



CHEMLAWN®

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CERTIFIED MAIL P-719 757 722

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December 9, 1988

Mr. Michael Towle, Remedial Enforcement Officer
U.S. Environmental Protection Agency
PA CERCLA Remedial Enforcement Section (3HW12)
841 Chestnut Street, 6th Floor
Philadelphia, PA 19107

Re: Novak Sanitary Landfill - Information Request of November 16, 1988

Dear Mr. Towle:

Upon review of your November 16, 1988 correspondence, I was somewhat surprised by your comments indicating that ChemLawn's November 6, 1987 response had been "inadequate or incomplete." The responses which I drafted addressed the specific questions which you asked both correctly and completely. The questions which you are now asking are entirely different than those originally posed, in that the original questions pertained only to hazardous substances as defined by §101(14) of CERCLA. The questions which you are now asking pertain to the waste materials generated by ChemLawn at its Allentown, Pennsylvania facility, which clearly do not fall within that definition.

I have attempted to answer each of your 3 questions below as complete as possible and have enclosed a copy of your last correspondence as a reference.

1. Typical office and maintenance refuse which is generated by ChemLawn's facilities would include:
 - Used paper of various types (forms, envelopes, etc.)
 - Used vehicle parts such as oil filters, air filters, etc.
 - Empty pesticide containers which have been triple rinsed to remove any residuals (in compliance with FIFRA, all rinsates go back into ChemLawn's recycle systems).
 - Road dirt and small stones which have accumulated in the bottom of the recycle tank; only a few gallons of this material is generated per year. (In 1986, an E.P. Toxicity test for 2,4-D was performed on this material from the Allentown branch; that test showed only 3.13 mg/l of 2,4-D, well below the RCRA standard of 10 mg/l).
 - Used clothing and similar items.
 - Broken pallets and wooden spools, etc.

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2. ChemLawn's records show that it began using Valley Disposal in August of 1984. Valley Disposal transported the waste materials to the Novak Sanitary Landfill during the months of August, September and October of 1984. Valley then notified ChemLawn that Novak had reached capacity as of November 1, 1984 and that they would be transporting the material to other facilities. I have enclosed invoices for the 3 months referenced above as well as the correspondence indicating that Novak had reached capacity.

As you can see, only a monthly charge of \$60.00 is listed on the invoice, but from previous landfill bills it appears that the prevailing rate at that time was approximately \$8.00 per compacted cubic yard. To the best of our knowledge, the total volume of ChemLawn's material which was transported to Novak by Valley Disposal would be calculated by:

$$\frac{(\$60.00/\text{month}) (3 \text{ months})}{(\$8.00/\text{compacted cubic yard})} = 22.5 \text{ compacted cubic yards}$$

3. ChemLawn has been an environmentally sensitive company for many years, and has strict procedures for handling materials containing pesticides (and other hazardous substances). As pesticides make up the vast majority of hazardous substances handled by ChemLawn, I will use those procedures as an example.

The attached "IV Pesticide Safety Procedure" is a section from ChemLawn's current Safety Manual, a copy of which is located in every branch and used as the foundation of its training sessions. All employees are trained to handle pesticides in accordance with these procedures.

All of ChemLawn's branches are equipped with a "recycle system" which is used to recycle all truck wash water, drum rinsates, etc. back into usable product. This system enables ChemLawn facilities to reuse various materials and avoid generating any hazardous wastes. The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) recommends this procedure and ChemLawn has found that although the initial installation costs are rather high, it is a very efficient system once operating. (As previously discussed in Answer 2 above, the small quantity of road dirt and stones which collect in the system at ChemLawn's Allentown branch have been tested and shown to be non-hazardous by RCRA standards).

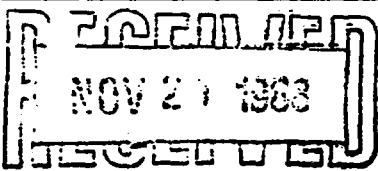
I hope this correspondence provides you with all the information and support documentation that you desire, but if I can be of further assistance, do not hesitate to contact me. My direct dial number is (614)847-4654.

Sincerely,

CHEMLAWN SERVICES CORPORATION

Robert L. Roberts, Jr.

Robert L. Roberts, Jr. 204715
Environmental Counsel



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

841 Chestnut Building
Philadelphia, Pennsylvania 19107

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CERTIFIED MAIL
RETURN RECEIPT REQUESTED

In Reply Refer To: 3HW12

Mr. Robert L. Roberts, Jr.
Environmental Counsel
Chemlawn Services Corporation
8275 North High Street
Columbus, OH 43085

NOV 16 1988

Re: Novak Sanitary Landfill Site
Lehigh County, Pennsylvania

Dear Mr. Roberts:

This letter is written as a response to your letter of November 6, 1987 (copy enclosed) and requests additional information concerning your company's involvement with Novak Sanitary Landfill, Inc.; Valley Disposal and Recycling, Inc.; "Valley Disposal"; "Valley Recycling"; LCN Corp.; Novak Landfill and Recycling, Inc.; Novak Landfill Corp. or Novak Sanitation Services, Inc. EPA records indicate that your company used the services of one or more of the above-mentioned companies to transport or dispose of wastes generated by your company. EPA now requests that you respond within thirty (30) days of your receipt of this letter to the questions listed on page two.

