Romic Environmental Technologies Corp.

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Chandler, Arizona
TSD Facility

Section N

Air Emission Standards for Equipment Leaks

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N AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS

N1 APPLICABILITY AND DEFINITIONS

Equipment, other than tanks and containers which are covered under Subpart CC, that contains or contacts hazardous waste streams with greater than or equal to 10 percent organics is monitored periodically according to the equipment type and service as shown in Figures D-6 through D-10, D-12, and in the P&IDs provided in Section E. This equipment includes piping systems, pumps, valves, and fittings in light liquid service. The equipment that is subject to the requirements of 40 CFR 264 Subpart BB is clearly marked with unique stamped metal identifying tags (Refer to Figure N-1), and is readily distinguishable from other equipment. A list of all equipment subject to Subpart BB is contained in Romic's Subpart BB monitoring program's inspection log, which is maintained electronically in the facility operating record. A copy of the Subpart BB inspection log is included as Appendix F-5, which is a stand-alone attachment to this submittal.

The facility uses pre-acceptance analysis and/or generator knowledge of a waste stream as formalized by a waste profile to determine the highest total organic content of an incoming hazardous waste stream. Incoming wastes are sampled to verify that they match their profile. Refer to the Waste Analysis Plan in Section C for details on how incoming wastestreams are fully characterized, sampled and designated.

The following types of equipment are exempt from 40 CFR 264 (Subpart BB):

- Equipment in vacuum service (40 CFR 264.1050 (e))
- Equipment which contacts hazardous waste streams with greater than or equal to 10 percent organics for less than 300 hours per calendar year (40 CFR 264.1050(f)).

The vacuum distillation unit, thin film evaporator, and the fractionation column are capable of operating under a vacuum. It is likely that the vacuum distillation unit, the fractionation column, and the thin film evaporator may each be operated under 300 hours per year for hazardous waste service. Records of hours of operation in hazardous waste service and operation under vacuum are maintained in the facility process record. Samples of the process logs are found in Appendix N-1. If economic conditions warrant processing limited amounts of, or no hazardous waste in these units over the course of a given year, facility process logs will be used to verify that Subpart BB requirements do not apply to these units. Notation will be placed in the Subpart BB inspection log (Refer to Appendix F-5) indicating the period to which the exemptions apply to these units, because the inspections required under Subpart BB can be made only while the units are processing hazardous wastes. The unique stamped metal tags that are installed on all Subpart BB equipment will remain in place during the exemption periods.

The monitoring requirements and frequencies for each type of equipment, which contains or contacts hazardous wastes with greater than or equal to 10 percent organics, is presented in the subsections below and summarized in Table N-1, Monitoring Schedule.

Some terms used to describe compliance with 40 CFR 264 Subpart BB can be defined as follows:

- A **leak** is indicated by an instrument reading of greater than or equal to 10,000 ppm organics.
- **No detectable emissions** is defined by an instrument reading of <500 ppm organics above background level. See Section N6.3, "No Detectable Emissions" Forms, for designation requirements.
- **In light liquid service** means any piece of equipment which contains or contacts a waste stream where 20% or greater (by weight) of the waste stream is a combination of components that have a vapor pressure greater than 0.3 kilopascals (2.25 mm Hg) at 20 C° (or 68° F).
- **Heavy liquid service** is any piece of equipment which is not in gas/vapor service or light liquid service.

N2 STANDARDS FOR SPECIFIC EQUIPMENT

The following sections describe the requirements under Subpart BB for specific types of equipment that may be in use at the facility. Subpart BB requirements do not apply to this equipment when it is not in hazardous waste service.

N2.1 PUMPS IN LIGHT LIQUID SERVICE

Each pump in light liquid service will be monitored monthly to detect leaks, except as described below, and visually inspected each week for indications of liquid dripping from the pump seal. Monthly monitoring is performed while the pumps are operating in hazardous waste service. Any drip discovered during a visual inspection is considered a leak. Romic does not have pumps with dual mechanical seals and barrier fluids, pumps designed for no detectable emissions, or pumps with closed vents on the seals, that are exempted from Subpart BB requirements by § 264.1052.

