

**ENVIRONMENTAL PROTECTION AGENCY****40 CFR Parts 261 and 262**

[EPA-HQ-RCRA-2003-0012; FRL-8171-5]

RIN 2050-AG18

**Standards Applicable to Generators of Hazardous Waste; Subpart K—Standards Applicable to Academic Laboratories****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Proposed rule.

**SUMMARY:** Today, EPA is proposing alternative generator requirements applicable to college and university laboratories as defined in this proposed rule. The proposal provides a flexible and protective set of regulations that address the specific nature of hazardous waste generation in college and university laboratories. The flexibility in today's proposed rule will allow colleges and universities the discretion to determine the most appropriate and effective method of compliance with today's proposed requirements. This preamble will refer to this flexible approach as a "performance-based" approach. Additionally, this proposed rule grants colleges and universities the choice to manage their hazardous wastes in accordance with today's alternative set of regulations or remain subject to the existing generator regulations.

**DATES:** EPA will accept public comments on this proposed rule until August 21, 2006.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-HQ-RCRA-2003-0012 or EPA-2050 AG 18 RCRA-2003-0012, by one of the following methods:

- <http://www.regulations.gov>: Follow the on-line instructions for submitting comments.

- E-mail: Comments may be sent by electronic mail (e-mail) to ["RCRA-docket@epamail.epa.gov"], Attention Docket ID No. EPA-HQ-RCRA-2003-0012 or EPA-2050 AG 18 RCRA-2003-0012.

- Fax: Fax comments to: 202-566-0270, Attention Docket ID. No. EPA-HQ-RCRA-2003-0012 or EPA-2050 AG 18 RCRA-2003-0012.

- Mail: Send comments to: OSWER Docket, EPA Docket Center Mailcode: 5305T, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460, Attention Docket ID Number EPA-HQ-RCRA-2003-0012 or EPA-2050 AG 18 RCRA-2003-0012. In addition, please mail a

copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attn: Desk Officer for EPA, 725 17th Street NW., Washington, DC 20503.

- Hand Delivery: Deliver comments to: Environmental Protection Agency, EPA Docket Center, Room B102, 1301 Constitution Avenue, NW., Washington, DC, Attention Docket ID Number EPA-HQ-RCRA-2003-0012 or EPA-2050 AG 18 RCRA-2003-0012. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA-HQ-RCRA-2003-0012 or EPA-2050 AG 18 RCRA-2003-0012. EPA's policy is that all comments received will be included in the public docket without change and may be made available on-line at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through <http://www.regulations.gov> or e-mail. The <http://www.regulations.gov> Web site is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through <http://www.regulations.gov>, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket, visit the EPA Docket Center homepage at <http://www.epa.gov/epahome/dockets/htm>. For additional instructions for submitting comment, comment go to section B of the **SUPPLEMENTARY INFORMATION** section of this document.

Docket: All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in <http://www.regulations.gov> or in hard copy at the at the OSWER Docket in the EPA Docket Center (EPA/DC), EPA West, Room B102, 1301 Constitution Ave., NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1774, and the telephone number for the OSWER Docket is (202) 566-0270. Copies cost \$0.15/page.

**FOR FURTHER INFORMATION CONTACT:** For general information, contact EPA's Web site at <http://www.epa.gov/epaoswer/osw/comments.htm>. For general information regarding lab wastes for educational institutions, contact <http://www.epa.gov/epaoswer/osw/specials/labwaste/index.html>. For further information regarding specific aspects of this notice, contact Patricia Mercer, Hazardous Waste Identification Division, Office of Solid Waste (5304W), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, Washington, DC 20460; (703) 308-8408; fax number (703) 308-0514; e-mail address: [mercera.patricia@epa.gov](mailto:mercera.patricia@epa.gov).

**SUPPLEMENTARY INFORMATION:**

**General Information**

*A. Entities Potentially Affected by This Proposed Rule*

Entities potentially affected by this proposed action are generators of unwanted materials, as defined in this proposal, from college and university laboratories. College and university laboratories, as defined under this proposal, include laboratories associated with a private or public, post-secondary, degree-granting, academic institution that is accredited by an accrediting agency listed annually by the U.S. Department of Education. Only those colleges and universities which have laboratories on their campuses would be covered by this alternate approach; laboratories not located at colleges or universities would not be covered. This proposed action is optional in that colleges and universities may elect to have their laboratories remain regulated under current RCRA generator regulations as set forth in 40 CFR 262.11 and 262.34(c), or may choose to manage

their hazardous wastes according to this alternative regulatory approach. (In RCRA authorized states, today's proposed action would be an option once it has been adopted by the state in which the college or university resides.) To determine whether a college or university laboratory is covered by this action, interested parties should examine 40 CFR part 262 subpart K carefully. If there are questions regarding the applicability of the proposed rule to a particular entity, consult the person listed in the section of this preamble entitled **FOR FURTHER INFORMATION CONTACT**.

*B. What To Consider When Preparing Comments for EPA*

1. *Submitting CBI*. Do not submit this information to EPA through <http://www.regulations.gov> or e-mail. Clearly mark part of all of the information that

you claim to be CBI. For CBI information in a disk or CD ROM that you mail to EPA, mark the outside of the disk or CD ROM as CBI and then identify electronically within the disk or CD ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed, except in accordance with procedures set forth in 40 CFR part 2.

2. *Tips for Preparing Your Comments*. When submitting comments, remember to:

- Identify the rulemaking by docket number and other identifying information (subject heading, **Federal Register** date and page number).

- Follow directions—The Agency may ask for commenters to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.

- Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.
- Describe any assumptions and provide any technical information and/or data that you used.
- If estimating potential burden or costs, explain methods used to arrive at the estimate in sufficient detail to allow for it to be reproduced.
- Provide specific examples to illustrate any concerns and suggest alternatives.
- Make sure to submit comments by the comment period deadline identified above.

LIST OF ACRONYMS

ACE .....	American Council on Education.
APA .....	Administrative Procedures Act.
APPA .....	Association of Higher Education Facilities Officers.
BR .....	Biennial Report.
C2E2 .....	Campus Consortium for Environmental Excellence.
CAA .....	Central Accumulation Area.
CAS .....	Chemical Abstract Service.
CESQG .....	Conditionally Exempt Small Quantity Generator.
CFR .....	Code of Federal Regulations.
CSHEMA .....	Campus Safety, Health and Environmental Management Association.
EH&S .....	Environmental Health and Safety.
EMP .....	Environmental Management Plan.
EMS .....	Environmental Management System.
HHMI .....	Howard Hughes Medical Institute.
HSWA .....	Hazardous and Solid Waste Amendments of 1984.
ICR .....	Information Collection Request.
LDR .....	Land Disposal Restrictions.
LMP .....	Laboratory Management Plan.
LQG .....	Large Quantity Generator.
NACUBO .....	National Association of College and University Business Officers.
NGO .....	Non-Governmental Organization.
NTTAA .....	National Technology Transfer Advancement Act.
OMB .....	Office of Management and Budget.
PRA .....	Paperwork Reduction Act.
Project XL .....	eXcellence and Leadership.
RCRA .....	Resource Conservation and Recovery Act.
RFA .....	Regulatory Flexibility Act.
SAA .....	Satellite Accumulation Area.
SIC .....	Standard Industrial Code.
SQG .....	Small Quantity Generator.
SWDA .....	Solid Waste Disposal Act.
TRI .....	Toxics Release Inventory.
TSDf .....	Treatment, Storage or Disposal Facility.
UMRA .....	Unfunded Mandates Reform Act.

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## I. Statutory Authority

These regulations are proposed under the authority of Sections 2002, 3001, 3002, and 3004 of the Solid Waste Disposal Act (SWDA) of 1970, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), 42 U.S.C. 6921, 6922, 6923, and 6924.

## II. Background

### A. Intent of Today's Proposed Rule

The intent of today's proposed rule is to establish an alternative set of generator requirements for college and

university laboratories that is better suited to their specific circumstances, and promotes environmental protection and public health through safer management of laboratory hazardous wastes. While the Agency has been investigating these issues for a number of years, starting in 2002, EPA conducted a series of outreach activities to generators of hazardous waste with laboratories to obtain information regarding the differences between how hazardous waste is generated and managed at college and university laboratory operations as compared with production operations of industrial generators and other non-college or university laboratory generators. The information collected by the Agency indicates that college and university laboratory operations differ from both industrial laboratories and industrial production facilities that generate hazardous waste, warranting development of an alternative set of regulations for college and university laboratories.

Relative to industrial production facilities, laboratories generally have a large number of points of generation (i.e. points where waste is originally generated) such as multiple laboratory benchtops within a single laboratory and laboratories located at several areas on a single campus. Laboratories also tend to generate a relatively small volume of hazardous waste at each of these points of generation. In contrast, industrial generators tend to generate only a few wastestreams in large quantities at relatively few generation points. Additionally, while most individuals involved in hazardous waste generation activities at both industrial production facilities and other non-college or university laboratories are employees who are professionally trained in managing hazardous wastes, students often generate hazardous waste at college and university laboratories.

EPA recognizes that hazardous waste management operations vary widely among campuses and some colleges and universities have developed programs that have proven to be successful, and thus may be reluctant to change from the regulation under which they are currently operating. Therefore, today's proposal is an optional, alternative set of requirements to the existing generator regulations at §§ 262.11 and 262.34(c). Those colleges or universities that choose to continue to manage their laboratory hazardous waste under the current hazardous waste regulations may do so. Colleges or universities that would like the additional flexibility of today's rule may choose to manage their

laboratory hazardous waste according to this new set of generator regulations. This proposal was developed with performance-based standards in part to account for the diversity among college and university operations and practices, curricula, and goals. The term "performance-based standards" means a flexible approach that will allow colleges or universities the discretion to determine the most appropriate and effective method of compliance with the requirements of today's proposed rule. This diversity in programs for managing wastes, including hazardous waste, is also reflective of logistical considerations including campus size, space, personnel, and other resource differences among colleges and universities.

EPA has heard from college and university stakeholders that the greatest difficulty they face in managing their laboratory hazardous waste under the existing regulations is making the RCRA hazardous waste determination pursuant to 40 CFR 262.11 (i.e. determining whether their solid waste is hazardous waste) in the laboratory when individuals in the laboratory generating the solid waste and other materials are students, often untrained and unqualified to make a hazardous waste determination.

Additionally, stakeholders have pointed out that it is difficult to make hazardous waste determinations in college and university laboratories because in a college and university setting there are numerous individual points of generation. This can make it difficult for an Environmental Health and Safety (EH&S) (or other similarly qualified) staff member to be present when the waste is generated. Since any individual laboratory chemical hood (as one example) can be considered a point of generation, and any college or university with a substantial science department can have over a thousand such hoods located in many laboratories throughout a campus, it can be extremely impractical to have such qualified individuals present at each point.

Today's proposal addresses this issue by providing flexibility in 40 CFR 262.209 with regard to where the hazardous waste determination can be made (i.e. in the laboratory, at an on-site central accumulation area (CAA) or at an on-site TSDF), provided all unwanted materials (as defined in Section IV. A. of this preamble) that are generated in the laboratory are managed according to the provisions described below. If the unwanted materials are sent to an on-site CAA (or on-site TSDF) at the college or university for

hazardous waste determination by EH&S personnel (or other RCRA trained individuals), the hazardous waste determination must be made within four calendar days of arriving at the on-site CAA or TSDF. Additionally, today's rule allows for the hazardous waste determination to be made by RCRA-trained individuals in the laboratory before unwanted materials are removed from the laboratory. The proposed provisions would apply to all unwanted materials in the laboratory that have the potential for being RCRA hazardous wastes, including those which are later determined not to be RCRA hazardous waste by EH&S or other qualified personnel. Colleges or universities with laboratories that generate hazardous waste that choose not to be subject to today's proposal would remain subject to the current generator requirements set forth in §§ 262.11 and 262.34(c). Today's proposal would not alter or move the point of generation of any hazardous waste, but merely allow the hazardous waste determination to be made at an on-site central accumulation area or TSDF, or allow the hazardous waste determination to be made in the laboratory, but at a point in time after initial generation of the waste. The point of generation of the hazardous waste would continue to be the location and time at which the hazardous waste is first created.

Because the specific issues which are faced by colleges and universities with regard to waste management are specific to hazardous wastes generated in laboratories, it is only the hazardous waste generated in the laboratory that may be managed under subpart K. Hazardous wastes generated at other parts of the college and university will remain subject to the existing hazardous waste regulations.

EPA believes that a performance-based approach will allow colleges and universities greater flexibility and ensure better environmental results. EPA also recognizes that performance-based standards inherently lack specificity. Therefore, EPA is proposing a planning component to help ensure that a college or university thoroughly considers its specific circumstances, and provides the details needed to ensure safe management of its unwanted materials. Therefore, under today's proposal, colleges and universities must develop, implement and retain a Laboratory Management Plan (LMP). This plan would describe how a college or university will meet the required provisions in this proposal (i.e. the performance-based standards). Subpart K will require that the LMP contain certain elements; however, how an

individual college or university chooses to comply with these requirements (i.e. the specifics of the LMP) will be left to its discretion. For example, while the labeling standards for containers require the words "unwanted material" to be either affixed to or physically accompany the container, the Agency is providing flexibility to colleges and universities to use their discretion to meet the labeling standard for providing sufficient information to alert emergency responders to the hazards of the contents of the container. In this instance, the Agency is proposing performance-based language for container labeling and is not mandating specific terms or information to be used for defining "sufficient information." The same is true for the proposed requirements for container management standards (i.e., while containers must be maintained and kept in good condition, EPA is not prescribing precisely how the containers are managed) and training/instruction (i.e., depending on a college or university's generator status and the duties of individual workers, colleges and universities may determine the level of training needed for an individual to perform their assigned duties). These elements must be addressed in detail in an LMP. It would be a violation of subpart K for a college or university laboratory (choosing to operate under subpart K) not to have an LMP that addresses the required elements in a way which would meet the performance standards. EPA is proposing two options for enforceability of the provisions contained within the LMP. Under one option, it would not be a violation of subpart K for a college or university to deviate from its LMP, provided the performance-based standards are met. Under the second option, it would be a violation of subpart K for a college or university to deviate from its LMP.

EPA believes that today's proposal will lead to safe management of unwanted materials and greater environmental protection by facilitating RCRA hazardous waste determinations, requiring that they be performed by specifically trained personnel, rather than by untrained students in college and university laboratories. EPA also believes that today's proposal will promote the protection of human health and the environment by ensuring that all unwanted materials which may, in whole or in part, be RCRA hazardous wastes are safely managed while in the laboratory prior to the time that the hazardous waste determination is made. In addition, EPA believes that the requirement in today's proposal to

develop and implement an LMP will improve a college or university's coordination and integration of hazardous waste management procedures and enhance environmental awareness among researchers and students at colleges and universities, leading to a transfer of good environmental management practices to the larger community.

EPA strongly encourages colleges and universities to go beyond developing an LMP that addresses only the required elements, and examine their waste generation and management practices college or university-wide, with a particular eye toward finding opportunities for waste minimization and pollution prevention. For example, opportunities may exist for developing systems that would facilitate and encourage redistribution and reuse of unwanted materials throughout the institution. To that end, EPA actively encourages colleges and universities to consider the implementation of an Environmental Management System (EMS), a system of management practices and related documentation, procedures, and work practices that are put in place to manage an institution's overall environmental impacts. More information on EMSs at colleges and universities can be found at: <http://www.epa.gov/ne/assistance/univ/emsguide.html> and <http://www.campusEMS.org/>.

#### *B. History*

EPA has led and participated in several efforts to gain a better understanding of the challenges associated with managing hazardous wastes in college and university laboratories. Pursuant to Congressional direction in the Hazardous and Solid Waste Amendments of 1984 (HSWA), the Environmental Protection Agency (EPA) undertook a study of challenges associated with the accumulation, storage and disposal of hazardous wastes from college and university laboratories. The study culminated in a Report to Congress (Report) in April 1989, outlining the then current regulatory requirements for college and university laboratories managing hazardous waste, the current practices at these laboratories, and the problems confronting college and university laboratories. The challenges for college and university laboratories highlighted in the Report included a lack of awareness about hazardous wastes and the applicable regulations due to the transient nature of the student population, the highly variable wastestreams generated, resource constraints on hazardous waste

management, and general difficulty in complying with the hazardous waste regulations.

In 1999, EPA initiated a pilot program for three colleges and universities, providing the regulatory flexibility necessary for the participating institutions to be able to experiment with potentially promising regulatory approaches to hazardous waste management in college and university laboratories. This program was developed under the Agency's Project XL, which stands for "eXcellence and Leadership," an initiative to allow regulated entities to achieve better environmental results at less cost by increasing awareness of EPA regulations and environmental performance through the use of tools such as Environmental Management Plans (EMPs). The goals of the EPA University Laboratories Project XL were to develop a more effective approach for regulating university laboratories, develop programs to enhance laboratory safety, and illustrate better systems to manage laboratory environmental impacts.

In 2001, Congress endorsed EPA's participation in a pilot project in collaboration with ten major academic research institutions, the Howard Hughes Medical Institute (HHMI) and state regulatory officials and directed EPA to subsequently report to Congress on the HHMI project. The project was intended to evaluate a performance-based approach in order to provide regulatory flexibility, reduce burdens and yield superior compliance, and thus, environmental protection. EPA encouraged state regulators to provide the maximum flexibility under the current regulations to program participants so that they could implement the consensus best practices developed through the program. In 2002, EPA issued a Report to Congress (Report) on the HHMI project, recognizing that college and university laboratories may have difficulty complying with the RCRA hazardous waste regulations largely due to the regulations' industry-oriented framework. In the Report, EPA also indicated that regulatory changes may be necessary in some cases and that the regulatory process would allow EPA to consider views from diverse stakeholders and promote national consistency through the public notice-and-comment process.

EPA subsequently developed a three-phased approach to address the issues identified in the 2002 Report to Congress: (1) Outreach to stakeholders to gather information to help EPA understand the specific nature of the issues, (2) guidance to clarify issues

raised by stakeholders not needing regulatory changes, and (3) regulatory changes, where appropriate, to provide flexibility. Such an approach allowed EPA to first identify the specific issues involved, and quickly address, through guidance, those issues that would not necessarily require rulemaking. Those issues that are more complex, and that are best served by the rulemaking process, were to be addressed at a later time.

In June 2003, as part of the first phase, EPA held a public meeting in order to solicit input from stakeholders on approaches to address the issues concerning hazardous waste management in college and university laboratories. Topics discussed at the meetings included: Where and when to make the hazardous waste determination; waste labeling requirements; personnel training requirements; satellite area accumulation; and types of treatment performed in laboratories. In March 2004, as part of the second phase, EPA issued a guidance memorandum, answering certain frequently asked questions regarding satellite accumulation area regulations. Because most laboratories in colleges and universities would be considered satellite accumulation areas, this memorandum helped resolve many of the issues faced by college and university laboratories. Today's rule constitutes phase three of the three-phased approach, and addresses several of the issues which require a rulemaking.

As a parallel effort, in May 2003, colleges and universities were selected to become a partner in EPA's Sector Strategies Program. The Sector Strategies Program seeks industry-wide environmental gains through innovative actions taken with a number of manufacturing and service sectors. EPA is working with six college and university Sector Partners (Howard Hughes Medical Institute (HHMI); American Council on Education (ACE); APPA: The Association of Higher Education Facilities Officers; Campus Consortium for Environmental Excellence (C2E2); Campus Safety Health and Environmental Management Association (CSHEMA); and National Association of College and University Business Officers (NACUBO)) to develop sector-specific approaches to assist colleges and universities to advance the use of environmental management systems, reduce regulatory performance barriers, and measure environmental progress.

In May, June and August 2004, the College and University Sector Program

Partners shared their thoughts in a series of proposals suggesting alternative approaches for developing a RCRA program that addresses the specific problems faced by college and university laboratories. Their suggested changes to existing requirements focused on tailoring new regulations for college and university laboratories that are different from the standards required of other generators and operators of treatment, storage and disposal facilities, similar to the current "satellite accumulation area" regulations, and included provisions for providing flexibility for the point at which the hazardous waste determination is made, training of laboratory workers, labeling, container management standards, and provisions for bench-scale treatment of waste in the laboratory. (See the docket for today's rulemaking for copies of proposals submitted to EPA.)

### *C. Agency's College and University Initiatives*

Today's proposed rule is just one of the many efforts EPA is pursuing to assist colleges and universities in reducing risks and costs by developing tools to better manage chemicals and waste; reducing use of resources; and promoting better overall environmental stewardship. These efforts on behalf of colleges and universities rely on voluntary and tool-based approaches, as well as regulations designed to achieve better environmental performance at less cost and burden. The Agency also has developed funding mechanisms to promote the development of new, more environmentally friendly experiments and technologies. The goals of all these programs are to improve environmental performance and environmental health where students, educators, and college or university personnel learn, teach and work.

Through its Colleges and Universities Sector Strategies Program, described above, the Agency is partnering with college and universities and their trade associations to overcome potential regulatory barriers, promote environmental management systems, and develop measures of environmental performance. More specifically, EPA is working with the college and university sector to incorporate sound sustainable practices to improve environmental safety practices, provide a baseline for measuring change, identify priorities for continual improvement and minimize overall environmental impacts. To learn more about EPA's College and University Sector Strategy Program, visit: <http://www.epa.gov/sectors/colleges/index.html>.

Three of these efforts focus specifically on reducing waste. First, there is an Agency partnership, called WasteWise, which is a voluntary program helping U.S. organizations eliminate costly municipal and solid waste, improving economic and environmental sustainability. The WasteWise program is supporting RecycleMania, an intercollegiate competition involving colleges and universities across the U.S. in an annual recycling competition. The goal of the competition is to increase student awareness of campus recycling. Founded in 2001 by two of EPA's WasteWise partners, the number of competing schools increased from 2 in 2001 to 47 in 2005. The total pounds recycled per student across all participating schools increased from 74 pounds in 2001 to 1,117 pounds in 2005.

Second, in 2002, EPA funded Chemical Management Services (CMS) pilots at two universities—the University of New Hampshire and Dartmouth College. CMS, which has been used successfully in the automotive, microelectronic and aerospace industries, restructures the relationship between buyers of chemicals and their suppliers. Chemical suppliers and waste service providers bring their expertise directly to the college or university to help manage chemicals and waste streams, allowing the colleges and universities to focus on their core function—education. More information about the results of the pilots can be found at <http://www.epa.gov/epaoswer/hazwaste/minimize/pdfs/cms-broch.pdf>.

Third, is EPA's Green Chemistry Program. Green Chemistry, a proven pollution prevention approach toward environmentally sustainable manufacturing, is the design of chemical products and processes that reduce or eliminate the use or generation of hazardous substances. To promote this goal, EPA's Green Chemistry Program supports a variety of educational and research efforts in which colleges and universities have participated. One element of EPA's Green Chemistry Program is the development of curricular materials and experiments that incorporate the principles of green chemistry. These materials are primarily aimed at undergraduate and graduate chemistry students. Another element of EPA's Green Chemistry program is awarding grants for research that advances the development and use of innovative technologies and approaches directed at avoiding or minimizing the use or generation of hazardous substances. A third element is the

Presidential Green Chemistry Challenge Awards Program, which provides national recognition of outstanding chemical technologies that incorporate the principles of green chemistry into chemical design, manufacture, and use. To learn more about EPA's Green Chemistry Program, visit: <http://www.epa.gov/greenchemistry/index.html>.

In 2003, EPA launched another award program: the P3 Award—A Student Design Competition for Sustainability. P3 focuses on the three components of sustainability: People, prosperity and the planet. Only colleges and universities are eligible to participate in this annual competition. The competition has two phases. Initially, student teams compete for \$10,000 grants to use for researching and developing their design projects. The P3 award, which includes additional funding of up to \$75,000, is given to the highest-rated student designs, which gives the students the opportunity to further develop their designs for sustainability, implement their projects in the field, and move them to the marketplace. One of the 2005 P3 winners was designing and developing solar ovens to be mass-produced at low cost, for use in the developing world. To learn more about EPA's P3 Awards, visit: <http://es.epa.gov/ncer/p3/index.html>.

There are two efforts within EPA that focus specifically on laboratories. First, in 2003, EPA awarded a cooperative agreement to Iowa State University to develop a website, called Labs Achieving Better Stewardship (LABS) Central, which is a web-based clearinghouse of information of interest to laboratories, at colleges and universities and elsewhere, dedicated to the pursuit of enhanced environmental performance. This site brings together existing information about innovative approaches to waste management and resource conservation that may be helpful to laboratories interested in regulatory compliance and environmental stewardship. LABS Central guides visitors to web-based information about regulatory compliance, environmental performance, advanced waste management techniques and waste reduction. LABS Central can be found at: <http://www.labscentral.info>.

Second, the Agency's Laboratories for the 21st Century (Labs21) Partnership Program encourages the development of sustainable, high-performance, and low-energy consumption laboratories. Labs21 is a voluntary program whose partners set goals to reduce energy and water use and take a "whole-building"

approach to laboratory design or retrofitting. Labs21 partners are demonstrating that a holistic approach to laboratory design can result in higher efficiencies, cost savings, reduced emissions, and improved health and safety conditions. Currently 16 of 23 private sector partners in Labs21 are colleges and universities. To learn more about Labs21, visit <http://www.labs21century.gov>.