As you know, the EPA is seeking information concerning the release, or the threat of a release, of hazardous substances into the environment from the Novak Sanitary Landfill Site. Pursuant to the authority of Section 3007(a) of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. Section 6927(a), and Section 104(e) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), 42 U.S.C. Section 9604(e), as amended by the Superfund Amendments and Re-authorization Act of 1986 ("SARA"), public law 99-499, 100 Stat. 1613, your company is again requested to furnish all information and documents in its possession, custody or control, or in the possession, custody or control of any of its officers, employees

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or agents which concern, refer or relate to hazardous substances as defined by Section 101(14) of CERCLA, 42 U.S.C. Section 9601(14) which were transported to, or stored, or disposed of at the Novak Sanitary Landfill Site in South Whitehall Township, Lehigh County, Pennsylvania.

EPA currently has information indicating that the owner of the Novak Sanitary Landfill also operated a waste hauling business under the names listed in the first paragraph of this letter. Records maintained at the landfill office indicate that wastes hauled by these companies were disposed at the Novak Sanitary Landfill.

EPA has determined that your response to its previous information request letter was inadequate or incomplete. EPA now requests that you further respond to this information request within thirty (30) days of your receipt of this letter and supply all information and documentation concerning:

1. the types of and a detailed description of waste (e.g. typical office and maintenance refuse) generated by Chemlawn;
2. the volume of waste generated by Chemlawn transported to the Novak Sanitary Landfill by Chemlawn, or any company listed in the first paragraph of this letter or any other company; and,
3. the procedures followed by Chemlawn to ensure that none of the various hazardous chemicals used by Chemlawn are disposed into the Novak Landfill.

EPA also requests that if responses to the above questions can not be documented your company identify and interview knowledgeable company representatives who can provide complete information. The company representative should be identified in your response and their information must be submitted to EPA as an affidavit.

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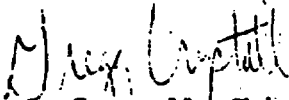
You are entitled to assert a claim of business confidentiality covering any part of the submitted information, in the manner described in 40 C.F.R. Section 2.203(b). Information subject to a claim of business confidentiality will be made available to the public only in accordance with procedures set forth in 40 C.F.R. Part 2, Subpart B. Unless a business confidentiality claim is asserted at the time the requested information is submitted, EPA may make this information available to the public without further notice to you.

Please send the required information to:

Michael Towle, Remedial Enforcement Officer
U.S. Environmental Protection Agency
PA. CERCLA Remedial Enforcement Section (3HW12)
841 Chestnut Street, 6th Floor
Philadelphia, Pennsylvania 19107

If you have any questions concerning this matter, please contact Michael Towle at (215) 597-3166; any legal questions should be directed to Joseph Donovan, esq. at (215) 597-0427.

Sincerely,


Gregg Crystall, Chief
PA CERCLA Remedial Enforcement
Section

Enclosures

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November 6, 1987

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CERCLA REMEDIAL ENFORCEMENT SECTION

NOV 13 1987

EPA-Region III

Michael Towle
U. S. Environmental Protection Agency, Region III
PA. CERCLA Remedial Enforcement Section (3HW12)
841 Chestnut Street - 6th Floor
Philadelphia, PA 19107

Re: Information concerning Valley Disposal Inc. and/or
Novak Sanitary Landfill

Dear Mr. Towle:

This letter responds to your information request regarding ChemLawn Services Corporation's operations at its branch located at 764 Roble Road, Allentown, Pennsylvania. ChemLawn Services Corporation does not, as a matter of course, dispose of materials presently defined as hazardous substances by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or hazardous waste under the Resource Conservation and Recovery Act (RCRA).

Responses to your specific questions are as follows:

1. ChemLawn Services Corporation is in the business of providing professional lawn care and maintenance service to both commercial and residential customers. Our specialists apply dilute fertilizer and pesticide solutions at specified application rates. A fleet of trucks is maintained at each branch for that purpose.
2. Discussions with current branch personnel indicate that no hazardous substances, as defined by CERCLA or RCRA are generated at this branch, or were any shipped to the Novak Sanitary Landfill.
3. Not applicable. See response to question 2.
4. Not applicable. See response to question 2.
5. Not applicable. See response to question 2.
6. Not applicable. See response to question 2.
7. Not applicable. See response to question 2.
8. ChemLawn Services Corporation has no deeds, rights-of-way, leases or other real interests in or with the Novak Sanitary Landfill.

