON T. BROWN INC
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☒



Pickup Serial Number: 7070Z

Pickup Location: TP1

Pickup Sensing Axis: Y

Pickup Sensitivity: 100 mv peak / g peak

Sweep Speed: 1.0 oct/minute

☐ Live ☐ Tape

Job Number: 40-871

Date: 27 Aug 80

Time: 1083

1077 Enc 1 Pg 14

Lab Form D-24

Plotted by: R. Rankin

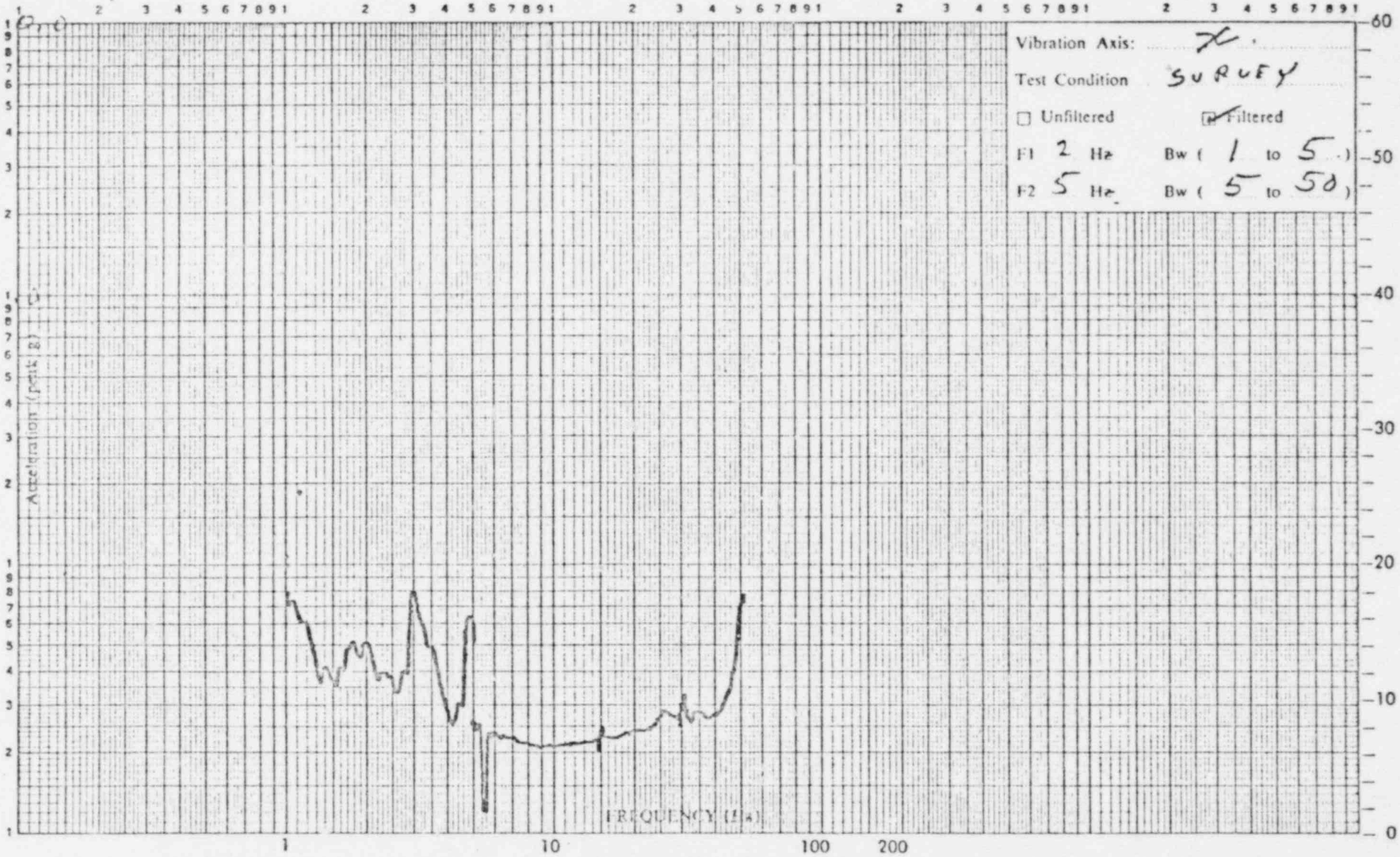
Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☑



