EQUIPMENT LOAN INVENTORY

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March 1993
Final Technical Report

Approved for public release; distribution is unlimited.

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**Abstract**

The Equipment Loan Section of Armstrong Laboratory maintains industrial hygiene, environmental, and radiation measuring equipment for use by base-level bioenvironmental engineering offices. This technical report lists the equipment available for loan.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>LOAN PROCEDURES</td>
<td>2</td>
</tr>
<tr>
<td>Equipment</td>
<td>2</td>
</tr>
<tr>
<td>Industrial Hygiene Supplies</td>
<td>3</td>
</tr>
<tr>
<td>INDUSTRIAL HYGIENE EQUIPMENT INVENTORY</td>
<td>4</td>
</tr>
<tr>
<td>RADIATION EQUIPMENT INVENTORY</td>
<td>9</td>
</tr>
<tr>
<td>ENVIRONMENTAL QUALITY EQUIPMENT INVENTORY</td>
<td>11</td>
</tr>
<tr>
<td>EQUIPMENT LOAN SAMPLING SUPPLIES</td>
<td>12</td>
</tr>
<tr>
<td>MANUFACTURERS INDEX</td>
<td>16</td>
</tr>
<tr>
<td>APPENDIX</td>
<td></td>
</tr>
<tr>
<td>Equipment Loan Procedures</td>
<td>27</td>
</tr>
</tbody>
</table>
EQUIPMENT LOAN INVENTORY

INTRODUCTION

The mission of the Armstrong Laboratory (AL) is to provide professional consultation, specialized laboratory services, and operational field support to Air Force installations worldwide in the areas of occupational, radiological, and environmental health. The mission of the Equipment Loan Section is to provide equipment loans and consultations to Air Force installations worldwide. This report provides a listing of all equipment currently in the Equipment Loan inventory. This listing is provided for use by Air Force personnel to determine if Equipment Loan has the equipment they need to borrow. Also included in this report is a listing of sampling supplies which Equipment Loan maintains for emergency requests from Air Force installations. The last section of this report contains a listing of equipment and supply manufacturers, including addresses and telephone numbers. When available, a toll free number and FAX number for the manufacturer have been provided.

Additional information concerning this report or the Equipment Loan inventory can be obtained from the AL/OEMI Equipment Loan Section, Building 175W, 2402 E Drive, Brooks AFB, TX 78235-5114, DSN 240-2142.
LOAN PROCEDURES

Equipment

The following procedures are for borrowing equipment (they are also summarized in the flowchart in the Appendix).

a. To request equipment, send a letter or a FAX to Equipment Loan (FAX No. 240-3945). The letter/FAX should include: the manufacturer and model number of the requested equipment; list of necessary accessories (please be as specific as possible to avoid errors/delays); your complete mailing address to include building number and street address; a point of contact; and a phone number. Overseas bases should indicate base name and host country.

b. Equipment Loan will process your request within 2 duty days, to include sending equipment out through the Transportation Management Office (TMO). Allow 7 days for delivery. If you need it sooner, provide us with a Federal Express Account Number or some other funding mechanism.

c. When you receive the equipment, take the following actions:

(1) Perform an inventory and an operational check of the equipment. Fill out the hand receipt (AF Form 1297) and the questionnaire and send them back in the provided self-addressed envelope. Insure that you sign and date the AF Form 1297 and note any discrepancies.

(2) If you need a loan period extension, call Equipment Loan and explain the situation. An extension of up to 2 weeks will normally be granted, unless there is a waiting list for the equipment.

(3) When returning the equipment, be sure to package it properly. DO NOT send the equipment in its carrying case; it must be separately padded to prevent damage. It is your responsibility to insure that Packing and Crating packages the equipment properly and that it is sent via a traceable means. Maintain the Transportation Control Number so the item can be traced if the equipment doesn’t show up after an appropriate period of time.

d. If you request an item that is not presently available, you will be placed on a waiting list. As soon as the equipment is available, you will be contacted and the equipment will be sent out.
Industrial Hygiene Supplies

The following procedures are for obtaining sampling media.

a. Equipment Loan stocks a limited supply of air sampling media for EMERGENCY requests. Equipment Loan can also help you with ordering information for your routine sampling media needs.

b. Review the AFOEHL Recommended Sampling Procedures, March 1989, and consider alternative sampling methods.

c. Call Equipment Loan (DSN 240-2142, 21\(^0\), 3669) to request air sampling media. Indicate the collection method you will be using.

d. Please limit your request to 10 items. Quantities in excess of 10 will be granted on a case-by-case basis; however we expect you to replace media when quantities exceed 10.

e. Air sampling media will normally be sent by mail. If you need it overnight, supply Equipment Loan with your Federal Express Account Number. Otherwise, your request will be mailed out within 2 duty days of the request.
INDUSTRIAL HYGIENE EQUIPMENT INVENTORY