N2.2 PRESSURE RELIEF DEVICES IN GAS/VAPOR SERVICE

Except during pressure releases, process pressure relief devices are operated with no detectable emissions, and are returned to this condition after each pressure release event involving hazardous waste as confirmed by monitoring completed within five days of the event. The vacuum distillation unit has a pressure relief device, the other two distillation units do not have such a device.

After a pressure release in hazardous waste service, the pressure relief device that released will be returned to a condition of no detectable emissions, as soon as practicable, but no later than five calendar days after each pressure release unless delays are allowed as described in Section N5.2. The "no detectable emission" standard will be verified by an instrument reading less than 500 ppm above background. The pressure relief device will be tested within five calendar days of the release to confirm

that there are no detectable emissions. If the device cannot be repaired and returned to a condition of no detectable emissions within five calendar days, the device will be isolated from organic hazardous waste until repairs can be completed.

N2.3 SAMPLING CONNECTION SYSTEMS

Romic does not have any sampling systems with purges requiring a closed loop or closed vent system. Romic's in situ sampling systems are exempt from the Subpart BB requirements of §264.1055.

N2.4 OPEN-ENDED VALVES OR LINES

Open-ended valves or lines are used on every tank, process unit, and connection trough. They are equipped with a cap, blind flange, plug, or a second valve that seals the open-ended valve or line do not require monitoring except when flow through is required by operations. Open-ended valves or lines under Subpart BB requirements.

N2.5 COMPRESSORS

There are no process compressors in use at the facility.

N2.6 VALVES IN GAS/VAPOR SERVICE OR IN LIGHT LIQUID SERVICE

Valves in hazardous waste service must be monitored monthly to detect leaks. If a leak is not detected in two consecutive months, the valve may be monitored the first month of each quarter, beginning with the next quarter, until a leak is detected. Romic may elect to use the alternative monitoring plan, after notifying the EPA, described in 40 CFR 264.1062.

Any valve which is designated for "no detectable emissions" is exempt from the monthly/quarterly monitoring provided the following: it has no external actuating mechanism in contact with the waste stream, operates with no detectable emissions, and is monitored for no detectable emissions initially upon designation and annually thereafter. Qualifying valves are listed in Appendix F-5.

Exemptions are also made for valves that are "difficult to monitor" (40 CFR 264.1057(h)). The inspection frequency for difficult to monitor valves is specified in Table F-1, Inspection Schedule. These elevated valves require a minimum inspection schedule of once per calendar year. Difficult to monitor valves are those that must elevate monitoring personnel more than two meters above a support surface.

N2.7 PUMPS AND VALVES IN HEAVY LIQUID SERVICE, PRESSURE RELIEF DEVICES IN LIGHT OR HEAVY LIQUID SERVICE, FLANGES AND OTHER CONNECTORS

Pumps and valves in heavy liquid service, pressure relief devices in light or heavy liquid service, and flanges and other connectors are required to be monitored for leaks within five days if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method.

Under normal operating practice, if sensory evidence of a potential leak is found, the existence of a leak is presumed and a first attempt of repair is made within five days. If the first attempt of repair is successful, the potential leak no longer exists, precluding the requirement to monitor. If a leak is detected by monitoring, it will be repaired according to the repair schedule in Section N5.

N3 EQUIPMENT MONITORING PROCEDURES

Monitoring is performed to detect leaks ($\geq$10,000 ppm organics) and determine "no detectable emissions" (<500 ppm organics above background). Both monitoring programs are conducted using methods specified in 40 CFR Part 60 Appendix A, Method 21, "Determination of Volatile Organic Compounds Leaks." Monitoring frequency and type is summarized in Table N-1, Monitoring Schedule. Monitoring reports for all Subpart BB equipment are found in the Subpart BB section (disk) of Appendix F-5, Inspection Forms. A copy of the Subpart BB inspection log is also included as Appendix F-5, which is a stand-alone attachment to this submittal.