Pickup Serial Number: TB70Y

Pickup Location: TP1

Pickup Sensing Axis: X

Pickup Sensitivity: 100.0 mv peak / g peak

Sweep Speed: 1.0 oct/minute

☐ Live ☑ Tape

Job Number: 402871

Date: 27 AUG 80

Time: 1058

Lab Form D-24

Plotted by: P. Paulsen

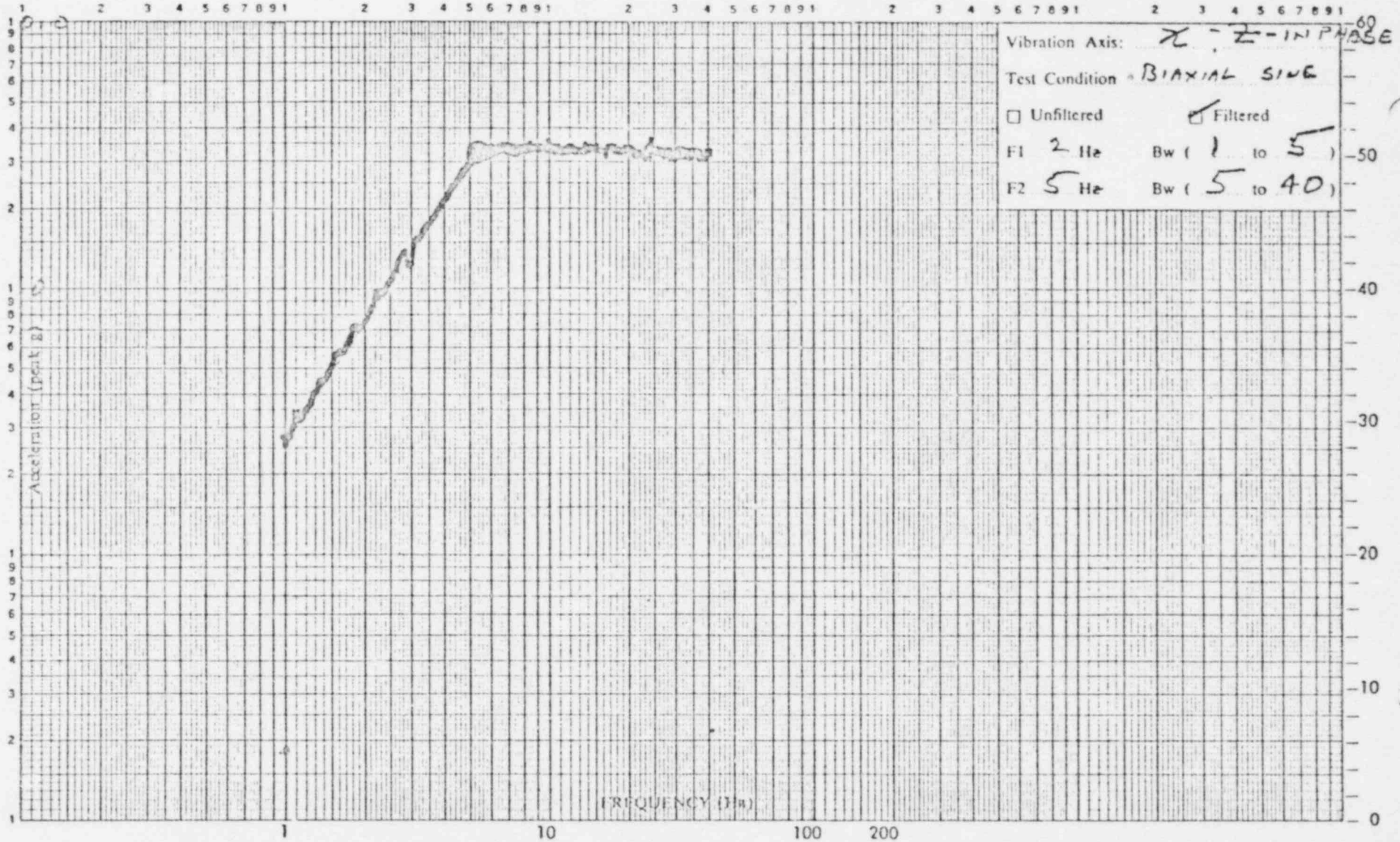
Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☐



Pickup Serial Number: 246

Pickup Location: CONT.

Pickup Sensing Axis: HOR

Pickup Sensitivity: 100.0 mv peak / g peak

Sweep Speed: 0.5 oct/minute

☑ Live ☐ Tape

Job Number: 402871

Date: 27 AUG 80

Time: 1154

1077 Enc 1 Pg 16

Lab Form D-24

Plotted by: W. [illegible]

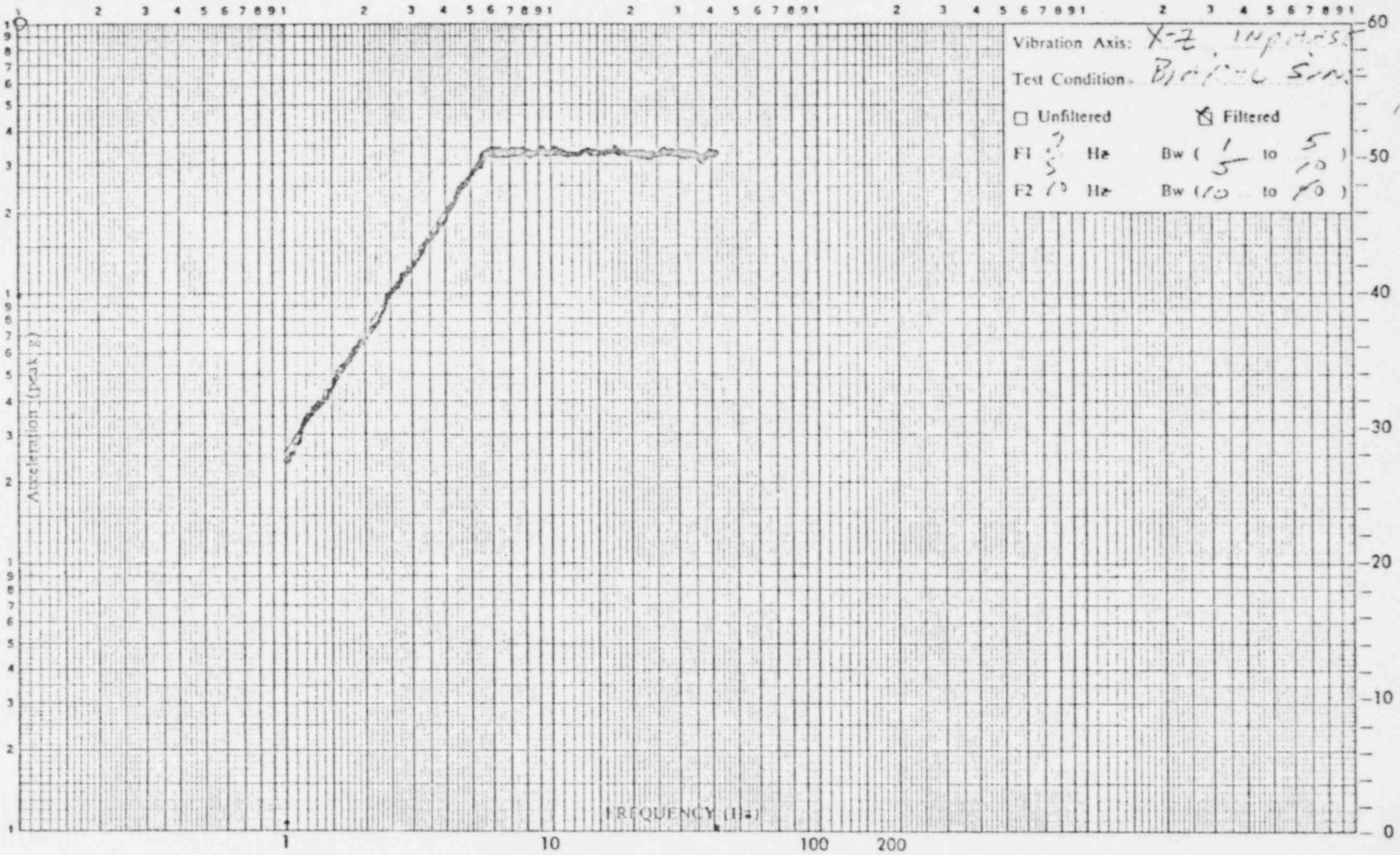
Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☒