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Michael Towle
U.S.E.P.A.
November 6, 1987
Page 2

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The ChemLawn Services Corporation is willing to supply you with any information in our possession, but we are not aware of any materials handled by Valley Disposal which were hazardous in nature. It is ChemLawn's position that all materials which are or were transported from the Allentown branch are non-hazardous and constitute typical office and maintenance refuse.

If the USEPA has any information indicating that the ChemLawn branch located in Allentown, Pennsylvania, did indeed generate, transport, or dispose of any hazardous materials in the Novak Landfill, please send me copies of that information. This information, if available, should include not only dates and quantities, but also some description of the hazardous nature of the materials involved.

Sincerely,

CHEMLAWN SERVICES CORPORATION

Robert L. Roberts

Robert L. Roberts, Jr.
Environmental Counsel

jhm

cc: Dean Tkacik, Assistant Branch Manager,
Allentown 4531

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Phone 495-6251

CUR NEW ADDRESS

VALLEY DISPOSAL

Div. of Novak Landfill Corp.
MODERN SANITATION EXPERTS

RD.1 BOX 2643

Allentown, Pa. 18104

VALLEY DISPOSAL
NOVAK LANDFILL CORP.
RD. 1 BOX 2643
ALLENTOWN PA 18104

AUG 31, 19 64

Chemlawn Corp.

P.O. Box 2643

1030 N. Irving St.

Allentown, PA 18105

Refuse Removal Month of August

Amt.	\$60.00
Past Due July	<u>\$60.00</u>
Total Due	\$120.00

*7/14/64
OK. Clear
L. ...
M. ...*

AUG 2 1964

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Phone 395-6251

OUR NEW ADDRESS

VALLEY DISPOSAL

Div. of Novak Landfill Corp.
MODERN SANITATION EXPERTS

RD.1 BOX 246

Allentown, Pa. 18104

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VALLEY DISPOSAL
DIV. OF NOVAK LANDFILL CORP.
RD. 1, BOX 246
ALLENTOWN, PA. 18104

Sept 30, 19 84

Chemlawn Corp.

P.O. Box 2643

1030 N. Irving St.

Allentown, PA 18105

This Is An Invoice

Refuse Removal Month of September

Amt.	<u>\$60.00</u>
Past Due July	\$60.00
August	<u>\$60.00</u>
Total Due	\$180.00

*10/9/84
Lit. charge #4539
EHP
D. McFadden*

RECEIVED
DATE SEP 28 1984
CHECK #

204722

Phone 395-6251

VALLEY DISPOSAL

Div. of Novak Landfill Corp.
MODERN SANITATION EXPERTS

RD.1 BOX 246

Allentown, Pa. 18104

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October 31, 19 84

Chemlawn Corporation
P. O. Box 2643
1030 N. Irving Street
Allentown, PA 18105

Refuse Removal Month of October

Amt. \$60.00

RECEIVED

DATE NOV 1 1984
CHEM-LAWN

*11/1/84 # 4539
Ok. Chemlawn & TSP
M. J. [Signature]*

OUR NEW ADDRESS

VALLEY DISPOSAL
DIV. NOVAK LANDFILL CORP.
R.D. #1 BOX 264A
ALLENTOWN, PA 18104

227005

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Phone 395-6251

VALLEY DISPOSAL

Div. of Novak Landfill Corp.
MODERN SANITATION EXPERTS

P.O. Box RD. 1

Allentown, Pa. 18102

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January 1, 1985

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DATE JAN 16 1985

CHEM-LAWN

Chemlawn Services Corp.
P.O. Box 2643
1030 N. Irving St.
Allentown, PA 18105
Dear Customer,

As of November 1, 1984 our landfill has reached capacity, which has forced us to use other facilities. This involves further trips and costly tipping fees.

Enclosed are the fees for dumping at the closest sites. We are currently trying to recycle as much of the trash as possible to hold down the costs.

Your cost for disposal will be \$72.00 a month as of Jan. 1, 1985.

If there are any questions feel free to call.

Sincerely yours,

Louis Novak
President

LCN/cas

Enclosure

*1/25/85
C.E. Miller
Under Contract E.A.
Mans
Mie*

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IV. Pesticide Safety Procedure

A. Selection of Pesticides and Other Chemicals

We have established an Approved Materials List for the ChemLawn Services Corporation. Only materials on the Approved Materials List may be used by ChemLawn, ChemLawn Tree and Shrub Care, Commercial Division, CarpetClean, PestFree or other businesses that the ChemLawn Services Corporation may operate. The chemicals must be approved for use by the appropriate Director of Technical Services from a programmatic consideration and by the Director of Employee and Environmental Health from safety and health considerations. It is the responsibility of each Regional Technical Manager to register all tank mixes with Poison Control Centers in the communities where ChemLawn does business.