**Acoustical Calibrators**

- General Radio Model 1562-A Sound Level Calibrator - 125 Hz thru 2000 Hz (adjustable)
- General Radio Model 1567 Sound Level Calibrator - 114 dB at 1000 Hz
- General Radio Model 1986 Omnical Sound Level Calibrator - 74 dB to 114 dB, 125 Hz thru 4000 Hz.
- Metrosonics Model CL303 Acoustical Calibrator - 102 dB at 1000 Hz
- Metrosonics Model CL304 Acoustical Calibrator - 102 dB at 1000 Hz

**Air Samplers (Personal)**

- Dupont Alpha 1 Multi-Flow Air Sampler (IT) - 5 to 5000 cc/min
- Dupont Alpha 2 Low Flow Sampler (IT) - 5 to 200 cc/min
- Gillian Model HFS-113A High Flow Air Sampler (IT) - 500 to 3500 cc/min

**Air Velocity Meters**

- Alnor Model 8500D-II Digital Thermo-Anemometer - 20 to 3000 fpm, temperature and m/s also displayed
- Kurz Model 443 Air Velocity Meter - 0 to 12,000 fpm, 0 to 5" H₂O (static pressure)
- Kurz Model 1440 Air Velocity Meter - 0 to 12,000 fpm
- Pacer Model DA4000 Digital Vane Anemometer - displayed in fpm or mps
- Sierra Model 617 Air Velocity Meter - 0 to 12,000 fpm, 0 to 5" H₂O (static pressure)
- Alnor Balameter - 0 to 2,000 cfm
- Dwyer Incline Manometer - 0 to 12" H₂O, 500 to 12000 fpm
Combustible Gas and Oxygen Detectors

- GasTech Model 1314 Combustible Gas/Oxygen Analyzer - detects and measures concentrations of CG/Vapors and Oxygen

- Industrial Scientific Model MX241 Combustible Gas/Oxygen Monitor - detects and measures concentrations of GC/Vapors and Oxygen

- Neotronics Exotox 75 - 0 to 32% O₂, 0 to 100% LEL, 0 to 999 ppm CO, 0 to 99 ppm NO₂, 0 to 499 ppm H₂S, 10 to 90% Rel Hum, -4 to 122 degrees Fahrenheit

Dust/Particle Detectors

- ATI Model TDA-2E Particle Detector Apparatus - size 0.1 to 100 micrometers

- SKC Cyclone Respirable Dust Sampler

- MSA Cyclone Respirable Dust Sampler

Heat Stress Analyzers/Temperature and Humidity Instruments

- Botsball, Black Globe Kit

- Princo Sling Psychrometer - Dry Bulb(DB), Wet Bulb(WB), Relative Humidity(RH)

- Reuter-Stokes Model RSS-211D Heat Stress Monitor - DB, WB, Globe Temperature(GT), WBGT (IN/OUT), and strip chart recorder

- Vista Scientific Model 858 Heat Stress Analyzer - DB, WB, GT, WBGT (IN/OUT), with scan and strip chart recorder

Light Meters

- Photo Research Model 504 Photometer - 0.5 to 19,999 fc

- Simpson Model 408-2 Illumination Level Meter - 0 to 500 fc
Mass Flow/Air Flow Calibration Instruments

- Bubble Tube - 0 to 500 cc/min
- Buck Model M-5 Calibrator - 1 to 6000 cc/min
- Gilian Model Gilibrator Primary Flow Calibrator - with 3 flow sensors in ranges: 1 to 250 cc, 20cc to 6 lpm, 2 to 30 lpm

Microbial Samplers

- Anderson Model 15-502 2-Stage Microbial Sampler - stage 1 (nonrespirable), stage 2 (respirable)
- Mattson-Garvin Model 200 Microbial/Biological Sampler - collects bacteria and fungi on a media, changeable time settings (150 ml), 15/30/60 min motor

Miscellaneous Equipment

- Centronics Model GLP-II Printer - used with Metrosonics db-310 Noise Dosimeters
- Gast Model DOA-P104-AA Vacuum/Pressure Pump - oil-less, 60 psig max pressure, 24" max vacuum, free air capacity 1.2 cfm
- Gilian Spill Proof Impinger
- Metrosonics dl-332 Data Logger - time, date, alarm, min, max, aver, stel, total time, time history
- SKC Midget Impinger, Fritted Nozzle
- SKC Midget Impinger, Standard Nozzle
- Staplex Calibration Kit
- Template for swipe sampling - 1 ft by 1 ft
- TSI Portacount Plus Model 8020 Respirator Fit Tester
- YSI Model 43TD Tele-thermometer
- YSI Model 44TC Tele-thermometer
- YSI Model 44TZ Tele-thermometer
Noise Dosimeters