Pickup Serial Number: 567

Pickup Location: Cont

Pickup Sensing Axis: Z

Pickup Sensitivity: 100 mv peak / g peak

Sweep Speed: .5 oct/minute

☒ Live ☐ Tape

Job Number: 40 0511

Date: 27 May 80

Time: 1154

1077 Enc 1 Pg 17

Lab Form D-24

VALVE

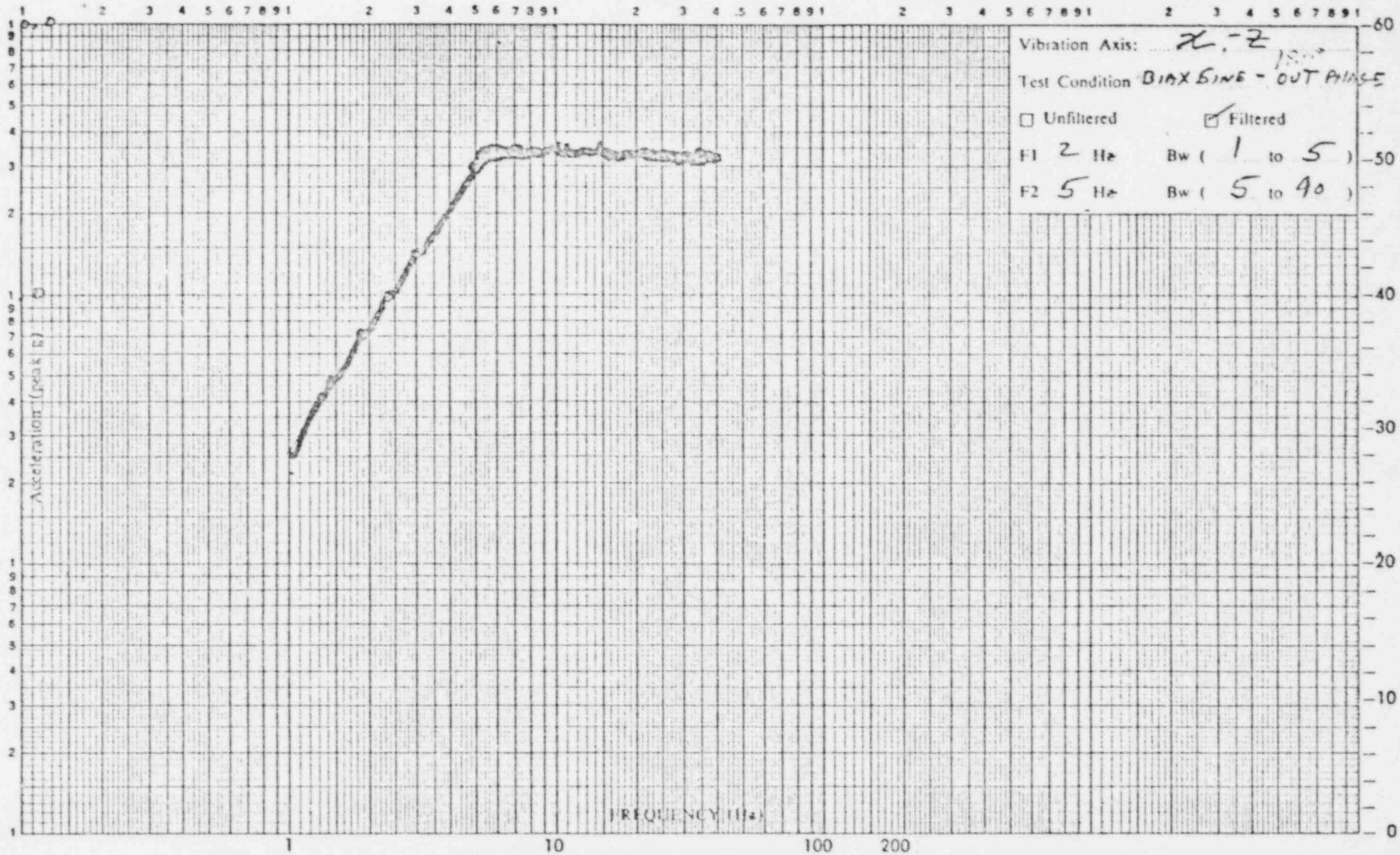
Tested by: D. [illegible]

DAYTON T. BROWN INC. Testing Laboratories

Serial Number(s): 1

Checked by: .....

Unit: Operational ☐ Non-operational ☑



Pickup Serial Number: 246

Pickup Sensitivity: 100.0 mv peak / g peak

Job Number: 402871

Pickup Location: CONT.

