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Methamphetamine Lab Clean-Up and Remediation Issues

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Summary

Methamphetamine (meth), a drug with limited medical use and high potential for abuse and addiction, is a subject of widespread concern. Once associated mainly with the West Coast and white, male, blue-collar workers, illicit meth is now used by diverse population groups nationwide, with concentrations in the West, Southwest, and Midwest. Meth is supplied primarily by clandestine labs in California and Mexico. The drug is relatively simple to make from easily obtained recipes, but access to certain ingredients has become more difficult. Meth production in small, toxic labs (STLs) increased initially due to the successful closure of some "super-labs" (labs capable of making more than 10 pounds of meth in a 24-hour cycle), relative ease of making meth, continuing demand for the drug, and desire for potential wealth and involvement in a criminal underground social activity. Although the greater fraction of meth used and distributed across the nation comes from super-labs, the sheer number of STLs, their geographic diffusion, and their residual impacts have prompted concern in Congress, state and local governments, law enforcement agencies, and real estate and other groups.

Meth labs have many significant and widespread residual impacts. According to the United States Drug Enforcement Administration (DEA), there were 9,092 STLs and related meth sites in 2000 and 17,356 in 2003; the number has been declining since. These sites can be found in a wide range of places, such as apartments, motel rooms, abandoned buildings, and packed in car trunks in parks and other locations. Meth makers can use common items such as mason jars, coffee filters, hot plates, over-the-counter medications containing pseudoephedrine or ephedrine (e.g., Sudafed and some other nonprescription decongestants), acetone, hydrochloric acid, and anhydrous ammonia. Making meth can result in eye and respiratory irritations, chemical burns, explosions and fires, toxic wastes, and contaminated surroundings. Some residual impacts of meth production threaten the health and welfare of children removed from meth sites. This report focuses on the residual environmental impacts of STLs.

Cleaning and remediating a meth site can cost more than $200,000, depending on the magnitude of contamination. State and local governments that incur expenses cleaning a site can apply to the U.S. Environmental Protection Agency (EPA) for reimbursement, up to $25,000 per incident. Alternatively, rather than incur costs and apply for a capped reimbursement, state and local governments can notify DEA of a site, and DEA will perform and pay for cleaning. In addition, funds have been available from the Department of Housing and Urban Development (HUD) to redevelop a former meth production site.

No uniform federal guidelines or standards exist governing the process or the endpoint for cleaning or remediating STLs. Across various states, acceptable levels of meth residue, after remediation, range from 0.05 to 0.1 micrograms of meth per 100 square centimeters of surface. Twelve congressional bills, one enacted into law in March, relate broadly to meth site cleaning or remediation. This report will be updated as warranted.

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Introduction

The geographic and societal diffusion of the illicit production of methamphetamine (meth) has spread hazardous manufacturing wastes, and related concerns, into communities nationwide. The need to reduce the potential safety, health, and environmental hazards of these wastes, by cleaning and remediating the sites of illicit production, consequently also has spread nationwide. "Clean-up" is the term often used to describe removing gross, or large-scale, contaminants, such as equipment and large quantities of chemicals; clean-up is usually done for the purpose of securing evidence for criminal investigations, and for reducing imminent hazards such as explosions or fires. "Remediation" is often used to describe removing residual, or small-scale, contaminants such as chemical residues in carpeting or walls, usually for the purpose of rehabilitating a facility for reoccupancy or reuse.

While there are many ways to make meth, the most common way begins with over-the-counter medications containing pseudoephedrine or ephedrine,[1] and often involves cooking with acetone, hydrochloric acid, sodium hydroxide, ether, and anhydrous ammonia to serially concentrate and purify the meth. Cooking meth, which can result in eye and respiratory irritations, chemical burns, explosions and fires, toxic waste products, and contaminated surroundings, can be dangerous to the meth "cook," to the people and community around the lab, and to those persons who first come upon the lab, such as fire fighters, law enforcement officials, emergency medical technicians, or social welfare workers. There are reports of emergency medical technicians and police officers suffering burns, eye and respiratory irritations, nausea, and other injuries not just at meth labs, but even from treating persons removed from the labs.[2]

Depending on the process used and the skill of the cook, each pound of meth produces about six pounds of hazardous waste. Illicit meth "cooks" usually dump this waste into sewers, streams, rivers, or the ground near the lab (which may be farmland, or land over groundwater supplies), along highways, in parks and forests, or on hiking trails. Water used to extinguish lab fires also carries toxic chemicals into the environment. Cooking meth can also infuse carpeting, walls, furniture, water

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[1] Pseudoephedrine, for example, is an active ingredient in products like Sudafed and some other over-the-counter decongestants.