B. Signs of Pesticide Poisoning

1. **Cholinesterase Inhibitors.** All employees working with pesticides should be familiar with the signs of poisoning due to inhibition of cholinesterase. These pesticides include: Betasan, Dursban, Diazinon, Dylox, Orthene, Aspon, Sevin and Oftanol. Among the earliest signs of poisoning by these insecticides are blurred vision, tightness of the chest, vomiting and diarrhea. Body temperature is not affected. As the severity of the poisoning increases the signs include small pupillary size, salivation, sweating, muscle twitching and weakness, slurring of speech, mental confusion, disorientation and drowsiness. Further progression leads to difficulty in breathing which may be life threatening. The early signs of cholinesterase inhibition may be indistinguishable from mild influenza. Employees with these signs should request that their physician send a blood sample to ChemLawn Clinical Lab for determination of cholinesterase activity.

2. **Phenoxy Herbicides.** 2,4-D acid, salts, esters and amine and MCPP. Acute accidental poisoning by 2,4-D is rare. Concentrated solutions are irritating to the skin and eyes. Accidental or intentional swallowing of 2,4-D concentrates produces irritation of the mouth and throat, vomiting, abdominal pain, diarrhea and chest pain. Uncoordinated muscle twitching and weakness may occur.

3. **Arsenicals.** The arsenical herbicides cacodylic acid, DSMA and MSMA are mild skin irritants, but if ingested may produce a salty taste, a burning of the throat and colicky pains of the stomach and intestines. Vomiting and bloody diarrhea may occur.

4. **Other Herbicides.** Although concentrated formulations may be eye or skin irritants, other toxic effects from human exposure to atrazine, dacthal, dicamba and other commonly used herbicides are not reported.

C. Handling Concentrated Acids or Bases

Any chemical solution with a pH value less than 3.0 or greater than 11.0 is considered to be corrosive to the eye or skin. This means that it may destroy the integrity of these tissues. The greater the concentration of the chemical, the greater the hazard. Concentrated phosphoric acid is used to decrease the pH of tank mixes.

When water is added to a concentrated acid or base or when concentrated acids or bases are mixed with each other, a very large amount of heat is generated. The resul-

tant mixture may boil rapidly and vigorously with dangerous splashing or if confined explode.

To dilute concentrated acids or bases, always add a smaller amount of the concentrated acid or base to a larger volume of water.

If acids or bases splash on the skin or eye, dilute with large volumes of running water. Do not attempt to neutralize because the heat generated may result in a chemical burn.

V. Standard Operating Procedures for Storage and Handling of Pesticides

A. Storage of Pesticides

1. All pesticide storage areas should be secured to prevent theft or vandalism. Of particular concern is the potential for accidental exposures.

2. Store in a dry, well ventilated place at temperatures above freezing. Pesticide odors are often unpleasant, if not potentially toxic, and exhaust fans may be necessary to remove the vapors from the storage areas.

3. Keep pesticide containers tightly closed. Protect against odors from open bags by wrapping with polyethylene bags or inserting opened bag into labeled sealable pails.

4. Never transfer pesticides into food containers such as pop bottles or paper cups.

5. Never transfer pesticides into an unmarked or unlabeled container. The container must be labeled with the common chemical name, percent active ingredient, EPA registration number and signal word.

6. Do not store pesticides near offices, restrooms, or where food, seed or water can be contaminated.

7. As part of a monthly safety inspection, examine containers of pesticides for leaks and tears. Dispose of leaking and torn containers and clean up spilled or leaked material promptly.

8. Minimize storage of flammable liquids. Storage of flammable liquids should meet fire safety standards of the local governmental unit.

9. Date all containers when received. Keep an inventory of all pesticides and include notations on batch or lot number in addition to date received.

B. Transportation of Concentrates

1. Formulations or Concentrates

- every container must be labeled
- transport in original labeled container
- make certain that containers are tightly closed
- do not transport in the cab of a truck or a closed vehicle (automobile)
- protect bags from rain
- protect all containers from puncturing, tearing, or rolling about
- pesticide concentrates transported on tankers should be secured in a locked compartment
- shipment must be accompanied by a bill of lading with appropriate DOT identification and placards

2. Tankers Containing Diluted End Use Product

- keep copy of tanker label and fill chart in the truck cab

3. Truck Safety Equipment. The following items of safety equipment are to be present in every truck and checked on a daily basis:

- Chock Block
- Fire Extinguisher
- First Aid Kit
- Eyewash Bottle (refill monthly)
- Gloves
- Wash Water Canister
- Soap and Hand Towels
- Flares (3)
- Reflector Kit
- Insurance Identification Card

C. Handling of Pesticides

Minimize exposures to pesticides by all reasonable means to prevent contact with the skin, accidental ingestions, or generation of respirable dust or aerosols.