Sweep Speed: 0.5 oct/minute

Date: 27AUG80

Pickup Sensing Axis: HOR

☑ Live ☐ Tape

Time: 1313

Lab Form D-24

Plotted by: [illegible]

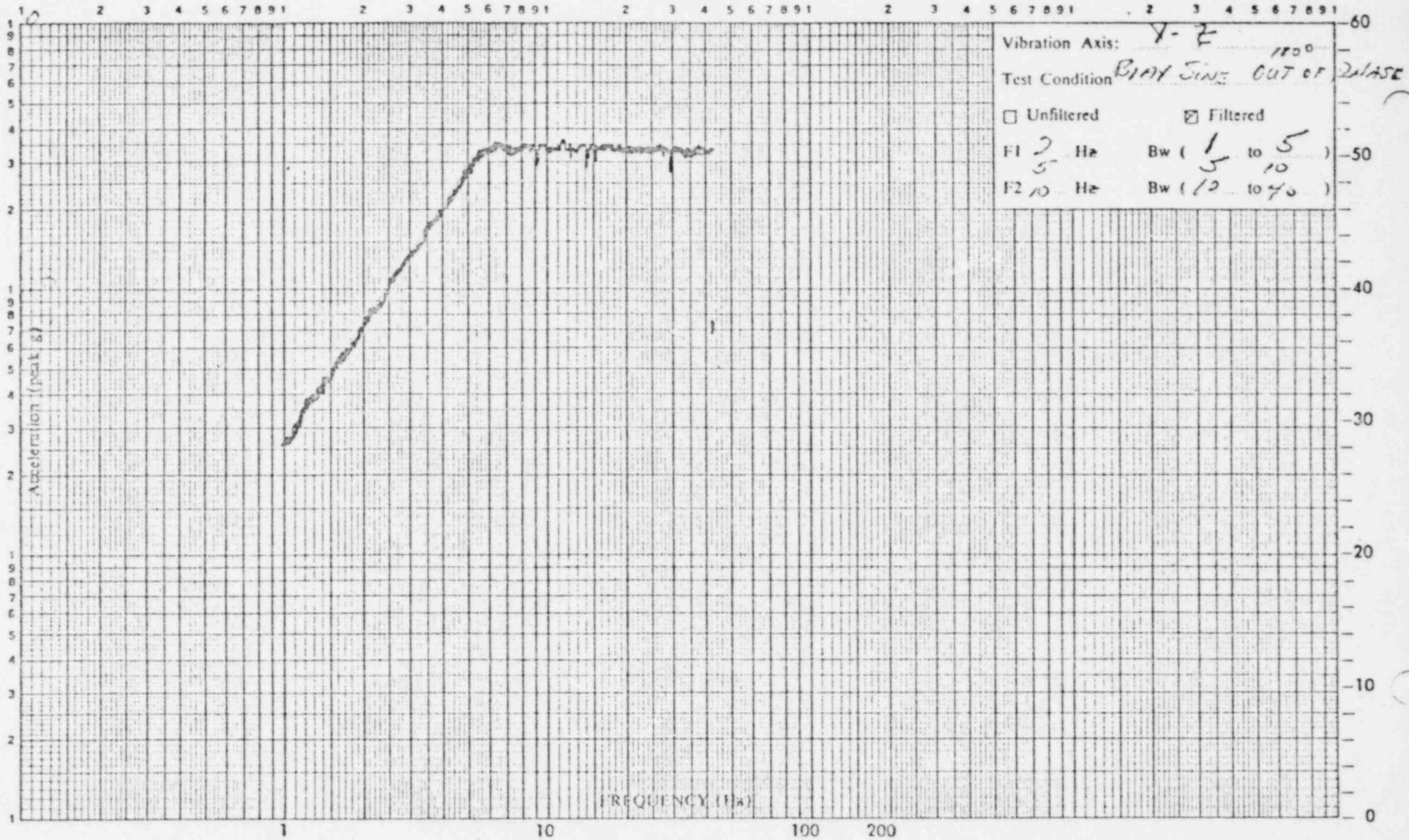
Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE 1

Serial Number(s):

Unit: Operational ☐ Non-operational ☒



Pickup Serial Number: 867

Pickup Location: CONT

Pickup Sensing Axis: [illegible]

