

**HEALTH CARE
LOGISTICS**

**6106 BAUSCH ROAD
GALLOWAY, OHIO
43119**

PWS ID: OH2552412

**WATER SYSTEM
MAP**

Health Care Logistics Public Water System
6106 Bausch Road
Galloway, Ohio 43119
PWS ID: OH2552412

February, 4, 2017

1. System Description - Health Care Logistics operates a non-transient non- public water system that pumps approximately 1200 gallons per day from one well located next to the warehouse. The well draws water from a limestone bedrock aquifer. The aquifer is covered by more than 50 feet of low-permeability material, which provides significant protection from contamination. Depth to the top of the limestone aquifer is approximately 125 feet below the ground surface.
2. A 1½ inch water line underground from well to the pressure tank is 48" below grade.
3. The East sections of the building (pages 1, & 2) were built in 1988. The center section (page 3) was built in 1993 and the west sections (pages 4 & 5) Warehouse & lunch room & West bathrooms, were built in 1997. Overall there is Approx. 40,000 square feet. There is a basement section (page 1) 2400 square feet, under the most eastern part of building.
4. All supply line plumbing follows the ceiling of the structure and drops down to fixtures in bathrooms, water heaters, etc. The only under floor water line is in basement section that supplies an outside spigot.
5. There are a total of 4 outside spigots
6. There is a line shut off valve located in the Medical Repair room which will shut off all East part of building.

2 ←

← outside spigot

①

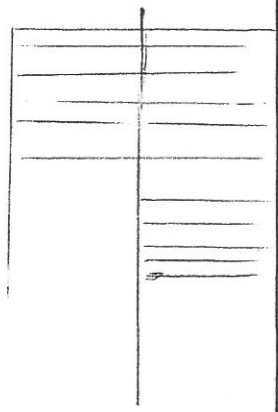
1/2" copper (under cement floor)

