3.7 Degreasers

3.7.1 General Description of Source Category

There are three solvent cleaning machines, or degreasers, at LANL that use regulated halogenated solvents. The degreasers are used for parts cleaning. Two of the degreasers are ultrasonic cold batch degreasers with a capacity of 18 liters. The third unit was designed at LANL with a capacity of 6 liters. It is a spray cold batch degreaser. Trichloroethylene (CAS No. 79-01-6) is typically used as the solvent; however, other solvents may be used in the future. Trichloroethylene, a halogenated solvent, is both a VOC and HAP. The solvents are not heated or boiled.

Parts in an ultrasonic degreaser are cleaned by agitation created with sound waves of alternating frequency. The alternating sound waves generate high and low pressure waves that cause tiny bubbles to form and collapse. The agitation from the formation and collapse of the bubbles is effective in removing residue and leaves the surface clean and undamaged.

The spray degreaser was designed to minimize the amount of solvent used. Mechanical spraying is performed in a closed loop system. A fine solvent spray is delivered to the parts in need of cleaning. The over spray is collected in a reservoir, filtered and pumped back to the spray nozzle.

Additional degreasers are used at LANL. None of these additional degreasers use halogenated solvents. They qualify as insignificant emission units under Insignificant Activity #1. In addition, a few of the degreasers containing non- halogenated solvents are used in shops that are dedicated to facility maintenance activities and qualify as a Trivial Activity (#2). Trivial Activities are not discussed further in this section.

3.7.2 Operating Schedule

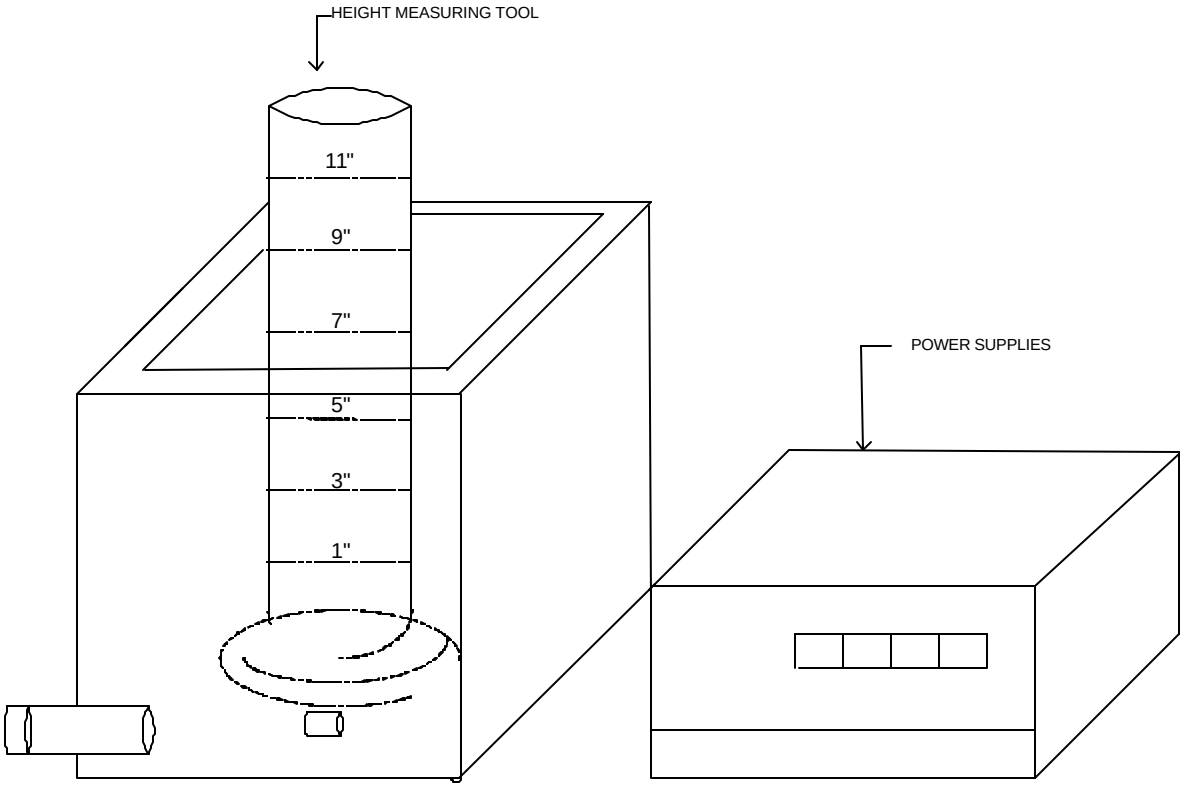
The degreasers are used sporadically for short periods of time. It is estimated that a maximum of 200 liters (53 gallons) of solvent would be used per

year. Based on 1999 and 2000 data, actual usage is less than 100 liters per year. When the degreasers are not being used the lids are kept closed or the solvent is removed. LANL is not proposing to limit solvent use, hours of operation, or emissions specifically from the degreasers.