ENERGY STAR is another program that is demonstrating that better energy management, in this case across a college or university campus, can yield cost savings. Colleges and universities spend close to \$2 billion each year on energy. ENERGY STAR is a voluntary EPA program that gives institutions the power to reduce the pollution that causes global warming, while enhancing their financial value. EPA's ENERGY STAR program encourages colleges and universities to become ENERGY STAR partners and adopt a strategic approach to energy management that can lower energy bills by 30% or more. By partnering with ENERGY STAR, an organization demonstrates environmental leadership, improves its energy efficiency, saves money, and receives recognition. ENERGY STAR is a proven energy management strategy to distinguish an institution as an environmental leader and save money for repair and renovation, hiring of new faculty, new construction, and other core activities. To learn more about ENERGY STAR or becoming an ENERGY STAR partner, visit: [http://www.energystar.gov/index.cfm?c=higher\\_ed.bus\\_highereducation](http://www.energystar.gov/index.cfm?c=higher_ed.bus_highereducation).

Recognizing that universities have a significant impact on the built and natural environment, EPA continues to pursue a series of projects that promote smart growth implementation to achieve increased viability of the campus and the surrounding neighborhood in an environmentally sustainable manner. These activities include: Co-hosting the 1st Annual Smart and Sustainable Campuses Conference at the University of Maryland in November 2005, funding the publication of "Partnerships for Smart Growth: University-Community Collaboration for Better Public Spaces," compiling a list of smart growth course prospectuses, developing a list of resources of best practices and contacts at universities, providing input on the P3 project and providing information and tools to the public. To learn more about EPA's Smart Growth Program, visit: <http://www.epa.gov/smartgrowth>.

Finally, EPA has sponsored partnerships with industry, academic institutions, environmental groups, and

other agencies to launch sector-specific Compliance Assistance Centers (Centers). Through web sites, telephone assistance lines, fax-back systems, and e-mail discussion groups, the Centers are helping businesses, local governments, and federal facilities understand federal environmental requirements and save money through pollution prevention techniques. The Agency is in the early stages of developing a new compliance assistance center dedicated to the education sector. Existing compliance assistance centers may be viewed at: <http://www.assistancecenters.net>.

#### *D. Overview of College and University Laboratory Operations*

While Agency data sources and information gained through site visits and comments indicate that other areas of colleges and universities generate hazardous waste, today's proposal only addresses hazardous waste generated and accumulated in college and university laboratories. Other areas within the college or university do not face the same specific situations as laboratories and the current RCRA requirements are effectively dealing with waste generation and management in those areas. Agency information gathering and outreach efforts also indicate the primary differences between laboratories and the other areas in the college or university and more traditional industrial settings include the number of wastestreams generated, the variability and volume of any individual wastestream generated, the number of individuals involved in waste generation and management, their employment status (e.g. employee vs. student) and the stability of that workforce (e.g. transient nature of students, visiting professors etc. involved in waste generation and management vs. relatively constant workforce in an industrial setting or other non-college or university laboratory setting).

In traditional industrial settings, generally the waste output is known in advance. Relatively large volumes of each waste type are generated, and there are relatively few wastestreams per facility, with little variability over time. Furthermore, industrial facilities, including industrial laboratories, maintain a relatively steady workforce and include environmental health and safety experts on staff. In contrast, the waste generated within a laboratory at a college or university is generated in relatively small quantities (beakerful versus barrelful), and the exact character and composition of the waste may not be known in advance. Additionally, the

number of different wastestreams generated by a single laboratory may be quite high due to the nature of research and teaching activities. Each college or university may have a very large number of individual laboratories, each generating different wastestreams and operating under different management or supervision. The most striking difference is that at colleges and universities, much of the hazardous is generated by students who are either in instructional settings (such as a chemistry class) or are conducting research, but who are not employees of the college or university.

A great deal of variability also exists in hazardous waste generation and management procedures from laboratory to laboratory at colleges and universities depending on the type of activity being conducted and the size of the laboratory. However, there are some general practices that can be identified, and are discussed below.

There are two primary activities that occur in college and university laboratories and that generate hazardous waste. The first is the routine use of chemicals in instruction and research. Over the course of a typical month, the majority of waste generated by college and university laboratories is generated during such routine use. During instruction or research, chemicals are mixed to produce reactions, and the resulting mixtures may qualify as hazardous waste upon completion of the experiment. In other instances, solvents, a major wastestream from laboratories, are used as extractants (to help isolate and extract a wanted chemical from a mixture), or in cleaning laboratory glassware. In addition, certain laboratory equipment used in analyzing samples discharge the chemical sample and any chemical carrier as waste at the end of the analysis. Hazardous waste generated in this way may be of a very small volume (beakerful or less), and any given experiment may generate multiple wastes. Often the exact chemical makeup of such a waste is unknown to the researcher, particularly in research experiments involving synthesizing new chemicals.

A researcher or student in a college or university laboratory generally generates the hazardous wastes through routine use under a laboratory hood, a contained area equipped with ventilation and drainage, as part of the experiment he/she is conducting. Typically, these hazardous wastes are collected in a container directly under the hood. At the end of an experiment, or the end of the day, the waste is transferred to a container in a specially designated area nearby. When a

container of hazardous waste is filled (usually well before the 55 gallon limit is exceeded, according to college and university representatives), the environmental health and safety staff (or waste management company under contract to the college or university) are contacted by the researcher or laboratory manager. In some cases, the environmental health and safety staff come directly to the laboratory to make a hazardous waste determination (identifying the appropriate RCRA hazardous waste code), and to transport the waste either to an on-site central accumulation area, or in some cases, directly to an on-site or off-site permitted treatment, storage or disposal facility.

The second activity at college and university laboratories that generates hazardous wastes is laboratory clean-outs. Laboratory clean-outs are relatively infrequent events that may generate larger volumes of hazardous waste over a relatively short period of time. Unlike routine laboratory operations, the primary wastes generated during a clean-out event are not chemicals that have been used during an experiment, but rather expired laboratory standard solutions and unused reagents. Generally, the term "reagent" is used to describe the chemicals in their "original" state, as purchased from a manufacturer, rather than when the chemicals are the result of a chemical reaction. However, the result of a chemical reaction can also become a reagent in a new reaction. Most laboratories have a large inventory of various reagents used for conducting experiments. Because researchers at colleges and universities may require a particular reagent on very short notice in the development of an experimental procedure, they tend to maintain a large inventory in the laboratory, rather than obtain each chemical from a central location or from a chemical distributor. Reagents generally are used infrequently and only in small amounts at any one particular time. Therefore, researchers and/or professors at colleges and universities may store those reagents for long periods of time. When a researcher and/or professor retires or otherwise leaves the college or university, the laboratory may be cleaned out of all unused reagents. A laboratory clean-out may also occur when a building is renovated, or on occasion, as the result of a college or university-wide effort to identify and remove excess chemicals. During a laboratory clean-out, reagents often are assessed to determine if they should be kept for further use. If retained, the reagents are not considered

solid or hazardous wastes. However, when accumulated for long periods of time, for example, such unused reagents may be considered solid or hazardous wastes if it can be determined that they are no longer usable for their intended purpose.

Laboratory clean-outs are relatively infrequent. One reason for this is that during a laboratory clean-out, fairly large volumes of hazardous waste, including those listed as acutely hazardous, may be generated at one time (as compared with the baseline of generation for that laboratory). Currently, college and university laboratories generally operate as satellite accumulation areas under 40 CFR 262.34(c), and therefore must promptly (within 3 days) remove any acutely hazardous waste that exceeds one quart in volume. Furthermore, a generator's status (as large quantity generator, small quantity generator, or conditionally exempt small quantity generator) is determined, in part, by the volume of acutely hazardous waste it generates in a calendar month. During a laboratory clean-out, it is common for college and university laboratories to generate acutely hazardous wastes in relatively large quantities, since many unused bottles of reagents are deemed to be no longer needed (the hazard is not increased in this instance, because the amount of the substances is not increasing, merely its status is changing from unused product to hazardous waste). This increase in generation of acutely hazardous waste is problematic for small quantity generators that generate quantities exceeding one quart during a laboratory clean-out and thereby forcing them into large quantity generator status with shorter on-site accumulation time and additional requirements and recordkeeping burden.

Hazardous wastes generated in college and university laboratories either during routine laboratory operation, or during laboratory clean-out events are then removed from the laboratory and transferred to another location for treatment, storage or disposal. Some colleges and universities have on-site central accumulation areas or treatment storage and disposal facilities (TSDF), while others transport their hazardous waste to off-site TSDFs.

#### 1. Generation of Hazardous Waste—Types and Quantities

This section describes the estimated hazardous waste quantities and hazardous waste types generated by college and university large and small quantity generators. Specifically, this section discusses the overall hazardous

waste generation activities at college and university laboratories, and the hazardous waste generated from colleges and universities with art programs.

##### a. Data Sources

The information on colleges and universities contained in this section was obtained from the following agency data sources: 2001 Biennial Report (BR) data and additional data from the RCRAInfo (Resources Conservation and Recovery Act Information) database, and the 2001 Toxics Release Inventory data files. To supplement data not obtainable from EPA databases, EPA used public information to fill data gaps or to improve data quality. The Art School and Program Directory (<http://www.artschools.com>) was used to assist with identifying colleges and universities that have an art program, and the list of U.S. universities and list of community colleges developed by the University of Texas (available at: <http://www.utexas.edu/world/univ/>) was used to identify small quantity generator sites. These data sources provided the most recent and reliable data available to the agency for finalizing this proposed rule.

##### b. Summary of College and University Hazardous Waste Generation Activities<sup>1</sup>

A summary of quantities and types of hazardous wastes generated at colleges and universities by large quantity generator (LQG) and small quantity generator (SQG) four-year college, university and professional schools; two-year junior colleges/technical institutes; and vocational schools (which include "all other miscellaneous schools and instruction," "fine arts schools" and "other technical and trade schools") follows.

Assuming college and university hazardous waste generation remains fairly stable over time, college and university generators account for a relatively small quantity of overall hazardous waste generation (i.e., in 2001, over 40,800,000 tons of hazardous wastes were generated by the total generator reporting universe compared to the 35,742 tons generated by colleges and universities). Specifically, in 2001, there were a total of 1,304 college and university LQGs and SQGs generating hazardous waste. These entities generated 35,742 tons of hazardous wastes. Of these totals, 333 colleges and universities are LQGs generating a total of 33,789 tons of hazardous wastes and

971<sup>2</sup> colleges and universities are SQGs generating a total of 1,953 tons of hazardous wastes.

Information also indicates that colleges and universities generate relatively small quantities of many different types of hazardous wastestreams. For example, in 2001, colleges and universities generated 12 distinct hazardous waste type categories or wastestreams: lab packs; heavy metal and cyanide; dioxin pesticide; ignitable, corrosive and/or reactive characteristic; inorganic metal; listed discarded commercial chemical products ("P" and "U" listed); mixtures from non-specific sources; mixtures of toxic characteristic; pesticide; organic; spent solvents; and "unknowns." Hazardous waste generated for any one particular wastestream by college and university LQGs ranged from approximately 3,158 tons generated by 268 colleges/universities to less than one ton generated by one college/university generator (with the exception of one vocational school generating over 25,000 tons of inorganic metal hazardous wastes). To further illustrate the small quantities of hazardous waste generated by college and university large and small quantity generators, a significant number of colleges and universities generate less than one ton per generator for a particular waste type (e.g., 2.3 tons of dioxin pesticides wastes were generated in 2001 by 27 four-year colleges or universities which averages to approximately .08 tons per college or university).

In addition, while the majority of college and university hazardous waste generators are SQGs (roughly two-thirds of the college and university generator universe), LQGs account for over 90% of the hazardous waste generated by colleges and universities. Furthermore, in 2001, LQGs generated an average of approximately 75 tons of hazardous waste per school and SQGs generated an average of approximately 2 tons per school.

##### i. Summary of College and University Laboratory Hazardous Waste Generation<sup>3</sup>

As can be expected, laboratory hazardous waste generated by colleges and universities is a small percentage of overall hazardous waste generation because colleges and universities

<sup>2</sup> EPA does not have hazardous waste quantity information for 517 SQGs. Therefore, these SQG estimates are excluded and hazardous waste generation quantities for SQGs may be underestimated.

<sup>3</sup> For purposes of this analysis, a hazardous waste was considered a laboratory waste if the Biennial Report waste description contained the word "lab."

<sup>1</sup> Hazardous waste quantities exclude remedial waste generation and types and quantities of hazardous waste generated by medical facilities affiliated with a college or university hospital.

represent only a portion of the total generator universe and laboratory waste is only a portion of college and university hazardous waste. In addition, not all colleges and universities generating hazardous waste reported generating laboratory waste. However, laboratory waste represents a small portion of the hazardous waste generated at colleges and universities, as well. For instance, 246 of the 333 college and university LQGs and 309 of the 971 SQGs reported generating relatively small quantities of laboratory hazardous wastes. For LQGs, laboratory waste generation only amounts to approximately 9% (or 2,939 tons) of the total hazardous waste generated by colleges and universities, while SQGs reported generating approximately 334 tons of laboratory hazardous waste, which on average equates to approximately 1 ton of laboratory hazardous waste per SQG.

Art studios/programs at colleges and universities are included in the universe of college and university laboratories in this proposal, while some types of laboratories are not included (e.g., hazardous waste generated by medical facilities associated with a college or university). In considering the effect of hazardous waste generation by college and university art programs, it is interesting to note its comparison to hazardous waste generation by other laboratories in the scope of today's proposal at colleges and universities. Schools with art programs generated an estimated 21% of the total hazardous waste generated by college and university LQGs. Another interesting comparison is that more college and university SQGs reported having art programs than those generating laboratory hazardous wastes.

#### ii. Summary of Type and Volume of Laboratory Hazardous Waste Generation at College and University LQGs and SQGs

College and university LQGs generated approximately 2,939 tons of laboratory hazardous waste in 2001. This represents approximately 9% of the hazardous waste generated by these college and university LQGs. Four-year schools comprise the vast majority of schools generating laboratory waste (235 of 246 LQGs generating laboratory hazardous waste were four-year schools) and account for approximately 8.5% of the 9% of the laboratory hazardous waste generated. Vocational schools reported generating a minute amount of laboratory hazardous waste (about .01%). The hazardous waste type comprising the highest percentage generated by both four-year and two-

year schools generating laboratory hazardous waste is lab packs, generated by 114 out of a total of 235 four-year schools, and 3 out of a total of 8 two-year schools reporting. Of the total number of vocational schools reporting (3), the largest percentage of laboratory hazardous waste generated is by one fine arts school for inorganic (metal) wastes.

Approximately 73% of college and university SQGs that generated laboratory hazardous waste in 2001 are four-year colleges and universities. These four-year schools generated about 285 tons of laboratory hazardous wastes which represents approximately 14% of the all hazardous waste generated by college and university SQGs. Four-year SQGs generated the majority of laboratory hazardous waste for all college and university SQGs reporting (~ 85%). Lab packs are the largest contributor to the quantity of laboratory hazardous waste generated and represents ~ 73 tons of waste generated by approximately 79 SQGs. Spent solvents is the second largest type of hazardous waste generated (~ 51.7 tons generated by ~ 91 SQGs), followed by ignitable, corrosive, and/or reactive characteristic hazardous wastes with an approximate 44.2 tons of laboratory hazardous waste generated by an estimated 92 four-year college and university SQGs.

College and university LQGs with art programs have a modest impact on laboratory hazardous waste generation. In 2001, an estimated 239 of 333 college and university LQGs reported having an art program. These schools generated an estimated total of 7,167 tons of hazardous wastes (or 21% of the total hazardous waste generated by college and university LQGs). College and university SQGs with art programs account for approximately 19% of the total hazardous waste generated by SQGs. Notably, SQGs with art programs account for the majority of hazardous waste generated by college and university SQGs (approximately 62% of the 953 tons of hazardous waste generated).

#### 2. Summary of Current RCRA Generator Regulations

Colleges and universities that generate hazardous waste are subject to the RCRA generator regulations at 40 CFR part 262. Colleges and universities generate hazardous waste at many locations and facilities throughout their campuses, including laboratories, but also including operations and maintenance facilities, construction and renovation activities, vehicle maintenance facilities, and photo

processing facilities. The institution(s) generator status depends on the total amount of hazardous waste generated at the entire site in a calendar month. Many colleges and universities are LQGs of hazardous waste, generating (1000 kg/month; or >1 kg of acute hazardous waste/month. LQGs may comply with the regulations in 40 CFR 262.34(a) when accumulating hazardous waste on-site. Hazardous wastes generated by LQGs also may be accumulated on-site without interim status or a permit for 90 days or less provided the hazardous waste is accumulated in certain types of units. Many other colleges and universities are SQGs, generating >100 kg/month but <1000 kg/month of hazardous waste. SQGs may comply with 40 CFR 262.34(d) for the accumulation of hazardous waste on-site. However, hazardous wastes generated by SQGs may be accumulated on-site without interim status or a permit for 180 days or less provided the hazardous waste is accumulated in certain types of units. In addition, if the hazardous waste needs to travel more than 200 miles, it can be stored on-site without interim status or a permit for up to 270 days, provided the SQG complies with 262.34(d).

Additionally some colleges and universities are conditionally exempt small quantity generators (CESQGs), generating < 100 kg/month of hazardous waste, or < 1 kg of acutely hazardous waste/month. While CESQGs are not subject to the requirement to obtain an EPA ID number, comply with accumulation and storage requirements, manifest their wastes, or meet recordkeeping and reporting requirements, they are subject to limited generator waste management standards. CESQGs also may be subject to Department of Transportation requirements. Specifically, CESQGs must identify their hazardous waste, comply with storage limit requirements (no more than 1000 kg of hazardous waste stored in any one calendar month), and ensure hazardous waste treatment or disposal occurs at a facility that is on-site or off-site and is one of the following:

- Permitted hazardous waste TSDF.
- Interim status hazardous waste TSDF.
- Facility authorized to manage hazardous waste by a state with an approved hazardous waste program.
- Licensed, registered, or permitted by the state to manage municipal solid waste.
- Licensed, registered, or permitted by the state to manage non-municipal non-hazardous solid waste.

- Facility that beneficially uses, reuses, recycles or reclaims its waste; or treats its waste prior to beneficial use, reuse, recycling, or reclamation, or
- Universal waste facility.

(See 40 CFR 261.5(f)(3) or 261.5(g)(3).)

Because generator status is determined on a monthly basis, it is possible that a generator's status can change from one month to the next, depending on the amount of hazardous waste generated in a particular month. This is commonly referred to as "episodic generation." If a generator's status does in fact change, the generator is required to comply with the respective regulatory requirements for that class of generators for the hazardous waste generated in that particular month (*i.e.* LQG, SQG, CESQG).

Many of the hazardous wastes managed at colleges and universities are generated and initially accumulated in laboratories. The satellite accumulation provisions of 40 CFR 262.34(c) allow for reduced requirements for hazardous waste accumulated in containers at or near any point of generation. Both LQGs and SQGs may take advantage of the reduced requirements while hazardous waste is in satellite accumulation areas, such as laboratories, provided the waste is managed in accordance with the provisions at 40 CFR 262.34(c).

Appendix I contains a comparison table of current regulations and the proposed regulations in Subpart K.

Regardless of the generator's status, or whether the waste is generated in a satellite accumulation area, all generators of hazardous wastes are required to make a hazardous waste determination according to § 262.11. Proper hazardous waste determination is essential to the success of the RCRA program. The determination process can be simplified into several basic steps:

1. Is the material in question a solid waste (as defined in 40 CFR 261.2)?
2. Is the solid waste excluded from regulation as a hazardous waste under § 261.4?
3. Is it or does it contain a hazardous waste listed in Subpart D of Part 261?
4. Does it exhibit any of the characteristics defined in Subpart C of Part 261 (ignitability, corrosivity, reactivity or toxicity)?

a. Who May Determine Whether a Waste is Hazardous?

40 CFR 262.11 states, "A person who generates a solid waste...must determine if that waste is a hazardous waste..." A "person" is defined in § 260.10 as "an individual, trust, firm, joint stock company, Federal Agency, corporation (including a government corporation), partnership, association, State,

municipality, commission, political subdivision of a State, or any interstate body" (40 CFR 260.10). Therefore, a "person" is not limited to a specific individual, but may also be an entity. Therefore, any individual who is part an entity that meets the definition of "person" and can act on behalf of that entity may make a hazardous waste determination. The hazardous waste determination is not limited to the *individual* who actually generates a solid waste. For example, Environmental, Health & Safety (EH&S) personnel may make a hazardous waste determination for a waste generated by an individual professor, as long as the EH&S personnel and the professor are part of the same "person" (e.g., colleges and universities). This regulatory interpretation has been previously stated in a memo from Elizabeth Cotsworth, Director, Office of Solid Waste to RCRA Senior Policy Advisors and EPA Regions, dated August 16, 2002, a copy of which has been placed in the docket for today's proposal.

EPA's objective under § 262.11 (Hazardous Waste Determination) is to ensure that the hazardous waste is accurately identified. Proper hazardous waste determination is important in order to allow the generator to comply with the applicable hazardous waste management requirements and to protect public health and the environment. In short, it is the "person's" responsibility to ensure that the individuals within the organization who are making the hazardous waste determination obtain all the necessary information from appropriate sources so that they can make a proper hazardous waste determination. In practice, a hazardous waste determination in a laboratory setting would likely be made by the laboratory staff or staff member, or would be a collaborative effort between the individual researcher at a college or university who generates the waste and EH&S personnel who may make the hazardous waste determination. In the latter instance, EH&S personnel making a hazardous waste determination will need sufficiently accurate and detailed information about the waste from the laboratory staff to ensure an accurate hazardous waste determination.

b. Generators That Treat Hazardous Waste On-Site

EPA has consistently interpreted its existing hazardous waste regulations to allow generators to non-thermally treat hazardous waste in their accumulation tanks and containers, without obtaining a permit or having interim status (51 FR 10168, March 24, 1986). This is true for

both LQGs and SQGs. Of course, all generators are allowed to treat only the hazardous waste that is generated on-site. A permit would be required to store and/or treat hazardous waste that is consolidated from off-site locations. Examples of treatment that may be conducted in accumulation tanks and containers without a permit or interim status include precipitating heavy metals from solutions and oxidation/reduction reactions. It should be noted, however, that thermal treatment by generators is not allowed without a permit.

c. Land Disposal Restrictions

The land disposal restrictions (LDRs) of part 268 also apply to generators of hazardous waste, including college and university laboratories. The LDRs require that hazardous waste must be treated by a specified method or to a specified constituent concentration level before it (or its residue) may be placed in or on the land. The generator must know the treatment standard applicable to his/her hazardous waste and either treat (non-thermally and in tanks and containers) to meet the treatment standard or send it to an interim-status or permitted hazardous waste treatment facility to do so.

The hazardous waste becomes subject to the LDR requirements at the point the waste is generated. Therefore, if the hazardous waste is being treated on-site and the treatment residue is destined to be land disposed, the generator still has responsibilities under the LDR program with regard to the treatment residues. In addition, generators who treat hazardous waste on-site to meet a treatment standard must prepare a waste analysis plan if treatment occurs in units that do not require a RCRA permit (see 40 CFR 262.34(a)(4) for LQGs, and 40 CFR 262.34(d)(4) for SQGs). Additionally, there are some generator reporting and recordkeeping requirements associated with the LDRs (40 CFR 268.7(a)). More information about the LDR program may be found in "Land Disposal Restrictions: Summary of Requirements" at <http://www.epa.gov/epaoswer/hazwaste/ldr/new.htm>.

d. Applicability of Today's Proposal to Conditionally Exempt Small Quantity Generators (CESQGs)

Conditionally exempt small quantity generators are generators of hazardous waste that generate less than 100 kg/month of hazardous waste and less than 1 kg of acutely hazardous waste/month. Although, like all generators of hazardous wastes, CESQGs are required to make a hazardous waste

determination at the time the waste is generated, under the existing hazardous waste regulations, CESQGs are not required to comply with many of the requirements that apply to LQGs and SQGs. Because CESQGs are not currently subject to the controls that apply to satellite accumulation areas, many of the provisions set forth in today's proposal would be more stringent than those to which they currently are subject. For this reason, today's proposed alternative regulations would not apply to college and university laboratories that are CESQGs.

Nevertheless, EPA does not wish to preclude CESQGs from taking advantage of any of the benefits which could be gained by this proposed approach and is considering whether it would be appropriate to include CESQGs under this rule. EPA therefore is, requesting comment on whether to include CESQGs in this rule, whether CESQGs would in fact benefit from this alternative program, and whether they would elect to manage their hazardous wastes in accordance with its provisions. EPA also is soliciting comment on what portions of today's proposal would be appropriate for CESQGs if colleges and universities that are CESQGs are interested in complying with Subpart K. Specifically, EPA is requesting comment on whether it would be appropriate to allow colleges and universities that are CESQGs to take advantage of the proposed regulatory incentives for conducting laboratory clean-outs.

### III. Overview of Today's Proposal

A college or university which chooses to manage the unwanted materials generated in its laboratories according to the alternative regulations proposed today, would be required to send a notice to the EPA Regional Administrator or, in a state authorized for this rule, the State Director, informing them of its intent to follow the alternative set of regulations, as finalized. The college or university also would have to develop a Laboratory Management Plan (LMP), which describes the procedures that will be used by the laboratory(ies) at the college or university for implementing the performance-based requirements of these regulations.