Basement
Museum

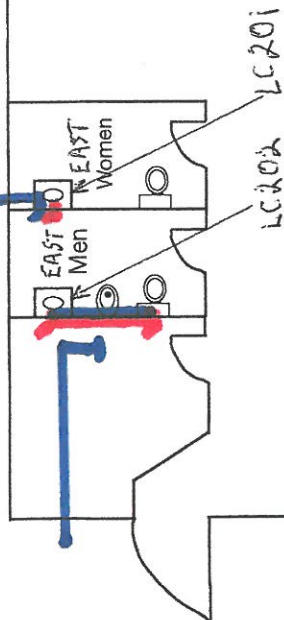
LC 208

Basement
Restroom

sump pump, water
heater, ejector
pump, mop sink



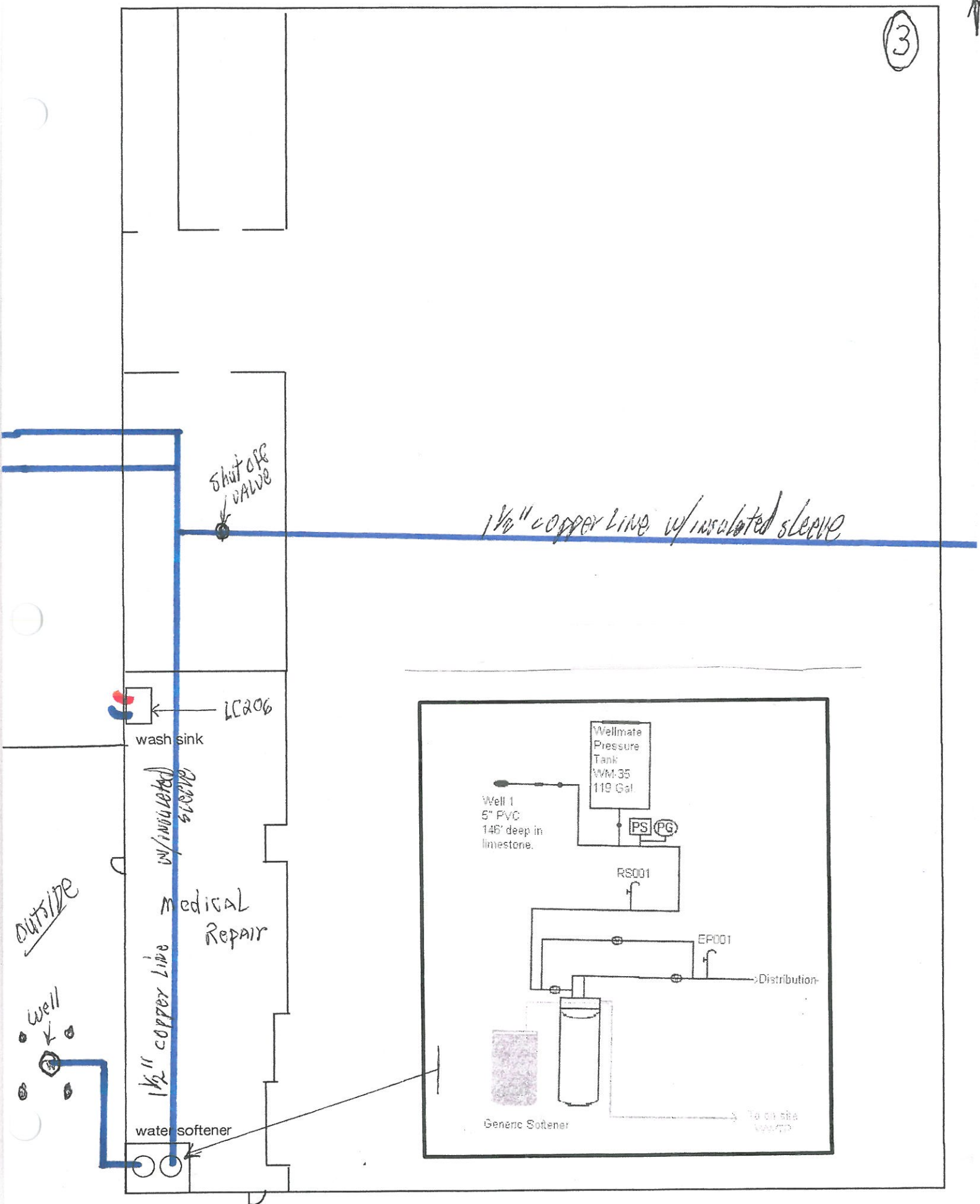
← OUTSIDE SPOT



Above museum

2

3



OUTSIDE 871007

N

Corridor

hot water heater

mop sink

wash sink

LC207

LC205

