The Dow Chemical Company's Direct Evidence Submission in re: Emergency Suspension Orders for 2,4,5-T and Silvex, FIFRA Docket Nos. 409, 410, April 10, 1979

Item also includes a cover letter from L. Mark Wine of Kirkland and Ellis.
To: Potential Dow Witnesses at EPA Hearing

I have enclosed for your information a copy of Dow's Direct Evidence Submission and EPA's witness list. The Hearing Panel's order required us to list exhibits and, therefore, we have tried to list exhibits for many of you even though we did not yet have draft testimony and references from you.

As many of you who have worked before on trials or hearings know, at times developments in hearing preparation suggest the need to limit witnesses or reorient testimony. As you review the enclosed Dow witness list, you will note some areas of overlap. We plan to be in touch with each of you individually in the near future to work out more specifically the areas that you will cover so as to minimize duplication of effort. As you review the enclosed list, many of you will recognize the names of your colleagues and you may have suggestions as to which areas you can best cover. We will welcome any thoughts that you have in that regard.

Unfortunately, the tight time limits that we are operating under will not allow us to coordinate as closely on these matters as we would like. Dow and, we at Kirkland & Ellis, appreciate your willingness to testify, and we will do everything possible to facilitate the preparation of your written and oral testimony with a minimum burden on you.

Sincerely,

L. Mark Wine

LMW:djd
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

In re Emergency Suspension Orders for 2,4,5-T and Silvex

FIFRA Docket Nos. 409, 410

THE DOW CHEMICAL COMPANY'S DIRECT EVIDENCE SUBMISSION

Of Counsel:
Michael J. Traynor
Dow Chemical, U.S.A.
2030 Dow Center
Midland, Michigan 48640

Edward W. Warren
L. Mark Wine
John S. Hahn
KIRKLAND & ELLIS
1776 K Street, N.W.
Washington, D.C. 20006
(202) 857-5000

Counsel for The Dow Chemical Company

April 10, 1979
Pursuant to the Hearing Panel's order of April 4, 1979, The Dow Chemical Company hereby submits its list of direct evidence, including witnesses and exhibits, and requests for oral direct testimony. In this memorandum we make some general observations concerning the attached witness and exhibit lists and the hearing schedule. Attached as Appendix A to this memorandum is a list of Dow's witnesses and exhibits. Attached as Appendix B is Dow's request for oral direct testimony.

In submitting this list of witnesses and exhibits, Dow makes full disclosure of its present hearing plans to the best of its ability. Those plans necessarily will evolve, and Dow will apprise the Panel of changes in Dow's list of witnesses and exhibits.

One reason that our present plans are tentative is that we still have no idea of the witnesses agency counsel will present. Accordingly, we cannot make final plans concerning our own witnesses.
In addition, agency counsel have raised a number of new allegations in the rebuttal comments filed Wednesday, April 4. The extent of some of these additional claims could not be evaluated until receipt of the supporting reference list and exhibit copies, which were delivered to counsel for Dow on April 6 and 7 respectively. Although we have added some witnesses to our list in response to these new allegations, there may be a need to add additional witnesses as we investigate these claims. On the other hand, Dow anticipates that it may be possible to remove some witnesses from the list, but it expects that most of the listed witnesses will testify.

The tentativeness of our witness list has made the task of listing exhibits even more difficult, and hence our exhibit list is less complete than our list of witnesses. Again, Dow has provided the most complete listing possible at this time. Indeed, because of the press of time, some exhibits have been listed tentatively even though Dow has been unable to confer with the witness regarding exhibits. */ As a result, some exhibits will be deleted and others added as hearing preparation progresses.

**Hearing Time**

Dow also wishes to comment on the Panel's allocation of hearing time to the parties.

* Moreover, some exhibits (e.g., Alsea II), will be referred to by more than one witness, but Dow has not repeated such exhibits in all cases.
The Panel has allotted only 22 days of hearing time to be divided among the parties, and has reserved five full days for witnesses that the Panel may wish to call. Dow seriously doubts that the 22 hearing days is sufficient for the parties' presentation of evidence and cross-examination. Dow also believes that five days for the Panel's witnesses is probably much more time than is necessary. Adversary proceedings are based on the assumption that both sides will effectively present evidence necessary for the decisionmaker to arrive at a fully informed, reasonable conclusion. The Panel should not lightly conclude that one or both parties are substantially incapable of fulfilling this responsibility. Instead of allowing a full week of hearing time for its own witnesses, the Panel should, at most, limit itself to two days and should reserve several days for rebuttal testimony.