[2] United States Department of Health and Human Services-Centers for Disease Control and Prevention, "Public Health Consequences Among First Responders to Emergency Events Associated With Illicit Methamphetamine Laboratories," at [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4945a1.htm].

supplies, and the ground with toxic chemicals.[3] Residues of meth have been measured as high as 16,000 micrograms per 100 square centimeters of surface, with levels as high as 300 micrograms per 100 square centimeters as long as six months after the last cook, sometimes far from the actual cooking area.[4]

While health effects on a user from direct use of meth have been well-studied, long-term health-effects research on exposures to substances associated with illicit meth production has just recently begun. Such health-effects research considers impacts on children, as well as on adults, who might be in the vicinity of a meth-making site.

There are no uniform federal guidelines or standards governing the clean-up or remediation of former meth sites, either for meth residues themselves, or for chemicals related to illicit meth production, partly because there is a lack of health-effects research upon which to base such guidelines or standards. "Guidelines," as used in this report, are discretionary recommendations, often using the word "should." "Standards" are mandatory, nondiscretionary regulations which must be followed, often denoted by words like "shall" or "prohibited." Guidelines may be developed by regulators into more stringent standards.

There generally have been four main approaches to cleaning meth sites. The United States Environmental Protection Agency (EPA) can respond directly when a pollutant or contaminant at an STL site presents an imminent or substantial danger to public health or welfare, but most STLs do not rise to this level.[5] For most STLs, state and local governments can pay to clean a meth site, then apply to EPA for reimbursement which is capped at $25,000 per incident. Alternatively, rather than pay directly for clean-up and later apply for reimbursement from EPA, state and local governments instead can notify the United States Drug Enforcement Administration (DEA), in the United States Department of Justice, and DEA will take responsibility and arrange for clean-up. In addition, there have been funds available from the Department of Housing and Urban Development (HUD) to redevelop of a former meth site.

The approaches to remediate meth sites are more variable, involving private, local, and state decisions. Remediation is an additional cost, after clean-up. Neither EPA nor DEA funds are available for remediation. Owners of contaminated private

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[3] United States Department of Justice-Office of Community Oriented Policing Services. "Clandestine Drug Labs." [http://www.cops.usdoj.gov/mime/open.pdf?Item=274].

[4] Testimony by John W. Martyny, industrial hygienist and associate professor of medicine at the National Jewish Medical and Research Center in Denver, given at the United States House of Representatives' Committee on Science March 3, 2005 hearing on H.R. 798 "Methamphetamine Remediation Research Act of 2005"; this testimony is available at [http://www.house.gov/science/hearings/full05/mar3/March32005.htm].

[5] *Federal Register*, vol. 63, no. 32, Feb. 18, 1998, pp. 8284-8291. For more information about Superfund, see CRS Report RL31154, "Superfund: A Summary of the Law," by (name redacted), and "Superfund: The Hazardous Waste Cleanup Program," by the U.S. Environmental Protection Agency, available at [http://www.epa.gov/epaoswer/general/orientat/rom62.pdf].

property, e.g., an apartment building or a motel, need to decide whether remediation is sensible; remediation cost estimates may exceed the value of the property. Local or state governments need to decide whether to remediate or restrict access to a contaminated public area, e.g., a hiking trail or parking lot in a forest. Remediation is discussed further in the section below on "Clean-up and Remediation Procedures."

Remediation costs vary, depending on the severity of contamination with meth and/or meth-related compounds. The average cost to clean a meth lab is estimated to range from $1,500 to $3,000, with some clean-ups exceeding $200,000.[6] The cost of remediating an average-size site has been estimated at $50,000, according to the U.S. Department of Justice.[7]

Several factors contribute to the geographic and societal diffusion of illicit meth production and use.

Background

Methamphetamine (meth) is a Schedule II narcotic under the Controlled Substances Act (CSA), Title II of the Comprehensive Drug Abuse Prevention and Control Act of 1970. CSA regulates the manufacture and distribution of drugs, and places all drugs into one of five schedules. A drug in Schedule II, like meth, has current accepted medical use and has high potential for abuse.[8] Meth has limited medical uses for the treatment of narcolepsy, attention deficit disorders, and obesity.[9] This report focuses on illicit use and production of meth, and subsequent clean-up and remediation issues.