- Dupont Model Mark-1 Audio Dosimeter - SLM, Dose %, L avg, L max, and duration

- Larson-Davis Model 700 Noise Dosimeter - SLM, time history, secure mode, projected dose, dose %, L avg, L min, L max, L peak, LDL function to recalculate data with new threshold, criterion and exchange rate, and printout capabilities

- Metrosonics Model db-310 Noise Dosimeters - time history, L max, L peak, L avg, secure mode, projected dose, and ECL printed onto AF Form 2756A or 2756B

- Metrosonics Model db-3100 Noise Dosimeters - time history, L max, L peak, L avg, TWA, projected dose, slow response, secure mode, select A or C weighting, PC interface

Sound Level Meters

- General Radio Model 1565-B Sound Level Meter - 50 to 140 dB range, A/B/C weighting, slow response

- General Radio Model 1981B Sound Level Meter - 30 to 120 dB range, slow/fast response, A weighting only

- General Radio Model 1982 Sound Level Meter and Analyzer - octave band (31.5 Hz to 16kHz, A/B/C/Flat weightings, fast/slow/impact and impulse responses, 30 to 140 dB range (10dB attenuator available)

- General Radio Model 1988 Integrating Sound Level Meter - same as 1982 but integrates

Toxic Gas Analyzers (General)

- Draeger Model 21/31 Multi-Gas Detector - for use with Draeger Detector Tubes, hand pump

- MSA Model A Samplair Pump - for use with MSA Detector Tubes, hand pump

- Sensidyne Model 800 Toxic Gas Detector Pump - for use with Sensidyne Detector Tubes, hand pump

- Seiger Model 3061 AUTOSPOT Toxic Gas Detector (requires a 4-month advance notice before loan, 90-day shelf life cartridge)

- Microtip HL-2000 Air Monitor/Photoionization Detector - 9.5 and 10.6 eV tube, 0.1 to 2000 ppm
Toxic Gas Analyzers (Specific)

- Energetic Sciences Ecolyzer Model 2000 Carbon Monoxide Analyzer - measures from 0 to 600 ppm (dual range), portable

- Interscan Model 1142 Carbon Monoxide Analyzer - measures from 0 to 500 ppm (dual range), portable

- Interscan Model 4368 Hydrogen Chloride Analyzer - measures from 0 to 50 ppm

- Jerome Model 411 Mercury Vapor Analyzer - 10-second detection limit 0.001 to 0.999 mg/m³ Hg

- Jerome Model 431 Mercury Vapor Analyzer - 0 to 0.999 mg/m³ Hg

- Neotronics CO-101 Carbon Monoxide Analyzer - 0 to 3999 ppm with alarm settings 50/400 ppm

- Neotronics Exotox 75 Ambilog - measures 0 to 499 ppm H₂S, 0 to 99 ppm NO₂, 0 to 999 ppm CO, 0 to 32% O₂, 0 to 100% LEL, 10 to 90% Ref Hum, -4 to 122 degrees Fahrenheit

- Metrosonics AQ-501 Air Quality Monitor - measures 0 to 5000 ppm CO₂, 0 to 100% Relative Humidity, 0 to 60 degrees Celsius
RADIATION EQUIPMENT INVENTORY

Non-Ionizing Radiation Meters

- Narda Model 8611 Broadband Isotropic Radiation Meter - for use with Narda Probes 86X1, 86X2, 86X3, 8635, 8644 and 8682

- Narda Model 8616 Broadband Isotropic Radiation Meter - for use with Narda Probes 86X1, 86X2, 86X3, 8682

- Narda Model 8716 Broadband Isotropic Radiation Meter - for use with Narda Probe 8722

- Narda Model 8696 Averaging Module - for use with Narda Model 8616 meter

Non-Ionizing Radiation Probes

- Narda Model 8621B Isotropic Radiation Probe (E Field) - 0.3 to 26 GHz, 20 mW/cm²

- Narda Model 8621D Isotropic Radiation Probe (E Field) - 0.3 to 40 GHz, 20 mW/cm²

- Narda Model 8623B Isotropic Radiation Probe (E Field) - 0.3 to 26 GHz, 100 mW/cm²

- Narda Model 8631 Isotropic Radiation Probe (H Field) - 10 to 300 MHz, 20 mW/cm²

- Narda Model 8633 Isotropic Radiation Probe (H Field) - 10 to 300 MHz, 10 mW/cm²

- Narda Model 8652 Isotropic Radiation Probe (H Field) - 0.3 to 10 MHz, 200 mW/cm²

- Narda Model 8662 Isotropic Radiation Probe (E Field) - 0.3 to 300 MHz, 200 mW/cm²

- Narda Model 8662B Isotropic Radiation Probe (E Field) - 0.3 to 1,000 MHz, 200 mW/cm²

Ionizing Radiation Meters

- Victoreen Model 470A Beta/Gamma/X-Ray Radiation meter - 0 to 3/10/30/100/300/1000 range, R/hr, mR/hr and integrate mR
- **Victoreen Model 471 Beta/Gamma/X-Ray Radiation Meter** - 0 to 1/10/30/100/300 range, mR/hr and R/hr (rate), integrate mode mR in same ranges