- wash hands after handling pesticides
- wear a clean uniform each day
- shower as soon as possible at the end of the work-day

1. Fill Procedures

(a) The fill area must be clearly outlined by painted lines or other means that clearly defines the fill area.

(b) Filling with pesticides requires the following protective equipment to be worn:

- (1) Goggles or Face Shield
- (2) Head Gear
- (3) Coveralls or Apron
- (4) Boots
- (5) Gloves
- (6) Gloves, goggles or safety glasses, and boots should be worn when injector gun canister is filled from concentrates carried in the truck

(c) Full Protective gear is not required when filling liquids via pump and meter. Eye protection must be worn any time concentrated pesticides are transferred under pressure.

(d) Gloves must be worn when filling hand cans.

(e) Drips, puddles and spills are to be cleaned up immediately after occurrence. Wear protective clothing and equipment. Contain with absorbent material or recycle into tanker. Place absorbed material into double line polyethylene bags, label with contents and store in metal drums temporarily. Consult Regional Technical Manager for disposal of contents.

(f) Pesticide measuring containers are to be triple rinsed with ¼ to ½ volume and rinsate disposed of in the tanker.

(g) Floor areas in pesticide weighing location must be kept clean by washing materials to recycle pits wherever possible. Otherwise, use sheet plastic taped to floor in weigh area to prevent contamination of porous concrete surface. However, the use of recycle pits should not substitute for care in measuring and filling.

2. Spraying and/or Spreading Lawns, Trees and Shrubs

(a) With fertilizers only the following equipment is to be worn:

- (1) Boots
- (2) Gloves (optional)

(b) With pesticides, MO-nitrogen or LTRN nitrogen the following equipment is to be worn:

- (1) Boots
- (2) Gloves (per label instructions)
- (3) Goggles or face shield for tall tree/high pressure spraying
- (4) Head gear for tall tree spraying

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3. Several Pesticide Safety Precautions

(a) Each employee must thoroughly wash with soap and water after filling with a pesticide.

(b) Use of leaky guns or other leaky equipment must be terminated and repaired before further use.

(c) When repairing equipment that could pose possible pesticide solution contact, i.e., diluted or concentrated, protective gear is to be worn to avoid such skin contact.

(d) No one is permitted to enter a tank containing a pesticide solution. It must be emptied and flushed several times prior to entry. (See tank entry procedure.)

(e) Each tanker, bubble or other production vehicle is to carry soap and fresh water for washing if pesticides are being used.

(f) No one is permitted to spray pesticides, spread dry materials containing pesticides, or in any way handle pesticides if:

- (1) The individual has severe dermatitis. (Broken skin and blisters.)
- (2) The individual has sizable cuts, scratches, or bruises. Small cuts, scratches, and bruises must be thoroughly protected before handling pesticides in any manner.

(g) Each employee must report to work with a clean uniform each day.

4. Personal Hygiene & Decontamination Procedures. The following Sanitary Procedures will reduce the possibility of pesticide exposure.

(a) Alter spray pattern to keep spray off feet and legs and avoid drift from overhead spraying.

(b) After exposure to pesticides, wash thoroughly with soap and water before eating, smoking, or using restrooms. Do not smoke while spraying.

(c) Wear a clean uniform each day. Wash pesticide contaminated clothes separately from other clothing.

(d) While spraying or spreading pesticides or using LTRN nitrogen, avoid wiping the face or other skin surfaces with hands and arms.

(e) Remove gloves exposed to pesticides in manner to avoid skin contact with the outside of the glove.

(f) Be careful not to contaminate the inside of gloves with pesticides. If the inside of the gloves become contaminated with concentrated pesticides, discard them

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Immediately. Wash gloves with soap and water daily or more frequently if they become contaminated. Replace gloves often, they are inexpensive but important.

(g) Shower as soon as possible at the end of the day.

(h) Gloves, boots and last six feet of hose should be decontaminated weekly with undiluted household bleach or household ammonia solution. Caution: these are eye and skin irritants. Allow contact for at least 15 minutes. Gloves may be soaked overnight, but should be rinsed with water and air dried before use. Do not mix bleach and ammonia. The mixture releases toxic chlorine gas.

(i) While gloves are not mandatory while spraying lawns with our general pesticides, we still encourage their use, especially among beginning lawn specialists.

(j) Do not mouth siphon or pipette pesticide solutions. Do not place nozzles or jets to the mouth for blowing out clogged materials.