We calculate that the Panel could hear testimony through Tuesday, June 5 and still reserve adequate time for post-hearing briefing and other actions. This practice could be accomplished in accordance with existing EPA regulations, as follows:*/

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday, June 5</td>
<td>Hearing Concludes</td>
</tr>
<tr>
<td>Monday, June 11</td>
<td>Parties' Proposed Findings, Conclusions and Briefs Filed (40 C.F.R. § 164.121(j)(1)).</td>
</tr>
<tr>
<td>Wednesday, June 13</td>
<td>Hearing Panel's Recommended Decision Issues (40 C.F.R. § 164.121(j)(2)).</td>
</tr>
</tbody>
</table>

*/* Dow recognizes that this suggested schedule does not precisely follow existing EPA regulations, but it believes that the schedule is workable.
Friday, June 15  -  Panel Submits Recommended Decision and Record to Administrator (40 C.F.R. § 164.121(j)(3)).

Monday, June 18  -  Parties' Briefs to Administrator (40 C.F.R. § 164.121(j)(4)).

Friday, June 22  -  Administrator's Decision Issues (40 C.F.R. § 164.122).

Dow believes it will be exceedingly difficult to schedule all of the necessary testimony, both on direct and cross-examination, in the 22 days allotted by the Panel. Accordingly, Dow suggests that the Panel provide additional hearing days by further restricting the time reserved for its own witnesses and permitting testimony to be concluded on June 5.

Respectfully submitted,

Edward W. Warren
L. Mark Wine
John S. Hahn
KIRKLAND & ELLIS
1776 K Street, N.W.
Washington, D.C. 20006
(202) 857-5000

Of Counsel:

Michael J. Traynor
Dow Chemical, U.S.A.
2030 Dow Center
Midland, Michigan 48640

April 10, 1979
APPENDIX A

The Dow Chemical Company's Witness and Exhibit List
For EPA Suspension Hearing on 2,4,5-T and Silvex

Risk Witnesses

1. Norman Akesson, Ph.D.
P.O. Box 2044
El Necara, CA 95618

Dr. Akesson may testify concerning application methods
and drift control, including as applicable to Alsea II.

2. R.D. Bovey
Research Leader, Brush Control
Research Group
U.S. Department of Agriculture
Texas A&M University
College Station, Texas

Mr. Bovey, Group Leader of the Assessment Team for range
and pasture, may testify concerning the environmental fate
of 2,4,5-T and silvex in pasture use.

3. Werner H. Braun
Dow Chemical, U.S.A.
1803 Building
Midland, MI 48640

Mr. Braun may testify on estimates of exposure of the
general population to 2,4,5-T, silvex and TCDD.

Exhibits

Ramsey, J.C., T.L. Lavy and W.H. Braun, "Exposure of Forest
Workers to 2,4,5-T: Calculated Dose Levels," Submitted
to EPA by Dow Chemical (1979) (ARI R-61).* /

* / "ARI R-__ " or "B-__ " refer to documents already in the
Administrative Record Index. "EPA RPAR ___ " refers to docu-
ments cited by EPA in the April 21, 1978 Rebuttable Presump-
tion Against Registration for 2,4,5-T, 43 Fed. Reg. 17116.
"Dow RPAR ___ " refers to documents cited in the "Response of
Dow Chemical, U.S.A. to Notice of RPAR and Continued Registra-
tion of Pesticide Products Containing 2,4,5-T," filed with


4. Donald Crosby, Ph.D. Anthony Wong, Ph.D.
Department of Environmental California Analytical
Toxicology Laboratories, Inc.
University of 401 North 16th Street
California, Davis Sacramento, CA 95817
Sacramento, CA 95814

Dr. Crosby and/or Dr. Wong may testify concerning their research showing that TCDD degrades rapidly in sunlight in the presence of hydrogen donors. They may also cover pesticide chemistry and metabolism.