Pickup Sensitivity: 100 mv peak / g peak

Sweep Speed: .5 oct/minute

☐ Live ☐ Tape

Job Number: 40-2571

Date: 27 Aug 80

Time: 1315

1077 Enc 1 Pg 19

Lab Form D-24

Plotted by: W. Clark

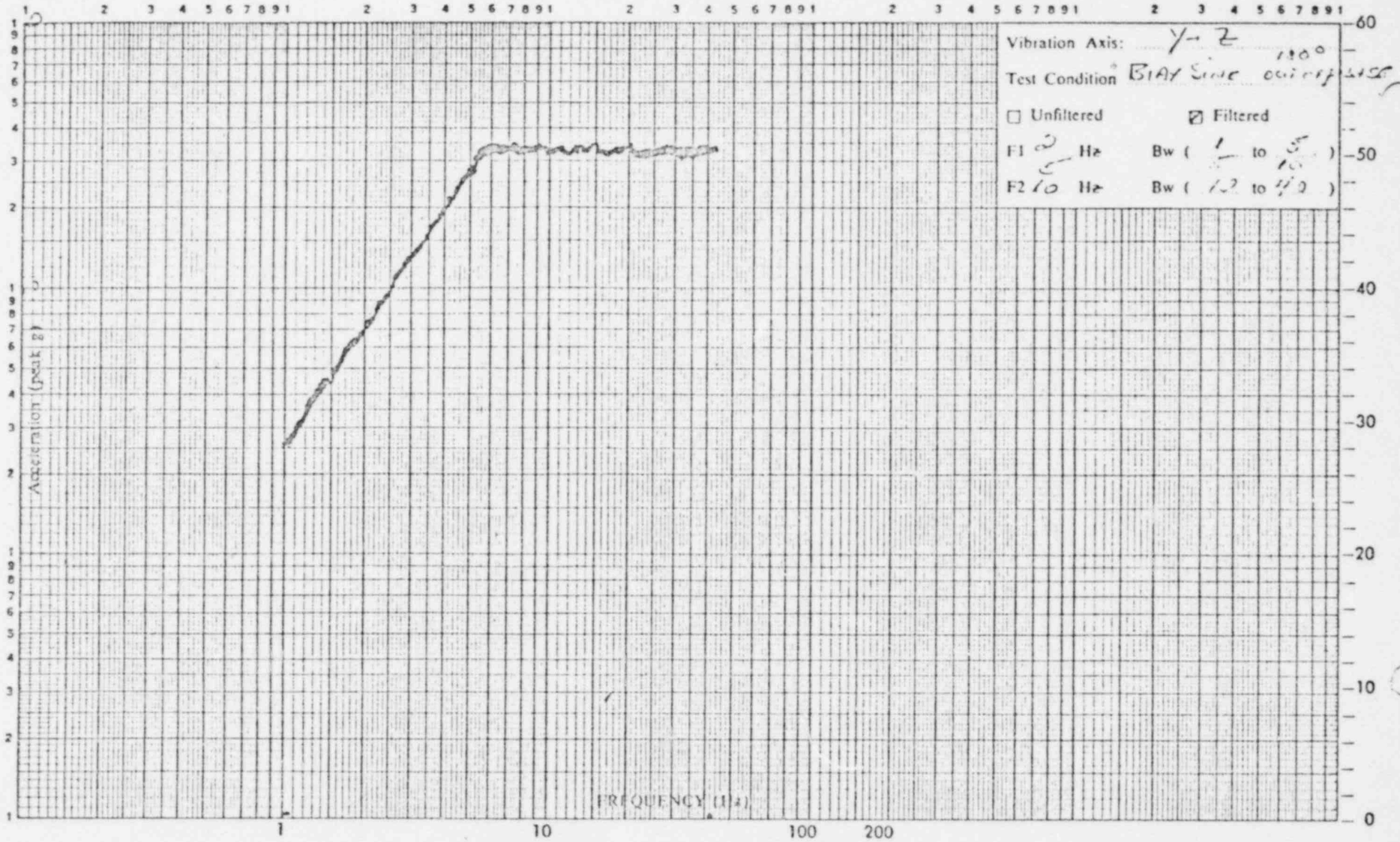
Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE

Serial Number(s):

Unit: Operational ☒ Non-operational ☐



Pickup Serial Number: 251

Pickup Location: Cont

Pickup Sensing Axis: Z

Pickup Sensitivity: 100 mv peak / g peak

Sweep Speed: 1.0 oct/minute

☐ Live ☐ Tape

Job Number: 4102571

Date: 24 Aug 80

Time: 1:40

1077 Enc 1 Pg 20

Lab Form D-24

Plotted by: R. Rankin

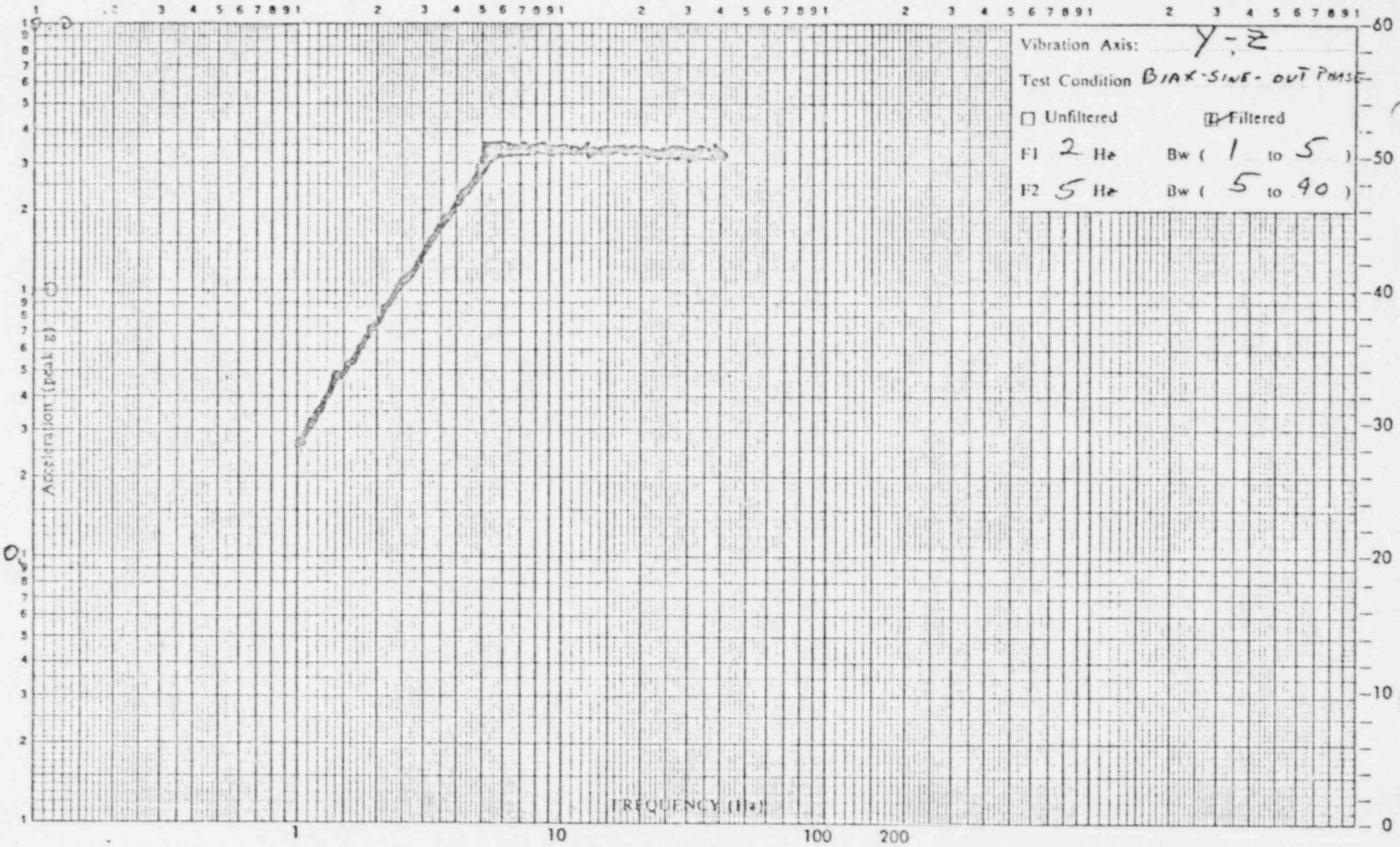
Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALUE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☑