Under the provisions of today's alternative set of regulations, all laboratory workers must be trained and students must be instructed commensurate with his/her duties. All persons working in a laboratory must determine whether any material they generate is unwanted and has the potential of being a RCRA hazardous

waste. They must then place the unwanted material in an appropriate container for subsequent removal. The container must be safely managed to prevent leaks, spills, emissions to the air, and adverse chemical reactions while in the laboratory. Containers also must be properly labeled with the appropriate information to make a hazardous waste determination. The date that the initial amount of unwanted material was placed in the container must be associated in some manner with the container, and if the volume of unwanted material exceeds 55 gallons or the volume of one of the seven reactive acutely hazardous unwanted materials (as defined in today's proposal) exceeds one quart, the date on which either volume limit is exceeded must also be associated with the container. Additionally, laboratory workers or students must provide sufficient information to allow a RCRA-trained individual to properly make a RCRA hazardous waste determination at a later time. Like the date, this information must be associated with the waste, but need not physically be attached to the waste container. For example, this information may be entered into a computer tracking system and a bar code placed on the container. In this example, the information is not physically on the container, but is associated with it via the bar code. A college or university must determine a schedule for removal of unwanted materials from its laboratories and specify the schedule in its LMP. The removal of unwanted materials must occur at least once every six months. However, if the volume limits of 55 gallons of unwanted materials or one quart of reactive acutely hazardous unwanted materials are exceeded, all of the unwanted material must be removed within 10 calendar days, or the next regularly scheduled removal time, whichever occurs first.

At the time of a removal, a RCRA-trained individual must either make a RCRA hazardous waste determination in the laboratory, or else remove the material to an on-site central accumulation area or on-site TSDF. If the hazardous waste determination is made in the laboratory, the RCRA hazardous waste can be taken to a regulated unit on-site or transported to an off-site TSDF, and must comply with the existing hazardous waste regulations, including the manifest requirements. If, however, the hazardous waste determination is not made in the laboratory, then the unwanted material must be taken to an on-site central accumulation area or on-

site TSDF. The college or university has four calendar days from the time that the unwanted material arrives at the on-site central accumulation area or TSDF within which to make the RCRA hazardous waste determination. EPA expects that the time that the unwanted material is in transport on-site from the laboratory to the central accumulation area or TSDF would be relatively short. However, to ensure that the unwanted material does not stay in transport for long periods of time, the rule requires that the unwanted material be taken directly from the laboratory(ies) to the on-site central accumulation area or on-site TSDF. Once an unwanted material is determined to be RCRA hazardous waste, it is subject to full RCRA hazardous waste regulation.

### IV. Detailed Discussion of Today's Proposed Rule

EPA is today proposing optional, alternative regulations (40 CFR part 262, subpart K) for the management of unwanted materials generated in college and university laboratories.

This section discusses in detail the major features of and rationale for the proposal. The Agency also presents other options that are being considered in developing the proposed rule. EPA welcomes comments on all aspects of this proposed rule, and on the options under consideration. Throughout this section, EPA requests comments on specific options and on specific issues, but comments are welcome on all provisions of this proposal. EPA's request for comments on specific options and specific issues means that EPA is considering those options and issues in developing the final rule.

#### A. Discussion of Proposed Definitions

All the definitions that appear in today's proposal are for the purposes of part 262, subpart K only. Therefore, the definitions are relevant only to colleges and universities that have laboratories and that take part in today's proposed alternative regulations.

*Central Accumulation Area*—Today's proposal defines "central accumulation area" as:

an on-site hazardous waste accumulation area subject to either § 262.34(a) of this Part (large quantity generators) or § 262.34(d) of this Part (small quantity generators). A central accumulation area at a college or university that chooses to be subject to this Subpart also must comply with § 262.211 when accumulating unwanted materials.

Under existing regulations, large quantity generators may accumulate hazardous waste on-site without a permit for up to 90 days provided they comply with § 262.34(a) and small

quantity generators may do the same for up to 180 days, provided they comply with § 262.34(d).<sup>4</sup> EPA is proposing to codify the term “central accumulation area” solely for the purposes of this rule to distinguish these types of accumulation areas from satellite accumulation areas or laboratories. Today’s proposal does not change the existing regulations in §§ 262.34(a) and 262.34(d); it merely codifies a term for the sake of convenience and clarity, within today’s rule. Colleges and universities that choose to operate under the provisions of today’s alternative regulations must comply with 262.34(a) or (d) at the central accumulation area, if and when, unwanted materials are brought from laboratories to a central accumulation area, as well as proposed § 262.211.

*College or University*—Today’s proposal defines “college or university” as:

a private or public, post-secondary, degree-granting, academic institution, that is accredited by an accrediting agency listed annually by the U.S. Department of Education.

Regardless of whether an institution has the word “college” or “university” in its title, for a generator to be eligible to operate under the provisions of Subpart K, the generator must meet the criteria in the definition. Aside from the obvious academic institutions, some of the institutions that EPA intends to include under this definition are post-secondary military academies, two-year community colleges, and post-secondary vocational or technical schools that admit high school graduates or GED recipients. Therefore, EPA does not intend for vocational or technical high schools, which are not post-secondary, to be eligible to participate in this proposed Subpart.

Similarly, the Agency does not intend for laboratories at hospitals that are affiliated with a college or university to be included in the definition of college or university. The Agency believes that although hospitals affiliated with colleges or universities have laboratories, the waste generation pattern at these hospital laboratories differs substantially from the research or teaching laboratories at a college or university, such as chemistry laboratories. The number of different wastestreams from research or teaching laboratories at a college or university is

expected to be higher and the variability of the wastes greater than from hospital laboratories. Furthermore, the turnover of hospital personnel is expected to be lower than at other types of laboratories within a college and university.

Given the importance of this definition to today’s proposal, the Agency requests comment on a number of areas. First, the Agency would like to know if the proposed definition of “college” or “university” captures and excludes the types of institutions that are discussed above. Second, is it appropriate to include and/or exclude those institutions described above in the definition of college and university? Third, what types of institutions grant certificates, rather than degrees and is it appropriate to extend participation in these new alternative regulations to those institutions? Fourth, the Agency is seeking comment on whether it is appropriate to include in the definition of college and university the requirement that the institution be accredited and if so, whether it is appropriate to limit accredited schools to those whose accreditation was granted by agencies approved by the U.S. Department of Education. The Department of Education publishes its list of approved agencies annually in the **Federal Register**. It is EPA’s understanding that the purpose of the Department of Education’s list of accreditation agencies is to determine eligibility for participation in federal financial aid programs. That is, a college or university that is accredited by an agency that is identified by the Department of Education is allowed to participate in federal financial aid programs. For those commenters that believe it is important for a college or university to be accredited to be able to participate in this new Subpart, EPA requests comment on whether there are alternative approaches for defining what institutions may bestow accreditation.

*Laboratory*—Today’s proposal defines “laboratory” as:

an area within a college or university where relatively small quantities of chemicals and other substances are used on a non-production basis for teaching or research purposes and are stored and used in containers that are easily manipulated by one person. An area where the same hazardous wastes are routinely generated, such as photo processing, is not a laboratory.

Today’s proposed definition of laboratory has its basis in the OSHA Laboratory Standard (29 CFR 1910.1450) and in EPA’s University Laboratory XL rule (40 CFR part 262, subpart J). EPA has combined elements of the definitions of laboratory and laboratory-scale into a single definition. EPA is

including phrases that both OSHA and the University Laboratory rule use such as “non-production basis” and “containers that are easily manipulated by one person” to make it clear that the rule is not intended for non-academic, commercial operations that may occur in areas sometimes referred to as laboratories. Commercial-scale laboratory operations tend to differ in their waste generation patterns, by using only a few chemicals, but in large quantities. Therefore, laboratories that use or produce commercial quantities of chemicals are not considered laboratories for purposes of this subpart. EPA intends to include laboratories where teaching or research occur, that are associated with a college or university, and where chemicals are used in small quantities. Of course, small quantities of many wastes can add up to large quantities overall, and it is not EPA’s intent to exclude laboratories at colleges and universities that are large quantity generators from participating in this proposed set of regulations. The intent is for subpart K to apply to those laboratories where each individual chemical is used in relatively small quantities.

Those areas that are typically referred to or considered as laboratories include chemistry and biology laboratories, for example. However, other areas within a college or university will also be considered laboratories. Generally, areas where large numbers of different wastestreams are generated in small volumes will be considered laboratories. For example, art studios will be considered laboratories under this proposal, despite the fact that they are rarely referred to as laboratories, because they have similar waste generation patterns to chemistry laboratories. On the other hand, it is possible that some areas that are typically referred to as laboratories will not be considered laboratories under subpart K. For example, photography laboratories, which generate a few predictable wastestreams, would not be considered laboratories under today’s proposal. Likewise, computer laboratories would not be considered laboratories under today’s proposal.

Similarly, automotive maintenance facilities, whether they are teaching facilities, or for the maintenance of college or university motor pools, will not be considered laboratories. This is because auto shops tend to generate a few predictable waste streams in large volumes.

Under the existing regulations, laboratories usually initially accumulate the hazardous waste they generate in satellite accumulation areas. EPA is

<sup>4</sup> Small quantity generators that must send their hazardous waste more than 200 miles for off-site treatment, storage, or disposal are allowed to accumulate hazardous waste on-site without a permit for 270 days or less, provided the conditions of § 262.34(d) are met (see § 262.34(e)).

proposing that laboratories operating under these proposed alternative regulations will no longer be subject to the satellite accumulation area provisions. Instead, laboratories at colleges and universities electing to participate in this new set of regulations will be subject to regulations in new subpart K in part 262, which have been developed specifically for the way these laboratories operate.

EPA is requesting comment on the proposed definition of laboratory and whether it is appropriate to include and/or exclude the types of laboratories discussed and whether there are additional types of laboratories that the Agency needs to consider. For example, the Agency seeks comment on whether field laboratories that are associated with colleges and universities should be included in the definition of laboratory and be eligible for the alternative regulations. Specifically, EPA is interested in whether the waste generation patterns of field laboratories that are associated with a college or university are similar to those of laboratories located at a college or university, and whether the alternative regulations proposed today would be suitable for their operations. The Agency expects that many field laboratories would be conditionally exempt small quantity generators, but seeks comment on whether this is the case and whether field laboratories associated with colleges and universities would fit the criteria of today's proposed alternative regulations.

In addition, EPA is seeking comment on whether to expand the scope of this alternative set of regulations to include other laboratories outside of colleges and universities that have similar hazardous waste generation patterns. For example, this could include government and private laboratories that generate large numbers of different waste streams, each in relatively small quantities that are stored and used in containers that can be easily manipulated by one person. Such an expansion in scope would not include production scale manufacturing laboratories, as they do not have the similar production patterns and unique circumstances that this rulemaking is intended to address. EPA is particularly interested in comments that provide data showing similarities or differences between college and university laboratories and laboratories at other institutions, with regard to hazardous waste generation patterns and challenges. Additionally, EPA seeks comments on whether such an expansion of scope might lead to

unintended, adverse consequences for human health or the environment.

If the Agency were to conclude that certain other laboratories should be included within the scope of this rulemaking, it would alter the definition to reflect those laboratories covered by the final rule to ensure that the specific types of non-academic laboratories that EPA has determined meet the same criteria are provided the same options that academic laboratories are provided. EPA envisions that the revised definition of laboratory might be "an area where relatively small quantities and a wide variety of chemicals and other substances are used on a non-production basis for teaching or research purposes and are stored and used in containers that are easily manipulated by one person. An area where the same hazardous wastes are routinely generated, such as photo processing, is not a laboratory." (See discussion under section IV.B.1.)

*Laboratory Clean-out*—Today's proposal defines "laboratory clean-out" as:

An evaluation of the inventory of chemicals and other materials in a laboratory that are no longer needed or have expired and the subsequent removal of those chemicals or other unwanted materials from the laboratory. A clean-out may occur for several reasons. It may be on a routine basis (e.g., at the end of a semester or academic year) or as a result of a renovation, relocation, or a change in laboratory supervisor/occupant. A regularly scheduled pick-up of unwanted materials as required by § 262.208 does not qualify as a laboratory clean-out.

EPA is proposing a definition for "laboratory clean-out" to distinguish it from regularly scheduled pick-ups of unwanted materials. Under the proposal, laboratory clean-outs are more comprehensive than the regularly scheduled pick-ups of unwanted materials. Although EPA does not intend to limit regularly scheduled pick-ups to used chemicals, EPA expects that regularly scheduled pick-ups will mainly consist of unwanted materials that are routinely generated in the course of laboratory operations and experiments, many of which will be used chemicals. A laboratory clean-out, on the other hand, includes an assessment of the inventory of unused chemicals and other materials in a laboratory that may have expired or are no longer needed and the subsequent removal of those chemicals or other materials. It is a process of sorting and evaluating to determine what should be eliminated from the laboratory's inventory. But just as EPA does not intend to limit regularly scheduled pick-ups to the removal of used chemicals,

EPA does not intend to limit laboratory clean-outs to the removal of unused chemicals and may include other unwanted materials as well.

During a laboratory clean-out, some of the chemicals that are evaluated may turn out not to be unwanted materials. That is, the chemicals may end up back on the laboratory shelf for further use. Those chemicals that are unwanted materials may include chemicals that are subsequently redistributed to other laboratories. However, the bulk of unwanted materials generated during laboratory clean-outs is expected to be disposed of as solid or hazardous waste.

*Laboratory Worker*—Today's proposal defines "laboratory worker" as:

a person who handles chemicals and/or unwanted materials in a laboratory and may include, but is not limited to, faculty, staff, post-doctoral fellows, graduate students, interns, researchers, technicians, supervisors/managers, and principal investigators. A person does not need to be paid or otherwise compensated for his/her work in the laboratory to be considered a laboratory worker. Students in a supervised classroom setting are not laboratory workers.

The reason for defining laboratory worker is to identify who in a laboratory must receive training under this subpart. The definition is intended to include any person who performs duties in a laboratory, regardless of whether that person is paid or is an employee of the college or university. EPA is proposing that students, whether undergraduate or graduate, will not be considered laboratory workers if their activities in the laboratory are limited to experimentation or other classwork. The Agency proposes to exclude students from the definition of laboratory worker for two reasons. First, EPA expects that students in a classroom setting will be under the direct supervision of an instructor or professor who would be considered a laboratory worker and would thus receive training under these new regulations. Second, given the large number and high turnover of students, EPA recognizes the impracticability of requiring training for students. However, EPA proposes that students in a classroom setting receive some form of instruction regarding the proper procedures for handling unwanted materials generated in the laboratory.

Under the proposed definition, a student may be considered a laboratory worker if that student conducts research activities outside of those required for a specific class. For example, undergraduate students that conduct research for extra credit, for honors projects or to earn money, would be considered laboratory workers. Similarly, EPA expects that most

graduate students would be considered laboratory workers, because their research is outside the classroom setting and may be unsupervised. It is not uncommon for colleges and universities to have guest researchers, or summer interns that are not employees of the college or university, that conduct research at the college or university. Therefore, the Agency proposes that it is not necessary for a person to be an employee of the college or university in order to be considered a laboratory worker.

EPA is requesting comment on the definition of laboratory worker. Specifically, EPA requests comments on whether there are additional types of work arrangements that EPA has not anticipated in this discussion and that may require clarification.

**RCRA-Trained Individual**—Today's proposal defines "RCRA-trained individual" as:

a person who has completed the applicable RCRA training requirements of § 265.16 for large quantity generators, or § 262.34(d)(5)(iii) for small quantity generators. A RCRA-trained individual may be an employee of the college/university or may be a contractor or vendor.

The primary reason for today's proposal is to allow a RCRA-trained individual to make the hazardous waste determination instead of the laboratory worker or student that generates the unwanted material. Today's proposal will allow laboratory workers and students to concentrate on proper materials management without having to be trained in the RCRA generator requirements. It will also allow a college or university to concentrate its resources on providing RCRA training to those individuals who will be responsible for using the information provided by the laboratory workers regarding the unwanted materials and translating that information into solid and hazardous waste determinations, as well as identifying any appropriate RCRA waste codes.

In some cases, a RCRA-trained individual will be an employee or student of the college or university. In other cases, the RCRA-trained individual that makes the hazardous waste determinations for a college or university may be an off-site vendor or contractor. If the RCRA-trained individual is an employee of the college or university, the RCRA-trained individual must have RCRA training appropriate to the generator status for the facility. That is, RCRA-trained individuals at colleges and universities that are small quantity generators must have training that complies with § 262.34(d)(5)(iii), while RCRA-trained

individuals at colleges and universities that are large quantity generators must have training in compliance with § 265.16. RCRA-trained individuals that are not employees of the college or university must have training that complies with the large quantity generator regulations.

The Agency is requesting comment on the extent to which colleges and universities currently rely on individuals that are not employees of the college or university to make the hazardous waste determination on their behalf. EPA seeks comment on allowing such individuals to make the hazardous waste determination on their behalf. EPA notes that a college or university that allows a non-employee to make the hazardous waste determination on its behalf could still be held liable in the event that a non-employee makes mistaken determinations that lead to mismanagement of hazardous waste.

**Reactive Acutely Hazardous Unwanted Material**—Today's proposal defines "reactive acutely hazardous unwanted material" as:

an unwanted material that is one of the acutely hazardous commercial chemical products listed in § 261.33(e) for reactivity and toxicity.

A reactive acutely hazardous unwanted material is an unwanted material that also is a commercial chemical product listed in § 261.33(e) (known as the "P-list") for reactivity and toxicity. Reactive acutely hazardous unwanted materials are a subset of unwanted materials and they currently include the following seven commercial chemical products:

- (1) P006 (CAS Number: 20859-73-8) Aluminum phosphide;
- (2) P009 (CAS Number: 131-74-8) Ammonium picrate; Phenol, 2,4,6-trinitro-, ammonium salt;
- (3) P042 (CAS Number: 51-43-4) 1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-;
- (4) P065 (CAS Number: 628-86-4) Fulminic Acid, mercury(2+) salt; Mercury fulminate;
- (5) P081 (CAS Number: 55-63-0) Nitroglycerine; 1,2,3-Propanetriol, trinitrate;
- (6) P112 (CAS Number: 509-14-8) Methane, tetranitro-; Tetranitromethane; and
- (7) P122 (CAS Number: 1314-84-7) Zinc phosphide  $Zn_3P_2$  when present at concentrations greater than 10%.

The language in the regulations at § 261.33(d) states: "the phrase 'commercial chemical product' \* \* \* refers to a chemical substance which is manufactured or formulated for commercial or manufacturing use which

consists of the commercially pure grade of the chemical, any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole active ingredient." Only unused chemicals are considered commercial chemical products that could carry a "P-listed" waste code. Once a reactive chemical that is on the P-list has been used, it is not considered a commercial chemical product. Therefore, it cannot be a reactive acutely hazardous unwanted material, nor an acute hazardous waste. It may, however, still be a hazardous waste because it meets the criteria of another listing, or one of the four characteristics.

**Unwanted Material**—Today's proposal defines "unwanted material" as:

any chemical, mixtures of chemicals, products of experiments, or other materials from a laboratory that are no longer needed, wanted or usable in the laboratory and which are destined for hazardous waste determination by a RCRA-trained individual. Unwanted materials include reactive acutely hazardous unwanted materials. Unwanted materials include materials that may eventually be determined not to be solid waste pursuant to § 261.2 or a hazardous waste pursuant to § 261.3.

As discussed above, one of the main purposes of today's proposal is to provide a college or university the discretion to make the hazardous waste determination for unwanted materials generated in the laboratory at a location other than the laboratory and at a time after its initial generation. Therefore, the Agency is proposing that chemicals or other materials that are no longer needed, wanted or usable in the laboratory be referred to as unwanted materials. The Agency prefers this term over the term laboratory waste, which was used in the University Laboratories XL rule, published as a final rule in the **Federal Register** (64 FR 460696, July 27, 1999), because some fraction of the unwanted materials may turn out not to be solid or hazardous waste. Stakeholders have frequently told EPA that putting a "waste" label on a container stigmatizes the material so that it is difficult to redistribute. Likewise, EPA has been told that generators are concerned about the legality of removing a hazardous waste label from a container, even if the label is in error. For example, sometimes chemicals are mistakenly identified as hazardous waste or a hazardous waste label is put on a container of unused material that is no longer wanted in one laboratory, but is otherwise eligible for redistribution to another laboratory for further legitimate use at the college or

university. EPA proposes to resolve these concerns by using the term unwanted materials. EPA believes this will remove any regulatory barriers that may exist to the redistribution of unused chemicals and promote the legitimate reuse of laboratory chemicals. Increased chemical redistribution and reuse will decrease costs associated with purchasing new chemicals, reduce the volume of hazardous waste generation, and avoid waste disposal costs.

EPA is proposing that the term unwanted materials include all chemicals or other materials in a laboratory that are no longer needed, wanted or usable in the laboratory. To this extent, the laboratory worker or student has made the decision that the material serves no useful purpose in the laboratory where it originated. Unwanted materials may be used or unused, new or expired, pure or mixtures, products of an experiment, or newly synthesized in the laboratory. Any chemical or other material that has the potential to be a solid and hazardous waste will be considered to be an unwanted material at the time that it is determined by a laboratory worker or RCRA-trained individual that it is no longer needed, wanted or usable in the laboratory. Many unwanted materials will later be determined to be solid and hazardous wastes. EPA emphasizes that the point of generation of those solid and hazardous wastes is in the laboratory, even though the formal RCRA hazardous waste code determination may be made at a later date, and outside the laboratory where it was generated.

The definition of unwanted materials includes reactive acutely hazardous unwanted materials, as defined above. In other words, reactive acutely hazardous unwanted materials are a subset of unwanted materials.

EPA requests comments on the definition of unwanted material and whether the definition appropriately captures the items EPA has indicated it intends to include or whether certain materials should be excluded from the definition. EPA asks that commenters provide specific examples of materials that may require additional clarification.

### *B. Scope of Laboratories at Colleges or Universities Covered Under This Proposed Rule*

#### 1. Laboratories in Colleges and Universities

Today's proposed alternative regulations would apply only to laboratories at colleges and universities that generate unwanted and that choose

to be subject to these proposed regulations instead of the existing regulations governing the generation of hazardous waste. Other parts of the college or university, and laboratories located outside of colleges and universities, that generate hazardous wastes would not be eligible for today's proposed rule, but rather are and will continue to be subject to the existing hazardous waste regulations.

As stated above, EPA has a long history of working with colleges and universities on the management of hazardous waste generated in laboratories. EPA has worked with colleges and universities since the early 1980s to more fully understand the difficulties they face in complying with the existing RCRA hazardous waste regulations. Projects such as the Howard Hughes Medical Institute pilot program and the EPA's University Laboratories Project XL Pilot Project, which provides flexibility to colleges and universities, have focused on how hazardous wastes are generated and accumulated in laboratories. EPA has met with stakeholders, held a public meeting, gone on site visits, and attended meetings and conferences with associations representing various colleges and universities and laboratories. Through these various activities, EPA has developed a good understanding of the operational practices in laboratories at colleges and universities and the challenges they face in complying with the RCRA hazardous waste requirements. Therefore, EPA has decided to develop separate, alternative hazardous waste regulations, primarily as it relates to where the hazardous waste determination for laboratories at colleges and universities can be made.

Nevertheless, EPA is taking comment on whether to expand the scope of this alternative set of regulations to include other laboratories with similar hazardous waste generation patterns. Specifically, this could include government and private laboratories that generate large numbers of different waste streams, each in relatively small quantities, that are stored and used in containers that can be easily manipulated by one person. EPA also requests comment on whether laboratories in hospitals owned by or affiliated with colleges or universities should be included in the scope of this alternative set of regulations, regardless of any other expansion in scope.

As stated above, college and university representatives have commented that laboratories located in colleges and universities have specific hazardous waste generation patterns. However, in comments submitted in

response to EPA's public meeting in 2003, several commenters indicated that laboratories in government and industry share similar processes, use of chemicals, and hazardous waste generation patterns. Specifically, like laboratories at colleges and universities, many industry, utility, and government laboratories generate relatively small amounts of a large variety of hazardous wastes.

Therefore, EPA seeks comment on whether the proposed alternative regulations should be limited solely to college and university laboratories or whether other institutions with laboratories having similar hazardous waste generation patterns as those in colleges and universities should also be given the option of complying with this alternative set of regulations. EPA is interested in comments with data that show similarities or differences between college and university laboratories and laboratories at other institutions, with regard to hazardous waste generation patterns and challenges.

If the Agency were to conclude that non-academic laboratories should be included within the scope of this rulemaking, it would alter the definition to reflect those laboratories covered by the final rule to ensure that the specific types of non-academic laboratories which EPA has determined meet the same criteria are provided the same options that academic laboratories are provided.

#### 2. Alternative Regulations

Today's proposal would allow colleges and universities the flexibility to manage unwanted materials generated in their laboratories in a more efficient manner, based on their specific circumstances, while still meeting the goals of the RCRA hazardous waste program: management of hazardous waste that is protective of human health and the environment. EPA believes that a regulatory option that is more tailored to the college and university laboratory setting will allow them to achieve better environmental performance. EPA also believes that today's proposed alternative set of regulations are as protective as the existing hazardous waste regulations. Therefore, EPA believes that allowing college and university laboratories to manage their hazardous waste under today's proposal will best meet the goals of the RCRA statute.

At the same time, it should be noted that laboratories in colleges and universities can operate quite differently from one another. For instance, there is tremendous variety among colleges and universities with regard to the number

of laboratories on campus, the dispersal of those laboratories over a large area and in a number of separate buildings, and the management and organizational structure of the institution. This high degree of variability among colleges and universities argues against a "one-size-fits-all" approach. In fact, certain colleges and universities may have developed internal procedures for identifying, handling, and storing hazardous waste such as computer tracking systems or contracts with waste haulers which allow them to more easily comply with the current requirements at their individual laboratories. For these college and university laboratories, the difficulty in transitioning to an alternative set of regulations for unwanted materials management may be greater than the benefit derived.