LC204

LC203

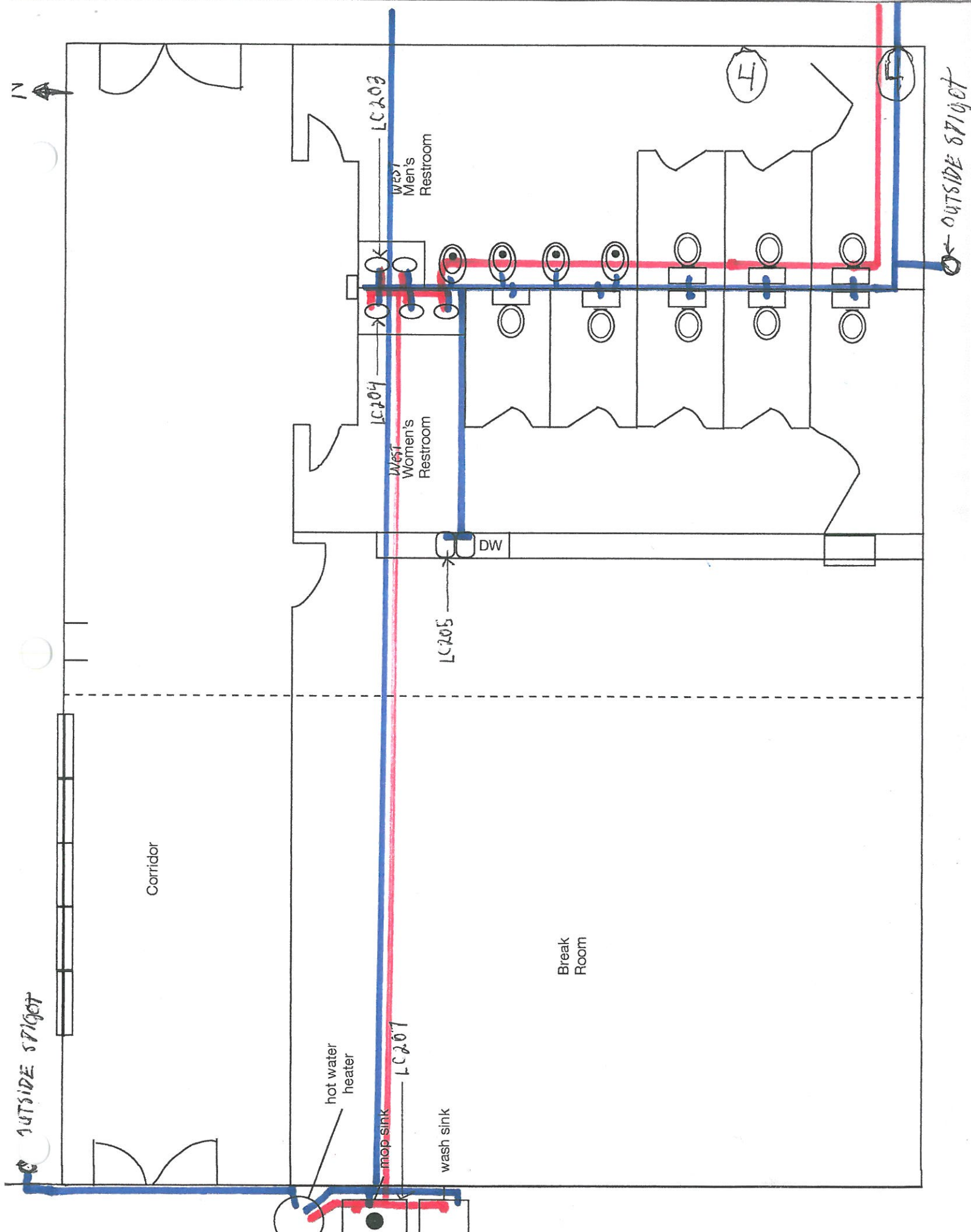
West Women's Restroom

West Men's Restroom

DW

Break Room

OUTSIDE 871007



2 ←



5

← ↑ ↗
SIDE AS
PAGE 4

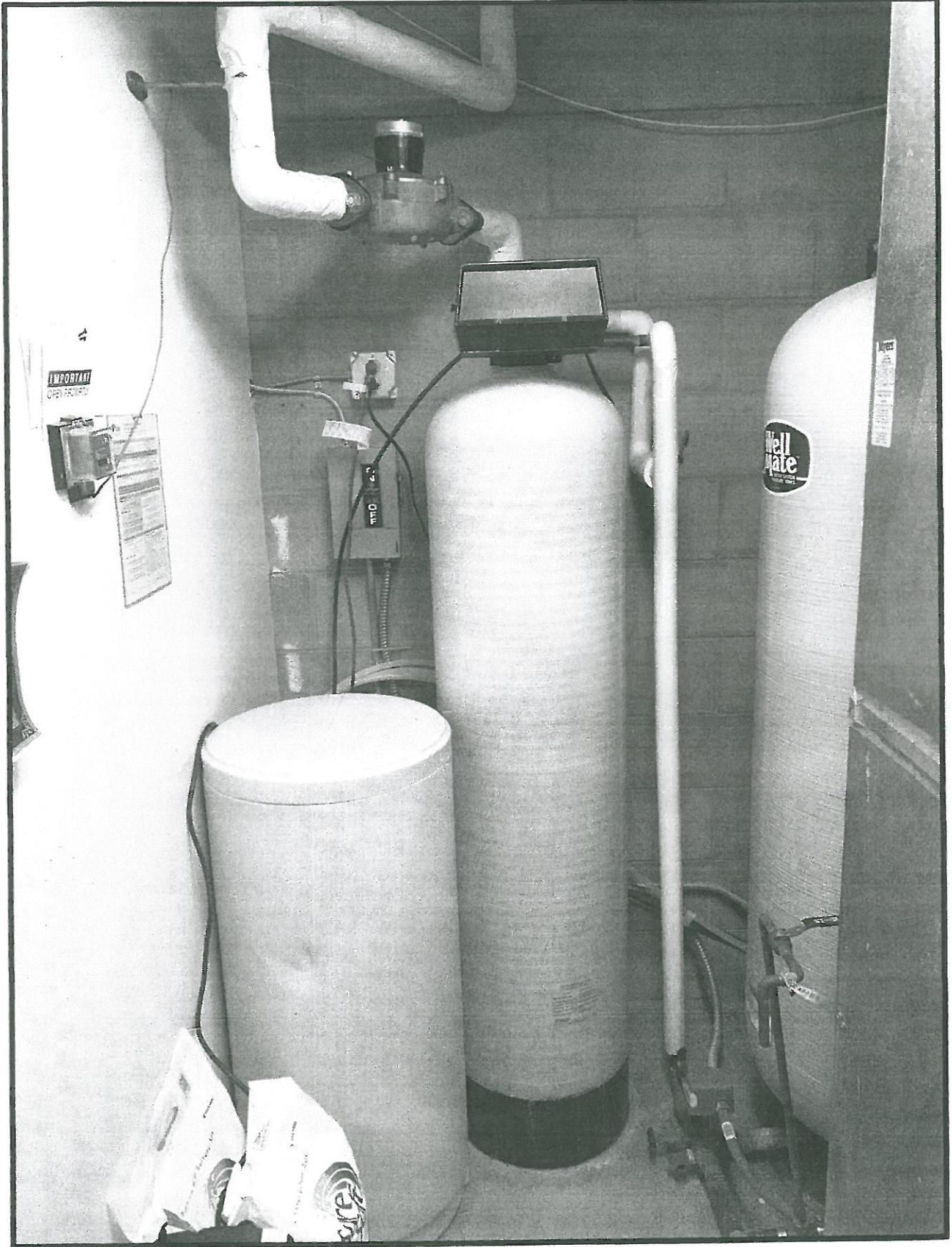
WAREHOUSE



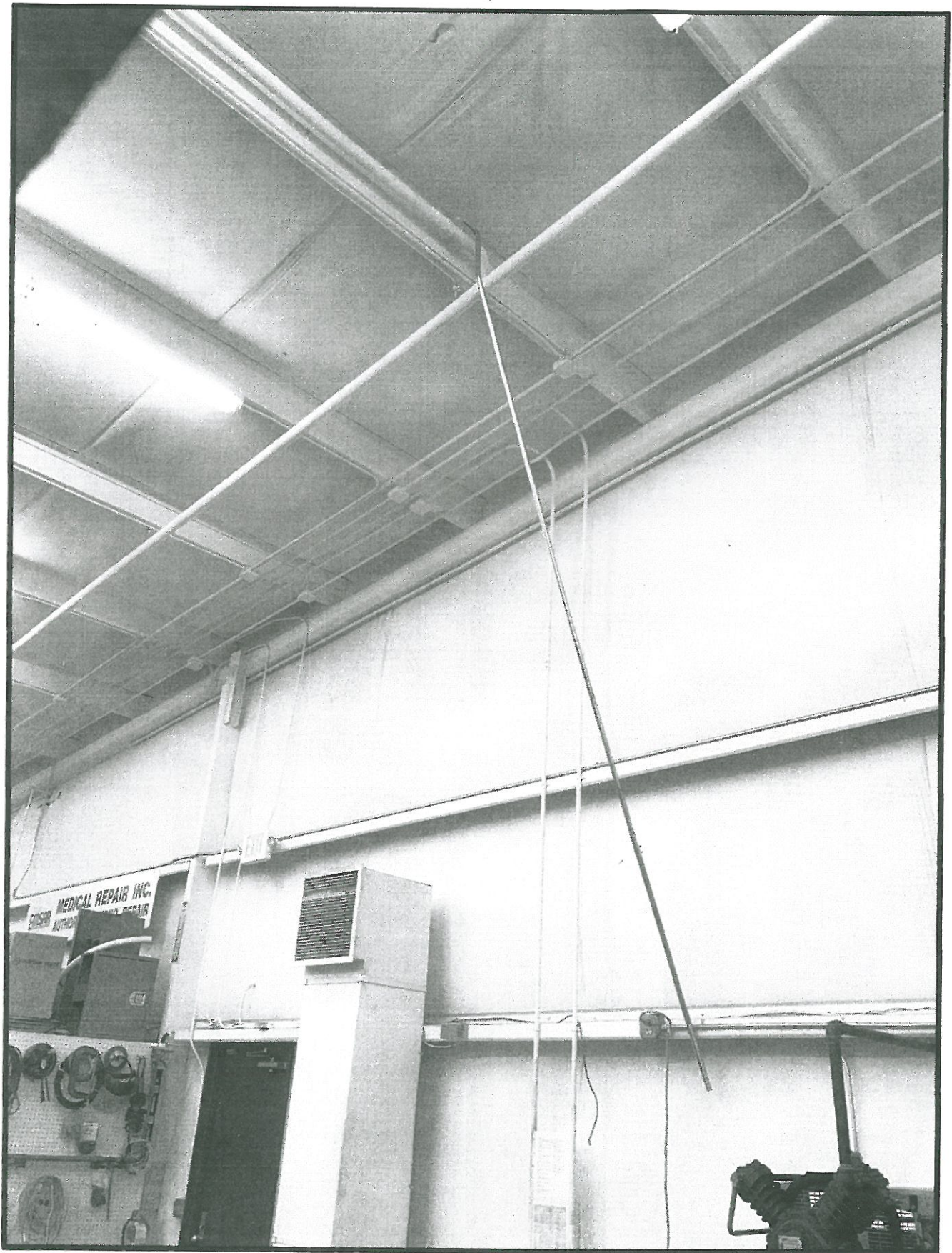
Well head at HCL-Galloway