Production and Trafficking

Meth production, trafficking, and abuse, in general, are concentrated in the western, southwestern, and midwestern United States. Meth is primarily supplied by clandestine laboratories in Mexico and California. There are some "super-labs" (labs

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[6] United States Drug Enforcement Administration. "DEA Cracks Down on Meth Manufacturing With 'Operation Sanctioned Sins'." January 7, 2005. Available at [http://www.usdoj.gov/dea/pubs/states/newsrel/seattle010705p.html].

[7] U.S. Department of Justice, Office of Community Oriented Policing Services, "Clandestine Drug Labs," available at [http://www.cops.usdoj.gov/mime/open.pdf?Item=274].

[8] A drug in Schedule I has no current accepted medical use and has high potential for abuse; examples include heroin, marijuana, and peyote. Examples of drugs in Schedule II include cocaine, morphine, OxyContin, and amphetamine. A drug in Schedule III has current accepted medical use and medium potential for abuse; examples include opium and Tylenol with codeine. A drug in Schedule IV has current accepted medical use and low potential for abuse; examples include Darvocet, Xanax, and Ambien. A drug in Schedule V has accepted medical use and lowest potential for abuse; examples include Phenergan and Lomotil.

[9] United States Department of Health and Human Services (HHS)-National Institute on Drug Abuse. "Research Report: Methamphetamine Abuse and Addictions." January 2002. Available at [http://www.drugabuse.gov/ResearchReports/methamph/methamph.html].

capable of producing in excess of ten pounds of meth in one twenty-four hour production cycle) in Mexico and the United States producing meth and other drugs, with vast networks of transporters, distributors, and money brokers who distribute not only meth, but also cocaine, heroin, marijuana, and MDMA (more commonly known as "ecstasy"). While meth made in super-labs is for broad distribution, meth made in small-scale labs tends to be for personal use or limited distribution. Successful closure in the United States of some super-labs, the relative ease of producing meth, the continuing demand for the drug, and the desire for potential wealth and involvement in a criminal underground social activity, contributed to an increase, through 2003, in meth production in small clandestine labs, also known as small, toxic labs (STLs).[10] Official data aggregate the numbers of meth labs, dump sites, chemicals, glass, and other equipment, and are reported as meth incidents. Since 2003, the nationwide numbers of meth incidents has declined, as shown in **Table 1.**

Table 1. Number of All Meth Incidents

(including labs, dump sites, chemicals, glass, and equipment)

Calendar Year	Number of Incidents Nationwide
2000	9,092
2001	13,537
2002	16,212
2003	17,356
2004	17,170

Source: United States Drug Enforcement Administration, National Clandestine Laboratory Database. "Total of All Meth Clandestine Laboratory Incidents," [http://www.dea.gov/concern/map_lab_seizures.html].

According to state law enforcement and public health professionals, the decline in meth incidents that occurred between 2003 and 2004 was the result of a few factors:

- Some states and retailers began to institute policies to restrict access to nonprescription pseudoephedrine-containing decongestants, a common meth ingredient.
- Over time, the number of states and retailers restricting access to meth ingredients increased, which made the tactic of traveling to a nearby state or store that did not have a policy to restrict access to meth ingredients more difficult.
- Some pharmaceutical companies reformulated their nonprescription decongestants to exclude pseudoephedrine.

[10] Drug Enforcement Administration. "Drug Trafficking in the United States." Available at [http://www.usdoj.gov/dea/concern/drug_traffickingp.html].

- Stiffer sentences for those convicted of illegally making meth further discouraged involvement with STLs.[11]

In December 2005, Iowa state authorities reported a decline of approximately 80% following the passage, in May 2005, of a state law restricting access to pseudoephedrine.[12] Subsequent to the passage of similar laws, state officials in Oklahoma and Oregon each reported a decline of approximately 50%.[13] The decline is expected to be seen nationwide, when complete 2005 data become available.

Although only 20% of illicit meth used in the United States comes from STLs,[14] the sheer number of such labs, their residual impacts, and their geographic diffusion, have prompted concerns in Congress, state and local governments, law enforcement agencies, and real estate and other groups.