Pickup Serial Number: 246

Pickup Location: CONT.

Pickup Sensing Axis: H&R

Pickup Sensitivity: 100.0 mv peak / g peak

Sweep Speed: 0.5 oct/minute

☑ Live ☐ Tape

Job Number: 402871

Date: 27 AUG 80

Time: 1340

1077 Enc 1 Pg 21

Lab Form D-24

Plotted by: R. Rankin

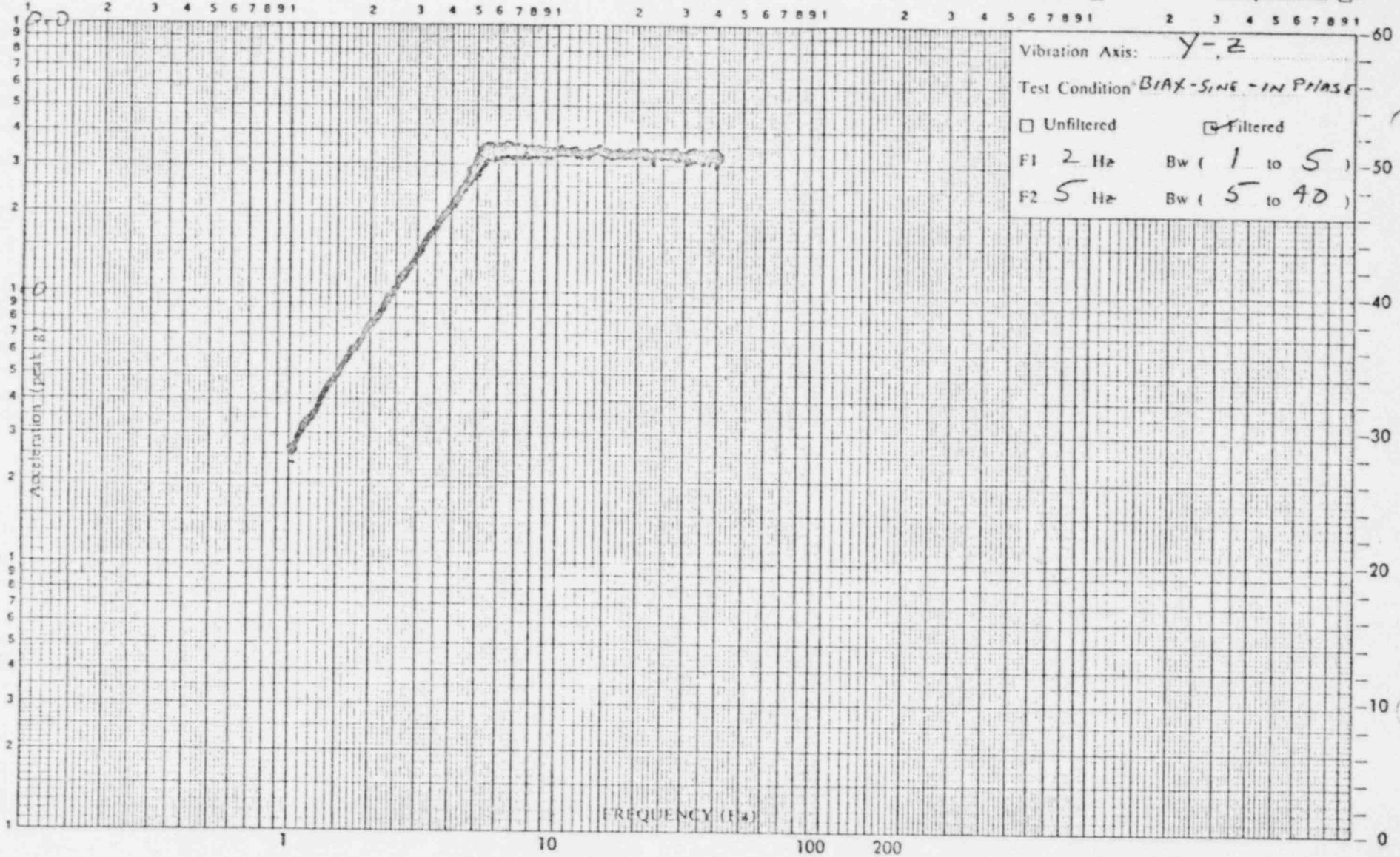
Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☐ Non-operational ☑