- **Victoreen Model 471RF Beta/Gamma/X-Ray Radiation Meter** - 0 to 1/10/30/100/300 range, mR/hr, mR and integrate mR

- **Radcal MDH Model 1015 X-Ray Monitor** - for use with MDH Probes 10X5-3, 10X5-180, and 10X5-6M

- **Radcal MDH Model 2025 X-Ray Monitor** - for use with MDH Probes 20X5-3, 20X5-180, and 20X5-6M

**Ionizing Radiation Probes**

- **Radcal MDH Model 10X5-3 Diagnostic Probe**
- **Radcal MDH Model 10X5-180 Scatter Probe**
- **Radcal MDH Model 20X5-3 Diagnostic Probe**
- **Radcal MDH Model 20X5-180 Scatter Probe**
- **Radcal MDH Model 20X5-6M Mammo Probe**
- **Radcal MDH Model 20X5-10.3CT CT Probe**

**Ultra-Violet Radiation Meter**

- **International Light Model IL7300 Ultra-Violet Radiometer** - ranges: 180 to 400 nm, Power Density - 0 to 0.5 W/cm²
ENVIROMENTAL QUALITY EQUIPMENT INVENTORY

Conductivity Meters

- YSI Model 33 Conductivity Meter - 0 to 500/5000/50000 micromhos/cm range

Dissolved Oxygen Meters

- YSI Model 51A Dissolved Oxygen Meter - 5 to 45 degrees Celsius temperature range, 0 to 15 ppm range, fresh and sea water
- YSI Model 51B Dissolved Oxygen Meter - same as 51A, but range is 0 to 10 mg/l

Flow Meter

- Marsh/McBirney Model 201D Portable Digital Water Current Meter - 0.5 to 10 ft/sec

pH Meters

- Fisher Model 640 Digital pH Meter - 0 to 14
- Orion Research Model 221 Digital pH Meter - 0 to 14
- Cole-Parmer Model 5985-40 Digital pH Meter - 0 to 14
- Cole-Parmer Model 5986 Digital pH Meter - 0 to 14

Wastewater Sampler

- SIGMA Streamline 800SL Portable Sampler with Integral Flowmeter and Rain Gauge

Well Sampling Pump

- Fultz Model SP-202 Groundwater Sampling Pump - self-powered (internal batteries and external gas engine), 1 to 60 ft well depth capability, performance is 1 gal/min per 50 ft
EQUIPMENT LOAN SAMPLING SUPPLIES

Aerosol Filter Cassettes

GF - Glass Fiber, 37 mm
GG - Glass Fiber, 13 mm
MF - Mixed Cellulose Ester, 37 mm, 0.8 micrometer
MG - Mixed Cellulose Ester, 25 mm, 0.45 micrometer
MH - Mixed Cellulose Ester, 37 mm, 0.45 micrometer
P5 - Polyvinyl Chloride, 37 mm, 5 micrometer
P7 - Polyvinyl Chloride, 37 mm, 5 micrometer, matched weight
P8 - Polyvinyl Chloride, 37 mm, 0.8 micrometer
SM - Silver Membrane, 37 mm, 0.8 micrometer
TF - Polytetrafluoroethylene Teflon (PTFE), 37 mm, 1 micrometer
TG - PTFE, 37 mm, 2 micrometer

Air Sampling Tubes

AL - Alumina Tubes, 50/100 mg sorbent
SKC Catalog # 226-11
CB - Chromosorb-102, 50/100 mg sorbent
SKC Catalog # 226-10
CD - Chromosorb-104, 75/150 mg sorbent, designated shelf life
SKC Catalog # 226-109
CF - Chromosorb-106, 50/100 mg sorbent
SKC Catalog # 226-110
CG - Chromosorb-107, 50, 300 mg sorbent, set, must be thermally treated
SKC Catalog # 226-112
CH - Charcoal Tube, Petroleum, 50/100 mg sorbent, designated shelf life
SKC Catalog # 226-38-03
CM - Charcoal Tube, Coconut, 50/100 mg sorbent, designated shelf life
SKC Catalog # 226-73