Additionally, because today's proposed alternative regulations apply only to colleges or universities that generate hazardous wastes in laboratories, and not to colleges or universities that generate hazardous wastes elsewhere on-site, a college or university choosing to be regulated under today's proposal could be subject to two different sets of requirements for waste management: 40 CFR part 262, subpart K for unwanted materials it generates in its laboratories, and all other applicable requirements in 40 CFR part 262 for hazardous wastes it generates elsewhere at the college or university. Therefore, some colleges or universities may find it easier to simply manage all of their hazardous wastes according to one set of regulations, and therefore remain subject to existing regulations, and therefore remain subject to 40 CFR part 262.

For these reasons, EPA believes that providing the option for colleges and universities to comply with either the existing hazardous waste regulations or the proposed alternative regulations better serves the intentions and goals of both the Agency and the college and university community.

Although today's proposed alternative set of regulations does give colleges and universities the option to select between the existing hazardous waste regulations or the proposed alternative regulations, EPA does not intend for colleges and universities to make this decision on a laboratory-by-laboratory basis. All laboratories in the college or university (covered under a single EPA ID number) must operate under the same set of regulations.

Finally, it should be noted that because EPA authorizes qualified states to administer their own hazardous waste programs in lieu of the federal

program within the state, colleges and universities located in authorized states wishing to have their laboratories be subject to subpart K do not have this option until and unless their state has adopted the finalized rule.

### 3. Notification

Because EPA's proposal provides the option for colleges and universities to choose to manage their hazardous wastes from laboratories under the existing regulations or alternatively their laboratories' unwanted materials under today's proposed provisions, it is important that EPA, or the authorized state, know to which set of regulations a college or university's laboratories are subject.

Today's proposal, therefore, requires that a college or university choosing the proposed alternative regulations for unwanted materials over the existing regulations for regulation of hazardous wastes generated in its laboratories must notify the appropriate EPA Regional Administrator or, when appropriate, State Director in authorized states that have adopted the final rule. A single notice may apply to multiple ID numbers, however, all laboratories within one EPA ID number must comply with the same set of regulations (in other words, the alternative approach can not be applied to only one or a few laboratories within that ID number, but must apply to all or none). The reason for this is that EPA believes it would be difficult for a college or university to adequately keep track of which set of regulations apply to which laboratory or group of laboratories. Furthermore, it would be extremely difficult for states or regions to keep track of the applicable set of regulations if, within a single EPA ID number, different laboratories are complying with different requirements. No mechanism currently exists at EPA or the states to track such distinctions. The notice must be submitted to the appropriate EPA Regional Administrator or State Director in authorized states that have adopted the final rule. At all times, a college or university's laboratories must comply with either the existing regulations or the alternative regulations. If a college or university decides that its laboratories will remain subject to the existing regulations, no notification is necessary.

It is also possible that once a college or university has chosen to manage its unwanted materials under the alternative regulations, it may decide that this approach is not meeting the needs of the college or university, and that it would prefer to return to regulation under existing applicable

generator regulations. Under today's proposal, a college or university that chooses to no longer manage its unwanted materials under the proposed alternative regulations would be required to submit another notice to the EPA Regional Administrator (or State Director in authorized states). The notice must indicate the date upon which the college or university's laboratories will no longer be subject to subpart K and would be subject to the existing applicable generator regulations.

The intent of today's proposed notification requirement is to provide basic information to regulatory agencies concerning which set of regulations the college or university has chosen to govern the management of the hazardous wastes or unwanted materials generated in its laboratories. The Agency is not proposing any specific format for these notices, but that the notification must include the name and address of the college or university, the EPA ID number(s), the name and phone number of a contact person at the college or university, and the date that the college or university will comply with or withdraw from the alternative regulations.

EPA requests comment on whether the information required in the notification to the EPA Regional Administrator (or State Director, in authorized states) is sufficient to unambiguously identify and monitor which colleges and universities are managing their hazardous waste or unwanted materials under which set of regulations. EPA would also like input into whether the Subtitle C Site Identification Form [EPA Form 8700-12] or the comparable state form should be used to provide this notice, and whether the forms should therefore be modified to include a checkbox to indicate which set of regulations the college or university is choosing to manage the unwanted materials generated in its laboratories. Additionally, EPA seeks comment on whether the Regional Administrator (or State Director, in authorized states) should provide the college or university with a written receipt of the one-time notice.

### C. Specific Requirements Under the Alternative Regulations

Today's proposed alternative regulations would allow laboratories in colleges and universities to send unwanted material that is generated in the laboratory to an on-site central accumulation area or an on-site TSDF before making the hazardous waste determination for the unwanted

material, or to make the hazardous waste determination in the laboratory prior to removal. However, the college or university laboratory must meet certain requirements as described below.

#### 1. Making the Hazardous Waste Determination

Currently, under the existing hazardous waste regulations in 40 CFR 262.11, any individual generating a solid waste is required to determine if that solid waste is hazardous, that is, determining whether a waste is "listed" and/or "characteristic" (as described in section II.D.2 of this preamble). Under 40 CFR 262.34(c), generators are allowed to accumulate up to 55 gallons of hazardous waste (or one quart of acutely hazardous waste) in containers at or near the point where the waste was generated without a permit or interim status and without complying with certain other hazardous waste generator requirements. This point is generally known as a "satellite accumulation area," (SAA). The SAA must be "under the control of the operator" generating the hazardous waste [40 CFR 262.34(c)(1)]. Although the generator requirements for hazardous wastes managed in the satellite accumulation area are a more streamlined set of requirements, the requirement to determine if the solid waste is hazardous still applies. Because most hazardous waste generated in a college or university laboratory is generated in small quantities (rarely do college or university laboratories accumulate up to the 55 gallon limit before removing their waste), laboratories generally manage their hazardous wastes according to the requirements of the "satellite accumulation area."

Typically, college and university laboratories do not have one central location where hazardous wastes are generated, but may have many independent and widely dispersed points where hazardous waste is generated, including many different points of generation within a single laboratory. Hazardous wastes generated in colleges and university laboratories are characterized by a wide variability in wastestreams, generally small quantities of each individual wastestream, and a large number of individuals involved in hazardous waste generation and management, many of whom are students, an inherently transient population. Due to this dynamic, under the current regulations, a large number of potentially constantly changing individuals must be able to make proper hazardous waste determinations (per 40

CFR 262.11) for large numbers of ever changing wastes. Colleges and universities have explained to EPA that it is a challenge to provide sufficient RCRA training to all these individuals. However, the potentially large number of laboratories at colleges and universities where such hazardous waste is generated makes the hazardous waste determination extremely difficult for the limited EH&S staff employed at these institutions. Scheduling an individual trained in RCRA regulations to be present at every laboratory location where hazardous waste generation occurs is impractical and difficult to achieve. Therefore, EPA is proposing today that colleges and universities be provided the flexibility to make the hazardous waste determination in the laboratory before it is removed from the laboratory or within four days of arriving at an on-site CAA or TSDF, provided certain provisions are met. Specifically these provisions are: (1) Any unwanted material that is generated is labeled in the laboratory, (2) the RCRA hazardous waste determination is made by a RCRA-trained individual before the unwanted material is removed from the laboratory or within four calendar days of arriving at an on-site CAA or TSDF, and (3) that while the unwanted material is in the laboratory certain other standards are met, as described in other sections of this preamble.

With the flexibility to make the hazardous waste determination in the laboratory, in an on-site central accumulation area or on-site TSDF, the individual in the laboratory generating the waste does not need to be familiar with the RCRA hazardous waste determination procedures. However, it is important to note that while the actual hazardous waste determination does not need to be made at the time that unwanted materials are generated in the laboratory, any unwanted material identified later as hazardous waste will be considered to have been generated in the laboratory, and the unwanted material must be properly managed from the moment of its generation and comply with the requirements of today's proposal. To ensure that any RCRA hazardous wastes that may be generated in the laboratory are properly managed, today's proposal would require that all unwanted materials generated in the laboratory be managed in accordance with the provisions set forth in today's proposal (even if ultimately they are determined not to be RCRA solid or hazardous waste). This provision is designed to ensure that persons properly and

thoroughly trained in the RCRA hazardous waste regulations be able to make hazardous waste determinations for all unwanted materials generated at the laboratory, rather than relying on a great many individual researchers or students attempting to do this. EPA believes that this will reduce the chances of either an improper hazardous waste determination or no hazardous waste determination at all for the unwanted material, and thus the possibility of hazardous wastes being improperly managed. It also will allow EH&S personnel at the college or university to determine, campus-wide, whether any of the chemicals or other materials generated in one laboratory may continue to be used in another laboratory and thus, reduce the amount of waste, whether hazardous or not, that is generated in the first place.

EPA's authority to impose requirements in today's proposal on college and university laboratories that generate unwanted materials, including unwanted materials that are ultimately determined not to be RCRA hazardous waste, is based on RCRA section 3002. This provision allows EPA to promulgate regulations for generators of hazardous waste. Historically, college and university laboratories have been generators of hazardous waste. College or university laboratories that decide to comply with subpart K of part 262 know that hazardous wastes typically constitute most of the unwanted materials generated in these laboratories. In this rulemaking, EPA is using its authority in Section 3002 to cover unwanted materials that may, in fact, be hazardous waste even though the formal determination is not required until such time that the unwanted material is removed from the laboratory, or until such time the unwanted material reaches the on-site central accumulation area or on-site TSDF. By making the determination of hazardous waste at a time subsequent to the initial generation of the unwanted materials, the laboratory assumes the responsibility for managing all of the unwanted materials in accordance with the provisions of today's proposal until such time as each wastestream is determined to be a hazardous waste, a non-hazardous solid waste or another material not regulated pursuant to RCRA.

#### 2. Container Standards

The Agency is proposing performance-based requirements for the management of containers of unwanted material while they are being accumulated in the laboratory. Today's proposal would require that containers

be properly managed for safe storage, to prevent spills, and to avoid dangerous situations in which adverse chemical reactions occur. Additionally, the Agency is proposing to require the following regulations for proper container management: management to prevent spills, leaks, or adverse environmental releases, including minimizing loss of unwanted materials via emissions into the air; practices to ensure containers are kept in good condition and damaged containers are replaced; and management to ensure that unwanted materials are compatible with their containers to avoid reactions between the contents and its container. The proposed rule would not specify the manner in which college or university laboratories would achieve these standards, thus providing flexibility for each laboratory to determine the most suitable approach, although in all cases, the unwanted materials would have to be properly controlled within the container.

Under the existing satellite accumulation area regulations, the container management standards are more specific, requiring that containers be in good condition with no structural defects or leaks, that the waste be compatible with the containers, and that containers holding hazardous waste always be closed during storage, except when adding or removing waste.

The proposed container management requirements provide laboratories with more flexibility than the current specific regulatory requirements, since each college or university laboratory is able to determine the most appropriate way to meet the standards in the rule. For example, the flexibility in the proposed rule allows laboratories to decide how to safely manage their in-line wastes, as opposed to the current regulations, which require that containers be closed at all times, except when adding or removing wastes. EPA believes that by allowing this flexibility, laboratories will be able to establish methods which are most appropriate for their institutions, thereby obtaining better environmental results.

One alternative the Agency is considering including in the regulation is the concept of a "working container." A working container would be defined as a small container (of one gallon or less), managed under the control of a laboratory worker and used at a bench or work station, whose contents are emptied into a container of unwanted material at the end of the procedure. Under this alternative, a more specific provision would be added to the proposed performance-based container management standards, requiring that

any container of unwanted materials that does not fit the definition of a working container be closed at all times, except when it is necessary to add or remove unwanted materials. This alternative option would provide flexibility for laboratory workers to leave working containers open during ongoing experiments, but would ensure that all other containers remain safely closed when not in use.

A second alternative option the Agency is considering is to explicitly include specific container management requirements in the regulation. This option would be similar to the current container management standards for laboratories, requiring that containers be in good condition, that the waste be compatible with other materials and the containers, and that containers holding hazardous waste always be closed during storage. As opposed to the more performance-based proposal, this option would contain regulatory language requiring that an institution "must at all times" keep containers: closed except when adding or removing materials and, in cases for in-line collection, provide assurance of no spillage from overflow; maintained to prevent leaks or spills and, if the container becomes impaired, immediately transfer materials to a container in good condition; and compatible with materials to prevent adverse reactions or container impairment and stored a safe distance from other incompatible containers. In addition, this option could impose minimum requirements for what constitutes a "safe distance from" and what constitutes a "container in good condition." This option also could include specific requirements for assuring that no spills from overflow occur for in-line collections by mechanisms such as secondary containment, equipment monitoring or shut down of equipment in certain instances. The Agency has proposed performance-based standards for container management as opposed to more specific requirements because the Agency believes such flexibility is appropriate and will lead to greater environmental protection, considering the specific circumstances at laboratories. As a result, laboratory personnel will be able to apply their institutional knowledge and experience to determining the most effective and safest container management standards for each laboratory.

The Agency requests comments on the proposed performance-based standards for container management. Specifically, EPA is seeking comment on whether the proposed standards provide for protection of human health

and the environment, while providing flexibility to the laboratories. EPA also seeks comment on the ease of determining compliance with the performance-based standards. EPA requests comments on the concept requiring that all containers be closed at all times, except "working containers." EPA specifically requests comment on the definition of "working container" and its applicability in college and university laboratories. Additionally, EPA is seeking comment on whether the alternative option of specific container management requirements should be in the regulations, and, if so, what these regulations should contain.

### 3. Labeling Standards

The labeling requirements in today's proposal include two sets of performance-based requirements. First, in order to demonstrate compliance with the proposed rule, to alert individuals handling the materials, and to ensure proper handling, a label must be affixed to or physically accompanying the container of unwanted material. This cautionary compliance label must include sufficient information to alert emergency response personnel and transporters to the material's hazards and/or identity. For example, this might include the possible hazardous properties of the unwanted material or its constituents. Once the RCRA-trained individual makes the hazardous waste determination, whether it is in the laboratory or an on-site CAA or TSDF, the hazardous waste code(s) must be added to the cautionary compliance label that is affixed to or physically accompanying the container. Requiring that the hazardous waste code(s) be placed onto the cautionary compliance label will ensure that inspectors can confirm that the hazardous waste determination has been made and that there is no confusion as to the contents of the container so that employees of the college or university or contractors consolidating the waste can easily verify that incompatible wastes are not lab-packed together.

The second proposed standard requires that the RCRA-trained individual who makes the hazardous waste determination receives sufficient information regarding the unwanted material so that the hazardous waste determination can be properly made. This information may be affixed to, but at a minimum, must in some way be associated with each container in order to allow this individual to properly identify whether an unwanted material is a hazardous waste and to assign a proper hazardous waste code(s).

Examples of the types of information that may be associated with the container are: a description of the chemical composition of the material; whether the unwanted material has been used or is unused; a description of the manner in which the unwanted material was used (*i.e.*, used as a solvent); and a description of the possible hazardous properties of the unwanted material (*i.e.*, toxic, reactive, corrosive or ignitable). This information may be physically affixed or attached to the container of unwanted material, but need not be. The information must be received by the RCRA-trained individual making the hazardous waste determination so that this individual is able to correlate the information received with the container of unwanted material to which it refers.

Additionally, the date the unwanted materials began accumulating in the laboratory must be associated with (but need not be affixed to) the container in order to track the interval when materials must be removed as specified in a college or university's LMP, which must not exceed six months. If the volume of unwanted materials in a laboratory exceeds 55 gallons (or 1 quart of acutely hazardous reactive waste), an additional date must be recorded in order to determine whether the 10 calendar days for removing the unwanted materials from the laboratory has elapsed. These dates—the date that the unwanted material began accumulating in the container in the laboratory and the date that the container exceeds 55 gallons of unwanted materials (or one quart of acutely hazardous reactive wastes)—may be on the label affixed to the container, or otherwise added to the label associated with the container.

A laboratory might meet the second proposed labeling standard by devising a system that, for example, numbers the containers of unwanted material and creates a spreadsheet containing sufficient information to identify the material for each of the numbered containers of unwanted material. The spreadsheet could then be sent electronically to the RCRA-trained individual so the information is available to that individual when the hazardous waste determination is made. Alternatively, laboratories could affix a bar code to each container that, when scanned, would provide the information necessary for proper determination of the unwanted material. Laboratories might also choose to include with the containers a printed inventory of the unwanted materials and the associated information each time the containers are removed from the laboratory and the

RCRA-trained individual makes the hazardous waste determination. The second labeling requirement is meant to provide the laboratory with flexibility in determining the most efficient manner in which to provide the RCRA-trained individual with the information they need to accurately and easily identify whether the unwanted materials are RCRA hazardous wastes.

Proposing two distinct labeling standards ensures that the RCRA-trained individual will be able to make an accurate hazardous waste determination of the status of the unwanted materials that are generated by students and laboratory workers. The central accumulation area or TSDF at a college or university may be receiving unwanted materials from dozens of laboratories, in addition to other sources on campus, and the RCRA-trained individual responsible for identifying and managing the unwanted materials may not be aware of the origins of this material, unless sufficiently informed by the generators in the laboratories.

The Agency is also considering a labeling option (concerning the second labeling requirement) that would require specific information be associated with the container of unwanted materials, as opposed to the performance-based requirements described above. Under this approach, specific labeling requirements would be specified in the regulatory language. For example, the rule would specifically require, among other things, that containers have associated labels that include a chemical description of the unwanted material, whether the material is used or unused, the manner in which the chemicals were used, and a description of the possible hazardous properties of the material. The Agency is proposing the performance-based requirements and requesting comment on the specific labeling requirements option since EPA believes that the performance-based labeling requirements will allow college and university laboratories more flexibility in finding the most appropriate labeling method for their laboratory that will ensure the unwanted materials are labeled in such a way that they are properly handled, as well as easily and accurately identified, whether that is in the laboratory or at an on-site central accumulation area or TSDF.

The Agency requests comments on the proposed performance-based labeling requirements and the more prescriptive alternative option described above. Specifically, EPA is seeking comment on whether the proposed standards provide sufficient flexibility. Additionally, EPA is seeking comment

on whether it is more appropriate to require specific standards for labeling and, if so, what information should be required on the container labels.

#### 4. Training and Instruction Requirements

Today's proposal includes performance-based standards for training workers and instructing students in laboratories at participating colleges and universities. The proposal maximizes flexibility in both the content and method of instruction for students or training for workers in order to meet the proposed standards. Under this proposal, the regulation requires that colleges and universities provide laboratory workers with training commensurate with the laboratory workers' duties. Students working in laboratories must receive instruction relevant to their activities in the laboratory. A college or university is required to document in its Laboratory Management Plan (LMP) how it will meet the training and instruction standards of the proposed regulation (e.g., who will be trained/instructed, what are the minimal requirements for completing the training/instruction). EPA believes training should be commensurate with an individual's assigned duties, the degree of involvement with the management of the unwanted materials, and the transportation of potentially hazardous waste until the ultimate hazardous waste determination and treatment, storage or disposal of such hazardous waste is made. Therefore, EPA maintains it is sufficient for students to be instructed in the applicable laboratory chemical and unwanted materials management standards and practices of today's proposal to enable them to perform learning and enrichment activities customarily performed by students in the laboratory. Laboratory workers, including graduate students, must be trained in accordance with their job function. EPA is including graduate students in the same category for training as laboratory workers, as explained in the definition sections (section IV.A of this preamble and § 262.200 of subpart K), since graduate students often perform many of the same chemical or unwanted materials management functions as laboratory workers employed by, or otherwise in service to, a college or university.

EPA distinguishes training from instruction to correspond with the level of knowledge or practical application needed by individuals to perform their assigned functions or fulfill their job or enrollment classification (*i.e.*, professor,

EH&S, graduate student) within a college or university laboratory. EPA believes instruction constitutes familiarization or transference of knowledge to perform tasks and assignments in a safe and environmentally sound manner. For example, students conducting experiments will come in contact with and use a variety of chemicals which may potentially become hazardous waste following experimentation or may react adversely if incorrectly stored or managed. These potentially hazardous wastes must be stored in containers to minimize risk and labeled to alert individuals that the contents of the container should be managed in a certain manner. There is also the potential for dangerous or hazardous situations such as explosions, fires, spills, or other hazards from mishandling of chemicals or unwanted materials which require emergency response actions by qualified personnel. It is not necessary that students have the capability of an emergency response coordinator or other qualified individual to respond and perform emergency procedures and other remedial actions. Rather, it is sufficient for students to know how to correctly handle and manage potentially hazardous wastes to avoid dangerous or hazardous situations and in case of an emergency, the correct information or procedures to follow such as contact information and evacuation procedures.

Conversely, the Agency considers training as more formalized or technical instruction whereby upon completion of training, personnel are qualified to perform the functions of their job descriptions or assigned duties. To illustrate, current RCRA personnel training for LQGs under 40 CFR 265.16(a)(1) describes required training as classroom or on-the-job training. It also requires personnel to complete a training program that teaches them to perform their duties in a way which ensures compliance with the regulations. Therefore, for the purpose of subpart K, laboratory workers must receive formalized training or technical instruction commensurate with their duties (which is dependent on an individual's job description or assignments), be able to supervise or instruct students in the laboratory and generally perform duties which fulfill responsibilities contained in their job description or assigned duties, which may include conducting chemical analysis, preparing containers for transport, emergency response duties or other duties, as appropriate. It is required that personnel conducting the

hazardous waste determination or transporting unwanted materials on-site be RCRA-trained according to the generator status of the college or university. In the case of laboratory workers, the level of training needed by workers is dependent on their individual duties and may not require these individuals to be RCRA-trained to the same degree as required for individuals involved in the on-site transport of unwanted materials or making the hazardous waste determination if these duties are not assigned to them.

Under this proposal, colleges and universities choosing to be subject to this new set of alternative regulations have the flexibility to determine the appropriate subject matter for instructing their students and training laboratory workers and to tailor the training to individual needs according to function, duties and tasks. For example, to meet the requirement that all laboratory workers must receive training in accordance with their functions, a college or university may develop training that includes proposed laboratory practices and standards for unwanted materials management. As with personnel training for individuals not making the hazardous waste determination or transporting unwanted materials on-site, EPA is not mandating specific subject matter, materials or methods for instructing students. However, the Agency believes appropriate instruction for students would cover such information as unwanted materials management standards and practices sufficient to enable students to manage unwanted materials safely and in an environmentally sound manner, while working in the laboratory. Both training of laboratory workers and instruction of students must ensure that appropriate and accurate information is conveyed to the RCRA-trained individual in order for that individual to make accurate hazardous waste determinations and to safely transport unwanted materials on-site, if appropriate.

EPA believes it is necessary for individuals involved in the on-site transportation of potentially hazardous wastes and individuals making the hazardous waste determination (either in the laboratory, on-site CAA or on-site TSDF) to receive the full complement of RCRA training in accordance with the college or university's generator status as found in 40 CFR 262.34(a)(4) and 265.16 for LQGs, and 262.34(d)(5)(iii) for SQGs. EPA is requiring that individuals involved in the on-site transportation of unwanted materials receive this level of training due to the

potential of a release or spill directly to the environment (e.g., soil, air, water) or risks from an explosion or other accident, while potentially hazardous wastes or other materials are in route during on-site transport. EPA also believes that individuals making the hazardous waste determination must be aware of all applicable RCRA requirements in order to be able to classify the unwanted materials as solid and hazardous wastes and identify the RCRA hazardous waste code(s) for proper hazardous waste or unwanted materials management or re-use. Therefore, §§ 262.207(c) and (d), 262.209, 262.210(a) and (e), 262.211(a) and (c), and 262.212(a) and (c) of subpart K require that a RCRA-trained individual accompany on-site transport of unwanted materials and hazardous wastes and only RCRA-trained individuals may make the hazardous waste determination. EPA also is requiring in today's proposal that contractors employed by the college or university involved in laboratory management of unwanted materials or hazardous waste as contained in subpart K must be RCRA-trained per LQG requirements regardless of a college or university's generator status. To summarize, the existing training requirements relevant to RCRA-trained individuals cited above:

1. LQG regulations under 40 CFR 265.16 set a minimum of required elements (much of which pertain to emergency response) as follows:

a. Personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures compliance and must include hazardous waste management procedures (including contingency plan implementation) relevant to their employment position. Personnel who have not successfully completed training must not work in unsupervised conditions.

b. The training program must be directed by an individual trained in hazardous waste management. At a minimum, training must be designed to ensure that personnel are able to effectively respond to emergencies by familiarizing them with emergency procedures, equipment and systems. Where applicable, personnel are required to become familiar with the procedures and information of § 265.16(a)(3)(i)-(vi), such as responses to fires or explosions, or groundwater contamination incidents.

In addition, LQG training requirements of 40 CFR 265.16 require that personnel take part in an annual review of training (§ 265.16(c)) and must

maintain training records including a written description of the types and amount of training completed in accordance with job descriptions (§ 262.16(d)).

2. SQG training requirements of 40 CFR 262.34(d)(5)(iii) require the generator to ensure all employees are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal college or university operations and emergencies.

For purposes of Subpart K, training records for RCRA-trained individuals at college or university large quantity generators must be kept as currently required by 40 CFR 265.16. Both large and small quantity generators must address training standards for RCRA-trained individuals in their LMP as required by subpart K (see details in preamble section IV.D for recordkeeping and section IV.C.11 for LMP requirements associated with today's proposed rule).