Residual Impacts of Meth Labs

There generally are greater concerns about the environmental wastes from STLs than from super-labs, for several reasons. First, there is a trend for super-labs, and their wastes, to be in Mexico, where the ingredients for illicit meth can be obtained more easily than in the United States. Second, production processes used in STLs tend to be less efficient than those used in super-labs, and small-scale "cooks" tend more often to be careless, resulting in proportionally more contaminants (in the meth and in the environment) than production processes in super-labs. Third, while there are fewer super-labs, there are thousands of STLs across the United States: approximately 9,000 domestic small-scale labs with capacities under 10 pounds in

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[11] Comments made by several participants at the Midwestern Governors Association Regional Meth Summit, held in Indianapolis, Indiana, December 14-15, 2005, including Marvin Van Haaften (Director of Iowa's Office of Drug Control Policy), and Bruce Liebe (Illinois State Police). Available at[http://www.in.gov/cji/methfreeindiana/summit/index.html].

[12] Ibid.

[13] Office of Oklahoma Governor Brad Henry. "Governor Henry Urges Other States to Adopt Versions of Oklahoma Law Combating Meth." September 29, 2004. Available at [http://www.governor.state.ok.us/display_article.php?article_id=373&article_type=1]. Hon. Greg Walden. Letter, January 3, 2006. Available at [http://www.oregonmethwatch.org/walden%20letter.pdf]. Reducing the number of STLs can reduce environmental hazards and remediation costs, but some drug agents, emergency medical personnel, and addiction counselors note that meth supply has not declined, because of increased imports, and the higher cost and potency of imported meth is resulting in more overdoses and addictions, and more burglaries to pay for the imported meth; there have been suggestions for increased research and development, possibly through the National Science Foundation, for more effective demand reduction programs and treatments for overdosing.

[14] DEA statistics in "Senators predict passage of meth law," article by Joseph Rose in *The Oregonian*, February 25, 2005, at [http://www.nationaldec.org/news/2005-02-25-Portland Oregonian-Senators-OADEC.pdf].

2000,[15] and 17,000 in 2004.[16] Fourth, these small-scale labs can be geographically scattered among a wide range of sites, such as apartments, motel rooms, abandoned buildings, even packed in car trunks and moved among parks and other locations. Fifth, the range of wastes from STLs can be more varied and unpredictable than super-lab wastes, because small-scale, independent "cooks" may develop a new recipe or use any of a number of meth recipes available on the internet. The range of recipes and resulting wastes may be driven by the local availability of critical ingredients or equipment. The range of substitutes for pure ingredients and sophisticated production equipment may include common items such as decongestants from retail and convenience stores, mason jars, coffee filters, hot plates, pressure cookers, plastic tubing, and gasoline cans.

There is a range of residual impacts of small-scale labs. Children of some STL "cooks" have been found in residences where their parents were making meth. Meth levels as high as 5,000 micrograms per cubic meter of air have been measured during a cook, which "almost ensures that anyone (including children) in the vicinity of the cook will test positive for meth. Some children taken from home meth labs may show permanent damage to their respiratory tracts and possibly to their nervous systems."[17] The health and social welfare of these children, whether with or removed from their parents, are issues of concern, research, and cost. Further, some meth "cooks," and others in the illicit drug business, have been armed and mentally imbalanced.[18] Consequently, there is a range of residual social impacts associated with STLs.

Cleaning and Remediating Meth Labs

There have been four main ways to clean and redevelop a former meth lab site: two involve EPA, one involves DEA, and the last involves HUD.

EPA Alone

A local government, state or regional entity, or an individual can notify EPA about a possible meth lab.[19] The Agency will study the site and its findings will help steer the next actions to be taken. For example, under the Comprehensive

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[15] Drug Enforcement Administration. "Drug Trafficking in the United States." Op. cit.

[16] United States Drug Enforcement Administration, National Clandestine Laboratory Database. "Total of All Meth Clandestine Laboratory Incidents." [http://www.dea.gov/concern/map_lab_seizures.html].

[17] John W. Martyny, op. cit.

[18] United States House of Representatives, Committee on Science, op. cit. Compiled from testimonies given by six witnesses; all testimonies are available at [http://www.house.gov/science/hearings/full05/mar3/March32005.htm].