CP - Gas Chrom-P, 50 mg sorbent, designated shelf life
SKC Catalog # 226-52

CR - Charcoal, Coconut, 350/350/350 mg sorbent
SKC Catalog # 226-09-02

CT - Charcoal, Coconut 50/100 mg sorbent
SKC Catalog # 226-01

C1 - Charcoal, Coconut, 200/400 mg sorbent
SKC Catalog # 226-09

C2 - can use CT tubes

C3 - Charcoal, Coconut, 200, 400 mg sorbent, set
SKC Catalog # 226-37

C4 - Same as C3

C5 - Charcoal, JXC, 50/100 mg sorbent
SKC Catalog # 226-65

C6 - Charcoal, JXC, 390/700 mg sorbent
SKC Catalog # 226-36

C7 - Charcoal, Petroleum, 50/100 mg sorbent
SKC Catalog # 226-38

C8 - Charcoal, Petroleum, 200, 400 mg sorbent, set
SKC Catalog # 226-38-02

C9 - Same as C8

DR - Drying Tube, 250 mg sorbent
SKC Catalog # 226-44

FB - Firebrick, 300 mg sorbent
SKC Catalog # 226-42-02

FS - Florisil, 50/100 mg sorbent
SKC Catalog # 226-39

HO - Hopcalite, 200 mg sorbent
SKC Catalog # 226-17-1A

MS - Molecular Sieve, 200/400 mg sorbent, designated shelf life
SKC Catalog # 226-40-02
MT - Molecular Sieve, 400/800/400 mg sorbent, designated shelf life
SKC Catalog # 226-40

PP - Porapak-P, 50 100 mg sorbent
SKC Catalog # 226-114

PQ - Porapak-Q, 75/150 mg sorbent
SKC Catalog # 226-115

SG - Silica Gel, 75/150 mg sorbent
SKC Catalog # 226-10

SL - Soda Lime, 200/600 mg sorbent
SKC Catalog # 226-28

S1 - Silica Gel, 100/200 mg sorbent, designated shelf life
SKC Catalog # 226-10-06

S3 - Silica Gel, 50/100 mg sorbent
SKC Catalog # 226-51

S4 - Silica Gel, 150/300 mg sorbent
SKC Catalog # 226-10-04

S5 - Silica Gel, 260/520 mg sorbent
SKC Catalog # 226-15GWS

S6 - Silica Gel, 75/150 mg sorbent, designated shelf life
SKC Catalog # 226-53

S7 - Silica Gel, 200/400 mg sorbent
SKC Catalog # 226-10-03

S8 - Carbon Beads, 1500 mg sorbent, designated shelf life
SKC Catalog #226-31

TN - Tenax, 50/100 mg sorbent
SKC Catalog # 226-35-03

T1 - Tenax, 10/20 mg sorbent, designated shelf life
SKC Catalog # 226-35-01

T2 - Tenax, 15/30 mg sorbent
SKC Catalog # 226-35

T3 - Tenax, 25/50 mg sorbent, designated shelf life
SKC Catalog # 226-35-06

T4 - Tenax, 35/70 mg sorbent, designated shelf life
SKC Catalog # 226-35-07

T5 - Tenax, 17,35 mg sorbent, set, designated shelf life
SKC Catalog # 226-35-02
XA - XAD-2, 60/120 mg sorbent, designated shelf life
SKC Catalog # 226-118

XB - XAD-2, 75/150 mg sorbent, designated shelf life
SKC Catalog # 226-117

XD - XAD-7, 40/80 mg sorbent, designated shelf life
SKC Catalog # 226-98

XF - XAD-4, 40/80 mg sorbent
SKC Catalog # 226-93

XG - XAD-7, 50/100 mg sorbent
SKC Catalog # 226-95

XH - XAD-7, 175/175 mg sorbent, set
SKC Catalog # 226-97

X1 - XAD-2, 40/80 mg sorbent
SKC Catalog # 226-30

X2 - XAD-2, 30/100 mg sorbent
SKC Catalog # 226-30-03

X3 - XAD-2, 50/100 mg sorbent
SKC Catalog # 226-30-04

X4 - XAD-2, 75/150 mg sorbent
SKC Catalog # 226-30-05

X5 - XAD-2/Filter, 140/270 mg sorbent, designated shelf life
SKC Catalog # 226-30-16

X6 - XAD-2, 200/400 mg sorbent
SKC Catalog # 226-30-06

X7 - XAD-2, 300, 600 mg sorbent, set
SKC Catalog # 226-30-02

X8 - XAD-2, 40/80 mg sorbent, designated shelf life
SKC Catalog # 226-30-18

X9 - XAD-2, 50/100 mg sorbent, designated shelf life
SKC Catalog # 226-23

Passive Dosimeters

PE - Ethylene Oxide Monitors
3M PART # 3551 (18-MONTH SHELF LIFE)
PF - Formaldehyde Monitors
3M PART # 3721 (9-MONTH SHELF LIFE)

PM - Organic Vapor Monitors
3M PART # 3500 (18-MONTH SHELF LIFE)

MANUFACTURERS INDEX

Air Techniques, Inc. (301) 944-6037
11403 Cronridge Drive
Owings Mills, MD 21207

Alnor Instrument Co. (312) 677-3500
7555 N. Linder Avenue
Skokie, IL 60077

Ametec (813) 355-3361
5600 Summerset Drive
Largo, FL 34643

Andersen Samplers, Inc. (800) 241-6898
4801 Fulton Industrial Blvd.
Atlanta, GA 30336