5. Tank Entry Procedure

(a) No one should enter a tank, whether it be truck or storage, unless it is determined to be safe to enter by the Branch Manager. When in doubt about safe entry, contact the Health and Safety Department. No employee or other person may enter a tank used for storage of pesticide concentrates without approval of the Director of Technical Services or the Director of Employee and Environmental Health. The following procedures are intended for tanks that have contained fertilizer or end use dilutions of pesticides:

(b) To be safe, the tank must be completely emptied and flushed repeatedly with water. Then, a fan must be used to blow fresh air into the tank to purge the tank for at least one (1) hour. There must be other openings for the air to escape or a flexible hose must be inserted into the tank blowing fresh air. The fan must be running continuously while anyone is inside the tank.

(c) The personal protective clothing and equipment of the type used for filling pesticides must be worn in the tank. The gloves and coveralls should be discarded after the tank has been serviced. Goggles or safety glasses should be worn. Chipping and scraping create eye hazards.

(d) Lighting should be provided by a battery powered system, or if supplied by an electrical drop cord the cord should be heavy duty and the electrical circuit provided with a ground fault interrupter. The bulb should be protected with a guard to reduce potential for shock hazard should a bulb break in the tank while in use.

(e) Smoking is not permitted while working inside tanks.

(f) Solvents or paints are not permitted to be used inside tanks without explicit permission of the Director of Employee and Environmental Health.

(g) One person should not work in a tank more than one (1) hour per day.

(h) There should be a helper outside in communication with the person inside at all times while a worker is in the tank. Provisions must be made to be able to remove the person from the tank at any time. To aid in rescue from large tanks or where the person may be beyond reach of

the outside helper, a lifeline should be attached prior to tank entry.

A general attitude of SAFETY must prevail.

D. Personal Protective Equipment, Specifications and Care

1. Boots. Tennis shoes are not acceptable footwear for any activity involving the handling of chemicals. Leather shoes or leather boots are not to be worn when spraying or working in the fill area. Steel toe supports are recommended for mechanics, warehouse personnel or during soil injection, but are not required for spraying operations.

(a) Pesticides

(1) Lawn care and wash and fill. Boots are to be of natural rubber, neoprene, butyl or nitrile rubbers. These may contain polyvinyl chloride as a plasticizer but boots made entirely from vinyl are not acceptable. Boots must be 10-12 inches high and may be the type worn over the shoe or without shoes. Boot tops are not to be rolled down below the 10 inch level. Boots that leak must be replaced immediately.

Boots should not be worn in a customer's home and should be decontaminated weekly with bleach (5.25% sodium hypochlorite) or household ammonia.

(2) Tree and Shrub Care. Boots must meet above material specifications but 6 inch or above the ankle height is acceptable.

(3) PestFree. PestFree employees may wear leather shoes when doing inspections or during a crack and crevice application. However, ankle height chemically resistant boots [(a)(1)] must be worn during spraying or soil injection operations.

(b) Fertilization only. Boots made of a variety of materials that are waterproof and do not crack readily are acceptable. They must cover the ankle and may be the type worn over the shoe or without shoes.

Leather work boots may be worn during dry application of fertilizer when the lawn is dry.

2. Gloves. Gloves worn during filling of pesticides must be made of neoprene, rubber or other materials specified on pesticide label or material safety data sheet. No part of the glove, either inside or out, may be made of absorbent cloth material. Gloves that leak are to be discarded immediately. Handling of fertilizers may be done with other waterproof gloves. Wash gloves with soap and water before removing them whenever possible. Otherwise, remove gloves exposed to pesticides in a manner to avoid skin contact. If the inside of the gloves become contaminated, discard them. Gloves should be decontaminated weekly by soaking in bleach or household ammonia. Rinse thoroughly (3 times) with water and dry before reuse.

3. Coveralls and Uniforms. Coveralls or aprons worn during fill procedures must be non-absorbent and may be either disposable or washable type. **ANY UNIFORM SHOULD BE CHANGED AND WASHED OR DISCARDED IMMEDIATELY AFTER A KNOWN CONTAMINATION WITH PESTICIDE CONCENTRATES OR IF WETTED FROM ACCIDENTAL DRIFT OR SPILLS, BROKEN HOSES, OR DEFECTIVE EQUIPMENT.** Washable coveralls should be laundered on a weekly basis and

disposable coveralls should be replaced on a weekly basis.

Laundering of uniforms is discussed on page 2-3.

4. Eye Protection. Protective plastic goggles with vented template or a full face shield attached to a headgear must be worn to protect the eyes from splashing during filling. A hard hat with face shield or goggles with vented templates should be used with high pressure tall tree spraying.

Goggles or safety glasses with side shields are recommended for PestFree specialists during crack and crevice applications or soil injections using pressurized application systems.

Wearing of contact lenses is not recommended because unintentional drift, dust or other foreign particles may become trapped beneath the contact lens and result in injury to the eye.

5. Headgear. Hard hat with washable non-absorbant exterior surface or other waterproof headgear, such as a rain hat should be worn when filling or spraying above the head.