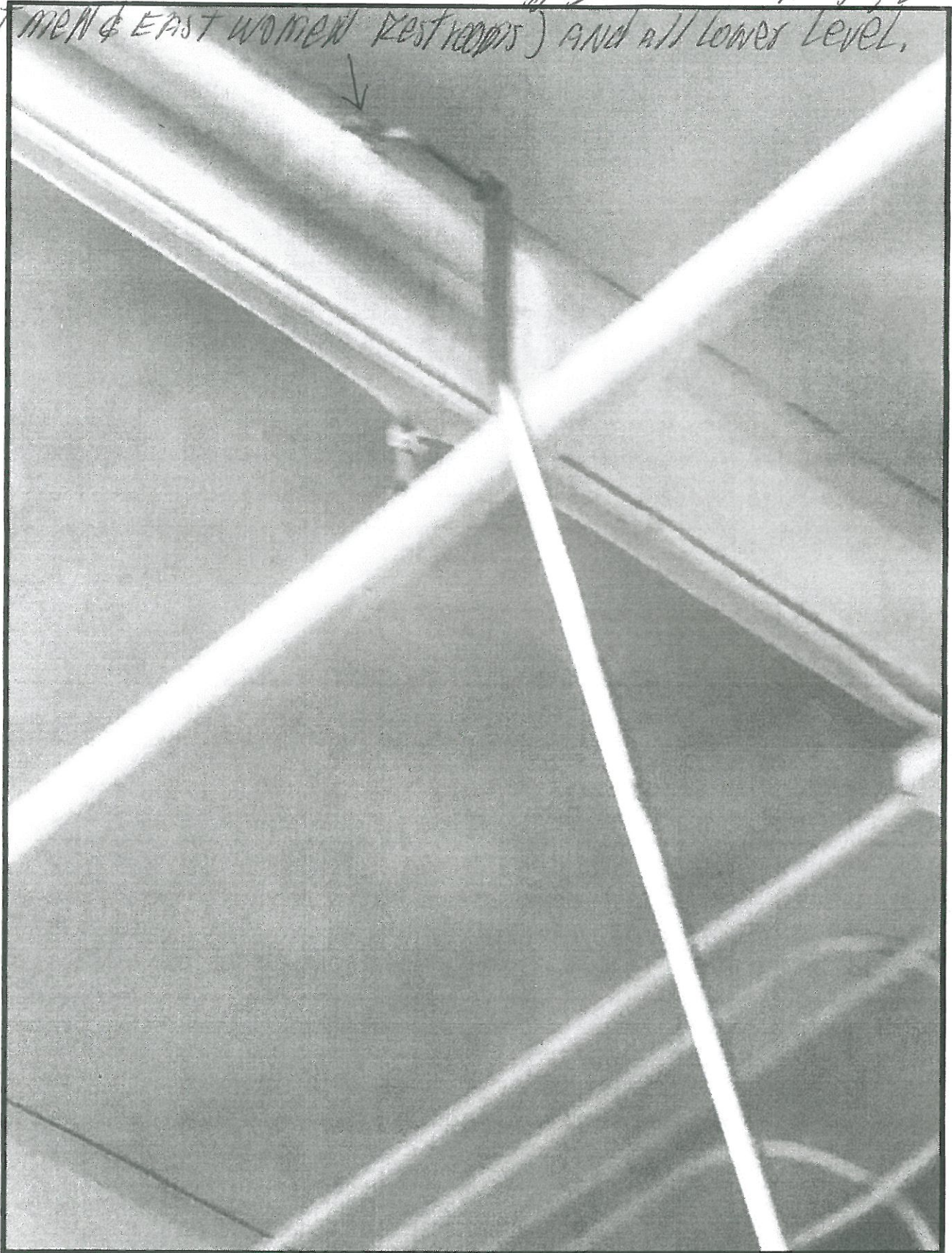
Well Room (Closet in Medical Repair) ^{HLL} Galloway



SHUT OFF VALVE AND EXTENSION ARM TO SHUT OFF



SHUT OFF VALVE IN CEILING OF MECHANICAL ROOM
THIS VALVE SHUTS OFF ALL WATER SUPPLY IN SECTION 1, 2, 3
(EAST MEN & EAST WOMEN RESTROOMS) AND ALL LOWER LEVEL.