N3.1 LEAKS MONITORING PROCEDURE

Romic will conduct leak detection monitoring procedures in compliance with Method 21. Leak repair requirements are described in Section N5. General Monitoring Procedures are listed below.

1. Place the probe inlet at the surface of the component interface.

2. Move the probe along the interface periphery while observing the instrument readout.

3. If an increased meter reading is indicated, sample that part of the interface until the maximum meter reading is obtained and leave the probe inlet in that position for approximately two times the response time.

4. If the maximum reading is greater than or equal to 10,000 ppm, a leak in the component has been identified. This information is then entered into the inspection/monitoring database. A maximum reading of less than 10,000 ppm indicates a component does not leak.

N3.2 "NO DETECTABLE EMISSIONS" MONITORING PROCEDURE

"No detectable emissions" monitoring procedures comply with Method 21.

1. Determine the background level around the component interface by moving the probe inlet randomly upwind or downwind at a distance of one to two meters. If an interference exists, such as a nearby vent, the background level may be determined no closer than 25 cm from the component interface.

2. Move the probe inlet to the surface of the component interface, as described in the Leaks Monitoring Procedure (Section N3.1) above, to determine the component interface reading.

3. Determine the arithmetical difference between the background level and the component interface reading.

4. If the arithmetical difference is <500 ppm, the equipment may be designated as having "no detectable emissions." This information is entered into the inspection/monitoring database.

N4 RECORDKEEPING

Records required by Subpart BB air emission standards will be maintained on forms or electronic files described in the following subsections and kept in the facility operating record. Examples of these forms are found in other locations in this application: Appendix F-1, Inspection Forms, Table F-1, Inspection Schedule, Appendix F-2, Maintenance Request Form, Figure C-4 Waste Profile Form, etc. The required Subpart AA and BB monitoring records for each piece of equipment are maintained in an electronic database. An example of the information collected in this database is provided as Appendix F-5. Each monitoring location has a unique stamped metal identification tag correlating to the information in the database (refer to Figure N-1).

The inspection forms in Appendix F-5 include a comprehensive Subpart AA and BB inspection and monitoring database, which is part of the facility operating record. It contains a description of each regulated piece of equipment, a unique identification number, the approximate location within the facility, the type of equipment (e.g., pump, valve), the percent-by-weight range of total organics in the wastestream at the equipment, the physical state of the wastestream (e.g., light or heavy liquid), the method of determining compliance (e.g., monthly leak detection, no detectable emissions), and the work order number for leak repairs, as applicable.

The procedures for identifying leaks, once they have been discovered by sensory or measured means, are described in Section N5.1, Repair Schedule, below. A potential leak, found by visual, audible, olfactory, or any other detection method, is noted during periodic (i.e., daily, weekly) inspections, as described in Section F2, Inspection Plan. A record of the discovery of these potential leaks and any remedial action necessary is maintained in the inspection forms attached in Appendix F-1. A Maintenance Request work order (Appendix F-2) is prepared to initiate the repair, and the unique maintenance request work order

number is entered in the inspection form comment section for the leak location. The repair and monitoring of any leak, if required, will be done according to Section N5, Leak Repair Requirements.

The facility operating record also contains the following miscellaneous information:

- A list of equipment in vacuum service, and the time it is operated under a vacuum in hazardous waste service, which is exempt from Subpart BB monitoring requirements;

- Hours of operation in hazardous waste service and the type of hazardous waste treated in the hazardous waste treatment units to determine if the units are exempt from Subpart BB monitoring requirements. Typical process record forms are found in Appendix N-1;

- Current analysis, and/or generator knowledge of the hazardous waste (profiles), including supporting documentation, which indicates the nature (i.e., organic content) of the hazardous waste stream in order to determine whether or not a unit is exempt from monitoring. This documentation indicates properties which differentiate between light and heavy liquid service, and determines if the liquid waste is greater or less than 10% organic content;

- A list of valves which are designated as "difficult to monitor" (see Section N2.6) and, if Romic elects to use the alternative monitoring plan described in 40 CFR 264.1062, a monitoring schedule and the percentage of leaking valves;

- A description of any process changes that could result in an increased organic content of a wastestream in an exempt unit.