6. Respiratory Protection. It is our policy that chemicals that require respiratory protection will not be used in the lawn care, tree and shrub care or carpet cleaning service lines. With the addition of PestFree to the ChemLawn service line, respiratory protection becomes necessary where pesticides may be used in poorly ventilated areas.

For occupational safety, a respirator by definition is a device that protects the wearer from inhaling toxic materials present in the atmosphere. It must cover the nose and mouth and filter out the toxic material, or it must provide a separate source of air of acceptable quality. There are two classifications of respirators.

- (a) air supplying
- (b) air purifying

Air supplying respirators, often called self-contained breathing apparatus, provide greater protection than air purifying respirators but are cumbersome to use. Because they provide the total supply of inhaled air, it is important to know the time limit of the air supply tank.

Air purifying respirators require a negative pressure within the facepiece in order to direct all inhaled air through the air purifying filters and/or cartridges. They must not be used in an oxygen deficient atmosphere (less than 19.5% O₂). In order to create negative pressure, the facepiece of the respirator must be fitted to obtain a tight seal against the face. Facial hair, that is beards, prevent adequate fitting of respirators. A leak in the seal of a negative pressure respirator will result in contaminated air bypassing the filter and directly entering the respiratory tract. Filters and chemical adsorption cartridges have a limited time period in which they are effective and must be changed periodically. The type of chemical adsorption cartridge selection and replacement are important for effective use of respirators.

A respirator may have a mask that covers the full face from chin to hairline and from ear to ear. The mask is recommended for the more toxic atmospheres and when the contaminants are irritating to the eyes. Although it is often difficult to fit a full face mask over eyeglasses, contact

lenses are not to be worn with full face respirators because adjusting the facepiece or other activity that may dislodge the lenses requires removal of the mask to correct the problem. A more commonly used mask is a half-mask that covers the nose, mouth and chin.

All cartridge respirators use exhalation valves to allow moist exhaled air to bypass the filter cartridge mechanism. This prevents moisture in exhaled air from contacting the filter and also decreases breathing resistance. It is important that the exhalation valve is clean and operable, otherwise on inhalation when the valve is closed but leaking, contaminated air may enter the mask and lungs.

ChemLawn Respirator Guidelines

6.1. ChemLawn will not use any pesticide or other chemical in the lawn care, tree and shrub care or carpet cleaning service lines that requires respiratory protection in providing these services. Chemical cartridge respirators will not be required when filling trucks and will not be permitted when spraying lawns.

6.2. Each branch that uses pesticides will have a chemical emergency response team certified for respirator use to deal with accidental spills of pesticide concentrates in the branch.

6.3. Any ChemLawn employee wearing a respirator must be appropriately trained and fitted for safe and effective respirator use. Medical certification will be required of any employee who wears a chemical cartridge or air supplying respirator for more than 1 hour per day or 5 hours per week.

6.4. Tank entry. A respirator must be worn when entering a tank that has contained diluted pesticides, unless the tank has previously been drained and rinsed. Do not enter tanks that have been used for storage of pesticide concentrates without specific permission from the Director of Technical Services or Director of Employee and Environmental Health.

6.5 Respirator selection. Respirators and cartridges used by ChemLawn employees should be NIOSH/MSHA approved air purifying respirators. These air purifying respirators should not be used in a low oxygen (<19.5% O₂) environment. Air purifying respirators do not provide safe respiratory protection for fire fighting or fire rescue procedures and should not be worn for this purpose.

(a) Chemical cartridge respirators. Chemical cartridge respirators are not required for any normal lawn care, tree and shrub care or carpet cleaning activity. They may be required in PestFree operations where pesticides are used in poorly ventilated areas. They should be worn during cleanup of accidental spills of pesticide concentrates of more than 5 gallons. The respirator must be fitted with the appropriate cartridge which in most cases would be a pesticide cartridge.

(b) Disposable dust and mist masks. Disposable dust and mist masks may be worn when filling or spreading dusty materials or when scraping rust from empty tanks.

6.6. Respirator fitting. A respirator must provide a good face seal to be effective. Because of differences in the

anatomy of the face, there is no respirator that will fit all individuals. A qualitative fit test should be made:

(a) Use ampules containing iso-amylacetate (banana oil) or a cotton tipped swab dipped into iso-amylacetate (press out excess). Ask the wearer to tell you if an odor is detected.

(b) With the mask adjusted, pass the banana oil ampule or swab slowly around the peripheries of the facepiece, holding the ampule or swab for short periods of time at the canister or filter element. Instruct the wearer to tilt his/her head back and from side to side. Pass the banana oil under the chin at the edge of the face mask.

(c) Detection of the banana oil odor indicates that the mask is defective or does not fit. Readjust the harness and repeat. If the mask fails the above inspection, it should not be used by the test subject.

(d) Use of a stannic chloride smoke generator may be used for individuals who cannot detect the odor of banana oil. The stannic chloride is an irritant and will elicit coughing if the mask is defective or not properly fitted. Because the smoke is an irritant, the eyes of the wearer should be closed during the test.