Exhibits


5. Philip D. Darney, M.D.
   Director of Reproductive Health
   Associate Professor of Obstetrics and Gynecology
   University of Oregon School of Medicine
   3181 Sam Jackson Road
   Portland, Oregon

   Dr. Darney may testify on the medical aspects of
   Alsea II.

6. Fred Decker, Ph.D.
   Oregon State University
   Atmospheric Sciences Dept.
   Ag. Hall - Room 328
   Corvallis, OR 97331

   Dr. Decker may testify on Alsea and non-Alsea exposure.

7. Thomas Downs, Ph.D.
   The University of Texas
   Health Science Center at Houston,
   School of Public Health
   P.O. Box 20186
   Houston, TX 77025

   Dr. Downs may testify on the statistical aspects of
   Alsea II.
8. Perry J. Gehring, D.V.M., Ph.D.  
Dow Chemical, U.S.A.  
1803 Building  
Midland, MI 48640

Dr. Gehring, one of the country's foremost toxicologists, may testify on a number of subjects, including Alsea II, animal data regarding carcinogenicity, teratogenicity and fetotoxicity, human metabolism, Seveso, other government reports and investigations, and other subjects.

Exhibits


Australia, National Health and Medical Research Council, "Re-examination of 2,4,5-T" (March 26, 1979).


California Dept. of Food and Agriculture, "Report on the Aerial Use of Phenoxy Herbicides" (April 6, 1978).


Hall, S. M., "Effects on Pregnant Rats and Their Progeny of Adequate or Low Protein Diets Containing 2,4,5-T or p, p'-DDT," Fed. Proc. 31(2) (1972) (Dow RPAR 40).


New Zealand Department of Health, "2,4,5-T and Human Birth Defects" (June 1977) (ARI R-38).


Wilson, J. G., Chairman, "Report of the Advisory Committee on 2,4,5-T to the Administrator of the Environmental Protection Agency" (submitted May 7, 1971) (EPA RPAR 48).

See also references of Prof. Tuchmann-Duplessis.

9. Milton E. Getzendaner, Ph.D. David J. Jensen, Ph.D
Dow Chemical, U.S.A. Dow Chemical, U.S.A.
9008 Building 9001 Building
Midland, MI 48640 Midland, MI 48640

Dr. Getzendaner and/or Dr. Jensen may testify about the environmental fate and presence of 2,4,5-T, silvex and TCDD.

Exhibits


Gentry, W. M., "Residues of 2,4-D, 2,4,5-T and Silvex in Grass Treated with Phenoxy Herbicides," GH-C 462 (August 3, 1971).


Kutz, F. W., "Environmental Monitoring Data on 2,4,5-T, 2,4,5-TP (Silvex), Erbon and Ronnel," Letter to H. L. Warnick EPA (July 6, 1977).


Norris, L. H., "Physiological and Biochemical Bases of Herbicide Selectivity," Herbicides and Vegetation Management Symposium Proceedings (Univ. of OR) at 52-59 (1967).


10. Ray Harbison
Department of Pharmacology
Vanderbilt University Medical Center
Nashville, TN 37232

Dr. Harbison may testify on fetotoxicity and teratogenicity.

11. Benjamin Holder, M.D.
Corporate Medical Director
Dow Chemical, U.S.A.
2030 Building
Midland, MI 48640

Dr. Holder may testify on Alsea and the epidemiology of Dow workers and others.

Exhibits

Ott, M.G., B.B. Holder, and R.D. Olson, "A Longevity Survey of Employees Exposed to 2,4,5-T," The Dow Chemical Co. (Confidential) (Dow RPAR 28).

12. Cecil B. Jacobson, M.D.
The Reproductive Genetic Center, Ltd.
8320 Old Court House Road
Suite 503
Vienna, VA  22180

Dr. Jacobson may testify on the reproductive epidemiology of Alsea II.

13. Hyland R. Johns
Asplundh
Blair Mill Road
Willow Grove, PA  19090

Mr. Johns may testify on application methods for 2,4,5-T.

14. Richard Jones, Ph.D.
Dept. of Biometrics
University of Colorado Medical Center
Box 119
4200 E. 9th Avenue
Denver, CO  80262

Dr. Jones may testify about the statistical aspects of the Alsea II study.

Exhibits

See also references of Dr. Lamm.