As stated earlier, EPA is not proposing specific types of training methods for laboratory workers or instruction requirements for students. Rather, each college or university choosing to be subject to subpart K may determine the best training or instruction method to meet their circumstances and operations. For example, training methods may consist of a variety of approaches, including formal classroom or electronic training, on-the-job training, or instruction to students by professors or other qualified personnel before or during an experiment. Professors may choose to simulate an emergency event as a method to instruct students on proper emergency contact or evacuation procedures, or choose to post information or procedures in the laboratory and/or test the students on these procedures as part of regular exams. Regardless of the method used, a college or university is required to address the training and instruction standards found in today's proposed rule and must document the training methods in its LMP. In addition, training or instruction must be sufficient to enable individuals to carry out their duties in an environmentally safe and sound manner and in accordance with other appropriate regulations.

The Agency is also considering an alternative option to today's proposal. This option is a more prescriptive regulatory approach than the proposed performance-based option. Like the proposed option, this option requires that training/instruction be commensurate with the duties of laboratory workers and students based

on the degree of involvement with handling and management of unwanted materials, and transportation of potentially hazardous waste. Also, as with the proposal, laboratory workers and graduate students would receive training, while students are required to receive instruction in appropriate areas. Colleges and universities would tailor the training/instruction to the individuals' functions and would determine training and instruction methods that best fit the college or university's environment (see examples in the proposal above). However, with this alternative, EPA would set certain minimum training requirements for laboratory workers and students. Specifically, EPA would require that: (1) Students receive instruction in proper container management and labeling (§ 262.206), collection procedures for unwanted materials (§ 262.208), and emergency procedures (as added, if appropriate); and (2) laboratory workers must be trained in the same subject matter as students, and any additional training necessary to perform their individual duties. For instance, laboratory workers may need to receive more technical or extensive training in the same areas as students to be able to teach, supervise or otherwise assist students in laboratory chemical and unwanted materials management practices. In addition, further training maybe required beyond what is sufficient to be able to supervise students in the laboratory if laboratory workers perform other duties such as chemical inventories, laboratory clean-outs, emergency response or other duties not required of students. These additional duties would require training in the areas not required of students. Furthermore, as with the proposed option, only RCRA-trained individuals may be tasked with on-site transportation of unwanted materials (see summary of RCRA training requirements in the proposed option above for LQGs and SQGs) and colleges and universities must address the required training standards in their LMP.

The Agency requests comments on the proposed performance-based training and instruction requirements and the alternative option offered. The proposed option grants maximum flexibility to colleges and universities in meeting the training requirements. The alternative option sets minimum standards which colleges and universities would be required to meet. In both cases, training must be documented in the college and university's LMP. Additionally, the

Agency is interested in receiving comment on training requirements under other regulations that institutions may use to fulfill the requirements of today's proposed option.

#### 5. Removal Frequency of Unwanted Materials

Typically, laboratories initially accumulate hazardous wastes within the laboratory before sending the hazardous wastes to an on-site or off-site location. As the initial accumulation area for hazardous wastes, the laboratory generally manages the hazardous waste in a satellite accumulation area (see § 262.34(c)). Under the current regulations, the removal of hazardous waste from satellite accumulation areas is dependent on the volume of hazardous waste. That is, once more than 55 gallons of hazardous waste (or more than 1 quart of acutely hazardous waste) is accumulated in a satellite accumulation area, a generator has three days to remove the excess hazardous waste from the satellite accumulation area and transfer it to an area that complies with § 262.34(a) for large quantity generators, or § 262.34(d) for small quantity generators. Of course, the hazardous waste from the laboratory may also be sent to an on-site TSDF or off-site TSDF. Large quantity generators are allowed to accumulate hazardous waste for up to 90 days on-site without a permit, provided the standards of § 262.34(a) are met. Similarly, small quantity generators are allowed to accumulate hazardous waste for up to 180 days on-site without a permit, provided the standards of § 262.34(d) are met.<sup>5</sup> The hazardous waste management standards in §§ 262.34(a) and 262.34(d) are more comprehensive than the regulations for accumulating hazardous waste in satellite accumulation areas in § 262.34(c). The satellite accumulation regulations of § 262.34(c)(2) require that once 55 gallons of hazardous waste is exceeded, only the excess of 55 gallons of hazardous waste must be removed (or the excess of 1 quart of acutely hazardous waste) from the satellite accumulation area.

Colleges and universities have told EPA that they rarely accumulate 55 gallons in a laboratory, except during a laboratory clean-out, which occurs, for example, when faculty retire or when buildings are renovated. Thus, under the existing hazardous waste

<sup>5</sup> Small quantity generators that must send their hazardous waste more than 200 miles for off-site treatment, storage or disposal are allowed to accumulate hazardous waste for 270 days or less on-site without a permit, provided the conditions of § 262.34(d) are met (see § 262.34(e)).

regulations, the hazardous waste can remain in the laboratory for long periods of time, provided that no more than 55 gallons of hazardous waste (or 1 quart of acutely hazardous waste) is accumulated, since there is no time limit for how long a satellite accumulation area can take to accumulate 55 gallons. However, once 55 gallons is exceeded, the excess must be removed within three days. Colleges and universities have commented that the three-day time limit is insufficient for EH&S personnel to respond to individual waste removal requests at laboratories that are sometimes spread out over extensive grounds of a college or university campus.

Today, EPA is proposing to regulate the removal of unwanted materials from laboratories at colleges and universities primarily by time, and secondarily by volume of unwanted materials (including reactive acutely hazardous unwanted materials). EPA is proposing that unwanted materials, including reactive acutely hazardous unwanted materials, generated in laboratories at colleges and universities must be removed from the laboratory at a regular interval that is specified in the college or university's Laboratory Management Plan. However, the regular interval for routine removal of unwanted materials must not exceed six months. If a laboratory accumulates more than 55 gallons of unwanted materials, or one quart of reactive acutely hazardous reactive unwanted material, prior to the regularly scheduled removal specified in the college or university's Laboratory Management Plan, then all of the unwanted materials, including the reactive acutely hazardous unwanted materials, must be removed from the laboratory within 10 calendar days of exceeding 55 gallons or one quart of acutely hazardous reactive materials, or at the next regularly scheduled removal, whichever occurs first. Colleges and universities that do not have an on-site central accumulation area or on-site TSDF will have to ensure that laboratories do not exceed 55 gallons, or be prepared to arrange for transportation off-site to a designated facility within 10 calendar days of exceeding 55 gallons.

EPA is proposing this alternative regulation for two reasons. First, it is rare for a laboratory to accumulate 55 gallons of hazardous waste (other than during laboratory clean-outs); therefore, hazardous waste can accumulate in laboratories for extended periods of time. The Agency believes a time-driven schedule for removal of hazardous waste from laboratories is more appropriate for the way laboratories operate and generate hazardous waste.

Second, regularly scheduled removals of unwanted materials will provide additional protection for laboratory workers and students, as well as the environment, since the regular removal of unwanted materials will result in accumulation of lower volumes of unwanted materials in the laboratory for shorter periods of time.

Colleges and universities will be required to identify in their LMP the frequency of removals of all unwanted materials. The Agency is proposing to impose a maximum time of six months that may elapse between removals. Colleges and university representatives have told EPA that tying the removal of wastes with the academic calendar would facilitate removal of wastes that accumulate during the course of the semester with a minimum of disruption. The Agency believes that six months is an appropriate length of time to allow colleges and universities to schedule removals of unwanted materials at the end of each semester. The Agency realizes that many colleges and universities have more than the traditional two semesters; however, the Agency is not aware of any college or university that has a semester exceeding six months. EPA is requesting comment on whether six months is an appropriate maximum interval for regularly scheduled removal of unwanted materials or whether another time interval may be more appropriate. Colleges and universities are certainly free to schedule the removal of unwanted materials from their laboratories at a shorter interval, if that best suits their schedule. However, EPA does not believe that allowing unwanted materials to accumulate for longer than six months would provide the benefits to human health and the environment that are anticipated from moving to a time-driven rather than volume-driven approach.

Although many commenters have told EPA that laboratories rarely accumulate 55 gallons of hazardous waste, the Agency is maintaining the current volume-driven removal approach as a secondary measure to prevent laboratories from accumulating unnecessary volumes of unwanted materials. Today's proposal differs from the current satellite accumulation area regulations, which are also volume-driven, in two ways. First, rather than being required to remove just the excess of 55 gallons of hazardous waste (or one quart of acutely hazardous waste), EPA is proposing that if a laboratory accumulates more than 55 gallons of unwanted materials or one quart of reactive acutely hazardous unwanted materials, all the unwanted materials

must be removed from the laboratory. The Agency believes that if a RCRA-trained individual is called upon for removal of unwanted materials, it makes sense to remove all the containers of unwanted materials, rather than leave up to 55 gallons of potentially hazardous waste or one quart of reactive acutely hazardous unwanted materials behind, while removing only the excess of unwanted materials. Secondly, the Agency is proposing to extend from three days to ten calendar days the time that a college or university has to remove unwanted materials from a laboratory when that laboratory exceeds 55 gallons of unwanted materials or one quart of reactive acutely hazardous unwanted materials. Under the current regulations, if a college or university has a schedule for waste removal from laboratories and a laboratory requests that waste be removed due to an exceedance of the specific thresholds, it may be difficult for EH&S staff to respond to the request within three days. For example, when removal requests are made just prior to weekends or holidays, three days will likely not provide sufficient time to respond to the request, and to continue routine waste removals. Commenters have suggested to EPA that extending the period from three days to ten calendar days will provide enough flexibility to allow colleges and universities to respond to what is expected to be an unusual occurrence of exceeding 55 gallons of unwanted materials or one quart of reactive acutely hazardous unwanted materials in a laboratory, while maintaining the requirement for regular waste removal from laboratories.

Currently, when a generator accumulates more than 55 gallons of hazardous waste (or 1 quart acutely hazardous waste) in a satellite accumulation area, the generator has three days to remove the excess hazardous waste from the satellite accumulation area to another location. The Agency has received numerous inquiries regarding the definition of "three days" in the current satellite accumulation area regulations. The Agency has interpreted "three days" to mean "three calendar days" (see memo from Robert Springer, Director, OSW to EPA Regional Directors, 3-17-04, a copy of which is included in the docket for today's proposed rule). For clarity, in today's proposal, the Agency is including the word "calendar" in the regulatory language that allows ten days to remove unwanted materials that exceed 55 gallons (or 1 quart of reactive acutely hazardous unwanted materials).

That is, once a laboratory accumulates more than 55 gallons of unwanted material (or 1 quart of reactive acutely hazardous unwanted materials), all of the unwanted material (or reactive acutely hazardous unwanted material) must be removed within 10 calendar days. EPA is requesting comment on whether 10 calendar days is an appropriate length of time for removing all of the unwanted material (or reactive acutely hazardous unwanted material) from the laboratory, once 55 gallons (or 1 quart) is exceeded in the laboratory.

#### 1. Reactive Acutely Hazardous Unwanted Materials

EPA recognizes the higher risk from reactive acutely hazardous unwanted materials (as defined in section IV.A. of this preamble), and has determined that there is justification for treating these materials somewhat differently from other unwanted materials, including others that are potentially acutely hazardous waste. The Agency has decided that these seven reactive acutely hazardous unwanted materials should be subject to a lower volume limit for accumulation in the laboratory. These reactive chemicals pose extreme danger to laboratory personnel when they are stored for long periods and become unstable. When they become unstable, these reactive chemicals have the potential to cause significant harm to individuals and property. Reactive acutely hazardous unwanted materials must be removed from the laboratory during regularly scheduled pick-ups, along with all unwanted materials. But, the Agency is proposing that if a laboratory exceeds 1 quart of these acutely reactive unwanted materials prior to a regularly scheduled removal, then all the acutely reactive unwanted materials must be removed from the laboratory within 10 calendar days of exceeding 1 quart, or at the next regularly scheduled removal, whichever occurs first. Because these reactive acutely hazardous unwanted materials are, by definition, unused commercial chemical products, and there are currently only seven such chemicals, they will be easily identifiable by a laboratory worker or student, and could therefore be collected separately from other unwanted materials. By segregating reactive acutely hazardous unwanted materials from other materials, the student or laboratory worker could easily determine when the one quart limit is reached.

#### b. Other Unwanted Materials That Are Potentially Acutely Hazardous Waste

Other than the reactive unwanted materials listed as acutely hazardous in

261.33(e), the remainder of unwanted materials that may eventually be determined to be acutely hazardous waste will not be subject to the lower accumulation volumes. Current requirements for managing hazardous wastes in satellite accumulation areas allow for the accumulation of up to one quart of acutely hazardous wastes and require the removal (within three days) of any excess over one quart. There is currently no requirement to remove the initial quart of acutely hazardous waste. Because today's proposal does not require that the hazardous waste determination be made until the unwanted material is removed from the laboratory or within 4 calendar days of arriving at an on-site central accumulation area or on-site TSDF, there is no way to distinguish in the laboratory between unwanted materials that may be acutely hazardous waste and those that may be non-acutely hazardous waste. Therefore, under today's proposal, except for the reactive acutely hazardous unwanted materials, unwanted material which may later be determined to be acutely hazardous waste is subject to the same requirements as other unwanted material generated in the laboratory, and may potentially accumulate in the laboratory in volumes greater than one quart. However, unlike the current generator regulations, today's proposal requires all unwanted material accumulated in the laboratory to be removed at a regular interval not to exceed six months. Furthermore, when 55 gallons of unwanted materials or one quart of reactive acutely hazardous unwanted materials is exceeded, all unwanted materials must be removed from the laboratory, not merely the excess of 55 gallons, as is required currently.

EPA believes that the risk associated with acutely hazardous waste is reduced in the laboratory by requiring unwanted material to be removed from the laboratory at least every six months and requiring that all of the unwanted materials be removed at regularly scheduled pick-ups, as well as when maximum volumes are exceeded. Additionally, today's proposed alternative regulations contain provisions, such as training requirements for laboratory workers, instruction for students, and the Laboratory Management Plan, which includes planning for emergency response, which the Agency believes will improve management of unwanted materials, while in the laboratory. Improved management will limit the potential for human exposure and spills

from all unwanted materials, including those which may later be determined to be acutely hazardous wastes. For these reasons, EPA does not propose to treat potentially acutely hazardous waste, with the exception of reactive acutely hazardous unwanted materials, differently from other potentially hazardous waste that is generated in the laboratory.

#### 6. Where and When To Make the Hazardous Waste Determination

In today's proposal, the Agency is providing maximum flexibility for colleges and universities with respect to where the hazardous waste determination may be made, while still providing protection of human health and the environment. Section 262.209 in today's proposal, requires colleges and universities to make the hazardous waste determination under § 262.11 on unwanted materials generated in laboratories in one of three places: (1) In the laboratory before the unwanted materials are removed from the laboratory (see § 262.210), (2) within 4 calendar days of arriving at an on-site central accumulation area (see § 262.211), or (3) within 4 calendar days of arriving at an on-site TSDF (see § 262.212). Regardless of where the hazardous waste determination is made, all of the standards that EPA is proposing today for managing unwanted materials in the laboratory would apply, while the unwanted materials remain in the laboratory, including training/instruction, labeling, and container management. Also, regardless of where the hazardous waste determination is made, an unwanted material that is determined to be a hazardous waste is subject to all applicable hazardous waste regulations from that point, including the land disposal restrictions of part 268, all requirements for the on-site management of hazardous waste, and any applicable requirements pertaining to off-site transportation.

As with all hazardous waste determinations, if a RCRA-trained individual determines that an unwanted material is suitable and intended for direct use or reuse at another laboratory or location at the college or university, or does not meet the definition of solid waste in 40 CFR 261.2, then the unwanted material will not become subject to the hazardous waste regulations. Likewise, if a RCRA-trained individual determines that an unwanted material is a solid waste, but not a hazardous waste, the unwanted material is no longer subject to the hazardous waste regulations, including part 262. However, the non-hazardous solid wastes must be managed and disposed

of according to applicable State and local solid waste management requirements.

#### Transferring Unwanted Materials or Hazardous Wastes From the Laboratory to an On-Site Central Accumulation Area, or On-Site TSDF

Currently, when hazardous waste is removed from a laboratory that manages it in a satellite accumulation area, it can be brought to an on-site generator accumulation area (sometimes called a <90 or <180 day area), an on-site TSDF, or picked up for transport to an off-site designated facility, such as an off-site TSDF. EPA's policy has been that hazardous waste in a satellite accumulation area may not be transferred to another satellite accumulation area (see memo from Robert Springer, Director, OSW to EPA Regional Directors; 3-17-04, a copy of which is in the docket for today's proposal). Today's proposal maintains all the same options and prohibitions for the removal of unwanted materials from the laboratory and for the removal of hazardous wastes from the laboratory if the hazardous waste determination is made in the laboratory.

Many of the unwanted materials that will be transferred from laboratories to an on-site central accumulation area or an on-site TSDF will ultimately be determined to be hazardous wastes. Therefore, EPA believes it is appropriate to keep the existing level of protection for the on-site movement of unwanted materials. EPA's interpretation of existing regulations is that any personnel responsible for the on-site movement of hazardous waste must receive the level of training appropriate to the college or university's generator status, as specified by § 262.34(d)(5)(iii) for small quantity generators and § 265.16 for large quantity generators (see memo from Robert Springer, Director, OSW to EPA Regional Directors; 3-17-04, a copy of which is in the docket for today's proposal). EPA is proposing to codify this regulatory interpretation for the on-site movement of unwanted materials at colleges and universities.

To ensure that unwanted materials removed from the laboratory are brought promptly to their next destination, the Agency is proposing to require that when unwanted materials are removed from a laboratory, they must be brought "directly" from the laboratory(ies) to an on-site central accumulation area or an on-site TSDF. Without such a requirement, the Agency is concerned that the unwanted material or hazardous wastes could be held in on-site transport for days or longer (without any specific

controls) before it is delivered to its next destination.

The Agency realizes that in certain cases, the RCRA-trained individual will remove the unwanted material from a single laboratory and deliver it immediately to the central accumulation area, while in other instances, the RCRA-trained individual will remove the unwanted material from a number of laboratories before it is delivered to the central accumulation area. In both cases, this would meet the intent of the regulation. On the other hand, if a RCRA-trained individual that is collecting unwanted materials from laboratories leaves the unwanted materials on a cart in the hallway overnight, this would not meet the intent of the regulations. In general, if the unwanted materials are sent from the laboratory to its next destination within the same work day, this would meet the intent of today's requirement to bring unwanted materials or hazardous wastes "directly" from the laboratory to an on-site central accumulation area, or on-site TSDF. EPA is seeking comment on whether it is necessary to define "directly" or to replace it with a more specific time-frame, such as a same day requirement.

#### 7. Making the Hazardous Waste Determination in the Laboratory

Any college or university that chooses to comply with today's new set of alternative regulations for unwanted materials generated in laboratories will have the option of making the hazardous waste determination in the laboratory before the unwanted materials are removed from the laboratory. The Agency believes that this option will be most useful for those colleges and universities that do not have on-site central accumulation areas or on-site TSDFs. EPA expects that smaller colleges and universities are less likely to have on-site central accumulation areas or on-site TSDFs and will be the most likely to benefit from making the hazardous waste determination in the laboratory before the unwanted materials are removed from the laboratory. Nonetheless, the Agency would like to extend the added flexibility of this option to colleges and universities that have on-site central accumulation areas or on-site TSDFs, as well. Some colleges or universities with on-site central accumulation areas or on-site TSDFs may elect to make the hazardous waste determination in the laboratory in order to avoid bringing non-hazardous wastes to its on-site central accumulation area or on-site TSDF. Regardless of whether a college or university has an on-site central

accumulation area, or on-site TSDF, if a college or university identifies in its Laboratory Management Plan that the hazardous waste determination will be made in the laboratory, EPA is proposing that the hazardous waste determination may be made in the laboratory at any time, but must be made before the unwanted materials are removed from the laboratory.

Commenters have told EPA that there are a number of reasons a college or university may choose not to build and maintain an on-site central accumulation area. First, some colleges and universities choose not to have a central accumulation area because they lack the extra resources needed to have an emergency coordinator available at all times to be either on-site or on call, as required for both small and large quantity generators (see §§ 262.34(d)(5)(i) and 265.55, respectively). Secondly, some colleges and universities do not have the physical space to build a central accumulation area and the cost of acquiring space can be prohibitive. Thirdly, complying with local fire codes associated with a central accumulation area can also make the cost prohibitive. It is clear, from these comments, that many colleges and universities that do not currently operate central accumulation areas are unlikely to do so in the future. Therefore, as noted previously, EPA is proposing that the hazardous waste determination for unwanted materials generated in laboratories at colleges and universities may be made before the unwanted materials are removed from the laboratory.

In many cases, EPA expects that the hazardous waste determination will not be made by an employee of the college or university, but rather by a contractor or vendor. This practice is acceptable, since the proposed definition of RCRA-trained individual includes contractors and vendors, provided the contractor or vendor has received RCRA training. Regardless of who makes the hazardous waste determination in this scenario, it must be made on all unwanted materials before the unwanted materials may be removed from the laboratory. In addition, regardless of whether an employee or non-employee makes the hazardous waste determination, the college or university could still be responsible if the hazardous waste determination is not made correctly and for any mismanagement of hazardous waste.

When an unwanted material has been determined to be a hazardous waste prior to its removal from the laboratory, it remains subject to subpart K for as

long as it remains in the laboratory. This is to avoid having the laboratory being dually regulated as a satellite accumulation area for the unwanted materials that have been determined to be hazardous wastes and as a laboratory under subpart K. For those unwanted materials that are determined to be hazardous wastes in the laboratory, the appropriate hazardous waste code(s) and the words "hazardous waste" must be placed on the container label that is affixed to the container prior to removing it from the laboratory. Upon removal from the laboratory, an unwanted material that has been determined to be a hazardous waste is subject to all applicable hazardous waste regulations, including the land disposal restrictions. Additionally, an unwanted material that is determined to be a hazardous waste must be counted toward the college or university's generator status. If an RCRA-trained individual determines that an unwanted material is not a solid or hazardous waste, then it would no longer be subject to part 262, including subpart K.

Many commenters representing colleges and universities have suggested that EPA create a new type of accumulation area to allow for the consolidation of hazardous wastes from laboratories. Under the existing regulations, generators may accumulate hazardous waste in two types of areas without having a permit or interim status: (1) satellite accumulation areas and (2) generator accumulation areas (<90 or <180 day areas).<sup>6</sup> EPA believes that today's proposal provides sufficient flexibility for colleges and universities to manage the unwanted materials that are generated in their laboratories. Nevertheless, the Agency is soliciting comment on whether such an additional category should be created. (See section below for specific request for comment.)

Under the current satellite accumulation area regulations, hazardous wastes must be accumulated at or near the point of generation. In addition, it has been EPA's regulatory interpretation that hazardous wastes can not be moved from one satellite accumulation area to another (see memo from Robert Springer, Director, OSW to EPA Regional Directors; 3-17-04, a copy of which is in the docket for today's proposal). Although many commenters suggested EPA create a new type of consolidation area, one commenter suggested a specific type of

consolidation area—a "super satellite area"—whereby hazardous wastes could be consolidated in a common area that is outside of the laboratory (i.e., not at or near the point of generation), but the current satellite accumulation area regulations, including volume limits, would continue to apply to the consolidated wastes. The commenter's primary goal was to enhance the safety of laboratory personnel by removing hazardous wastes from the laboratory as quickly as possible in order to prevent accidents. EPA believes that this concept would only be practical for laboratories generating relatively low volumes of waste, since combining hazardous wastes from multiple laboratories could result in quickly exceeding 55 gallons of unwanted materials or one quart of reactive acutely hazardous unwanted materials, which would require frequent removals. Thus, EPA is not proposing to establish a "super satellite area," as suggested by the commenter. However, the Agency is soliciting comment on this concept, and specifically, the Agency requests comment on why this approach is needed and what additional safeguards should be imposed, if any.

In summary, EPA is requesting comment on whether today's proposal will enable colleges and universities without central accumulation areas to take advantage of the intended benefits of today's rule. EPA is requesting comment on our proposal or other alternative approaches for allowing colleges and universities without central accumulation areas to benefit from this rule. Specifically, EPA is requesting comment on the creation of a third category of accumulation area—such as a consolidation area or "super satellite area." The Agency encourages commenters to be as specific as possible about what management standards would apply to consolidation areas and how those conditions would differ from those required in the current two types of accumulation areas. The Agency also requests that commenters address whether creating a new type of category of accumulation area would eliminate the concerns that have been raised to EPA by colleges and universities which do not operate an on-site central accumulation area.

#### 8. Making the Hazardous Waste Determination at an On-Site Central Accumulation Area

Based on the information that EPA received from college and university representatives, including from a public meeting in June 2003, receiving nearly 50 written comments to the associated docket, and participating in many

meetings, EPA has come to expect that most colleges and universities will remove their unwanted materials from laboratories to an on-site central accumulation area. Under the existing hazardous waste regulations, when hazardous wastes are removed from the laboratory to an on-site central accumulation area, the waste has already been identified as a hazardous waste and is subject to the applicable requirements, including the requirement to identify the hazardous waste code. EPA is proposing that when a RCRA-trained individual removes containers of unwanted materials from the laboratory and the unwanted material is brought to an on-site central accumulation area, the hazardous waste determination must be made within four calendar days after the unwanted material arrives at the on-site central accumulation area. The Agency has selected four calendar days for making the hazardous waste determination to allow sufficient time to make a hazardous waste determination when unwanted materials are removed from a laboratory at the end of the work week. Since the unwanted materials will be fully regulated upon arrival in the central accumulation area, with the exception of the "hazardous waste" label and hazardous waste code, the Agency believes that allowing four calendar days for the hazardous waste determination does not compromise protection of human health and the environment.