PLUMBING DIVISION

To Whom It May Concern:

Command heating supplies and installs only Lead free Sterling Solder and Lead free Oatey Flux Paste. I have included Certificates showing this. If you have any questions or concerns please feel free to contact me. Thanks,

Roger (Chip) Jones
614-871-3180

WORTHINGTON
SINCE 1895

Interling®
Premium Choice of Professionals

Premium Quality
Lead-free
Solid Wire Solder

1 lb 16oz 454g

NSF
Certified for
Food Service Use

WORTHINGTON
SINCE 1895

Interling®
Premium Choice of Professionals

Le meilleur choix des professionnels
La mejor elección del profesional

CAUTION: Use in well ventilated area. Product contains tin, copper and selenium. Misuse can present an irritant health hazard. Before using see product MSDS for safe use guidance and additional information.

PRECAUTION: use en un área bien ventilada. El producto contiene estaño, cobre y selenio. El uso inadecuado puede causar irritación. Antes de usar, lee la hoja de datos de seguridad del material para una guía de uso seguro e información adicional.

MISE EN GARDE: Utiliser dans un endroit bien ventilé. Ce produit contient de l'étain, du cuivre et du sélénium. Une mauvaise utilisation peut causer un risque pour la santé. Avant d'utiliser ce produit, consultez la FSDP du produit pour des conseils d'utilisation sécuritaire et des renseignements supplémentaires.

NSF
Certified for
Food Service Use

WORTHINGTON
SINCE 1895

Interling®
La mejor elección del profesional

Calidad Superior
Soldadura de
alambre macizo
sin plomo

1 lb 16 oz 454 g

NSF
Certification
ANSI/NFPA 615

630713 PEVA

SKU # 331755

1644714000 0

331755 W515086

96758



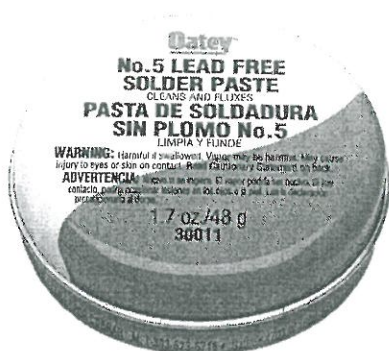
4700 W. 160th St.
Cleveland, OH 44135
PH: 800-321-9532
FX: 800-321-9535
www.oatey.com

TECHNICAL SPECIFICATION

NO. 5 LEAD FREE PASTE FLUX



TECHNICAL SPECIFICATION: Oatey No. 5 Lead Free Paste Flux cleans and fluxes most commonly soldered metals including copper, brass, zinc, galvanized iron, lead and tin or copper-coated metals. Fluxing is a critical step in the soldering process. No. 5 Paste Flux provides superior wetting properties for better solder flow and can be used with most soft solders.



PRECAUTIONS

Read all cautions and directions carefully before using this product. Apply flux with brush- do not apply with fingers. Wash hands thoroughly after use and before eating. Wear safety glasses with side shields and rubber gloves. EYE AND SKIN IRRITANT. HARMFUL IF SWALLOWED. VAPOR MAY BE HARMFUL. Eye or skin contact may cause intense irritation and injury. In case of contact with eyes or skin, flush with water and seek medical attention immediately. If swallowed, DO NOT INDUCE VOMITING. Drink water and call physician or poison control center immediately. Ingestion of this product may cause gastrointestinal distress. If inhaled, get fresh air and seek medical attention if ill feelings persist. Keep container closed when not in use. DO NOT REUSE EMPTY CONTAINER. KEEP OUT OF REACH OF CHILDREN.

Refer to material safety data sheet for more information.
For emergency first aid help, call 1-303-623-5716 COLLECT.

PHYSICAL/CHEMICAL PROPERTIES

Appearance	Amber Paste
Shelf Life	2 years from manufacture date
pH	3 - 4
Solder Temp. Range	400-700° F

DIRECTIONS FOR USE

Paste Fluxes require only a small amount of flux applied to the joint. Clean all surfaces before soldering. Apply small amount of flux inside the fitting and outside of the pipe. Heat to temperature required for soldering. Do not overheat the piping. For small diameter piping, direct the heat near the joint. For large diameter piping, move the heat around the joint to ensure adequate solder flow around the circumference of the joint. NOT FOR USE WITH ALUMINUM, STAINLESS STEEL OR MAGNESIUM. DO NOT USE ON ELECTRICAL PARTS.

When soldering process is complete, allow joint to cool undisturbed. Remove any flux residual with a damp cloth. Do not store No. 5 Paste Flux above 100° F.

COMMON APPLICATIONS

Oatey No. 5 Lead Free Paste Flux can be used to solder most commonly soldered metals including copper, brass, zinc, galvanized iron and tin or copper-coated metals.

Consult Oatey Technical Department for applications not specifically referenced above.