[19] The process by which EPA and other entities are notified about an incident, such as discovery of a meth lab site, is described in "How The System Works", which can be found at [http://www.epa.gov/superfund/programs/er/nrs/nrsworks.htm]; related information can be found at [http://www.nrc.uscg.mil/nrcback.html].

Environmental Response, Compensation, and Liability Act (P.L. 96-510, also known as CERCLA or Superfund), EPA can respond directly when a pollutant or contaminant may present an imminent or substantial danger to public health or welfare, taking responsibility for cleaning the site under Superfund. Most STLs do not rise to this level, however, and other actions may be taken.[20]

EPA Reimbursement

A local or state government can choose to clean a meth lab site, paying for costs by itself. The local or state government then can apply to EPA for reimbursement under Section 123 of CERCLA, via the Local Governments Reimbursement Program. Reimbursement is limited to $25,000 per incident. The numbers of reimbursements and dollar totals are shown in **Table 2**.[21]

Table 2. United States EPA Local Governments Reimbursement Program Clandestine Meth Lab Reimbursements

Fiscal Year	Number of Reimbursements	Total Dollars Reimbursed	Dollars Per Reimbursement
2002	20	$36,043	$1,802
2003	12	$37,003	$3,084
2004	9	$19,189	$2,132
2005	7	$15,426	$2,204
Total	**48**	**$107,661**	**$2,243**

Source: Personal communication with EPA in February 2006.

The number of applications for reimbursement has been declining in proportion with the number of reimbursements, as shown in the table.[22] One possible reason is the relative difficulty of using this process: the state or local government must first incur the clean-up expenses, and then, with proper evidence of expended costs, apply to EPA for reimbursement, which, if approved, may be received by the state or local government within six months of the Agency's receipt of the application. A second possible reason is that this type of reimbursement is capped at $25,000 per incident. Another possible reason relates to another alternate way to clean a meth site: notify DEA.

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[20] *Federal Register*, vol. 63, no. 32, Feb. 18, 1998, pp. 8284-8291. For more information about Superfund, see CRS Report RL31154, "Superfund: A Summary of the Law," by (name redacted), and "Superfund: The Hazardous Waste Cleanup Program," by the U.S. Environmental Protection Agency, available at [http://www.epa.gov/epaoswer/general/orientat/rom62.pdf].

[21] Information about EPA's Local Governments Reimbursement Program can be found at [http://www.epa.gov/superfund/programs/er/lgr/index.htm].

[22] Personal communication with US EPA on May 12, 2005.

DEA

There is growing awareness that DEA has taken responsibility for cleaning meth lab sites, without the need for upfront payment by state or local governments. The numbers of DEA clean-ups have been rising while applications for reimbursement via EPA's program have been declining. DEA clean-ups have been performed by a decreasing number of contractors: e.g., ten in 2001, four in 2004. The average cost per site generally has been decreasing, largely because of increasing clean-up efficiency resulting from increasing levels of expertise. The numbers of sites and dollar totals are shown in **Table 3**.[23]

Table 3. United States DEA Meth Lab Clean-Ups and Costs

Calendar Year	Number of Sites	Total Dollars Spent	Dollars Per Site
2002	7,534	$21,720,000	$2,883
2003	8,837	16,950,000	$1,918
2004	10,037	18,935,000	$1,887
2005	8,897	17,791,000	$2,000
Total	**35,305**	**75,396,000**	**$2,136**

Source: Personal communication with DEA in February 2006.

HUD

Federal funds to redevelop a former meth production site have been available through HUD's Brownfields Economic Development Initiative. In its FY2007 budget request, HUD proposes to consolidate its Brownfields program into its Community Development Block Grant (CDBG) program.[24] There were funding and other limits in HUD's program; further information may be obtained from HUD's Brownfields website.[25] How many federal dollars were used, through HUD's Brownfields program, to redevelop former STLs cannot be determined, because HUD did not record the nature of the problem that led to the brownfield.

Budget levels for HUD's Brownfields program for FY2005 and FY2006 were, respectively, $24 million and $10 million (with a $10 million rescission). HUD, in its FY2007 budget request, proposes to consolidate its Brownfields program into its

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[23] Personal communication with DEA in February 2006.

[24] United States Department of Housing and Urban Development. "FY2007 Budget Summary." Available at [http://www.hud.gov/about/budget/fy07/fy07budget.pdf].