N5 LEAK REPAIR REQUIREMENTS

Leak repair requirements for equipment subject to 40 CFR 264 Subpart BB shall be as described below.

N5.1 REPAIR SCHEDULE

When a leak is detected from a piece of equipment covered under Sections N2.1, N2.5, and N2.6, the component is tagged with a visible, weatherproof identifier which indicates the equipment ID number, the date evidence of a potential leak was found, and the date the leak was detected by monitoring. An example of the tag is found in Appendix N-2. The identification is removed, with the exception of valves, when the repair is completed. The identification on valves may only be removed after two consecutive months of monitoring with no leaks.

When a leak is detected, a maintenance request work order to repair the leak is submitted to the maintenance department by end of the shift of detection. A maintenance request form is found in Appendix F-2. Repairs to equipment must be completed within fifteen days after detection of a leak, unless an exception is allowed as discussed in Section N5.2. A first attempt at repairing the leak shall be

made within five days of detection. Repair attempts, including delays and confirmational monitoring, are documented in accordance with Section N4.

N5.2 REPAIR DELAYS

Repair delays on equipment for which leaks have been detected are allowed if the criteria presented in the following paragraphs are met.

- A repair delay is allowed if the repair is technically infeasible without a hazardous waste unit shutdown. In such a case, repair of this equipment shall occur before the end of the next shutdown.

- A repair delay is allowed if the equipment is isolated from and does not continue to contain or contact hazardous waste with organic concentrations ≥10 percent by weight. The repair must be completed prior to returning the equipment to the service of hazardous waste with organic concentrations ≥10 percent by weight.

N6 SEMI-ANNUAL REPORTING REQUIREMENTS

A semi-annual report will only be required if leaks are not repaired within the time frame specified in Section N5.1, Repair Schedule. Since Romic does not use a control device to meet the requirements of Subpart BB, the semiannual reporting that is required if a control device exceeds or operates outside of the design specifications for more than 24 hours is not applicable. The semi-annual report will provide the following information:

- The facility EPA ID number, name, and address;

- For each month during the semi-annual reporting period, the equipment identification number of each valve or pump which was not repaired in the required time frame;

- Dates of hazardous waste management unit shutdowns during the semi-annual period

If no exceedances occur during a semi-annual period, no report will be filed.

Table N-1
Equipment Monitoring Schedule

Equipment Type	Monitoring Frequency	Monitoring Category
Pumps in light liquid service (section N2.1); Not designated for "no detectable emissions"	Monthly monitoring, and Weekly visual	Leak Detection
Pumps in light liquid service (section.N2.1); Designated for "no detectable emissions"	Annual monitoring	"No Detectable Emissions"
Pressure relief devices in gas/vapor service (section N2.2)	Monitored after each pressure release event	"No Detectable Emissions"
Valves in gas/vapor or light liquid service (section N2.5) Not designated for "no detectable emissions"	Monthly monitoring, or Quarterly monitoring (if no leak detected for 2 consecutive months)	Leak Detection
Valves in gas/vapor or light liquid service (section N2.5) Designated for "no detectable emissions"	Annual monitoring	"No Detectable Emissions"
Pumps and valves in heavy liquid service, Pressure relief devices in light liquid service, and Flanges and other connectors (section N2.6)	Monitored (within 5 days) after discovering a potential leak with sensory evidence	Leak Detection
"Difficult to Monitor" valves	Annually	Leak Detection

Appendix N-1

Process Form

Romic Environmental S.W.
Production Sheet

Date_____ **Shift** _____ **Operator** _____

Thin Filmer Product _____ Batch_____

Slevel _____ Slevel_____ Slevel_____ Slevel_____
FeedTk_____ ProdTk_____ LitesTk_____ BtmTk_____
Elevel_____ Elevel_____ Elevel_____ Elevel_____