Arizona Instruments (800) 528-7411
P.O. Box 930
1100 E. University Dr.
Tempe, AZ 85281

Asbestos Control Technology (800) 221-1911
P.O. Box 183
Maple Shade, NJ 08052

Bacharach (412) 963-2091
625 Alpha Drive
Pittsburgh, PA 15238

Beckman Instruments (714) 871-4848
2500 Harbor Blvd.
Fullerton, CA 92634

BGI, Inc. (617) 891-9380
58 Guinan Street
Walthan, MA 02154

Bruel & Kjaer (508) 481-7000
185 Forest St.
Marlborough, MA 01752
Cahn Instruments
16207 South Carmenita Road
Cerritos, CA 90701
(800) 423-6641

Calibrated Instruments, Inc.
200 Saw Mill River Road
Hawthorne, NY 10532
(914) 741-5700

California Measurements, Inc.
150 East Montecito Avenue
Sierra Madre, CA 91024
(818) 355-3361

CEA Instruments
16 Chestnut Street
P.O. Box 303
Emerson, NJ 07630
(201) 967-5660

Cole-Parmer Instrument Co.
7425 North Oak Park Avenue
Chicago, IL 60648
(312) 647-7600

Columbia Scientific Industries
P.O. Box 203190
Austin, TX 78720
(910) 874-1364

Curtin-Matheson Scientific
P.O. Box 1416
Houston, TX 77521-14146
(800) 392-3353

Daco Products, Inc.
12 South Mountain Avenue
Montclair, NJ 07042
(201) 744-2453

Davis Instruments Co.
513 East 36th Street
Baltimore, MD 21218
(301) 243-4301

Detector Electronics Corp.
6901 W. 110th St.
Minneapolis, MN 55438
(612) 941-5665

Devilbiss Ransburg Co.
1724 Indian Wood Circle
Maumee, OH 43537
(800) 628-1200

Dickson Company
930 South Westwood Drive
Adison, IL 60101
(312) 543-3747

Direct Safety Company
7815 South 46th Street
Phoenix, AZ 85044
(800) 528-7405
Dosimeter Corporation of America
11286 Grooms Road
P.O. Box 42377
Cincinnati, OH 45242
(513) 498-8100

Dwyer Instruments
P.O. Box 373
Michigan City, IN 46360
(219) 872-9141

Eberline Analytical Corp.
5635 Jefferson Blvd NE 3874
Albuquerque, NM 87190
(505) 345-9931

E.I.L. Instruments, Inc.
10 Loveton Circle
Sparks, MD 21152
(301) 771-4800

Enmet Corp.
2308 S. Industrial Highway
Ann Arbor, MI 48104
(313) 761-1270

Fisher Scientific
711 Forbes Ave.
Pittsburgh, PA 15219
(412) 562-8300

Fisher & Porter Co.
10301 Stella Link Dr.
Suite 100
Houston, TX 77025
(713) 666-5409