Pickup Serial Number: 246

Pickup Location: CONT

Pickup Sensing Axis: HOR

Pickup Sensitivity: 100.0 mv peak / g peak

Sweep Speed: 0.5 oct/minute

☑ Live ☐ Tape

Job Number: 402871

Date: 27AUG80

Time: 1403

Lab Form D-24

1077 Enc 1 Pg 22

Plotted by: [illegible]

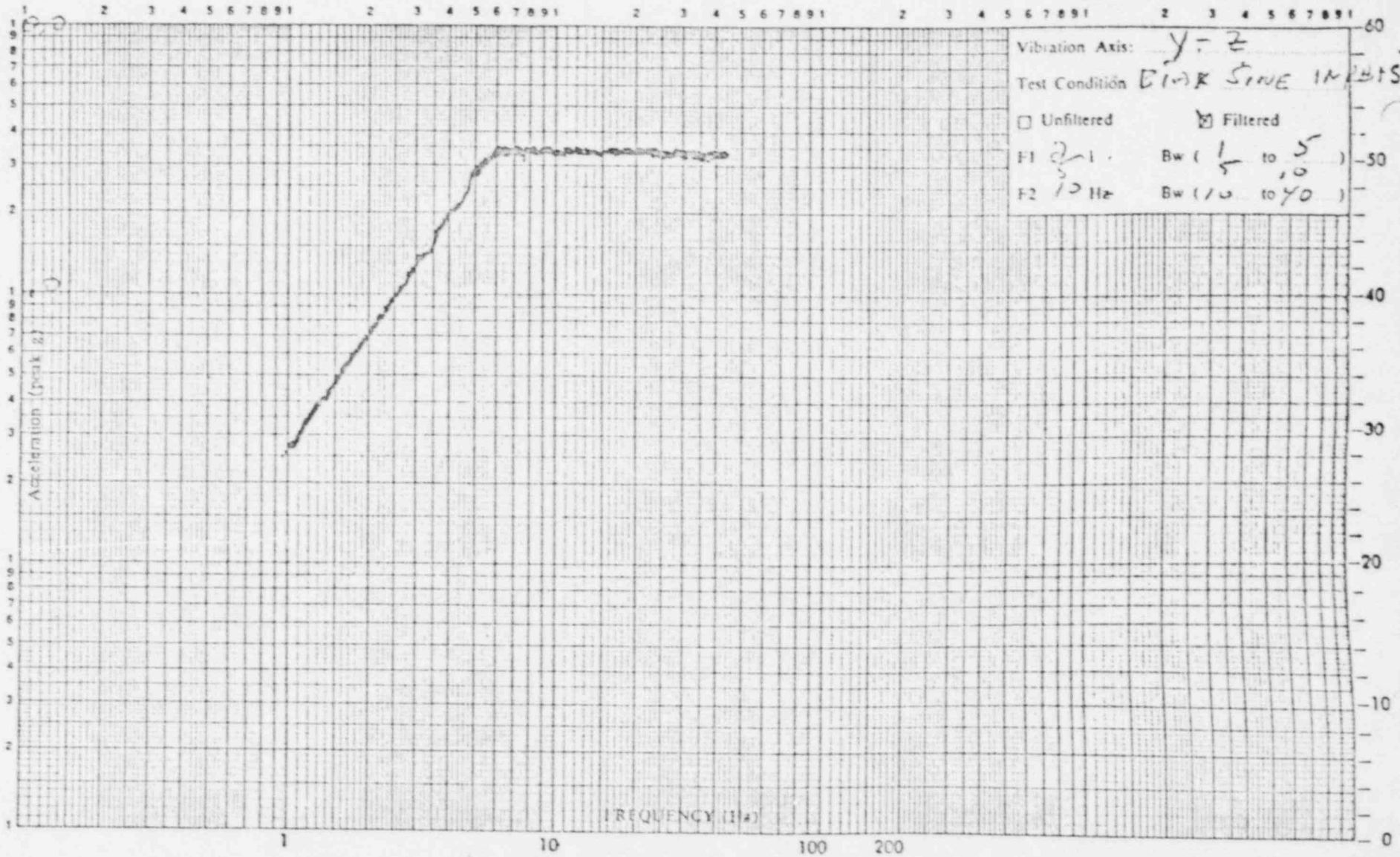
Checked by:

DAYTON T. BROWN INC.
Testing Laboratories

Test Item: VALVE

Serial Number(s): 1

Unit: Operational ☒ Non-operational ☐



Pickup Serial Number: 867

Pickup Location: Cont

Pickup Sensing Axis: Z

Pickup Sensitivity: 100 mv peak / g peak

Sweep Speed: .5 oct/minute

☒ Live ☐ Tape

Job Number: 402871

Date: 27 Aug 80

Time: 1423

1077 Enc 1 Pg 23

Lab Form D-24

DAYTON T. BROWN

TEST EQUIPMENT

TEST: SEISMIC VIBRATION

ITEM	MANUFACTURER	MODEL	S/N	ACCURACY
Seismic Vibrator	Dayton T. Brown, Inc.	001	001	Transfer Instrument
Sweep Oscillator	Spectral Dynamics	SD104A-5	187	± 2%
Servo Monitor	Spectral Dynamics	SD105A	140	± 4%
Digital Voltmeter	Dana	4200	505387	Mfr.
Dynamic Analyzer	Spectral Dynamics	SD101A	135	± 0.25 dB
Dynamic Analyzer	Sepctral Dynamics	SD101B	53	± 0.25 dB
Electronic Counter	Anadex	CF603R	31326	± 1 Count
Timer	Dimco Gray	167	47-156	± 1 Second
Log Converter	Hewlett Packard	7562A	1211A 01452	± 0.25 dB
Log Converter	Hewlett Packard	7562A	16129A 02165	± 0.25 dB
X-Y Recorder	Hewlett Packard	7035B	1206A 05761	± 1%
X-Y Recorder	Hewlett Packard	7035B	1543A-11724	± 1%
Charge Amplifier	Unholtz Dickie	D22PMS (0)-82	50-126	± 5%
Charge Amplifier	Unholtz Dickie	D22PMS -82	50-129	± 5%
Charge Amplifier	Unholtz Dickie	D22PMS -82	50-132	± 5%

Test equipment utilized for the program reported herein was within its assigned interval of calibration. Details are on file at Dayton T. Brown, Inc. and will be made available upon request.