3.7.3 Process Flow Diagram

A general process flow diagram is presented in Figure 3.7-1.

Figure 3.7-1. Process Flow Diagram for Degreasers



3.7.4 Emissions

Emissions are estimated on a mass balance approach. Before a degreaser is used, the amount of solvent present in the degreaser is recorded (i.e., initial amount). The addition or removal of any solvent is also recorded. Based on the amounts added or removed, the new amount of solvent is recorded (i.e., final amount). Air emissions are calculated as the difference between the final amount of solvent from the previous use and the initial amount of solvent for the next use.

Based on the dimensions of the degreaser tanks, the tank depth corresponds to a volume. The tank contents are monitored with a graduated dipstick. Each addition or removal of solvent is recorded in depth and corresponding volume.

For informational purposes emissions estimates based on actual records of use are presented in the following table. Allowable emissions of HAPs are limited on a facility wide basis and are discussed in Chapter 2.

Table 3.7-1. Emissions Estimates from Degreasers

Pollutant	Average Actual Emissions [(a)] with 3 Years Data (ton/yr)
HAP	0.03
Trichloroethylene (CAS No. 79-01-6)	0.03
VOC	0.03

(a) Based on operations in 1999, 2000, and 2001.

3.7.5 Emissions Control Equipment

There are no physical controls on the degreasers to reduce or eliminate emissions. Work practice standards are in place to minimize air emissions.

3.7.6 Applicable Requirements

Applicable requirements are shown in Table 3.7-2. They represent work practice standards required under 20.2.82 NMAC and 40 CFR 63 Subpart T for cold batch degreasers using halogenated solvents.

Table 3.7-2. Applicable Requirements for Degreasers

Source Category	Applicable Requirement
Degreasers using Halogenated Solvents	***Operating Requirements:*** • Keep degreaser closed with tight fitting cover. (§63.462(a)(2)) • Maintain a freeboard ratio of 0.75 or greater. (§63.462(a)(2)) • Collect and store all waste solvent and wipe rags in closed containers. (§63.462(c)(1)) • Perform flushing within the freeboard area only. (§63.462(c)(2)) • Allow cleaned parts to drip for 15 seconds or until dripping stops. (§63.462(c)(3)) • Do not exceed the fill line on the solvent level. (§63.462(c)(4)) • Wipe up spills immediately. (§63.462(c)(5)) • Do not create observable splashing with agitation device. (§63.462(c)(6)) • Keep the degreaser from being exposed to drafts greater than 40 m/sec. (§63.462(c)(7)) • Do not clean sponges, fabric, wood, and paper. (§63.462(c)(8))

3.7.7 Proposed Monitoring, Recordkeeping, and Reporting

Recordkeeping is being proposed as adequate monitoring for these work practice standards. Recordkeeping and reporting are presented in Table 3.7-3. Required recordkeeping and reporting are followed with a citation for the basis of the requirement.

Table 3.7-3. Proposed Monitoring, Recordkeeping, and Reporting for Degreasers

Source Category	Monitoring, Recordkeeping, and Reporting
Degreasers using Halogenated Solvents	***Monitoring/Recordkeeping:*** • Maintain records of solvent content. (LANL proposed condition) • Complete checklist for work practice standards. (LANL proposed condition) ***Reporting:*** • Submit initial notification of startup. (§63.468(b)) • Submit a compliance report 150 days after startup. (§63.468(c)) • Report criteria pollutant and HAP emissions on a semiannual basis. (20.2.73.300 NMAC for criteria pollutants and LANL proposed condition for HAPs and semiannual basis) • Submit semiannual report of any required monitoring within 45 days from the end of each reporting period. The reporting periods are January to June and July to December. (20.2.70.302(E)(1) NMAC)