15. Richard J. Kociba, D.V.M., Ph.D.
Dow Chemical, U.S.A.
1803 Building
Midland, MI  48640

Dr. Kociba may testify concerning the claimed carcinogenicity of 2,4,5-T, silvex and TCDD, including appropriate laboratory protocols and actual test results.

Exhibits


Hardell, L., and A. Sandstrom, "Case-Control Study-Malignant Mesenchymal Soft Tissue Tumor and Exposure to Phenoxy Acids or Chlorophenols," (Translated from Swedish) Lakartidningen 75 (40 (1978).


Kociba, R.J. et al., "Results of a Two-year Chronic Toxicity and Oncogenicity Study of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin in Rats," Toxico and Appl. Pharmac. 46 at 279-303 (1978) (ARI R-30).

Kociba, R.J. et al., "Results of a Two-year Chronic Toxicity and Oncogenic Study of Rats Ingesting Diets Containing 2,4,5-Trichlorophenoxyacetic Acid (2,4,5-T)," in press Fd. Cosmetic. Toxicol. (1979) (confidential) (ARI R-25).


Ott, M.G., B.B. Holder, and R.D. Olson, "A Longevity Survey of Employees Exposed to 2,4,5-T," The Dow Chemical Co. (Confidential) (Dow RPAR 28).


Spencer, H.W. and W. Woodrow, "TADP Review at University of Wisconsin, TCDD in Rats," EPA Memorandum to D. Reisa and H. Warnick (February 8, 1979) (ARI R-32).


16. Steven H. Lamm, M.D.
Tabershaw Occupational Medicine Associates
6110 Executive Boulevard
Suite 740
Rockville, MD 20852

Dr. Lamm is an epidemiologist who may testify concerning the epidemiological aspects of Alsea II, and other epidemiology.
Exhibits


Colorado Epidemiologic Pesticide Studies Center, "Protocol for Second Phase of Spontaneous Abortion Study" (October 1978).


Duncan Deposition 4, Handwritten Table of Spontaneous Abortions, 1972-1977, transmitted to Dr. Duncan (February 1979).


Duncan, R.C., "Further Analysis of Oregon/2,4,5-T Data" (February 8, 1979).


Griffith Deposition Exhibit G-2(g); Duncan Deposition Exhibit 11. Comments of Dr. George S. Woodson on R.C. Duncan, "Draft Report: 'Preliminary Assessment of Field Investigation of Six-Year Spontaneous Abortion Rate in Three Oregon Areas in Relation to 2,4,5-T Spray Areas.'"


Keefe-Savage Deposition Exhibit 4, note to Savage re Alsea Study (October 31, 1978).

Keefe-Savage Deposition Exhibit 39, "Request from EPA: Post-Questionnaire: Alsea, Oregon Miscarriage Investigation" (undated).

17. Nathan Mantel  
George Washington University  
Washington, D.C. 20052  
Mr. Mantel may testify on the statistical aspects of Alsea II.

Exhibit


18. Donald Morehouse  
Dow Chemical, U.S.A.  
834 Building  
Midland, MI 48640  
Mr. Morehouse may testify generally concerning the production of 2,4,5-T and silvex, with emphasis on the control of TCDD contamination, and may present historical data concerning the amount of TCDD in Dow products. Mr. Morehouse may discuss the current TCDD content of Dow products.

Exhibits

Tables showing TCDD content of Dow products.

19. Michael Newton, Ph.D.  
Dept. of Forest Science,  
School of Forestry  
Oregon State University  
Corvallis, OR 97331  
Dr. Newton may testify on the conditions affecting potential human exposure in the Alsea area, other aspects of exposure and the fate and behavior of the herbicides in the environment.
Exhibits

Newton, M., "Dermal Exposure of Humans to 2,4,5-T," Submitted to U.S. Environmental Protection Agency in Response to RPAR of 2,4,5-T, Oregon State University, Corvallis (1978).


Newton, M. and S.P. Snyder, "Exposure of Forest Herbivores to TCDD in Areas Sprayed With 2,4,5-T," (unpublished, 1978) (RPAR Rebuttal Comment #2625[30000/26]).

20. Kenneth R. Niswander, M.D.
   University of California, Davis
   Department of Obstetrics and Gynecology,
   School of Medicine
   Professional Building
   4301 X Street
   Sacramento, CA 95817

   Dr. Niswander may testify on the medical aspects of the Alsea II study.