EPA is proposing that from the time the unwanted material arrives in the central accumulation area, it will be subject to the full central accumulation area regulations of § 262.34(a) or § 262.34(d). Among other things, these existing generator regulations require that containers must be dated upon arrival in the central accumulation area. Under the existing generator regulations, this date is used to calculate when the maximum accumulation time for generators has elapsed (either 90, 180 or 270 days). Under today's proposal, the date of arrival at the central accumulation area will also be used to calculate when the four calendar days for making the hazardous waste determination have elapsed. That is, EPA is proposing that the four calendar days allowed for making the hazardous waste determination will be part of the 90 or 180 (or 270) days of maximum accumulation time, not in addition to it. EPA is proposing that containers in the central accumulation area will not be required to be labeled with the words "hazardous waste," as required by § 262.34(a)(3), until after a hazardous

<sup>6</sup> Small quantity generators that must send their hazardous waste more than 200 miles for off-site treatment, storage, or disposal are allowed to accumulate hazardous waste for 270 days or less on-site without a permit, provided the conditions of § 262.34(d) are met (see § 262.34(e)).

waste determination has been made. When a RCRA-trained individual determines that an unwanted material is a hazardous waste, the appropriate hazardous waste code(s) and the words "hazardous waste" must be added to the label that is affixed to the container.

EPA is requesting comment on whether four calendar days is an appropriate timeframe for making the hazardous waste determination for unwanted materials in the central accumulation area (or at an on-site TSDF), or whether another time period is more suitable. EPA also seeks comment on whether the four day period in which to make the hazardous waste determination should be added to the 90 or 180 (or 270) days of accumulation in the central accumulation area. Under today's proposal, by including the four calendar days as part of the 90/180/270 days, the date of arrival at the central accumulation area would be used for two purposes: (1) Calculating the four calendar days allotted for making the hazardous waste determination and (2) calculating the maximum accumulation time in the central accumulation area. Under this scenario, the total maximum accumulation time in the central accumulation area would be 90/180/270 days, which is the same as the current regulations. Under today's proposal, the hazardous waste determination would also have to be made within the first four calendar days of the on-site accumulation time. If, however, the four calendar days is in addition to the 90/180/270 days, then additional dating would be required after the hazardous waste determination is made. That is, the date of arrival at the central accumulation area would be used for calculating the four calendar days allotted for making a hazardous waste determination and a second date would be required after the hazardous waste determination is made for calculating the maximum accumulation time in the central accumulation area. Under this scenario, the total maximum accumulation time would increase from 90/180/270 days to 94/184/274 days. The Agency seeks comment on whether the benefit of an additional four calendar days of accumulation time warrants an additional dating requirement.

#### 9. Making the Hazardous Waste Determination at an On-Site TSDF

In a few cases, colleges and universities have on-site permitted (or interim status) storage or treatment facilities. In such cases, a college or university may choose to make the hazardous waste determination in the

laboratory before the unwanted materials are removed or bring unwanted materials to their on-site TSDF for the hazardous waste determination. EPA is proposing to allow colleges and universities to have the flexibility of choosing whichever option works best for them.

Under today's proposal, there will be many operational similarities between a college or university that makes the hazardous waste determination at an on-site central accumulation area and a college or university that makes the hazardous waste determination at an on-site TSDF. For example, colleges and universities that choose to make the hazardous waste determination at their on-site TSDF must bring their unwanted materials directly from the laboratory(ies) to the on-site TSDF and must make the hazardous waste determination within four calendar days of arriving at the on-site TSDF. The Agency does not intend to add any new dating requirements for colleges or universities that operate on-site TSDFs. Therefore, in order to calculate when the four calendar days have elapsed, EPA will rely on the requirement for dating containers upon arrival at a TSDF that already exists in the storage prohibition regulations of part 268 [see § 268.50(a)(2)(i)]. In order to implement the storage prohibition, EPA requires that containers of hazardous waste must be labeled with the date accumulation begins at a TSDF. This requirement will now have the secondary purpose of determining when four calendar days have elapsed for colleges and universities that make the hazardous waste determination in an on-site TSDF.

#### 10. Laboratory Clean-Outs

While today's proposal does not require periodic laboratory clean-outs, EPA strongly encourages that such clean-outs be conducted in laboratories at colleges and universities. EPA inspections and enforcement cases at colleges and universities have revealed that used and unused chemicals, but particularly unused chemicals, have remained in laboratories for years and even decades and can have the potential to cause significant harm to human health and the environment. Regular removals of unwanted materials will help remove some materials from the laboratory, but may not address the problem of "legacy" chemicals. These legacy chemicals often accumulate over many years in a laboratory as researchers purchase chemicals for new projects without using or disposing of chemicals from previous projects. Other times, EPA has been told that chemicals are purchased in much larger quantities

than are necessary for an experiment, because it is less expensive to buy in bulk, and the excess remains in the laboratory. In other cases, chemicals accumulate in laboratories when the management of an individual laboratory changes, such as when professors retire or move to another institution. In some of these cases, chemicals are left behind in the laboratory by a previous occupant, the new laboratory occupant may not know the contents of the containers, and the chemicals remain in the laboratory unidentified.

In the definitions section of today's proposal, the definition of "laboratory clean-out" is described. In short, EPA envisions laboratory clean-outs as more comprehensive than the regularly scheduled removals of unwanted materials. It is a process of sorting and evaluating to determine what should be eliminated from the laboratory's inventory.

EPA has been told that the current satellite accumulation area regulations are a barrier to conducting clean-outs of laboratories. Specifically, when laboratory clean-outs are conducted, it is likely that more than 55 gallons of chemicals, whether used or unused, will be generated. The existing satellite accumulation area rules require that once 55 gallons of hazardous waste (or one quart of acutely hazardous waste) is exceeded, the excess of 55 gallons must be removed within three days. Commenters have told EPA that the current requirement to move the excess of 55 gallons of hazardous waste (or one quart of acutely hazardous waste) within three days is an impediment to comprehensive laboratory clean-outs, because it does not provide enough time to sort through and evaluate the many chemicals that can be part of a laboratory clean-out. Under today's proposal, when 55 gallons of unwanted materials (or one quart of reactive acutely hazardous unwanted materials) is exceeded in a laboratory, the college or university has 10 calendar days to remove all of the unwanted materials from the laboratory. EPA believes that even 10 calendar days may not be a sufficient amount of time to conduct a thorough evaluation of the inventory of unused chemicals in a laboratory. Therefore, in an effort to encourage laboratory clean-outs, EPA is proposing certain modifications to the hazardous waste regulations that are designed to make it more advantageous for colleges and universities to conduct clean-outs. Specifically, EPA is proposing that during a laboratory clean-out only, a college or university will have up to 30 calendar days to sort through unwanted materials from the laboratory. EPA has

chosen 30 calendar days for the duration of a clean-out because college and university representatives have indicated that this would allow sufficient time to complete a thorough laboratory clean-out. EPA hopes that the extra time that EPA is including in today's proposal for laboratory clean-outs, will remove an existing regulatory obstacle for conducting laboratory clean-outs at colleges and universities.

During the course of a laboratory clean-out, as chemicals are evaluated and sorted, the determination about whether a chemical or other material is an unwanted material will be made. No doubt, some chemicals that are evaluated during a laboratory clean-out will end up not being unwanted materials. Once it has been determined that a chemical is, indeed, an unwanted material, as opposed to a chemical or other material that can be kept in the laboratory for further use, then the unwanted material becomes subject to subpart K.

If, at the conclusion of a laboratory clean-out, the total volume of unwanted materials in the laboratory does not exceed 55 gallons and the total volume of reactive acutely hazardous unwanted materials does not exceed one quart, the unwanted materials may remain in the laboratory until the next regularly scheduled removal of unwanted material. However, EPA would encourage colleges and universities that generate unwanted materials during a laboratory clean-out to remove the unwanted materials promptly to an on-site central accumulation area, an on-site TSDF or an off-site designated facility, even if 55 gallons is not exceeded. When determining whether 55 gallons of unwanted materials has been exceeded in a laboratory, EPA does not intend for routinely generated unwanted materials to be counted separately from unwanted materials generated at laboratory clean-outs.

If, however, the volume of unwanted materials generated during a laboratory clean-out exceeds 55 gallons, at the end of the 30-day laboratory clean-out, all unwanted materials must be removed from the laboratory, regardless of whether it was generated during the clean-out or during routine laboratory activities. As with other unwanted materials in today's proposal, unwanted materials generated during a laboratory clean-out must be brought directly to an on-site central accumulation area, on-site TSDF, or an off-site TSDF. If the unwanted materials generated during a laboratory clean-out will be transferred to an on-site central accumulation area or on-site TSDF, the hazardous waste determination, which must be done by

a RCRA-trained individual, may be made in the laboratory during the clean-out, but must be made no later than four calendar days after arriving at an on-site central accumulation area, or on-site TSDF. If the unwanted materials from a laboratory clean-out are not destined for further on-site management in a central accumulation area or on-site TSDF, the hazardous waste determination must be made in the laboratory and the hazardous waste sent off-site by the conclusion of the 30-day laboratory clean-out.

EPA has been told that another barrier to conducting laboratory clean-outs is the possibility that the volume of hazardous waste generated during a laboratory clean-out would be sufficient to change the college or university's generator status. This change in generator status would add additional regulatory burden, such as fewer days for on-site accumulation in a central accumulation area, or a requirement to have a contingency plan. Therefore, EPA is proposing that the hazardous waste generated during a laboratory clean-out will not be counted toward calculating the amount of hazardous waste generated per month when determining a college or university's generator status. Under the existing hazardous waste regulations, all hazardous wastes generated during a laboratory clean-out would be counted toward the college or university's generator status (unless it meets one of the exclusions in § 261.5(c) or (d)). EPA believes adding this flexibility will allow colleges and universities that are small quantity generators to undertake laboratory clean-outs without changing their generator status.

The Agency believes that both of these changes, allowing 30 calendar days for a laboratory clean-out and not counting hazardous wastes from laboratory clean-outs in calculating generator status, should encourage routine laboratory clean-outs. The Agency believes that laboratory clean-outs will go a long way toward addressing unused "legacy" chemicals that pose a threat to human health and the environment.

Nevertheless, while EPA wants to encourage laboratory clean-outs at colleges and universities, the Agency is also concerned that by providing these two incentives, EPA may be inadvertently encouraging colleges and universities to retain unwanted materials that are generated in the laboratory on a routine basis and remove them only during laboratory clean-outs. Therefore, EPA feels that it must limit the frequency with which colleges and universities can take

advantage of the two incentives for laboratory clean-outs to once per 12-month period per laboratory. Without such a safeguard, a college or university that is currently a large quantity generator could become a conditionally exempt small quantity generator by claiming that it is conducting monthly laboratory clean-outs since it is not required to count the hazardous waste toward its generator status. EPA is proposing that for each 12-month period each laboratory may have 30 calendar days to conduct a laboratory clean-out with the hazardous waste generated during that laboratory clean-out excluded from the college or university's monthly waste quantity determination. The Agency has selected a "12-month period," rather than "calendar year" because selecting "calendar year" could allow a laboratory clean-out to occur once in November of one calendar year and again in January of the following calendar year, and this was not EPA's intent. EPA wants to ensure that there will be at least one regularly scheduled removal of unwanted materials between laboratory clean-outs. Therefore, each laboratory may take advantage of the incentives for laboratory clean-outs only once per 12-month period.

Unwanted materials generated prior to a laboratory clean-out that are still in the laboratory at the time a laboratory clean-out begins must be counted toward the college or university's generator status. The proposed labeling standards requires that laboratories must identify the date that unwanted materials begin accumulating in a container. Therefore, any containers with dates that pre-date the onset of a laboratory clean-out are not considered part of the laboratory clean-out and must be counted toward the college or university's generator status.

EPA emphasizes that it is not limiting the number of laboratory clean-outs a college or university may conduct, only the frequency with which a college or university laboratory may take advantage of the proposed regulatory incentives. If a laboratory has conducted a laboratory clean-out within the past 12 months, EPA does not expect a subsequent laboratory clean-out to yield an excess of 55 gallons of unwanted materials. However, if a laboratory conducts a subsequent laboratory clean-out within the same 12-month period and generates an excess of 55 gallons of unwanted materials, the unwanted materials would have to be removed from the laboratory within 10 calendar days, in conformance with the requirements proposed for exceeding 55 gallons on a routine basis and that

amount would have to be counted in determining the generator status of the college or university.

EPA also emphasizes that any hazardous waste that is not counted toward generator status during a laboratory clean-out is still a hazardous waste and is subject to all applicable regulations, including the land disposal regulations, and the regulations for on-site and off-site management, transportation, and treatment and disposal of hazardous waste. The incentive that the Agency is proposing to provide for hazardous wastes generated during a laboratory clean-out affects only the length of time that hazardous wastes are stored on-site and other associated regulations of 40 CFR 262.34 pertaining to generator status, such as biennial reporting and contingency plans.

Because EPA is reluctant to impose barriers to laboratory clean-outs, it does not want to require overly burdensome recordkeeping for laboratory clean-outs. However, the Agency believes that it must require some minimal recordkeeping related to laboratory clean-outs to ensure compliance with the proposed requirements. The recordkeeping requirements would only apply if the college or university intends to take advantage of the laboratory clean-out incentives. A participating college or university that conducts a laboratory clean-out must keep records that identify the laboratory that has been cleaned out, the date the clean-out began and was completed, and the volume of hazardous waste generated during the laboratory clean-out. The Agency believes these records are necessary to ensure that a college or university is in compliance with the proposed requirements. The records identifying which laboratory is being cleaned out and the date the clean-out begins should be created at the onset of the laboratory clean-out. All records pertaining to laboratory clean-outs must be maintained for as long as the college or university operates under this new subpart.

A college or university may also want to implement a system for distinguishing between hazardous wastes that are counted and hazardous wastes that are not counted toward generator status. Such a system could consist of labels on individual containers, or separate storage areas, or records in a log book. EPA is not proposing to require such a mandatory tracking system, in order to provide colleges and universities with maximum flexibility.

EPA requests comments on the provisions related to laboratory clean-

outs. First, the Agency seeks comment on whether laboratory clean-outs should be required, rather than simply encouraged. In responding to this request, the Agency would appreciate any information or data that would support that such clean-outs should be required. Second, the Agency requests comment on whether 30 calendar days is an appropriate length of time for conducting a laboratory clean-out. Third, the Agency seeks comment on whether the proposal provides appropriate mechanisms for encouraging laboratory clean-outs or whether there might be a better incentive that EPA could provide. Fourth, EPA is requesting comment on whether limiting these incentives to once per 12-month period per laboratory is appropriate or whether a different interval, or no limit, would be more appropriate. Fifth, the Agency seeks comment on whether it would be appropriate to allow a college or university to take advantage of the incentives for laboratory clean-outs if the clean-out occurred in a chemical stock room that is not itself a laboratory, but that supplies laboratories with new or redistributed chemicals.

#### 11. Laboratory Management Plan

Today's proposal would require colleges and universities choosing to be subject to the proposed alternative regulations to develop a Laboratory Management Plan (LMP).

Under today's proposed rule, the performance-based standards set the framework for managing unwanted materials generated in a college or university laboratory, while the LMP is the mechanism for implementing those performance-based standards. A college or university is required to develop an LMP which articulates how it plans to comply with the performance-based requirements for safely managing the unwanted materials generated in laboratories. Specifically, the LMP must describe how the college or university proposes to meet the standards for regularly scheduled removal of unwanted materials from the laboratory, container management, labeling requirements, the requirements for instructing students and training laboratory workers, the requirements to ensure safe transportation of unwanted material or hazardous waste from the laboratory to an on-site accumulation area, on-site TSDF or an off-site TSDF, and emergency preparedness and response procedures. Additionally, although laboratory clean-outs are voluntary, if a laboratory conducts clean-outs, the college or university must also describe its laboratory clean-

out procedures in the LMP. EPA is requiring an LMP as part of this proposal to ensure that a college or university seeking flexibility in managing the unwanted materials from their laboratories will do so in a thoughtful manner by documenting their practices in an LMP. The LMP replaces the "one-size-fits all" provisions of the current regulations with the option for a college or university to develop their own system for managing unwanted materials from the laboratory. EPA has found that the written environmental management plan was a key component to the positive changes seen during the EPA University Laboratories XL Project.

While today's proposed rule would only require the above elements to be addressed in a college or university's Laboratory Management Plan, EPA envisions and encourages that additional elements could be incorporated into the LMP or that the LMP could form the basis for, or be incorporated as part of, a larger effort to "green" a campus. The LMP could help colleges and universities to go beyond compliance with today's proposed regulations by developing a program addressing all of their waste issues. The college or university could design a campus-wide recycling program or develop waste minimization programs for implementation. EPA envisions that the LMP will present an opportunity for colleges or universities to address all aspects of their waste management programs in a holistic manner.

While the development of an LMP is required under today's proposed rule, EPA is proposing two options regarding the enforceability of the LMP. The first option requires that an LMP be developed and that specific elements of today's proposal be contained in the LMP, but under this option the college or university would have some flexibility in how it implemented the specific provisions in its LMP. Provided the college or university meets the performance-based standards set forth in the rule, it would be in compliance with today's rule. The requirement to develop an LMP would, however, be enforceable and the failure to develop a plan would be a violation of this requirement.

As an example, under this option, an individual college or university may decide to meet the requirement that containers of unwanted materials have certain information associated with them by using a particular computer tracking system, and indicate this in its LMP. While EPA would expect the computer tracking system to be used as stated, if for some reason that system is

not functioning, and the university tracks the information manually, provided the information included with the unwanted materials meets the requirements of the regulation (i.e. it provides sufficient information to allow a RCRA-trained individual to make the hazardous waste determination), EPA would consider the college or university to be in compliance with the performance-based standards.

Under the second proposed option, as in the previous option, colleges and universities would be required to develop an LMP, and address all the specific elements of today's proposal. The LMP, however, would be enforceable. Therefore, a college or university would need to follow the specific provisions in its LMP, to be in compliance with this requirement. Only the parts of the LMP that are developed to satisfy the requirements of this subpart would be enforceable. If a college or university chooses to include elements not required by this proposal, resulting in a broader LMP, those other elements contained in the LMP would not be enforceable.

As an example, under this option, an individual college or university may decide to meet the requirement that containers of unwanted materials have certain information associated with them by using a particular computer tracking system, and indicate this in its LMP. EPA would expect the college or university to utilize the computer tracking system as described in the LMP. If the college or university fails to use this computer tracking system, EPA would consider the college or university to be in violation of these regulations.

As described elsewhere, today's proposed alternative regulations allow colleges and universities flexibility to tailor their laboratory operations to fit their individual circumstances, and remain protective of human health and the environment. Performance-based standards for management of unwanted materials generated in laboratories provide a better opportunity for colleges and universities to evaluate their overall hazardous waste management program, and tailor it in such a way that facilitates efficient and safe management of its hazardous waste, and minimizes burden, while at the same time maintain a high standard of protection of human health and the environment. Both of today's proposed options would help each college or university centralize and coordinate its chemical management practices and demonstrate environmental performance.

EPA realizes that many colleges and universities may already have plans that address some of the provisions of the

LMP proposed today. It is not EPA's intent for colleges or universities to develop a separate document or plan in such a situation. Therefore, both of today's options allow a college or university to revise an existing plan to address the specific LMP provisions described above. In this way, colleges and universities that have existing plans, such as the Chemical Hygiene Plan required under OSHA, may use this plan as a basis for meeting the LMP provision of today's proposal, making only those modifications and/or additions which would address the specific provisions required to be addressed in today's proposed LMP. This would avoid the development of largely redundant plans, while still ensuring that all provisions are adequately considered. It is EPA's belief that thoughtful, documented planning will result in better management of hazardous wastes, and the LMP requirements can be incorporated into existing mechanisms to achieve that end.

Finally, under both proposed options, the proposed rule would require colleges and universities to revise the LMP and improve it as new information becomes available. EPA envisions the LMP will evolve and change in accordance with changes in operations at the college or university.

In addition to the two options described above, EPA is also considering not requiring the development of an LMP as a condition of eligibility for this alternative regulation. In this case, rather than the "performance-based" requirements for container management, labeling, and training, etc., more specific requirements would likely be included in the regulatory language. (These specific requirements are discussed in sections IV. C. 2-4 above.)

Although many stakeholders have commented that the variability among colleges and universities makes a "one-size-fits all" approach impractical, and have stated that a more performance-based approach is preferable, EPA has learned from others that performance-based standards, by their very nature, are less specific than more prescriptive types of regulations. This less prescriptive form of regulation has the potential for differing interpretations regarding whether the standards have been met. Some stakeholders have expressed concern regarding compliance decisions in situations where one interpretation of a performance-based standard may differ from another. For such a college or university, complying with more specific regulatory conditions for the

management of unwanted materials in the laboratory may be preferable to having performance-based requirements accompanied by the requirement to develop an LMP.

While EPA believes that the development of an LMP will provide colleges and universities with an opportunity to thoroughly examine the hazardous waste management operations and practices in a holistic manner and identify areas of savings and improved management, the Agency is mindful of the additional burden. Therefore, EPA is taking comment on whether the Final Rule should require the development of an LMP. The process of developing an LMP can be lengthy and resource intensive for a college or university. For the LMP to be an effective and beneficial tool, we recommend that a college or university evaluate its current hazardous waste management practices and identify areas for improvement, as well as any barriers to meeting the performance-based standards. While EPA is proposing that a college or university may modify an existing plan to meet the requirement of an LMP (rather than developing a separate plan), many colleges and universities may not have a pre-existing plan to build upon. For these colleges and universities, the added burden of developing an LMP may discourage them from taking advantage of the benefits of today's proposal. However, EPA believes that colleges and universities can greatly benefit from the development of a comprehensive LMP and strongly encourages colleges and universities to develop a plan regardless of whether it is a mandatory requirement in the final rule or not.

EPA is requesting comment on whether the proposed approach of combining performance-based standards with a requirement for an LMP is practical, or whether it would be preferable to have more specific regulatory conditions for the management of unwanted materials in the laboratory due to the burden of developing an LMP.

#### *D. Recordkeeping*

Today's proposal requires that every college and university choosing to comply with this alternative set of regulations maintain certain records. Specifically, colleges and universities must maintain the following records: (1) Notification(s) to the appropriate EPA Regional Administrator (or State Director, in authorized states) of its participation in or subsequent withdrawal from subpart K; (2) a Laboratory Management Plan (LMP) (an

existing plan may be modified to address the specific requirements of this alternative regulation, as finalized); (3) training records for RCRA-trained individuals and laboratory workers as defined in 40 CFR 262.200 of this subpart; and (4) documentation of laboratory clean-out activities identifying the laboratory being cleaned out, the date the clean-out begins and is completed, and the volume of waste accumulated during a clean-out if a college or university chooses to conduct such clean-outs.

In today's proposal, EPA is requiring that the college or university maintain a copy of its notification to participate in subpart K on file for the duration the college or university remains subject to subpart K. Additionally, the college or university must maintain a copy of its notification to withdrawal from today's proposal, as finalized, on file for three (3) years.

Also, in today's proposal, EPA is requiring that the most recent copy of the college or university's LMP be retained on file at the college or university for the duration that it is regulated under 40 CFR part 262, subpart K. Furthermore, the LMP must be dated and accessible by anyone involved in the management of unwanted materials, including students in the laboratory. The college or university must determine how best to meet the requirements of this proposal. Further, since EPA envisions that an LMP will be revised periodically, the college or university must determine how best to maintain it, keep records, make revisions, etc. It is important to note that subpart K does not supersede or in any way alter the requirements of existing plans used or modified to comply with subpart K.

Today's proposal also requires that training records for RCRA-trained individuals (individuals conducting the hazardous waste determination or transporting unwanted materials on-site) and for laboratory workers are maintained in accordance with existing applicable training requirements pertaining to a college or university's generator status. SQG training requirements at 40 CFR 262.34(d)(5)(iii) do not require retention of training records. Since EPA proposes no changes to the existing recordkeeping requirements for compliance with today's proposal, RCRA-trained individuals at large quantity generators must comply with recordkeeping requirements found at 40 CFR 265.16(e). For laboratory workers at LQG colleges and universities, training records that are sufficient to indicate whether the laboratory worker has received adequate

training commensurate with their duties that ensures understanding the requirements of complying with this alternative regulation must be maintained (e.g., if laboratory workers are tasked with making the hazardous waste determination or transporting unwanted materials on-site then these employees would need to be RCRA-trained (see definitions in § 262.200). Under existing LQG recordkeeping provisions for training, these records must be kept until the institution closes or for three years after departure of a laboratory worker. In addition, it is sufficient for college and university laboratories that maintain training records required under existing regulations (i.e., LQGs) to cite in its LMP where existing training requirements and records are maintained for RCRA-trained individuals and laboratory workers.

Today's proposal would require a second labeling or information requirement, other than currently required by 40 CFR 262.34(c). Specifically, the following labels are required for containers for college and university laboratories choosing to be regulated under subpart K: (1) A precautionary label that must be affixed or physically accompany the container and (2) a second label (or other media such as a computer system that contains the required information) that may either be affixed or somehow associated with the container that contains the date unwanted materials began accumulating in the laboratory and sufficient information for a RCRA-trained individual to make the hazardous waste determination. At a minimum, these labels must be affixed or otherwise associated with their containers until the hazardous waste determination is made. However, it is left to the best judgement of each college or university to determine if labels should be kept longer.