Fluke Mfg. Company
10417 Gulfdale
San Antonio, TX 78216
(512) 340-2621

Foxboro Company
Bristol Park 1352-1B
Foxboro, MA 49022
(508) 543-8750

Gast Mfg. Corp.
P.O. Box 97
Benton Harbor, MI 49023-0097
(616) 926-6171

GastTech, Inc.
8445 Central Avenue
Newark, CA 94560
(415) 794-6200

GCA Industries, Inc.
213 Burlington Rd.
Bedford, MA 01730
(617) 275-5444

Gelman Sciences, Inc.
600 South Wagner Road
Ann Arbor, MI 48106
(800) 521-1520
<table>
<thead>
<tr>
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<th>Address</th>
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<tbody>
<tr>
<td>General Eastern Instruments</td>
<td>(617) 923-2386</td>
<td>50 Hunt Street, Watertown, MA 02172</td>
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<tr>
<td>General Metal Works</td>
<td>(800) 543-7412</td>
<td>145 South Miami Avenue, Village of Cleves, OH 45002</td>
</tr>
<tr>
<td>Gillian Instrument Corp.</td>
<td>(201) 808-3355</td>
<td>8 Dawes Highway, Wayne, NJ 07470</td>
</tr>
<tr>
<td>Gilmont Instruments, Inc.</td>
<td>(516) 487-0120</td>
<td>401 Great Neck Rd., Great Neck, NY 11021</td>
</tr>
<tr>
<td>GMD Systems, Inc.</td>
<td>(412) 746-3600</td>
<td>Old Route 519, Hendersonville, PA 15339</td>
</tr>
<tr>
<td>Gow Mac Instruments Co.</td>
<td>(201) 560-0600</td>
<td>P.O. Box 32, Bound Brook, NJ 08805</td>
</tr>
<tr>
<td>Grace Industries, Inc.</td>
<td>(412) 962-9231</td>
<td>P.O. Box 167, Transfer, PA 16154</td>
</tr>
<tr>
<td>Gulton Industries</td>
<td>(401) 884-6800</td>
<td>Route 2 Middle Road, East Greenwich, RI 02818</td>
</tr>
<tr>
<td>Heise Plant, Dresser Industries</td>
<td>(203) 426-3115</td>
<td>153 South Lane Street, Newtown, CT 06470</td>
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<tr>
<td>HNU Systems, Inc.</td>
<td>(617) 964-6690</td>
<td>160 Charlemont Street, Newton, MA 02161</td>
</tr>
<tr>
<td>Holiday Industries, Inc.</td>
<td>(612) 934-4920</td>
<td>14825 Martin Drive, Eden Prairie, MN 55344</td>
</tr>
<tr>
<td>Huygen Corporation</td>
<td>(312) 381-4050</td>
<td>Box 316, Wauconda, IL 60084</td>
</tr>
<tr>
<td>Industrial Scientific Corp.</td>
<td>(800) 338-3287</td>
<td>355 Steubenville Park, Oakdale, PA 15071</td>
</tr>
<tr>
<td>International Light, Inc.</td>
<td>(508) 465-5923</td>
<td>17 Graf Road, Newburyport, MA 01950</td>
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<td></td>
<td>FAX (412) 462-0759</td>
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<table>
<thead>
<tr>
<th>Company</th>
<th>Phone</th>
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<tr>
<td>Interscan Corporation</td>
<td>(818) 822-2331</td>
</tr>
<tr>
<td>21700 Nordhoff Street</td>
<td></td>
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<tr>
<td>P.O. Box 2496</td>
<td></td>
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<tr>
<td>Chatsworth, CA 91311</td>
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<tr>
<td>ISCO, Inc., Environmental Div.</td>
<td>(402) 474-2233</td>
</tr>
<tr>
<td>P.O. Box 82531</td>
<td></td>
</tr>
<tr>
<td>Lincoln, NE 68501</td>
<td></td>
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<tr>
<td>Kurz Instruments, Inc.</td>
<td>(408) 659-3421</td>
</tr>
<tr>
<td>20 Village Sq.</td>
<td></td>
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<tr>
<td>P.O. Box 849</td>
<td></td>
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<tr>
<td>Carmel Valley, CA 93924</td>
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<tr>
<td>Lab Line Instruments, Inc.</td>
<td>(800) 323-0257</td>
</tr>
<tr>
<td>15th and Bloomingdale Avenue</td>
<td></td>
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<tr>
<td>Melrose Park, IL 60160</td>
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<tr>
<td>Lab Safety Supply Company</td>
<td>(800) 356-0783</td>
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<tr>
<td>3430 Palmer Drive, P.O. Box 1368</td>
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<tr>
<td>Janesville, WI 53547</td>
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<tr>
<td>Larson Davis</td>
<td>(801) 375-0177</td>
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<tr>
<td>1681 West 820 North</td>
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<tr>
<td>Provo, UT 84601</td>
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<tr>
<td>Linseis Corp.</td>
<td>(800) 732-6733</td>
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<tr>
<td>P.O. Box 666</td>
<td></td>
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<tr>
<td>Princeton Junction, NJ 08550</td>
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<tr>
<td>Lucas/CEL</td>
<td>(301) 544-8773</td>
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<tr>
<td>760 Ritchie Hwy, Ste N6</td>
<td></td>
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<tr>
<td>Severna Park, MD 21146</td>
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<tr>
<td>Lumidor Safety Products</td>
<td>(305) 625-6511</td>
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<tr>
<td>5364 NW 167th Street</td>
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<tr>
<td>Miami, FL 33014</td>
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<tr>
<td>3M Occ Health &amp; Environ Safety</td>
<td>(800) 328-1667</td>
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<td>Bldg 275-6W-01</td>
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<tr>
<td>St. Paul, MN 55144</td>
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<tr>
<td>Markson Science</td>
<td>(800) 528-5114</td>
</tr>
<tr>
<td>7815 S. 46th Street</td>
<td></td>
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<tr>
<td>Phoenix, AZ 85044-5399</td>
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<tr>
<td>Marsh-McBirney, Inc.</td>
<td>(800) 368-2723</td>
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<tr>
<td>4539 Metropolitan Court</td>
<td></td>
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<tr>
<td>Frederick, MD 21701</td>
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<tr>
<td>Mast Div. Mast Keytone, Inc.</td>
<td>(319) 326-0141</td>
</tr>
<tr>
<td>2212 East 12th Street</td>
<td></td>
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<tr>
<td>Davenport, IA 52803</td>
<td></td>
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<tr>
<td>Company</td>
<td>Phone</td>
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<tr>
<td>Paker Meadow Corp.</td>
<td>(805) 529-5800</td>
</tr>
<tr>
<td>Particle Measuring Systems</td>
<td>(303) 443-7100</td>
</tr>
<tr>
<td>Photo Research</td>
<td>(818) 843-6100</td>
</tr>
<tr>
<td>PrFM, Inc.</td>
<td>(615) 966-8796</td>
</tr>
<tr>
<td>Precision Scientific</td>
<td>(312) 227-2660</td>
</tr>
<tr>
<td>Princo Instruments</td>
<td>(215) 355-1500</td>
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<tr>
<td>Qualimetrics Corp.</td>
<td>(800) 824-5873</td>
</tr>
<tr>
<td>Quest Electronics</td>
<td>(414) 567-9157</td>
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<tr>
<td>Rion Instruments</td>
<td>(301) 495-7738</td>
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<tr>
<td>Rueder-Stokes Canada Ltd.</td>
<td>(519) 623-4880</td>
</tr>
<tr>
<td>Scientific Instruments</td>
<td>(800) 431-5775</td>
</tr>
<tr>
<td>Scitec Corp</td>
<td>(800) 466-5323</td>
</tr>
<tr>
<td>Scott Aviation</td>
<td>(716) 683-5100</td>
</tr>
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</table>
Seiger Gasalarm
405 Barclay Blvd
Lincolnshire, IL 60069
(800) 221-1039