Exhibits

See also references of Dr. Lamm.

21. Logan Norris, Ph.D.
   Pacific Northwest Forest and Range Experiment Station
   Corvallis, Oregon 97330
Dr. Norris may testify on degradation of 2,4,5-T and TCDD in forests, the uses of herbicides in forests and the activities of the 2,4,5-T Assessment Team.

### Exhibits


22. Colin N. Park, Ph.D.
Dow Chemical, U.S.A.
1707 Building
Midland, MI 48640
Dr. Park may testify concerning biostatistical aspects of Alsea II and carcinogenic risk estimation.

Exhibits


23. John C. Ramsey, Ph.D.
Dow Chemical, U.S.A.
1803 Building
Midland, MI 48640

Dr. Ramsey may testify about the pharmacokinetics of 2,4,5-T and silvex and human exposure.
Exhibits


Kociba, R. J. et al., "Results of a Two-Year Chronic Toxicity and Oncogenicity Study of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) in Rats," Toxicol. and Applied Pharm. 46 at 279-303 (1978) (ARI R-30).


Newton, M., "Dermal Exposure of Humans to 2,4,5-T," Submitted to U.S. Environmental Protection Agency in Response to the Rebuttable Presumption Against Registration of 2,4,5-T, Oregon State University, Corvallis (1978).


24. Bernard A. Schwetz, D.V.M., Ph.D.  
Dow Chemical, U.S.A.  
1803 Building  
Midland, MI 48640  

Dr. Schwetz may testify concerning the general principles of and specific animal data concerning teratogenicity and fetotoxicity of 2,4,5-T, silvex and TCDD.

Exhibits


Courtney, K. D., "Prenatal Effects of Herbicides; Evaluation by the Prenatal Development Index," Arch. Environ. Contam. Toxicol. 6 at 33-46 (1977) (ARI R-6).


25. Louis Shadoff, Ph.D.
   Dow Chemical, U.S.A.
   574 Building
   Midland, MI 48640

   Dr. Shadoff may testify on the analytical methodology for detection of low amounts of TCDD in environmental samples and efforts to determine the presence of TCDD in the environment.

**Exhibits**

Dow Chemical, "Review of Residue, Surveillance and Environmental Fate Studies of TCDD," Appendix II to Dow Chemical 2,4,5-T RPAR Response (August 4, 1978).


See also references of Dr. Young.

26. Professor H. Tuchmann-Duplessis
Faculty of Medicine Paris
University Rene Descartes
Laboratory of Embryologie
45 Rue Des Saints-Peres
75270 Paris, France

Professor Tuchmann-Duplessis may testify on Seveso, fetotoxicity and teratogenicity.

Exhibits


27. Philip G. Watanabe, Ph.D.
Dow Chemical, U.S.A.
1803 Building
Midland, MI 48640

Dr. Watanabe may testify on general carcinogenicity and the mutagenicity of 2,4,5-T, TCDD and silvex.

Exhibits


Green, S., "Cytogenetic Evaluation of Several Dioxins in the Rat" (draft - unpublished).


28. James M. Witt, Ph.D.
Professor, Department of Ag. Chemistry
Oregon State University
Corvallis, Oregon 97330

Dr. Witt may testify on the exposure analysis in the Assessment Team Report.

29. Alvin Young, Ph.D.*
5226 Prince Valiant Drive
San Antonio, TX 78218

Dr. Young may testify on environmental presence and fate, describing his biodegradation work at Eglin AFB, Florida.

Exhibits


* Dr. Young's appearance is dependent upon approval by his Air Force superiors.


Benefit Witnesses

1. Dr. William C. Bramble  
Professor Emeritus of Forestry and  
Natural Resources  
Purdue University  
West Lafayette, Indiana

Dr. Bramble, a contributor to the Assessment Report, may testify concerning the ecological effects of use of 2,4,5-T and silvex for right-of-way maintenance.

Exhibits


2. Dr. Boysie Day
Professor of Plant Pathology
University of California
Berkeley, California 94720

Dr. Day, a member of the Assessment Team, may testify concerning the benefits of using 2,4,5-T and silvex.
3. Dr. O' Hale Fletchall  
Professor of Agronomy  
University of Missouri  
Columbia, Missouri  

Dr. Fletchall may testify concerning the benefits of using 2,4,5-T and silvex on pasture.