Start Time_____ Finish Time_____ Totalhrs_____
Down Time____ Total Gals _____ L_____ P_____ B_____
Comments:

Column **Product**_____ **Batch**_____

Slevel_____ Slevel_____ Slevel_____ Slevel_____
FeedTk_____ ProdTk_____ LitesTk_____ BtmTk_____
Elevel_____ Elevel_____ Elevel_____ Elevel_____

Start Time_____ Finish Time_____ Totalhrs_____
Down Time____ Total Gals_____ L_____ P_____ B_____
Comments:

VacPot **Product**_____ **Batch**_____

Slevel_____ Slevel_____ Slevel_____ Slevel_____
FeedTk_____ ProdTk_____ LitesTk_____ BtmTk_____
Elevel_____ Elevel_____ Elevel_____ Elevel_____

Start Time_____ Finish Time_____ Totalhrs_____
Down Time____ Total Gals_____ L_____ P_____ B_____
Comments:

Tank	Gallons	Product	Tank	Gallons	Product
101	_____	_____	124	_____	_____
102	_____	_____	217	_____	_____
103	_____	_____	219	_____	_____
104	_____	_____	222	_____	_____
105	_____	_____	___	_____	_____
201	_____	_____	___	_____	_____
202	_____	_____	___	_____	_____
203	_____	_____			
204	_____	_____			
210	_____	_____			

Comments:

Romic Environmental

Date______________ Batch Number____________

Product__________

Waste product analysis

Tank # __________ Product ________________
Beginning Tank Height _______ Ending Tank Height _______
~~Total Product~~ ____________ ~~Total Lites~~ __________
Total Bottoms ____________
% Product __________
% Water __________
NVR (Flash Pan) ________________________________
% Other ____
① Updates will be made if product is added or deleted from process

Tank # __________ Product ________________
Beginning Tank Height _______ Ending Tank Height _______
Total Product ____________ Total Lites __________
Total Bottoms ____________
% Product __________
% Water __________
NVR (Flash Pan) ________________________________
% Other ____
Updates will be made if product is added or deleted from process

Tank # __________ Product ________________
Beginning Tank Height _______ Ending Tank Height _______
Total Product ____________ Total Lites __________
Total Bottoms ____________
% Product __________
% Water __________
NVR (Flash Pan) ________________________________
% Other ____
Updates will be made if product is added or deleted from process

Tank # __________ Product ________________
Beginning Tank Height _______ Ending Tank Height _______
Total Product ____________ Total Lites __________
Total Bottoms ____________
% Product __________
% Water __________
NVR (Flash Pan) ________________________________
% Other ____
Updates will be made if product is added or deleted from process

Final Analysis

Tank # __________ Product ________________
Beginning Tank Height ________ Ending Tank Height _______
% Product __________
% Water __________
NVR (Flash Pan) ________________________________
% Other ____