DAYTON T. BROWN

TEST EQUIPMENT

TEST: SEISMIC VIBRATION

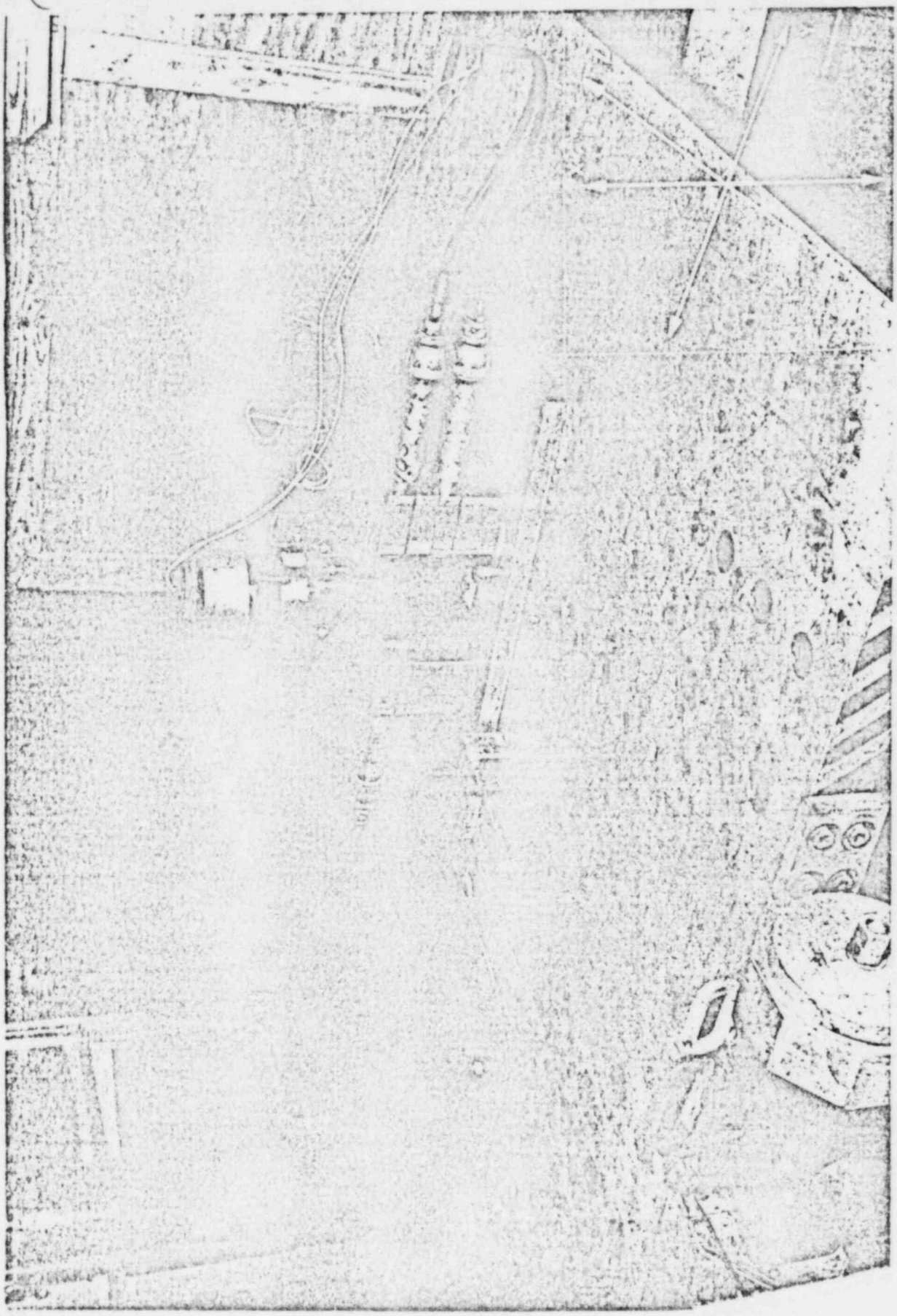
ITEM	MANUFACTURER	MODEL	S/N	ACCURACY
Charge Amplifier	Unholtz Dickie	D22PMS -82	50-133	± 5%
Charge Amplifier	Unholtz Dickie	D22PMS -82	50-136	± 5%
Accelerometer	Unholtz Dickie	5D21-8	246	± 5%
Accelerometer	Unholtz Dickie	5D21-8	867	± 5%
Accelerometer	Endevco	2226C	DJ38	± 5%
Bi-axial Vibrator	Dayton T. Brown, Inc.	3000	3.4	Transfer Instrument
Gauge	U.S. Gauge	0-300	60-492	± 1% F.S.
Accelerometer	Endevco	2228C	TB70	± 5%

Test equipment utilized for the program reported herein was within its assigned interval of calibration. Details are on file at Dayton T. Brown, Inc. and will be made available upon request.

DAYTON T. BROWN INC.

Enclosure 2

Photograph



TESTED FOR: VALCOR ENGINEERING CORPORATION
P/N: V70900-301, REVISION G
SEISMIC TEST SETUP X-Z AXIS
JOB NO: 402871-00-000
DTB04880-1077
FILE NO: 80-1678
ENCLOSURE: 2

ITEM: SOLENOID VALVE
S/N: 1
DATE: 27 AUGUST 1980
PHOTO: 1

DAYTON T. BROWN, INC.
ENGINEERING AND TEST DIVISION