INGREDIENTS

Petrolatum (8009-03-8)
Zinc Chloride (7646-85-7)
Ammonium Chloride (12125-02-9)

APPROVALS AND LISTINGS



NSF Listed to Standard 61
Meets Military Specification MIL-F-14256

PRODUCT NUMBER	DESCRIPTION	PACK	CARTON WEIGHT
30011	1.7 oz. No. 5 Paste Flux	12	2 lbs.
53017	1.7 oz. No. 5 Paste Flux with Brush – Display Carton	12	2 lbs.
53200	1.7 oz. No. 5 Paste Flux with Brush – Display Carton w/o carton inserts	12	2 lbs.
30013	4 oz. No. 5 Paste Flux	24	7 lbs.
30014	8 oz. No. 5 Paste Flux	24	15 lbs.
30041	16 oz. No. 5 Paste Flux	12	14 lbs.
30041D	16 oz. No. 5 Paste Flux – Display Carton	12	14 lbs.



SAFETY DATA SHEET

1. Identification

Product identifier Oatey No. 5 Paste Flux

Other means of identification

SDS number 1610E

Synonyms Part Numbers: No 5- 30011, 30013, 30014, 30038, 30041, 48307, 48420, 48421, 48422, 48423, 53017, 53060, 53200, Hot Weather- 30062

Recommended use Joining Copper Pipes. Joining Copper Tubing.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name Oatey Co.

Address 4700 West 160th St.
Cleveland, OH 44135

Telephone 216-267-7100

E-mail info@oatey.com

Transport Emergency Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

Emergency First Aid 1-877-740-5015

Contact person MSDS Coordinator

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Skin corrosion/irritation Category 1B
Serious eye damage/eye irritation Category 1

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Causes severe skin burns and eye damage.

Precautionary statement

Prevention Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dusts or mists.

Response If swallowed: Rinse mouth. Do not induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Petrolatum	8009-03-8	60-100

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Petrolatum (CAS 8009-03-8)	PEL	5 mg/m3	Mist.
Zinc chloride (CAS 7646-85-7)	PEL	1 mg/m3	Fume.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m3	Fume.
Petrolatum (CAS 8009-03-8)	TWA	10 mg/m3	Fume.
	TWA	5 mg/m3	Inhalable fraction.
Zinc chloride (CAS 7646-85-7)	STEL	2 mg/m3	Fume.
	TWA	1 mg/m3	Fume.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m3	Fume.
Petrolatum (CAS 8009-03-8)	TWA	10 mg/m3	Fume.
	STEL	10 mg/m3	Mist.
Zinc chloride (CAS 7646-85-7)	TWA	5 mg/m3	Mist.
	STEL	2 mg/m3	Fume.
	TWA	1 mg/m3	Fume.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Occupational Exposure Limits are not relevant to the current physical form of the product.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state

Solid.

Form

Solid. Paste.

Color

Not available.

Odor

Not available.

Odor threshold

Not available.

pH

Not available.

Zinc chloride	7646-85-7	10-30
Water	7732-18-5	3-7
Ammonium chloride	12125-02-9	1-5

4. First-aid measures

Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Continue rinsing. Call a physician or poison control center immediately. Remove contact lenses, if present and easy to do.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike far ahead of spill for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Do not get this material on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

Melting point/freezing point	Not available.
Initial boiling point and boiling range	638 °F (336.67 °C)
Flash point	540.0 °F (282.2 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	> 1
Relative density	1.1
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	20000 - 40000 cP
Other information	
VOC (Weight %)	29 g/l 3% by weight

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful. May cause irritation to the respiratory system.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns.

Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
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Information on toxicological effects

Acute toxicity	Not available.
Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity None known.

IARC Monographs. Overall Evaluation of Carcinogenicity

Petrolatum (CAS 8009-03-8)

3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not available.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Ammonium chloride (CAS 12125-02-9)

LISTED

Zinc chloride (CAS 7646-85-7)

LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes

Delayed Hazard - No

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Zinc chloride	7646-85-7	10-30
Ammonium chloride	12125-02-9	1-5

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Ammonium chloride (CAS 12125-02-9)

Petrolatum (CAS 8009-03-8)

Zinc chloride (CAS 7646-85-7)

US. New Jersey Worker and Community Right-to-Know Act

Ammonium chloride (CAS 12125-02-9)

Petrolatum (CAS 8009-03-8)

Zinc chloride (CAS 7646-85-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Ammonium chloride (CAS 12125-02-9)

Petrolatum (CAS 8009-03-8)

Zinc chloride (CAS 7646-85-7)

US. Rhode Island RTK

Ammonium chloride (CAS 12125-02-9)

Zinc chloride (CAS 7646-85-7)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 26-October-2014

Revision date 19-February-2015

Version # 03

HMIS® ratings Health: 3
Flammability: 0
Physical hazard: 0

Disclaimer The information in the sheet was written based on the best knowledge and experience currently available. Oatey Co. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for use, handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.



STERLING® Lead-Free Solder

Certificate of Conformance

This is to certify that WORTHINGTON STERLING Lead-Free Solder is lead-free as well as antimony-free. Meets or exceeds the requirements for lead-free plumbing solder set forth in the Federal Safe Drinking Water Act Amendments of June 19, 1986. ANSI/NSF 61 certified. This solder is manufactured per composition ASTM B-32 Alloy Grade TC.

NOMINAL COMPOSITION & TYPICAL PROPERTIES

Tin (Sn)	Balance	Tensile Strength	7130 psi
Copper (Cu)	4% - 5%	Shear Strength	5970 psi
Selenium (Se)	.04% - .20%	Melting Temperature	410°F




Made in U.S.A.
with global components



PremiumLF CofC
Rev 002
Date: 8/13/2015

MATERIAL SAFETY DATA SHEET

CODE: M/L 042

This Material Safety Data Sheet complies with
the U.S. OSHA Hazard Communication
Standard, 29 CFR 1910.1200

**PRODUCT: TIN/COPPER SOLDER ALLOYS;
TIN/COPPER/SILVER (<1% Silver Content) ALLOYS**

COMMON NAME OR SYNONYMS: Tin/Copper formulation, or, Tin/Copper/Silver formulation (<1% silver content) solders or alloys in the following forms: wire, ingot, pig, cake, rod, anodes, cast or extruded and ribbon.