[25] United States Department of Housing and Urban Development. "Brownfields Economic Development Initiative." Available at [http://www.hud.gov/offices/cpd/economicdevelopment/programs/bedi/index.cfm].

CDBG program and has requested $0 for Brownfields.[26] The portion of CDBG's budget that will be available for redeveloping former meth sites is not specified. Total budget levels for CDBG for FY2005 and 2006 were, respectively, $4.7 billion and $4.2 billion; $3.0 billion has been requested for FY2007.[27]

Clean-Up and Remediation Procedures

Clean-up and remediation are likely to require special training and equipment. While there currently are no uniform clean-up or remediation procedures, the range usually includes one or more of the following measures: removal of contaminated items which cannot be cleaned (this may involve outdoor as well as indoor items, such as soil, water, carpeting, and wallboard); ventilation; chemical neutralization of residues; washing with appropriate cleaning agents; encapsulation or sealing of contaminants; providing alternate water supplies; and/or controlling access to the site with fencing and signs. Extremely contaminated structures may require demolition, especially if clean-up and remediation costs are projected to exceed the commercial value of the structures.

While the decision to clean a meth site is aided by the availability of EPA and DEA funds for clean-ups, the decision to remediate a meth site may be more difficult. Neither EPA nor DEA funds are available for remediation, an additional action and cost after clean-up. An owner of a contaminated private property, e.g., an apartment building or a motel, needs to decide whether remediation is sensible; remediation cost estimates may exceed the value of the property. An owner may seek financial assistance for remediation from local or state governments. Local or state governments need to decide whether to remediate or simply restrict access to a contaminated public area, e.g., a hiking trail or parking lot in a forest.

Remediation cost is determined largely by the severity of contamination, but also by the decision at which level of cleanliness to stop remediation efforts.[28]

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[26] United States Department of Housing and Urban Development. "FY2007 Budget Summary." Op. cit.

[27] Ibid.

[28] DEA reports the average cost to clean a clandestine lab is estimated to range from $1,500 to $3,000, with some clean-ups exceeding $200,000 depending on the severity of contamination. DEA also reports that it spent an average $2,600 to clean each of 297 STLs in the state of Arizona in 2002, and $3,000 to $9,000 to clean each clan lab in Arkansas. The state of Minnesota reports state lab clean-up costs "at a minimum of $5,000 per site," and the state of Montana reports state lab clean-up costs of $15,000 per lab in 2001. Remediating a clandestine lab is a further expense; the cost of remediating an average-size site is estimated by DOJ to be $50,000. (See "Clandestine Drug Labs," available online at [http://www.cops.usdoj.gov/mime/open.pdf?Item=274].) "DEA Cracks Down on Meth Manufacturing With 'Operation Sanctioned Sins'." January 7, 2005. Available at the following website: [http://www.usdoj.gov/dea/pubs/states/newsrel/seattle010705p.html]. Cazenavette III, George J. (DEA Special Agent). "Statement Before the House Judiciary Subcommittee on Crime." February 25, 2000. This information is available at the following address: [http://www.usdoj.gov/dea/pubs/cngrtest/ct022500_01p.htm]. Backstrom, James

(continued...)

There are currently no federal guidelines or standards governing clean-up or remediation processes. While the endpoints for clean-up are relatively straightforward — i.e., that sufficient evidence has been procured for successful prosecution and that imminent hazards, such as explosion or fire, have been eliminated — the endpoints for remediation are less clear. As mentioned earlier, EPA and DEA funds previously described are for clean-ups only. No EPA or DEA funds are available for remediation.

Nine states (Alaska, Arizona, Arkansas, California, Colorado, Minnesota, Montana, Tennessee, and Washington) have feasibility-based remediation standards specific to meth. A feasibility-based standard considers costs as a key factor. Levels of meth residue below the standards are considered acceptable. The nine states' standards range from 0.05 to 0.1 micrograms of meth on every 100 square centimeters of surface.[29] While some state standards only address residual meth itself, others have acceptable levels for meth-related chemicals, such as volatile organic compounds and corrosives.[30] Some states require remediation "to be completed by a state-licensed or otherwise certified professional."[31] States and localities also differ in requirements to notify potential buyers, renters, neighbors, law enforcement departments, and other governmental agencies, and/or to maintain and make available public records of a facility having been contaminated with meth, and whether the facility was remediated.[32]