(e) Each time a respirator is worn it should be tested for proper fit by placing the palm of the hand over the exhalation valve to obstruct flow. Exhale to cause pressure inside the face piece. There should be resistance to slight positive pressure without leaking. If exhaled air escapes around the face seal readjust the headband and retest.

6.7 Respirator maintenance. Respirators worn by more than one person must be disinfected after each use. The rubber face seal should be wiped with either 70% alcohol, dilute bleach (2 tablespoonfuls of household bleach per gallon of water), dilute iodine such as Betadine® or diluted Lysol®. Disposable alcohol swabs are convenient for this purpose. The respirator should be cleaned daily with detergent and water, unless it is a disposable respirator. Each time the cartridge is changed, the cartridge should be marked with the date of installation. It is suggested that a hash mark system be used to record 1/2 hour incremental periods of use so that the effective use period of the cartridge is not exceeded. Respirator cartridges should be changed any time there is odor detection in the presence of a good face seal or it becomes difficult to inhale through the cartridge.

6.8. Respirator storage. Respirators should be stored in a location where they will not become contaminated by pesticides. They should be stored either in the form fitted container or positioned so that the facepiece and exhalation valve will rest in a normal position. The respirator should be enclosed in a sealed plastic bag to preserve the effectiveness of the cartridge.

VI. Environmental Safety

While we are concerned about safety for our employees, we are also concerned about safety for our customers,

their families and pets and the environment in which we all work and live. Thus, we want to select and use pesticides in a manner that will not adversely affect non-target species of plants, birds and other wildlife.

A. Children and Pets

Application of materials in any form should not be done in the presence of onlookers whether customers, non-customers or especially curious children in order to avoid any possibility of accidental contact with spray solutions or granular formulations. Be alert to avoid open windows behind shrubbery that is to be sprayed. Pick up toys and place them where contact with chemicals will not occur.

Do not apply materials if pets are in the yard. Ask the customer to take the pet into the house. Empty and turn over any feeding bowls, water dishes or bird baths. Do not empty feeding bowls in an area where contamination with pesticides may occur. We ask customers to keep children and pets away from sprayed areas until dry. Once the foliage is dry, very little of the dried residue is dislodgeable or transferable from the plant.

Do not treat areas of trees or shrubs where there are active bird nests, and notify the customer that because of the bird nest there may be some compromise in program results in those untreated areas. In many areas beekeepers are registered and should be notified when trees or other flowering shrubs are to be sprayed. Avoid the use of diazinon on lawns in lake areas where ducks and geese are present. They are grass feeders and are sensitive to diazinon.

B. Drift

Drift should be of continuous concern. Neighbors who are not on the program ordinarily do not want pesticides applied to their property without their knowledge. Controlling drift requires sound judgement and cannot be managed by overly simplified wind velocity guidelines. Use visual evidence of residue in non target areas as a guide to alter or stop spraying. Use extra precautions around swimming pools and fish ponds. Fish and other aquatic species are often the most sensitive species to pesticide toxicity. They generally have comparatively poor mechanisms for detoxifying and eliminating chemicals foreign to their own body. When water is contaminated, fish may be continuously exposed to the chemical. To illustrate the high sensitivity of aquatic species to pesticides chlorpyrifos may kill crayfish at a concentration of 1 part per billion (1ppb). Therefore, 1 gallon of Dursban 4E (44.3% chlorpyrifos) has the potential to contaminate 443,000,000 gallons of water at a concentration of 1ppb.

Exercise care to avoid contamination of streets, storm sewers, drainage ditches and other potential sources of runoff to streams and waterways. In no circumstance should tanks be cleaned or water intentionally discharged from a tank of any ChemLawn vehicle into a street, along a rural road or into a storm drain. Use recycling systems correctly. Do not squeegee water from wash and fill area out of the warehouse.

Be extra cautious in spraying around wells. Pesticides and fertilizers used by ChemLawn do not migrate very deeply into soil but seepage around a well casing or into an uncased well could lead to ground water contamination.

Be aware of vegetable gardens, both in customer's yard and neighboring property.

After applying granular pesticides, sweep any overcast granules from sidewalks, driveways or patios.

C. Prenotification

Some customers and their neighbors have multiple allergies or are unusually sensitive in allergic response to chemicals. None of the chemicals we use are strong sensitizers or producers of allergic responses. However, there are almost no chemicals for which one can say there are no sensitized or allergic individuals. The incidence rate for complaints of hives or other allergic responses is very low; nevertheless, this is an issue to which we must be sensitive and understanding.

Where we have identified that customers or neighbors are hypersensitive, we should notify them one day in advance of when their area is going to be treated. They are then given prior notification and can take steps to minimize their exposure to the treated areas or volatile chemicals.

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