INCLUDES TRADE NAME PRODUCTS: WORTHINGTON PREMIUM LEAD-FREE SILVER, WORTHINGTON SILVER BEARING ALLOY LEAD-FREE

NFPA/HMIS HAZARD CODES: HEALTH: 1/1 FIRE: 0/0 REACTIVITY: 0/0 SPECIAL: N/A

0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

SECTION I

MANUFACTURER NAME: WORTHINGTON
1690 Lowery Street
Winston-Salem, NC 27101
INFORMATION PHONE: 336-777-8600

ISSUE DATE: January 29, 2013

SECTION II HAZARDOUS INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>US-NIOSH RTECS NO.</u>	<u>US OSHA AL</u>	<u>US OSHA PEL</u>	<u>ACGIH TLV</u>	<u>WT. PERCENT</u>
Tin	7440-31-5	XP7320000	NE	2.0mg/m3	2.0mg/m3	Balance
Copper (dust)	7440-50-8	GL5325000	NE	1.0 mg/m3	1.0 mg/m3	1.0-10.0
(fume)				0.1 mg/m3	0.2 mg/m3	
Silver	7440-22-4	VW3500000	NE	0.01 mg/m3	0.1 mg/m3	<1.0

NE = NONE ESTABLISHED AL = ACTION LEVEL PEL = PERMISSIBLE EXPOSURE LIMIT TLV = THRESHOLD LIMIT VALUE

SECTION III PHYSICAL DATA

APPEARANCE & ODOR (AT NORMAL CONDITIONS): Solid - silver to silver gray metallic metal - no odor
SPECIFIC GRAVITY (H₂O=1): Approximately 7.38
MELTING POINT RANGE (DEGREES F): Alloy specific dependent: 227-250 (441-482 Degrees F)
BOILING POINT (DEGREES C): Information not available
SOLUBILITY IN WATER: Insoluble
PH: Not applicable

SECTION IV FIRE & EXPLOSION HAZARD DATA

FLASH POINT: Non-flammable
FLAMMABLE LIMITS: Not applicable
EXTINGUISHING MEDIA: No specific agents recommended
SPECIAL FIRE FIGHTING PROCEDURES: If involved in fire, use full protective clothing and NIOSHA/MSHA approved self-contained breathing apparatus operated in a positive-pressure mode.
UNUSUAL FIRE & EXPLOSION HAZARDS: The solid metal form is not a fire hazard. However, it is possible that dust generated from processing operations may present a moderate fire or explosion hazard.

SECTION V REACTIVITY DATA

STABILITY:	Stable
CONDITIONS TO AVOID:	Not applicable
INCOMPATIBILITY:	Chlorine, Turpentine, Magnesium, and Acetylene Gas
HAZARDOUS DECOMPOSITION PRODUCTS:	At temperatures above the melting point metal oxide fumes may be evolved.
HAZARDOUS POLYMERIZATION:	Will not occur.

SECTION VI HEALTH HAZARD DATA

NOTE: Exposure to the solid form of this product presents few health hazards in itself. However, normal handling or processing of this material may result in exposure to product components and/or decomposition products, which may present a potential health hazard.

ROUTES OF ENTRY: Dust/fume inhalation; dust ingestion.

SYMPTOMS & EFFECTS OF OVEREXPOSURE:

Chronic (prolonged) overexposure to Tin can result in benign pneumoconiosis (stannous). This form of pneumoconiosis produces progressive x-ray changes of the lungs as long as exposure exists, but there is no distinctive fibrosis, no evidence of disability and no special complicating factors.

Acute (severe short-term) overexposure to Tin dust/fume can cause irritation of the eyes, skin, mucous membranes and respiratory system. Acute overexposure to Copper dust/fume can cause irritation of the eyes, nose, throat and skin, and under severe fume overexposure can cause metal fume fever with flu-like symptoms such as sweet metal taste, dry throat, coughing, fever and chills, tight chest, dyspnea, headache, blurred vision, back pain, nausea, vomiting, fatigue. Symptoms usually disappear within 24 hours. Copper may cause skin and hair discoloration. Inhalation of copper dusts may cause changes in the gums and mucous lining of the mouth which is generally attributable to localized tissue effect rather than general toxicity.

MEDICAL CONDITIONS POSSIBLY

AGGRAVATED BY EXPOSURE: Pre-existing conditions of the lungs, Wilson's Disease (genetic trait)

CARCINOGENITY: Not listed as a carcinogen by NTP, IARC, OSHA, ACGIH

EMERGENCY & FIRST AID PROCEDURES:

SKIN: Normal hygiene and first aid procedures - wash with soap and water. If irritation develops or persists obtain medical attention.

EYES: Flush well with running water to remove particulate. If irritation persists obtain medical attention.

ACUTE INHALATION: Remove from exposure. Obtain immediate medical attention. If breathing has stopped, initiate artificial resuscitation.

INGESTION: Give water; induce vomiting only in a conscious non-convulsing individual; obtain immediate medical attention.