Processing Worksheet

Date_____ _____ Shift Workload

Thinfilmer_____

Vac Pot _____

30"Column_____

Miscellaneous_____

Comments_____

ROMIC ENVIRONMENTAL TECH – SW
T/F DISTILLATION SHEET

DATE ________ FEED STOCK ________ BATCH NO.__________

TANK FEEDING FROM ____________ GALLONS ___________

TANK PRODUCT PUMPED TO _______ GALLONS ___________

TANK LITES PUMPED TO __________ GALLONS ___________

STILL BOTTOMS PUMPED TO ______ GALLONS ___________

START TIME	VAPOR TEMP.	PROD. TEMP.	VACUUM	REMARKS

Vacumn Process Batch #________

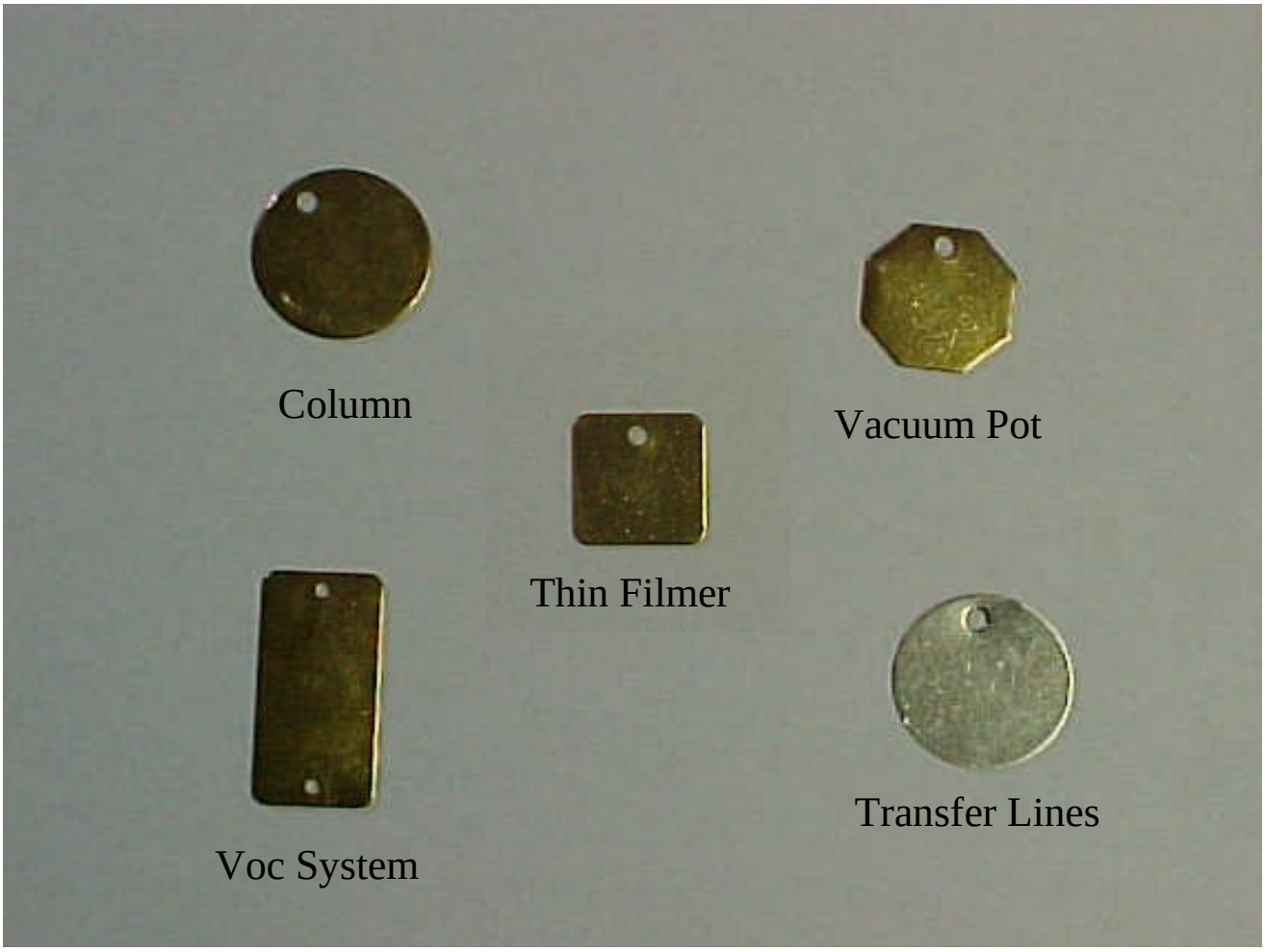
Date	Time	% Level	Temprature	% Vacumn	Chiller	VOC	Tank