Additionally, this alternative regulation includes a new recordkeeping provision for laboratory clean-out events at colleges and universities. Section 262.213 of today's proposal requires colleges and universities to document their clean-out activities. EPA is not mandating a particular record format or media. Instead, colleges and universities may determine the most appropriate type of record to maintain that best suits their individual capabilities and recordkeeping systems (e.g., filed hard copy, electronic copy). However, the documentation must contain certain specific information and be retained at the college or university, while the college or university laboratories are

regulated under 40 CFR part 262, subpart K. Specifically, this documentation must include the date the activity began and the date the clean-out was complete, the particular laboratory that is being cleaned out, and the volume of hazardous waste generated during the clean-out. This documentation is particularly relevant since a laboratory may only utilize the waiver from counting hazardous wastes toward generator status and the 30-day allowance for removal once per 12-month period per laboratory. Additionally, clean-out records must be easily accessible by inspectors and other relevant college and university personnel.

Today's proposal strives to reduce or minimize additional recordkeeping requirements on colleges and universities choosing to be subjected to subpart K. As an example, EPA believes colleges and universities will revise current planning documents required by relevant regulations such as OSHA's Chemical Hygiene Plan (CHP), where practicable. In this instance, a CHP, as revised, is required to be kept under OSHA laboratory standard regulations at 29 CFR 1910.1450 and, therefore, no additional recordkeeping requirement would be associated with an LMP. However, EPA also understands that this may not be true in all cases. While EPA does not expect this to be the case, where planning documents suitable for modification to comply with subpart K are not kept as a current requirement for a particular college or university, an additional recordkeeping requirement would be associated with maintaining an LMP since colleges and universities may need to develop this document to comply with this subpart.

EPA also believes utilizing existing generator regulatory provisions for training records associated with today's proposal is another example of how the Agency is minimizing burden. Specifically, today's proposal requires that college and university laboratories comply with the same requirements that currently apply to its generator status for maintaining training records for RCRA-trained individuals and laboratory workers. However, as is the case for an LMP, if training records do not exist, college and university laboratories would need to maintain pertinent records to comply with this proposal.

EPA is considering whether maintenance of other records or reporting requirements not included in the paragraphs above should be required under today's alternative regulation for purposes of improving implementation and compliance monitoring and

assistance by the relevant regulatory authority or for program implementation. However, it is not EPA's intention to place such additional recordkeeping or reporting burden on colleges and universities as to make subpart K unattractive or otherwise too burdensome. Therefore, EPA seeks comment on whether records are needed to assure compliance with subpart K requirements such as the retention of container labels for a specified length of time or if specific reporting requirements are needed for program implementation. The Agency is also requesting comment on whether other types of recordkeeping or reporting should be required to ensure compliance with today's proposed regulation, to measure program success, or if existing reporting requirements exist which may further reduce burden on colleges and universities. Specifically, EPA is requesting comment on whether maintenance of training records for RCRA-trained or laboratory workers at SQGs should be required, or if other additional records or information are needed to assure college and university laboratories are conducting clean-outs or managing unwanted materials in the laboratory according to requirements of this subpart (e.g., retention of labels with unwanted materials accumulation and removal dates for specified period of time after the hazardous waste determination is made such as electronic labels accompanying containers, or records on container maintenance). In addition, EPA is considering using the RCRA Subtitle C Site Identification Form [EPA Form 87-12] in the Notification of Waste Activity Instructions and Form Booklet or the required state form as a substitute for the proposed notification process. Therefore, EPA is seeking comment on whether the alternative notification option contained in today's proposal of utilizing the RCRA Subtitle C Site Identification Form should be required instead of the proposed requirement to submit a separate notice to the appropriate EPA Regional Administrator (or State Director, in authorized states) to enter or withdraw from subpart K. Specifically, instead of submitting a written notification to enter or exit regulation under subpart K, colleges and universities would notify the appropriate state (in authorized states that have adopted the final rule) or EPA authority of their regulatory status by submitting a Subsequent Notification of Regulated Waste Activity. The college or university laboratory generator would complete the RCRA Subtitle C Site

Identification Form [EPA Form 87-12] in the Notification of Waste Activity Instructions and Form Booklet or the required state form. Data from the form is maintained in the agency's RCRAInfo system. EPA also requests comment on whether using this method would reduce burden on colleges and universities. In lieu of requiring notification using EPA Form 87-12, EPA is seeking comment on whether to include a requirement for the appropriate EPA Regional Administrator (or State Director, in authorized states) to send an acknowledgment of receipt to colleges and universities submitting a notification to either enter or withdraw from regulation under subpart K. EPA is also seeking comment on whether colleges and universities would still choose to be subject to subpart K if additional recordkeeping or reporting requirements are necessarily imposed and when it would be too burdensome.

#### *E. Implementation and Enforcement*

Colleges and universities with laboratories that are subject to the existing hazardous waste regulations of 40 CFR 262.11 and 262.34(c) must comply with either those existing regulations or with today's proposed subpart K of part 262, as finalized. Today's proposal co-proposes two enforcement options for the Laboratory Management Plan (LMP) requirement. Under proposed option one, colleges and universities must develop, implement and maintain an LMP. However, how a college or university chooses to meet the required rule standards in the LMP is not enforceable. Proposed option two, as with option one, requires colleges and universities to develop, implement and maintain an LMP; however, the college or university must comply with the procedures described in their LMP. Only colleges and universities with eligible laboratories, as defined in this proposal, may choose to manage their wastes according to subpart K. All laboratories sharing a single identification number (ID) must comply with either the existing generator regulations of 40 CFR 262.11 and 262.34(c) or with subpart K of 40 CFR part 262. Specifically, a college or university may not decide to manage the unwanted materials from some of its laboratories or campuses under the existing hazardous waste regulations and then manage unwanted materials from other laboratories with that same ID number under today's proposed alternative regulations. However, colleges and universities may choose which set of regulations (i.e., 40 CFR subpart K or 40 CFR 262.11 and 262.34(c)) to comply with on a case-by-

case basis for laboratories or campuses with unique RCRA ID numbers.

In addition, since today's proposal is optional, it is possible that eligible colleges and universities could be subject to two different sets of requirements for waste management: 40 CFR part 262, subpart K for unwanted materials generated in its laboratories and 40 CFR part 262, subpart C for all other applicable wastes generated by the college or university. Further, the regulatory status of laboratories sharing the same RCRA ID number may fluctuate periodically since colleges and universities have the option to enter or exit regulation under subpart K at their discretion. As a result, implementers will need to determine a college or university's laboratory regulatory status at any given time for compliance monitoring and assistance.

Colleges and universities regulated under subpart K of part 262 must adhere to the requirements and standards set forth therein for notifying the appropriate State or EPA Administrator of its participation or subsequent withdrawal from subpart K (§§ 262.203-262.204), making the hazardous waste determination (§§ 262.209-262.212), the container management and labeling requirements (§ 262.206), the training requirements (§ 262.207), and the requirement to develop and maintain an LMP which under proposed option one addresses the required performance-based elements of § 262.214 of the rule, or under proposed option two address and complies with the measures developed by the college or university and contained in their LMP to meet the performance-based elements of § 262.214 of today's proposed rule. In addition, colleges and universities must adhere to the quantity limits and removal frequencies for unwanted materials both in the laboratory and at other on-site locations (§ 262.208), and the safe movement of unwanted materials from laboratories to other on- or off-site destinations (§§ 262.210, 262.211 and 262.212). Further, the college or university must make its LMP available to students, laboratory workers, others at the college or university who request it and inspectors, and the LMP must be reviewed and revised as needed. Failure to comply with the requirements of the rule, including the performance-based requirements and standards set forth in the rule, may subject a college or university to an enforcement action. To comply with the LMP requirement of proposed option one, colleges and universities must meet the performance-based standards requirements set forth in the proposed rule; however, how a

college or university chooses to describe its procedures in the LMP or how the LMP is implemented is not an enforceable action. For a college or university to comply with the co-proposed option two for the LMP requirement, a college or university must implement the measures contained in their LMP to meet the performance-based standards. For example, minimum standards exist in the rule with which colleges and universities are required to comply, including a requirement for an LMP and a requirement to document in a college or university's LMP how it will meet the standards of the rule. Specifically, an LMP must describe how a college or university will meet the required standards for: (1) Container labeling and management in accordance with § 262.206(a) and (b); (2) training of laboratory workers, other appropriate faculty, and environmental health and safety personnel, commensurate with their duties in accordance with § 262.207(a); (3) instructing students in accordance with § 262.207(b); (4) ensuring the safe movement of unwanted materials from the laboratory to an on-site central accumulation area; an on-site interim status/permitted treatment, storage, or disposal facility; or an off-site interim status/permitted treatment, storage, or disposal facility in accordance with § 262.207(c); (5) developing a regular schedule for identifying and removing unwanted materials from its laboratories in accordance with § 262.208, (6) making the hazardous waste determination, including where the determination will be made in accordance with § 262.209 and (7) conducting laboratory clean-outs in accordance with § 262.213, if a college or university chooses to conduct these events. If these required standards are not addressed in an LMP, the college or university is in violation and an enforcement action may ensue. However, under the proposed option it is the intent of the proposed rule that if a college or university does not comply precisely with the terms of its LMP, that no enforcement action can be levied against it, provided the college or university meets the performance-based requirements. As an example, colleges and universities must describe in a LMP how it will instruct students. If the college or university LMP contains an instruction program that includes a specific number of hours of classroom training for students, but students receive either a different number of hours, or a different type of training, such as video instruction, the college or university would not be in violation of

subpart K, as long as the students are instructed and meet the performance-based standards. However, it is the intent of co-proposed option two to require that a college or university's LMP is enforceable. Specifically, while the college or university may tailor the approach or measures developed to meet the required standards of the rule in order for a college or university to be in compliance with co-proposed option two, the college or university must implement those measures as developed and described in their LMP.

Further, under subpart K, colleges and universities are required to maintain and retain certain records as specified in section D of this preamble and the appropriate sections of this proposed rule. Specifically, colleges and universities must maintain the following records: (1) Notifications to enter or exit participation in subpart K, (2) an LMP, (3) training records for RCRA-trained individuals and laboratory workers, and (4) laboratory clean-outs.

In summary, colleges and universities with laboratories must either comply with the existing regulations found at 40 CFR 262.11 and 262.34(c), or with today's proposal, as finalized. Colleges and universities with eligible laboratories electing to be regulated under subpart K must comply with the requirements set forth in today's proposal. Failure to comply with these requirements or to meet the performance-based standards of this proposed rule may result in an enforcement action. As referenced above and specified in the rule language, a violation may occur if colleges or universities fail to notify the appropriate EPA Regional Administrator or State Director of their election to participate or withdrawal from regulation under subpart K and to include the required information in the notice; do not develop or revise an existing plan to meet the LMP requirements of this proposal; fail to meet required container labeling and management standards; do not maintain required records, such as training records for RCRA-trained individuals at LQGs, clean-out documentation and notifications to enter or withdrawal from subpart K; do not instruct students and train laboratory workers and other relevant faculty commensurate with their duties; do not comply with the requirement that only RCRA-trained individuals may make the hazardous waste determination or transport unwanted materials on- or off-site; and do not comply with the rule requirements for making the hazardous waste determination in the laboratory, or on-

site CAA, or TSDF, including such requirements as frequencies for removing unwanted materials from the laboratory or on-site CAA, or TSDF; quantity limits for accumulating unwanted materials or chemicals in the laboratory; providing dates for unwanted material accumulation and removal in the laboratory or other areas where the hazardous waste determination is made or for laboratory clean-outs. In essence, while this summary is not exhaustive, failure to adhere to or comply with any of the requirements as found in today's proposal or failure to meet any of the performance-based standards of this proposal may result in an enforcement action.

In addition, today's proposed rule would not affect the college and university's obligation to promptly respond to any releases of hazardous wastes that may occur, including releases in the laboratory, as they may later prove to be hazardous wastes once the hazardous waste determination is made. Any management of released material not in compliance with applicable Federal and State hazardous waste requirements could result in an enforcement action. For example, an individual who spilled or released a hazardous waste and failed to immediately clean it up could potentially be subject to enforcement for illegal disposal of the hazardous wastes. See, for example, 40 CFR 264.1(g)(8). In addition, solid and hazardous waste releases could potentially be addressed through enforcement orders, such as orders under RCRA sections 3013 and 7003.

## V. State Authorization

### A. Applicability of the Rule in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified states to administer their own hazardous waste programs in lieu of the federal program within the state. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized states have primary enforcement responsibility. The standards and requirements for state authorization are found at 40 CFR part 271.

Prior to enactment of the Hazardous and Solid Waste Amendments of 1984 (HSWA), a State with final RCRA authorization administered its hazardous waste program entirely in lieu of EPA administering the federal program in that state. The federal requirements no longer applied in the authorized state, and EPA could not

issue permits for any facilities in that state, since only the state was authorized to issue RCRA permits. When new, more stringent federal requirements were promulgated, the state was obligated to enact equivalent authorities within specified time frames. However, the new federal requirements did not take effect in an authorized state until the state adopted the Federal requirements as state law.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), which was added by HSWA, new requirements and prohibitions imposed under HSWA authority take effect in authorized states at the same time that they take effect in unauthorized states. EPA is directed by the statute to implement these requirements and prohibitions in authorized states, including the issuance of permits, until the state is granted authorization to do so. While states must still adopt HSWA related provisions as state law to retain final authorization, EPA implements the HSWA provisions in authorized states until the states do so.

Authorized states are required to modify their programs only when EPA enacts Federal requirements that are more stringent or broader in scope than existing Federal requirements. RCRA section 3009 allows the states to impose standards more stringent than those in the Federal program (see also 40 CFR 271.1). Therefore, authorized states may, but are not required to, adopt Federal regulations, both HSWA and non-HSWA, that are considered less stringent than previous Federal regulations.

#### *B. Effect on State Authorization*

Today's notice proposes regulations that would not be promulgated under the authority of HSWA. Thus, the standards proposed today would be applicable on the effective date only in those states that do not have final authorization. Moreover, authorized states are required to modify their program only when EPA promulgates Federal regulations that are more stringent or broader in scope than the authorized state regulations. For those changes that are less stringent or reduce the scope of the Federal program, states are not required to modify their program. This is a result of section 3009 of RCRA, which allows states to impose more stringent regulations than the Federal program. Today's proposal, however, is considered to be neither more nor less stringent than the current standards. Therefore, authorized states would not be required to modify their programs to adopt regulations consistent with and equivalent to today's proposed

standards. Nevertheless, because EPA believes that today's proposal will increase the ability of colleges and universities to comply with the RCRA hazardous waste generator regulations, which would likely lead to greater environmental protection, EPA strongly encourages States to adopt today's proposed rule, once it is finalized. Colleges and universities located in authorized states wishing to be subject to subpart K do not have this option until their state has adopted the final rule.

### **VI. Statutory and Executive Order Reviews**

#### *A. Executive Order 12866: Regulatory Planning and Review*

##### 1. Economic Analysis

Under Executive Order 12866 (58 FR 51735 (October 4, 1993)), the Agency, in conjunction with OMB's Office of Information and Regulatory Affairs (OIRA), must determine whether a regulatory action is "significant" and therefore subject to OMB review and the full requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this rule is a "significant regulatory action." The proposed rule raises novel legal or policy issues. The proposed rule is unlikely to result in any significant university lab waste management costs or cost savings. Thus, the \$100 million threshold for economic significance, as established under point number one above, is not relevant to this action. In addition, this rule is not expected to adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities. Thus, this rule is not

considered to be an economically significant action. This rule is also not considered significant under points two through three of the Order. Finally, while economic benefits have not been quantified or monetized for this proposal, we believe such benefits to be well below the \$100 million threshold.

We have prepared an economic assessment in support of today's proposal. This document is entitled: Assessment of Costs, Benefits, and Other Impacts For the Proposed Revised Standards Applicable to Generators of Hazardous Waste; Subpart K—Academic Laboratories. Findings from this document are summarized below. This document, and any changes made in response to OMB review, are maintained in the RCRA docket established for today's action. Interested persons are encouraged to read and comment on all aspects of this document.

##### 2. Summary of Proposed Rule Findings: Costs, Economic Impacts, Benefits

This section summarizes the findings from our Assessment document, as identified above. A detailed review of our analytical methodology, data sources, findings, and limitations are presented in the full Assessment document.

The Agency has identified a total of 1,811 colleges and universities in operation in the U.S. Of this total number of colleges and universities, we estimate that 333 are large quantity generators (LQGs) and 1,478 are small quantity generators (SQGs).

The total quantity of hazardous waste generated by the affected colleges and universities, excluding remediation wastes was estimated based on 2001 biennial reporting data. In total, the affected colleges and universities generated a total of 11,628 tons of hazardous waste during 2001. Of this waste quantity, laboratory hazardous wastes are estimated to range from approximately 3,400 to 6,000 tons per year. Only the management of laboratory-generated hazardous wastes are affected by the proposed rulemaking.

The proposed rule is optional, which means that individual colleges and universities may choose to be regulated under subpart K, or continue to operate under existing regulations. Furthermore, because the rule is optional, states with authority to administer the RCRA program may adopt the proposed rule (when it is finalized) or continue to rely on existing rules. Because the rule is optional, we believe only some states will adopt the rule. Additionally, we believe that colleges and universities

will only choose to be subject to the rule if it is deemed to be in their interest. For purposes of the EA, it is assumed that only colleges and universities that would experience a reduction in hazardous waste management costs would choose to be subject to the rule. The aggregate annualized cost savings associated with the proposed rule are estimated to range from \$0.6 to \$2.9 million for all colleges and universities that choose to be subject to subpart K.

The proposed regulations have numerous benefits. There are many economic gains through efficient waste management practices, waste minimization and waste coordination activities. The structured nature of the Laboratory Management Plan (LMP) will result in safer laboratory practices and increased awareness of waste management. This would minimize exposure of hazardous substances to humans and the environment. Ultimately, the proposed changes would improve the way universities coordinate and integrate waste management activities and enhance awareness about proper handling techniques.

In addition to the LPM, the proposed rule specifies training requirements for students, laboratory workers, individuals involved in the on-site transportation of potentially hazardous wastes and individuals making the hazardous waste determination. The requirements for training are expected to reduce the potential for release of hazardous materials. For example, waste generated through experimentation may react adversely if incorrectly stored or managed; training requirements for laboratory workers will ensure workers are knowledgeable in the storage and compatibility of waste materials, as well as reagents.

The Agency believes that the proposed rule will also encourage more frequent clean-outs of unwanted material, including unused reagents from laboratories. Over time, storage of unused material stored in the laboratory can suffer from deteriorating labels and containers, increasing the chances that a long-stored reagent will be accidentally or mistakenly released into the environment. More frequent clean-outs of laboratories will help to reduce this potential.

The Agency did not complete a formal RCRA 3007 survey of college and university laboratories. Consequently, for this assessment it was necessary to rely on publicly available data which resulted in numerous limitations. Furthermore, this analysis may not capture all of the variables that affect a generator's decision to manage hazardous wastes under the proposed

rule. College and university laboratories manage hazardous wastes with substantial variations in procedures and staff making hazardous waste determinations, in regarding laboratory clean-outs, use of subcontractors and other factors which could not all be modeled. Additionally, this analysis relies on biennial reporting data which does not include hazardous waste quantities for a number of SQGs. Furthermore, it is difficult to determine whether hazardous waste reported is generated in college and university laboratories or other college and university operations.

#### *B. Paperwork Reduction Act (ICR)*

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. The Information Collection Request (ICR) document prepared by EPA has been assigned EPA ICR Number 0820.10.

EPA is proposing an alternative set of generator regulations for college and university laboratories under the authority of sections 2002, 3001, 3002, and 3004 of RCRA as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA). Section 2002 authorizes EPA to prescribe regulations as are necessary to carry out the requirements under the RCRA statute. Section 3001 authorizes EPA to develop and promulgate criteria for identifying the characteristics of hazardous waste, and for listing hazardous waste, which would be subject to the hazardous waste program. Sections 3002(a) and 3004(a) direct EPA to establish requirements for hazardous waste generators and TSDFs respecting, among other things, recordkeeping practices for hazardous wastes.

As stated above, this proposed rule establishes an alternative set of generator requirements for eligible college and university laboratories. It is important that EPA or the authorized states know which set of regulations a college or university is subject to. Therefore, EPA has determined at proposed 40 CFR 262.203 and 262.204 that it is necessary to require colleges and universities to submit a notification to the EPA Regional Administrator or State Director, in authorized states indicating that they are electing to be subject to or withdrawing from subpart K for all laboratories under the same EPA ID number.

Under proposed 40 CFR 262.206, 262.208, 262.10, 262.11, and 262.12 colleges and universities must label containers of unwanted materials as

specified. These labeling requirements are necessary to: demonstrate compliance with subpart K, alert individuals handling the containers of its contents to ensure proper handling, assist RCRA-trained individuals in making the hazardous waste determination and assigning the appropriate hazardous code(s) and for enforcement and monitoring purposes.

Proposed 40 CFR 262.207 requires training or instruction for all individuals working in a laboratory commensurate with their duties. This training/instruction is necessary to ensure that unwanted materials are handled safely and in an environmentally sound manner and in compliance with the proposal. In addition, colleges and universities that are LQGS must maintain training records for laboratory workers to ensure compliance with the proposed requirements.

Under proposed 40 CFR 262.313 colleges and universities must develop and maintain documentation on laboratory clean-outs to ensure compliance with the proposed requirement.

Under proposed 40 CFR 262.214 colleges and universities are required to develop, implement and maintain a laboratory management plan to document their practices for complying with the performance-based requirements of subpart K.

Section 3007(b) of RCRA and 40 CFR part 2, subpart B, which defines EPA's general policy on public disclosure of information, contain provisions for confidentiality. However, the Agency does not anticipate that businesses will assert a claim of confidentiality covering all or part of the proposed rule. If such a claim were asserted, EPA must and will treat the information in accordance with the regulations cited above. EPA also will assure that this information collection complies with the Privacy Act of 1974 and OMB Circular 108.

According to the estimates provided in the ICR for this proposed rule, the average annual incremental burden to respondents as a result of the proposed requirements is approximately 59,136 hours and \$2.08 million. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the

existing ways to comply with any previously applicable instructions and requirements; train personnel to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for this rule, which includes this ICR, under Docket ID number EPA-HQ-RCRA-2003-0012 or EPA-2050 AG 18 RCRA-2003-0012. Submit any comments related to the ICR for this proposed rule to EPA and OMB. See **ADDRESSES** section at the beginning of this notice for where to submit comment to EPA. Send comments to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW., Washington, DC 20503, Attention: Desk Officer for EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after May 23, 2006, a comment to OMB is best assured of having its full effect if OMB receives it by June 22, 2006. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

#### C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 U.S.C. 601 *et seq.*, generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of today's proposed rule on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a

government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise that is independently owned and operated and is not dominant in its field.

In determining whether a rule has a significant economic impact on a substantial number of small entities, the impact of concern is any significant adverse economic impact on small entities, since the primary purpose of the regulatory flexibility analysis is to identify and address regulatory alternatives "which minimize any significant economic impact of the proposed rule on small entities." 5 U.S.C. 603 and 604. Thus, an agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, or otherwise has a positive economic effect on all of the small entities subject to the rule.

Because this proposed rule is performance-based, colleges and universities with qualifying laboratories have increased flexibility to manage materials and hazardous wastes in a manner best suited to the operations at their individual institutions. The Agency believes that hazardous waste management costs for both small and large entities will be reduced or minimized. In addition, since facilities may choose to either opt into the new requirements in today's proposal or to remain subject to the existing part 262 requirements, EPA believes facilities will only opt into today's proposal if they are more cost effective or otherwise beneficial to the facility. EPA has therefore concluded that today's proposed rule will relieve regulatory burden for all small entities.

Because this proposal will not have a significant impact on a substantial number of small entities, EPA nonetheless has tried to reduce the impact of this proposal on small entities. In addition to the economic analysis, we conducted outreach activities to ensure that small business interests were informed of our potential actions, and to solicit input from representatives of small entities during the development of the proposal. We continue to be interested in the potential impacts of the proposed rule on small entities and welcome comments on issues related to such impacts.

After considering the economic impacts of today's proposed rule on small entities, we have concluded that this proposed rule will not have a significant economic impact on a

substantial number of small entities. For the reasons discussed above, I certify that this action will not have a significant economic impact on a substantial number of small entities.

#### D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of \$100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that this rule does not contain a Federal mandate that may result in expenditures of \$100 million or more for State, local, and tribal governments, in the aggregate, or to the private sector in any one year. This is because this final rule imposes no enforceable duty on any State, local or tribal governments. EPA also has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. Thus, today's rule is not

subject to the requirements of sections 202 and 205 of the UMRA.

*E. Executive Order 13132: Federalism*

Executive Order 13132, entitled “Federalism” (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure “meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.” “Policies that have federalism implications” is defined in the Executive Order to include regulations that have “substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.”

This proposed rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. This proposed rulemaking directly affects primarily generators of “unwanted materials” and hazardous wastes from college and university laboratories, as defined in this proposal. There are no state and local government bodies that incur direct compliance costs by this rulemaking. State and local government implementation expenditures are expected to be a minimum of \$2,126 in any one year. The \$2,126 cost does not include one-time-only costs of \$23,917 for reviewing notifications from schools and a cost of \$10,632 for initial inspector training (refer to the economic background document to this proposed rule for more information). Thus, Executive Order 13132 does not apply to this proposed rule.

*F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments*

Executive Order 13175, entitled “Consultation and Coordination with Indian Tribal Governments” (65 FR 67249, November 9, 2000), requires EPA to develop an accountable process to ensure “meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.”