SECTION VII PROTECTION MEASURES

RESPIRATORY PROTECTION:	Respiratory protection is required where airborne exposures exceed U.S. OSHA/ACGIH permissible air concentrations. Respirator selection shall be made in accordance with the U.S. OSHA Respiratory Protection Standard, 29 CFR 1910.134.
VENTILATION:	Ventilation, as described in "Industrial Ventilation, A Manual of Recommended Practice", by the American Conference of Governmental Industrial Hygienists, is recommended to maintain exposure levels below the Permissible Exposure Limits (PEL's) or Threshold Limit Values (TLV's) specified by U.S. OSHA or other local or state regulations.
PROTECTIVE GLOVES:	Recommended for prolonged contact/heat.
EYE PROTECTION:	Safety glasses or goggles are recommended where the possibility exists of getting dust particles in the eyes. Safety glasses or goggles with face shield are recommended around molten metal.
OTHER PROTECTIVE EQUIPMENT:	Safety equipment should be worn as appropriate for the work environment.
WORK/HYGIENIC PRACTICES:	Do not permit eating, drinking, or the use of cosmetics or tobacco products while handling or processing material or in product work areas. Practice good personal hygiene procedures. Wash hands and face thoroughly before eating, drinking, applying cosmetics or using tobacco products. Avoid inhalation and ingestion of product, and activities, which generate dust or fume. Keep melting/soldering temperatures as low as possible to minimize the generation of fume.

SECTION VIII PRECAUTIONS FOR SAFE HANDLING & USE

PRECAUTIONS TO BE TAKEN

IN HANDLING & STORING: Practice good housekeeping procedures to prevent dust accumulations. Keep material dry. Avoid storage near incompatible materials (See Section V). Keep product away from children and their environment and domestic animals.

OTHER PRECAUTIONS: Special attention is drawn to the requirements of the U.S. OSHA Respirator 1910.134 should airborne exposures exceed the U.S. OSHA PEL. Inadvertent contaminants to product such as moisture, ice, snow, grease or oil can cause an explosion when charged to a molten metal bath or melting furnace (preheating metal will remove moisture from the product).

SECTION IX SPILL OR LEAK PROCEDURES

SPILL OR LEAK PROCEDURES:

1. Material in dust form-minimize exposure. Clean up using dustless methods (i.e. HEPA Vacuum). Do not use compressed air.
2. Place in closed labeled containers for recycling or disposal.
3. Keep out of waterways.

NOTE: Cleanup personnel should wear protective clothing and respiratory protection where significant dust/fume exposure exists.

OTHER PROCEDURES: For large product users or involving large product quantities, we recommend that the purchaser establish a spill prevention, control and counter measure plan. This plan should include procedures for proper storage as well as clean up of spills or leaks. The procedures should conform to safe practices and provide for proper recovery and/or disposal. Depending on the quantity spilled, notification to the U.S. National Response Center (800-424-8802) may be required in case of hazardous substances. (See USEPA and USDOT regulations; also various state and local regulations.)

WASTE DISPOSAL METHODS: May have value on a recycled basis. If disposed of, dispose of in a permitted disposal site in accordance with all federal, state and local disposal or discharge regulations

SECTION X UNITED STATES SARA TITLE III INFORMATION

This product/mixture contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the U.S. Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372. The percent by weight of each toxic chemical and its associated chemical abstract system (CAS) number are to be found in Section II of this Material Safety Data Sheet.

<u>CHEMICAL NAME</u>	<u>EHS RQ (LBS)</u> (*1)	<u>EHS TPQ (LBS)</u> (*2)	<u>SEC.313</u> (*3)	<u>313 CATEGORY</u> (*4)	<u>311-312 CATEGORY</u> (*5)
Copper	Not Applicable	Not Applicable	Yes	Copper	H-1

-FOOTNOTES-

*1 = Reportable quantity of Extremely Hazardous Substance, Section 302.

*2 = Threshold Planning Quantity, Extremely Hazardous Substance, Section 302.

*3 = Toxic chemical, Section 313

*4 = Chemical category as required by Section 313 (40 CFR 372.42). Subject to annual release reporting requirements.

*5 = Hazard category for SARA Section 311/312 reporting:

Health H-1 = Immediate (ACUTE) Health Hazard

H-2 = Delayed (CHRONIC) Health Hazard

Physical P-3 = Fire Hazard

P-4 = Sudden Release of Pressure Hazard

P-5 = Reactive Hazard

SECTION XI UNITED STATES CERCLA SECTION 103 INFORMATION

This product/mixture contains the following chemicals subject to the release reporting requirements of Section 302.

CHEMICAL NAME	RQ (LBS)
Copper	5000 (*1)

-FOOTNOTES-

*1 = Reportable quantity (RQ) under CERCLA Section 302. Spills to the environment exceeding the reportable quantity in any 24-hour period must be reported to the U.S. National Response Center (800-424-8802). No reporting of releases of the hazardous substance(s) is required if the diameter of the pieces of the solid metal(s) released is equal to or exceeds 100 micrometers (0.004 inches).

SECTION XII TRANSPORTATION INFORMATION

PROPER SHIPPING NAME:	Non-regulated as shipped
TECHNICAL NAME:	N/A
HAZARD CLASS:	N/A
UN NO.:	N/A
PACKING GROUP:	N/A
EMERGENCY RESPONSE GUIDE NUMBER:	N/A
OTHER:	N/A

SECTION XIII ADDITIONAL INFORMATION

VOC CONTENT: None

This Material Safety Data Sheet is offered solely for your information, consideration and investigation. WORTHINGTON provides no warranties, either express or implied, and assumes no responsibilities for the accuracy or completeness of the data contained in this document. The data in this Material Safety Data Sheet relates only to this product and does not relate to use in combination with any other material or in any process.

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Doc Type: Report

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County: Franklin

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