Column Process Batch #__________

Date	Time	% Seperator	Density	Reflux	% Reboiler	Chiller	VOC	Prod. Tank	operator

Appendix N-2

Sample Leak Tags



Sample Leak Tags

Figure N-1

Sample Equipment Tags

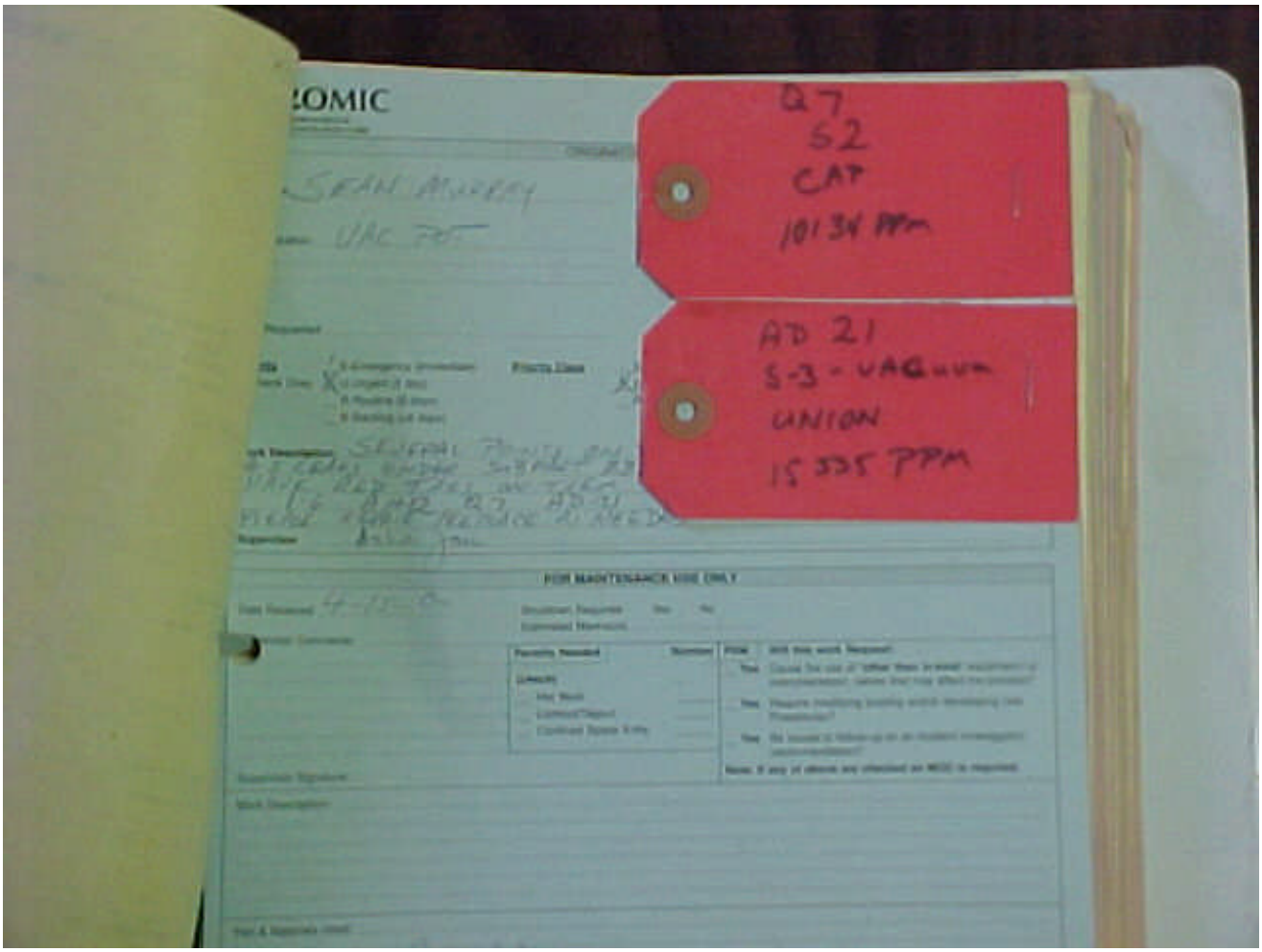


Figure N-1
Examples of Equipment Repair Tags