While some feasibility-based standards exist, standards based on health effects or risk do not. Standards based on health effects or risk address the question, "to what level do we need to minimize (remediate) a contaminant in order to prevent the

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[28] (...continued)
C. (Dakota County Attorney). "Methamphetamine: A Statewide Concern." January 21, 2005. This information can be found at the following address: [http://www.co.dakota.mn.us/attorney/other%20resource%20materials/pdf/MethStatewideConcern.pdf]. City of Kalispell (Montana) Police Department. "Stop Meth." This information is available at the following address: [http://www.stopmeth.com]. National Drug Intelligence Center. "Methamphetamine." October 2000. Available at [http://www.usdoj.gov/ndic/pubs/647/meth.htm].

[29] National Multihousing Council and the National Apartment Association. Op.cit., and Green (Esq.), Sherry. Testimony given to the United States House of Representatives Science Committee on March 3, 2005. This testimony is available at[http://www.house.gov/science/hearings/full05/mar3/March32005.htm]. Also, the White House Office of National Drug Control Policy, the Department of Justice, and the Department of Health and Human Services, "State Cleanup Standards," available at [http://www.methresources.gov].

[30] The setting of guidelines or standards for meth-related chemicals is complicated by the variability of chemicals that may be used by any given "cook;" recipes can change over time and location, depending on the ease of availability of ingredients, reduced odor and detectability, or other factors.

[31] Green (Esq.), Sherry. Op. cit.

[32] A facility may lose market value even after being remediated. "Based upon this (Kansas) limited data, there appears to be a fifteen percent value loss for the stigma of a home associated as a meth lab, remediated and then offered for sale," reported Rick Stuart, CAE. Available at [http://www.accesskansas.org/kcaa/reports/meth.htm].

average person from having adverse health effects (e.g., become sick)?"[33] Lacking standards based on health effects or risk, states and localities are using the currently limited research information to develop "the appropriate feasibility-based standard that must be met by a clean-up contractor and/or industrial hygienist in order to certify that a property has been decontaminated."[34]

Standards and Guidelines

The task of remediating former meth labs is complicated by the lack of uniform standards, for the reasons discussed above:

- There are currently no uniform federal guidelines for the remediation of former meth labs.
- Research on health effects associated with clandestine labs only recently began, so there is currently only limited health-effects information to guide policy choices.
- Feasibility-based standards, which consider costs, for remediating clan labs exist, but differ among states and localities.
- Existing feasibility-based standards differ in stringency of clean-up level, need for certification of clean-up workers, and requirements for reporting and recording the history of a facility's association with meth.[35]

The National Alliance for Model State Drug Laws (NAMSDL) is working toward a model act or model guidelines for the clean-up and remediation of meth lab sites.[36] Members of the Alliance have noted the need for federally funded short- and long-term health-effects studies, health-based cleanup standards, and scientifically validated field test-kits, as well as methods for sample-collection and remediation. Having reviewed existing state and local laws, policies, guidelines, and ordinances pertaining to meth lab remediation, NAMSDL released its preliminary outline of key components that the Alliance may include in a draft model act or model guidelines:

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[33] Green (Esq.), Sherry. Op. cit.

[34] Ibid.

[35] Information underlying a guideline or standard may be challenged by an affected party, via the Information Quality Act and Peer Review requirements. For further information, see CRS Report RL32532, *The Information Quality Act: OMB's Guidance and Initial Implementation*, by (name redacted) and Mi chael Simpson, and CRS Report RL32680, *Peer Review: OMB's Proposed and Revised Bulletins*, by (name redacted) and (name r edacted).

[36] NAMSDL is the successor to the President's Commission on Model State Drug Laws, appointed by President George H.W. Bush. The Commissioners created a nonprofit organization for ongoing and bipartisan work on model state drug laws. Congress began funding NAMSDL in FY1995. For further details, see [http://www.natlalliance.org].

- State Agency Authority: oversight of clean-up program (probably with designated responsibilities to local health departments in regulation); set requirement for owner to clean property; promulgate related regulation; keep database of properties deemed to be contaminated; keep list of certified contractors and approved laboratories.

- Notification Responsibilities: making uniform requirements regarding who must be notified, when, how, and for how long, about the existence and status of a meth lab (likely parties include first responders, law enforcement, local health officers and departments, building code and local or other property records officials; owners; and the public via signage on the property itself).