Sensidyne, Inc.
16333 Bay Vista Dr.
Clearwater, FL 60069
(813) 530-3602
FAX (813) 539-0550

Sentex Sensing Technology, Inc.
553 Broad Street
Ridgefield, NJ 07657
(201) 530-3602

Shortridge Instruments, Inc.
14609 N. Scottsdale Road
Scottsdale, AZ 85260
(602) 991-6744

Sierra Instruments
P.O. Box 909
Carmel Valley, CA 93924
(408) 659-3177

Simpson Instruments
7325 Ashcroft St.
Houston, TX 77081
(713) 271-3100

Sipin Company
505 Eighth Avenue
New York, NY 10018
(212) 695-5706

SKC Gulf Coast
9827 Whithorn Drive
Houston, TX 77095-5027
(800) 225-1309
(713) 859-8050

Solomat Corp.
652 Glenbrook Road
Stamford, CT 06906
(800) 932-4500
FAX (814) 359-3044

Spectrex Corp.
3594 Haven Avenue
Redwood City, CA 94063
(415) 365-6567

Staplex Air Sampler Division
777 Fifth Avenue
Brooklyn, NY 11232
(800) 221-0822

Supelco, Inc.
Supelco Park
Bellfonte, PA 16823
(814) 359-3441
FAX (814) 359-3044

TECH/OPS Landauer & Co.
2 Science Road
Glenwood, IL 60425
(708) 755-7000
Teledyne Hasting Raydist
P.O. Box 1275
Hampton, VA 23661
(804) 723-6531

Thomas Industries
1419 Illinois Avenue
Sheboygan, WI 53082
(414) 457-0463

Thomas Scientific
99 High Hill Rd. ATI-295
Swedesboro, NJ 08085
(609) 467-2000

Triplett Corporation
One Triplett Dr. Dept A
Bluffton, OH 45817
(609) 467-2000

TSI, Inc.
P.O. Box 64394
St. Paul, MN 55164
(612) 483-0900
FAX (612) 490-2574

Tylan Corp.
23301 S. Wilmington
Carson, CA 90745
(213) 518-3610

Vaisala Inc.
2 Tower Office Park
Woburn, MA 01801
(617) 933-4500

Vallen Safety Supply Company
2120 Denton Dr., Suite 105
Austin, TX 78758
(512) 836-9668

Varian Instrument Group
611 Hansen Way
Palo Alto, CA 94303

Vici Metronics
2991 Corvin Drive
Santa Clara, CA 94089
(408) 737-0550

Victoreen Nuclear Associates Corp
6000 Cochran Rd.
Freeport, NY 11520
(216) 248-9300

Vista Scientific Corp.
85 Industrial Park
Ivyland, PA 18970
(215) 322-2255

Weksler Instruments Corp.
P.O. Box 808, 80 Mill Road
Freeport, NY 11520
(516) 623-0100
Whatman, Inc.  (800) 922-0361
9 Bridewell Place
Clifton, NJ 07014

Wheaton Scientific  (609) 825-1100
1000 N. 10th Street  FAX 1-609-825-1131
Millville, NJ 08332

Xetex, Inc.  (415) 964-3261
660 National Avenue
Mountain View, CA 94043

Xontech, Inc.  (818) 787-7380
6862 Hayvenhurst Avenue
Van Nuys, CA 91406

Yellow Springs Instrument Co.  (513) 767-7241
P.O. Box 279
Yellow Springs, OH 45387

Zero Haliburton  (818) 846-4191
12224 Montague St.
Pacoima, CA 91331
APPENDIX

Equipment Loan Procedures
EQUIPMENT LOAN PROCEDURES

BASE ACTIONS

EQUIPMENT LOAN ACTIONS

BASE ACTIONS