EPA has concluded that this proposed rule may have tribal implications to the extent that qualifying academic institutions with laboratories affiliated with tribal lands could be affected. However, this proposed rule will neither impose substantial direct compliance costs on tribal governments or preempt tribal law.

EPA did not consult directly with representatives of Tribal governments early in the process of developing this proposal. However, EPA did conduct an extensive outreach process with industry. Thus, EPA believes it has captured concerns that also would have been expressed by representatives of Tribal governmental. EPA solicits additional comments on this proposed rule from Tribal officials.

*G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks*

Executive Order 13045: “Protection of Children from Environmental Health Risks and Safety Risks” (62 FR 19885, April 23, 1997) applies to any rule that: (1) is determined to be “economically significant” as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is

preferable to other potentially effective and reasonably feasible alternatives being considered by the Agency.

This proposed rule is not subject to the Executive Order because it is not economically significant as defined in Executive Order 12866, and because the Agency does not have reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children.

*H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Usage*

This rule is not a “significant energy action” as defined in Executive Order 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Usage” (66 FR 28355, May 22, 2001) because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

*I. National Technology Transfer Advancement Act*

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (“NTTAA”), Public Law 104–113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards. This proposed rule does not involve technical standards. Therefore, EPA is not considering the use of any voluntary consensus standards.

**Attachment A**

TABLE 1.—COMPARISON OF CURRENT AND PROPOSED REGULATIONS FOR LABORATORIES

	Current regulations §262.34(c)	Proposed regulations subpart K
name of accumulation area .....	satellite accumulation area .....	laboratory.
materials regulated .....	hazardous wastes & acute hazardous wastes	unwanted materials & reactive acutely hazardous unwanted materials.
hazardous waste determination .....	must make hazardous waste determination: ... <ul style="list-style-type: none"> <li>• in satellite accumulation area .....</li> <li>• when hazardous waste is generated ...</li> </ul>	RCRA-trained individual must make hazardous waste determination: <ul style="list-style-type: none"> <li>• in laboratory, before unwanted material is removed, or</li> <li>• within 4 days of arriving at on-site central accumulation area or on-site TSDF.</li> </ul>
maximum accumulation time in lab .....	none (unless 55 gallons hazardous waste or 1 quart acute hazardous waste is exceeded).	six months (unless 55 gallons hazardous waste or 1 quart reactive acutely hazardous waste is exceeded).

TABLE 1.—COMPARISON OF CURRENT AND PROPOSED REGULATIONS FOR LABORATORIES—Continued

	Current regulations § 262.34(c)	Proposed regulations subpart K
maximum accumulation volume .....	<ul style="list-style-type: none"> <li>• 55 gallons of hazardous waste .....</li> <li>• 1 quart of acute hazardous waste .....</li> </ul>	<ul style="list-style-type: none"> <li>• 55 gallons of unwanted material</li> <li>• 1 quart of reactive acutely hazardous unwanted material.</li> </ul>
maximum number of days that lab can exceed maximum volume.	3 days .....	10 calendar days.
labeling on container .....	“hazardous waste” or “other words that identify the contents of the container”.	<ul style="list-style-type: none"> <li>• “unwanted material” and</li> <li>• sufficient information to alert emergency responders to hazards of contents.</li> </ul>
information associated with container .....	none .....	<ul style="list-style-type: none"> <li>• sufficient information to allow a RCRA-trained individual to make a hazardous waste determination.</li> <li>• date accumulation begins.</li> </ul>
training of laboratory personnel .....	none .....	<ul style="list-style-type: none"> <li>• training for laboratory workers commensurate with duties.</li> <li>• instruction for students.</li> </ul>
container management .....	<ul style="list-style-type: none"> <li>• containers must be in good condition .....</li> <li>• hazardous waste must be compatible with container.</li> <li>• containers must be kept closed except when adding or removing waste.</li> </ul>	<ul style="list-style-type: none"> <li>• containers must be properly managed to assure safe storage of unwanted materials to prevent spillage, or adverse chemical reactions or other dangerous situations that may result in harm to laboratory workers or the environment.                             <ul style="list-style-type: none"> <li>• containers must be in good condition.</li> <li>• unwanted material must be compatible with container.</li> </ul> </li> </ul>
Laboratory Management Plan .....	none .....	required to describe specifics of implementing performance-based standards.
incentives for non-mandatory laboratory clean-outs (limited to 1x per 12-month period per lab).	none .....	<ul style="list-style-type: none"> <li>• do not have to count hazardous waste generated during lab clean-out toward generator status.</li> <li>• have 30 calendar days to complete clean-out.</li> </ul>
notification .....	notification to indicate generator status .....	notification to indicate decision to exercise option to comply with part 262 subpart K.

**List of Subjects**

*40 CFR Part 261*

Environmental protection, Hazardous waste, Recycling, Reporting and recordkeeping requirements.

*40 CFR Part 262*

Environmental protection, Exports, Hazardous materials transportation, Hazardous waste, Imports, Labeling, Packaging and containers, Reporting and recordkeeping requirements.

Dated: May 12, 2006.

**Stephen L. Johnson,**  
*Administrator.*

For the reasons set out in the preamble, parts 261 and 262 of title 40, Chapter I of the Code of Federal Regulations are proposed to be amended as follows:

**PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE**

1. The authority citation for part 261 continues to read as follows:

**Authority:** 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924(y), and 6938.

2. Section 261.5 is amended by adding paragraph (c)(7) to read as follows:

**§ 261.5 Special requirements for hazardous waste generated by conditionally exempt small quantity generators.**

\* \* \* \* \*

(c) \* \* \*

(7) Is generated solely as a result of a laboratory clean-out conducted at a college or university pursuant to § 262.213. For purposes of this provision, the term college or university shall have the meaning as defined in § 262.200 of part 262.

\* \* \* \* \*

**PART 262—STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE**

3. The authority citation for part 262 continues to read as follows:

**Authority:** 42 U.S.C. 6906, 6912, 6922–6925, 6937, and 6938.

**Subpart A—General**

4. Section 262.10 is amended by adding paragraph (l) to read as follows:

**§ 262.10 Purpose, scope, and applicability.**

\* \* \* \* \*

(l) The laboratories located at a college or university that chooses to be subject to the requirements of subpart K of this part are not subject to the

requirements of § 262.11 or § 262.34(c), except as provided in subpart K. For purposes of this provision, the terms “laboratory” and “college” and “university” shall have the meaning as defined in § 262.200 of subpart K of this part.

5. Part 262 is amended by adding subpart K to read as follows:

**Subpart K—Alternative Requirements for Hazardous Waste Determination and Accumulation of Unwanted Material for Laboratories Located at Colleges/Universities**

Sec.

- 262.200 Definitions for this subpart.
- 262.201 Applicability of this subpart.
- 262.202 This subpart is optional.
- 262.203 How a college or university indicates it will be subject to the requirements of this subpart.
- 262.204 How a college or university indicates it will withdraw from the requirements of this subpart.
- 262.205 Summary of the requirements of this subpart.
- 262.206 Labeling and management standards for containers of unwanted material in the laboratory.
- 262.207 Training and instruction.
- 262.208 When must containers of unwanted material be removed from the laboratory?

- 262.209 Where and when to make the hazardous waste determination and where to send containers of unwanted material upon removal from the laboratory.
- 262.210 Making the hazardous waste determination in the laboratory before the unwanted material is removed from the laboratory.
- 262.211 Making the hazardous waste determination at an on-site central accumulation area.
- 262.212 Making the hazardous waste determination at an on-site interim status or permitted treatment, storage or disposal facility.
- 262.213 Laboratory clean-outs.
- 262.214 Laboratory management plan.
- 262.215 Unwanted material that is not solid or hazardous waste.
- 262.216 Non-laboratory hazardous waste generated at a college/university.

**§ 262.200 Definitions for this subpart.**

The following definitions apply to this subpart:

*Central Accumulation Area* means an on-site hazardous waste accumulation area subject to either § 262.34(a) of this Part (large quantity generators) or § 262.34(d) of this Part (small quantity generators). A central accumulation area at a college or university that chooses to be subject to this subpart must also comply with § 262.211 when accumulating unwanted material.

*College/University* means a private or public, post-secondary, degree-granting, academic institution, that is accredited by an accrediting agency listed annually by the U.S. Department of Education.

*Laboratory* means an area within a college or university where relatively small quantities of chemicals and other substances are used on a non-production basis for teaching or research purposes and are stored and used in containers that are easily manipulated by one person. An area where the same hazardous waste is routinely generated, such as photo processing, is not a laboratory.

*Laboratory Clean-out* means an evaluation of the inventory of chemicals and other materials in a laboratory that are no longer needed or that have expired and the subsequent removal of those chemicals or other unwanted material from the laboratory. A clean-out may occur for several reasons. It may be on a routine basis (e.g., at the end of a semester or academic year) or as a result of a renovation, relocation, or change in laboratory supervisor/occupant. A regularly scheduled removal of unwanted material as required by § 262.208 does not qualify as a laboratory clean-out.

*Laboratory Worker* means a person who handles chemicals and/or unwanted material in a laboratory and

may include, but is not limited to faculty, staff, post-doctoral fellows, interns, researchers, technicians, supervisors/managers, and principal investigators. A person does not need to be paid or otherwise compensated for his/her work in the laboratory to be considered a laboratory worker.

Undergraduate and graduate students in a supervised classroom setting are not laboratory workers.

*RCRA-Trained Individual* means a person who has completed the applicable RCRA training requirements of § 265.16 for large quantity generators, or § 262.34(d)(5)(iii) for small quantity generators. A RCRA-trained individual may be an employee of the college/university or may be a contractor or vendor.

*Reactive Acutely Hazardous Unwanted Material* means an unwanted material that is one of the acutely hazardous commercial chemical products listed in § 261.33(e) for reactivity and toxicity.

*Unwanted Material* means any chemical, mixtures of chemicals, products of experiments or other material from a laboratory that are no longer needed, wanted or usable in the laboratory and that are destined for hazardous waste determination by a RCRA-trained individual. Unwanted material includes reactive acutely hazardous unwanted materials. Unwanted material includes material that may eventually be determined not to be solid waste pursuant to § 261.2 or a hazardous waste, pursuant to § 261.3.

**§ 262.201 Applicability of this subpart.**

This subpart provides optional, alternative requirements to the requirements in §§ 262.11 and 262.34(c) for the hazardous waste determination and accumulation of hazardous waste in laboratories located at colleges and universities that choose to be subject to this subpart and that complete the notification requirements of § 262.203. This subpart does not apply to laboratories at colleges or universities that are conditionally exempt small quantity generators (CESQGs) under § 261.5.

**§ 262.202 This subpart is optional.**

Colleges and universities have the option of complying with this subpart with respect to its laboratories, as an alternative to the requirements of §§ 262.11 and 262.34(c).

**§ 262.203 How a college or university indicates it will be subject to the requirements of this subpart.**

(a) A college or university must notify the appropriate EPA Regional

Administrator in writing that it is electing to be subject to the requirements of this Subpart for all laboratories located at the college or university under the same EPA Identification Number. In the notification, a college or university must include:

(1) The name, address and EPA Identification number of the college or university

(2) Contact information for an appropriate representative of the college or university, and

(3) The date on which the laboratories at the college or university will become subject to this subpart.

(b) A college or university must keep a copy of the notification on file at the college or university while its laboratories are subject to this subpart.

**§ 262.204 How a college or university indicates it will withdraw from the requirements of this subpart.**

(a) A college or university must notify the appropriate EPA Regional Administrator in writing that it is electing to no longer be subject to the requirements of this subpart for all laboratories located at the college or university under the same EPA Identification Number. In the withdrawal notification, a college or university must include:

(1) The name, address and EPA Identification number of the college or university

(2) Contact information for an appropriate representative of the college or university, and

(3) The date on which the laboratories at the college or university will no longer be subject to this subpart.

(b) A college or university must keep a copy of the withdrawal notice on file at the college or university for three years from the date of the letter.

**§ 262.205 Summary of the requirements of this subpart.**

This subpart provides optional, alternative requirements for the hazardous waste determination and accumulation of unwanted material in laboratories located at colleges and universities that choose to be subject to this subpart and that complete the notification requirements of § 262.203. Under this subpart, a participating college or university must manage the unwanted material in its laboratories in accordance with §§ 262.206–262.208 (container labeling, container management standards, training/instruction, regular removal from the laboratory) from the point of generation of unwanted materials in the laboratory. For purposes of this subpart, the

hazardous waste determination pursuant to § 262.11 for unwanted material must be made by a RCRA-trained individual in the laboratory before the unwanted material is removed from the laboratory, or within 4 calendar days of arriving at an on-site central accumulation area, or on-site treatment, storage or disposal facility in accordance with the applicable provisions of §§ 262.210, 262.211, or 262.212. A college or university that chooses to be subject to subpart K is not required to have interim status or a permit for the accumulation of hazardous waste in the laboratory, provided the laboratories comply with the provisions of this subpart and the college or university has a Laboratory Management Plan (LMP) in accordance with § 262.214 that describes how the college or university laboratories will comply with the requirements of subpart K.

**§ 262.206 Labeling and management standards for containers of unwanted material in the laboratory.**

A college or university must manage containers of unwanted material while in the laboratory in accordance with the requirements in this section.

(a) Labeling: Label unwanted material as follows:

(1) The following information must be affixed to or physically accompany the container:

(i) The words “unwanted material” and

(ii) Sufficient information to alert emergency responders to the hazards or the contents of the container.

(2) The following information must be associated with the container:

(i) The date that unwanted material first began accumulating in the container.

(ii) Information sufficient to allow a RCRA-trained individual to properly identify whether an unwanted material is a solid and hazardous waste and to assign a proper hazardous waste code(s), pursuant to § 262.11. For example, the following information may be associated with the container:

(A) The name and/or description of the chemical contents or composition of the unwanted material, or, if known, the product of the chemical reaction.

(B) Whether the unwanted material has been used or is unused

(C) A description of the manner in which the chemical was processed, if applicable.

(b) Management of Containers in the Laboratory: A college or university must properly manage containers to assure safe storage of the unwanted material, to prevent leaks, spills, emissions to the

air, adverse chemical reactions, and to prevent dangerous situations that may result in harm to human health or the environment. Proper container management must include the following:

(1) Containers are maintained and kept in good condition and damaged containers are replaced.

(2) Containers are compatible with their contents to avoid reactions between the contents and the container; and are made of, or lined with, material that is compatible with the unwanted material so that the container's integrity is not impaired.

**§ 262.207 Training and instruction.**

A college or university must provide training or instruction to all individuals working in a laboratory at that college or university, as follows:

(a) For laboratory workers: Training for laboratory workers must be commensurate with their duties so they understand the requirements in this subpart and implement them such that it ensures the laboratories' compliance with the requirements of this subpart.

(1) A college or university that is a large quantity generator must maintain training records for laboratory workers:

(i) That are sufficient to determine whether laboratory workers have been trained.

(ii) For the durations specified in § 265.16(e).

(2) [Reserved]

(b) For students: Students in a laboratory where unwanted material is generated must receive instruction relevant to their activities in the laboratory. For example, instruction may include proper container labeling, collection procedures for unwanted material, and emergency response procedures.

(c) For on-site transportation: Only RCRA-trained individuals may transport unwanted material and hazardous waste on-site.

(d) For hazardous waste determination: Only RCRA-trained individuals may make hazardous waste determinations, pursuant to § 262.11, for unwanted material

(e) A college or university can provide training and instruction for laboratory workers and students in a variety of ways, including, but not limited to:

(1) Instruction by the professor/manager before or during an experiment.

(2) Formal classroom training.

(3) Electronic/written training.

(4) On-the-job training.

(5) Written or oral exams.

**§ 262.208 When must containers of unwanted material be removed from the laboratory?**

(a) A college or university must remove all containers of unwanted material and acutely reactive unwanted material from each laboratory on a regular interval, not to exceed 6 months. The college or university must specify in its Laboratory Management Plan a regular interval for removal of unwanted material and acutely reactive unwanted material.

(b) If a laboratory accumulates more than 55 gallons of unwanted material (including reactive acutely hazardous unwanted material) before the regularly scheduled removal, the college or university must ensure that all containers of unwanted material (including reactive acutely hazardous unwanted material) are:

(1) Labeled with the date that 55 gallons is exceeded; and

(2) Removed from the laboratory within 10 calendar days of the date that 55 gallons was exceeded, or at the next regularly scheduled removal, whichever comes first.

(c) If a laboratory accumulates more than 1 quart of reactive acutely hazardous unwanted material before the regularly scheduled removal, then the college or university must ensure that all containers of reactive acutely hazardous unwanted material are:

(1) Labeled with the date that 1 quart is exceeded; and

(2) Removed from the laboratory within 10 calendar days of the date that 1 quart was exceeded, or at the next regularly scheduled removal, whichever comes first.

**§ 262.209 Where and when to make the hazardous waste determination and where to send containers of unwanted material upon removal from the laboratory.**

A college or university must ensure that a RCRA-trained individual makes a hazardous waste determination, pursuant to § 262.11, for unwanted material in one of the following areas:

(a) In the laboratory before the unwanted material is removed from the laboratory, in accordance with § 262.210, or

(b) Within 4 calendar days of arriving at an on-site central accumulation area, in accordance with § 262.211, or

(c) Within 4 calendar days of arriving at an on-site treatment, storage or disposal facility, in accordance with § 262.212.

**§ 262.210 Making the hazardous waste determination in the laboratory before the unwanted material is removed from the laboratory.**

If a college or university makes the hazardous waste determination, pursuant to § 262.11, for unwanted material in the laboratory before the unwanted material is removed from the laboratory, it must comply with the following:

(a) A RCRA-trained individual must determine, pursuant to § 262.11, if the unwanted material is a hazardous waste before the unwanted material is removed from the laboratory.

(b) If an unwanted material is a hazardous waste, the college or university must place the appropriate hazardous waste code(s) and the words "hazardous waste" on the container label that is affixed to or physically accompanies the container, before the hazardous waste may be transferred to an on-site central accumulation area, an on-site interim status or permitted treatment, storage or disposal facility, or transported off-site to a designated facility.

(c) If an unwanted material is a hazardous waste, the college or university must count the hazardous waste toward the college or university's generator status, pursuant to § 261.5.

(d) An unwanted material that is a hazardous waste, is subject to all applicable hazardous waste regulations when it is removed from the laboratory.

(e) Unwanted material and hazardous waste that is transferred from the laboratory to an on-site central accumulation area or on-site interim status or permitted treatment, storage or disposal facility must be accompanied by a RCRA-trained individual.

**§ 262.211 Making the hazardous waste determination at an on-site central accumulation area.**

If a college or university makes the hazardous waste determination, pursuant to § 262.11, for unwanted material at an on-site central accumulation area, it must comply with the following:

(a) Unwanted material and hazardous waste that is transferred from the laboratory to an on-site central accumulation area must be accompanied by a RCRA-trained individual.

(b) Unwanted material must be taken directly from the laboratory(ies) to the on-site central accumulation area.

(c) A RCRA-trained individual must determine, pursuant to § 262.11, if the unwanted material is a hazardous waste within 4 calendar days of arriving at the on-site central accumulation area.

(d) The unwanted material becomes subject to the generator accumulation regulations of § 262.34(a) for large quantity generators or § 262.34(d) for small quantity generators as soon as it arrives in the central accumulation area, except for the "hazardous waste" labeling requirements of § 262.34(a)(3).

(e) If the unwanted material is a hazardous waste, the college or university must place the appropriate hazardous waste code(s) and the words "hazardous waste" on the container label that is affixed to the container, before the hazardous waste may be transferred to another on-site central accumulation area or on-site interim status or permitted treatment, storage or disposal facility, or transported off-site to a designated facility.

(f) If the unwanted material is a hazardous waste, the college or university must count the hazardous waste toward the college or university's generator status, pursuant to § 261.5 and is subject to all applicable hazardous waste regulations.

**§ 262.212 Making the hazardous waste determination at an on-site interim status or permitted treatment, storage or disposal facility.**

If a college or university makes the hazardous waste determination, pursuant to § 262.11, for unwanted material at an on-site treatment, storage or disposal facility, it must comply with the following:

(a) Unwanted material and hazardous waste that is transferred from the laboratory to an on-site interim status or permitted treatment, storage or disposal facility must be accompanied by a RCRA-trained individual.

(b) Unwanted material must be taken directly from the laboratory(ies) to the on-site interim status or permitted treatment, storage or disposal facility.

(c) A RCRA-trained individual must determine, pursuant to § 262.11, if the unwanted material is a hazardous waste within 4 calendar days of arriving at an on-site interim status/permitted treatment, storage or disposal facility.

(d) The unwanted material becomes subject to the terms of the college or university's hazardous waste permit or interim status as soon as it arrives in the on-site treatment, storage or disposal facility.

(e) If the unwanted material is a hazardous waste, the college or university must place the appropriate hazardous waste code(s) and the words "hazardous waste" on the container label that is affixed to or physically accompanies the container, before the hazardous waste may be transferred to another interim status or permitted

treatment, storage or disposal facility or transported off-site to a designated facility.

(f) If the unwanted material is a hazardous waste, the college or university must count the hazardous waste toward the college or university's generator status, pursuant to § 261.5 and is subject to all applicable hazardous waste regulations.

**§ 262.213 Laboratory clean-outs.**

(a) One time per 12 month period per laboratory, a college or university may opt to conduct a laboratory clean-out that is subject to all the applicable requirements of this subpart, except that:

(1) If the volume of unwanted material in the laboratory exceeds 55 gallons (or 1 quart of reactive acutely hazardous unwanted material), the college or university is not required to remove all unwanted materials from the laboratory within 10 calendar days of exceeding 55 gallons (or 1 quart of reactive acutely hazardous unwanted material), as required by § 262.208.

Instead, the college or university must remove all unwanted materials from the laboratory within 30 calendar days from the start of the laboratory clean-out, including those already in the laboratory prior to the beginning of the laboratory clean-out, and

(2) A college or university is not required to count hazardous waste generated solely during the laboratory clean-out toward its hazardous waste generator status, pursuant to § 261.5(c) and (d). An unwanted material that is generated prior to the beginning of the laboratory clean-out and is still in the laboratory at the time the laboratory clean-out commences, must be counted toward hazardous waste generator status, pursuant to § 261.5(c) and (d), if it is determined to be hazardous waste, and

(3) A college or university must document the activities of the laboratory clean-out. The documentation must, at a minimum, identify the laboratory being cleaned out, the date the laboratory clean-out begins and ends, and the volume of hazardous waste generated during the laboratory clean-out. The college or university must maintain the records for a period of three years from the date the clean-out ends.

(b) For all other laboratory clean-outs conducted during the same 12-month period, a college or university is subject to all the applicable requirements of this subpart, including, but not limited to:

(1) If the volume of unwanted material in the laboratory exceeds 55 gallons (or 1 quart of reactive acutely hazardous unwanted material), the

college or university is required to remove all unwanted materials from the laboratory within 10 calendar days of exceeding 55 gallons (or 1 quart of reactive acutely hazardous unwanted material), as required by § 262.208, and

(2) A college or university must count hazardous waste generated during the laboratory clean-out toward its hazardous waste generator status, pursuant to § 261.5(c) and (d).

**§ 262.214 Laboratory management plan.**

*option 1 for paragraph (a):*

(a) A college or university must develop, implement, and retain on-site a Laboratory Management Plan, or revise an existing plan, that describes how the college/university will comply with paragraphs (a)(1) through (9) of this section:

*option 2 for paragraph (a):*

(a) A college or university must develop, implement, and retain on-site a Laboratory Management Plan, or revise an existing plan, that describes how the college/university will comply with paragraphs (a)(1) through (9) of this section. The college or university must comply with the specific provisions contained in its Laboratory Management Plan.

(1) Container management in accordance with § 262.206.

(2) Container labeling in accordance with § 262.206, including identifying where the labeling information will be located.

(3) Training for laboratory workers commensurate with their duties in accordance with § 262.207(a).

(4) Instruction for students in accordance with § 262.207(b).

(5) Training to ensure safe on-site movement of unwanted material and hazardous waste in accordance with § 262.207(c).

(6) Develop a regular schedule for identifying and removing unwanted material from laboratories in accordance with § 262.208.

(7) Make hazardous waste determinations for unwanted material, in accordance with § 262.209.

(8) Conduct laboratory clean-outs in accordance with § 262.213, if the college or university elects to conduct laboratory clean-outs.

(9) Emergency prevention, notification and response procedures appropriate to the hazards in the laboratory.

(b) A college or university must make its Laboratory Management Plan available to laboratory workers, students, or others at the college or university who request it.

(c) A college or university must review and revise its Laboratory Management Plan, as needed.

**§ 262.215 Unwanted material that is not solid or hazardous waste.**

(a) If a RCRA-trained individual determines that an unwanted material does not meet the definition of solid waste in § 261.2, it is no longer subject to this subpart or to RCRA Subtitle C.

(b) If a RCRA-trained individual determines that an unwanted material does not meet the definition of hazardous waste in § 261.3, it is no longer subject to this subpart or to RCRA Subtitle C, but may be subject to RCRA Subtitle D.

**§ 262.216 Non-laboratory hazardous waste generated at a college/university.**

A college or university that generates hazardous waste outside of a laboratory is not eligible to manage that hazardous waste under subpart K and remains subject to the generator requirements of §§ 262.11, 262.34(c) (if the hazardous waste is managed in a satellite accumulation area) and all other applicable generator requirements of 40 CFR part 262, with respect to that hazardous waste.

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