- Contractor/Industrial Hygienists: certification; training; site safety responsibilities; monitoring of contractors' work.

- Preliminary Assessment and Work Plan.

- Decontamination Procedures: for walls, furniture, ventilation systems, variety of surfaces; waste characterization and disposal.

- Confirmation of Decontamination: decontamination standards; sampling methods; laboratory analytical testing.[37]

After various reviews and approval by NAMSDL's Board of Directors, the model would be distributed to Alliance contacts in the states, including governors and attorneys general. The model also would be posted on NAMSDL's website ([http://www.natlalliance.org]).[38]

Congressional Actions

In the 109th Congress, 11 bills authorize funds to help local and state governments pay for cleaning former meth production sites. One bill provides for research and development of remediation standards and other related activities.

Grants and Authorities for Clean-Up

H.R. 4763, the Methamphetamine Eradication Act, authorizes funds for the COPS Program, the Byrne Formula Grant Program, DEA, EPA Local Governments Reimbursement Program, and Department of Transportation, for remediation actions, equipment, and training.

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[37] Green (Esq.), Sherry. Op. cit.

[38] Ibid.

H.R. 3324 and S. 430, the Arrest Methamphetamine Act of 2005, authorizes funds for the COPS Program and provides authority to the Attorney General, through the Bureau of Justice Assistance, to make grants to States to undertake meth clandestine lab environmental clean-ups.

H.R. 3889, the Metheamphetamine Epidemic Elimination Act, authorizes funds to reimburse DEA for remediation activities.

H.R. 3199, the USA Patriot Improvement and Reauthorization Act of 2005, became P.L. 109-177 on March 9, 2006. Authorized to be appropriated each fiscal year 2006 through 2010 are $99 million to reimburse DEA for remediation work and to support state and local environmental meth-related activities, among other things.

H.R. 1446, the Methamphetamine Abuse Prevention Act of 2005, expands authority to include the hiring of personnel and the purchasing of equipment for cleaning STLs.

H.R. 314 and S. 103, the Combat Meth Act of 2005, would amend the Omnibus Crime Control and Safe Streets Act of 1968 to authorize the use of grant funds to hire personnel and purchase equipment to assist in cleaning methamphetamine-affected areas.

H.R. 13, the Clean, Learn, Educate, Abolish, Neutralize, and Undermine Production (CLEAN-UP) of Methamphetamines Act, authorizes funds for grants, through the Secretary of Labor and Occupational Safety and Health Administration, to state and local law enforcement for training and equipment acquisition for cleaning former meth lab sites; funds for the United States Department of Agriculture to clean former STLs; and funds, through DEA, for meth-related training activities.

S. 2118, To Amend the USA Patriot Act, extends certain provisions of the Act to March 31, 2006, and authorizes funds to reimburse DEA for clean-up expenses.

S. 259, the Federal Emergency Meth Lab Cleanup Funding Act of 2005, would make funding available from the Department of the Treasury Forfeiture Fund for payment to designated state, local, or tribal law enforcement, environmental, or health entities for experts and consultants needed to clean areas formerly used as meth labs. It would also provide that if a meth laboratory is located on private property not more than 90% of the costs may be paid only if the property owner (1) did not have knowledge of the existence or operation of such laboratory before the law enforcement action to close it or (2) notifies law enforcement not later than 24 hours after discovering the existence of such laboratory.

To Establish Remediation Guidelines

H.R. 798, the Methamphetamine Remediation Research Act of 2005, passed by the House on December 13, 2005, would require the Assistant Administrator for Research and Development of EPA to establish (1) voluntary guidelines, based on the best currently available scientific knowledge, for the remediation of former meth laboratories, including guidelines regarding preliminary site assessment and the remediation of residual contaminants, and (2) a program of research to support the development and revision of such guidelines. It also would direct the Assistant Administrator to (1) periodically convene a conference of appropriate state agencies, as well as individuals or organizations involved in research and other activities directly related to the environmental or biological impacts of former meth laboratories, and (2) enter into an arrangement with the National Academy of Sciences for a study of the status and quality of research on the residual effects of meth laboratories. H.R. 798 also would require the Director of the National Institute of Standards and Technology to support a research program to develop (1) new meth detection technologies, with an emphasis on field test kits and site detection, and (2) appropriate standard reference materials and validation procedures for meth detection testing.