4. Carl Hendrickson  
Senior Analyst  
Market Opinion Research  
Detroit, Michigan  

Mr. Hendrickson may testify concerning the economic effects of suspension of 2,4,5-T and silvex for right-of-way use.

5. Dennis Holewinski  
Manager  
Asplundh Environmental Services  
Blair Mill Road  
Willow Grove, PA 19090  

Mr. Holewinski may testify concerning the economic effects of suspension of 2,4,5-T and silvex for right-of-way use.

Exhibit


6. Garlyn O. Hoffman  
Range Brush and Weed Control Specialist  
Texas A&M University  
College Station, Texas  

Mr. Hoffman, a member of the Assessment Team, may testify concerning the benefits of 2,4,5-T and silvex use on pasture, and the economic effects of suspension.


7. Harvey A. Holt
Assoc. Professor of Forestry and Natural Resources
Purdue University
West Lafayette, Indiana

Dr. Holt, Group Leader of the Assessment Team for rights-of-way, may testify concerning the benefits of 2,4,5-T and silvex for right-of-way maintenance.

8. Dayton L. Klingman
Chief, Weed Research Laboratory
USDA
Beltsville, Maryland

Mr. Klingman, a co-leader of the Assessment Team, will testify concerning the benefits of 2,4,5-T and silvex, particularly for commercial and ornamental turf uses.

9. B. Ted Kuntz
Research Economist
U.S. Department of Agriculture
Corvallis, Oregon 97330

Mr. Kuntz, Economic Assessment Leader of the Assessment Team, may testify concerning the economic losses from suspension of 2,4,5-T and silvex.

10. Robert A. Nosse
Director of Forestry Practices
Ohio Edison Co.
Akron, Ohio
Mr. Nosse may testify concerning the benefits of using 2,4,5-T and silvex for maintenance of electric utility rights-of-way.

11. Clark Row
   Principal Research Economist
   U.S. Forest Service
   Washington, D.C.

   Mr. Row, a contributor to the Assessment Report, may testify concerning the economic effects of suspending 2,4,5-T and silvex for forestry use.

12. Steven K. Shapiro
    Management Analysis Center, Inc.
    Washington, D.C.

    Mr. Shapiro, an economic consultant for the National Forest Products Association, may testify concerning the economic effects of suspending 2,4,5-T and silvex for forestry use.

13. Gene Smith
    Rolla, Missouri

    Mr. Smith will testify concerning application techniques and benefits of 2,4,5-T.

14. Ronald E. Stewart
    Research Silviculturist
    U.S. Forest Service
    Washington, D.C.

    Mr. Stewart, the Group Leader for forestry of the Assessment Team, may testify concerning the benefits of 2,4,5-T use in forestry, and the effects of suspension of 2,4,5-T for forestry use.
Exhibits


15. Michael Towns
Cave City, Arkansas

Mr. Towns, who farms in the Ozark Mountains, may testify concerning the benefits of using 2,4,5-T to reclaim overgrown pasture.

System Arborist
New England Power Service Co.
Westborough, Massachusetts

Mr. VanBossuyt may testify concerning the benefits of using 2,4,5-T and silvex for maintenance of electric utility rights-of-way.

17. Clay Williams
Director of Marketing, Agricultural Products
Dow Chemical, U.S.A.
9008 Building
Midland, MI 48640

Mr. Williams may testify concerning the benefits of and alternatives to 2,4,5-T and silvex.

18. Dr. John D. Walstad
Weyerhauser Company
Springfield, Oregon
Dr. Walstad may testify concerning the benefits of 2,4,5-T and silvex use in forestry and the effects of suspending the forestry use of 2,4,5-T.

**Exhibit**


19. Noel Yoho
International Paper Co.
Mobile, Alabama

Mr. Yoho may testify concerning the benefits of 2,4,5-T use in forestry, alternatives to use of 2,4,5-T, and forest workers' exposure to 2,4,5-T.

**Other Exhibits**

Blum, Barbara, Telegraphic Message to Michelle Howard (California Wool Growers Association), undated.

Blum, Barbara, Transcript of Press Conference on 2,4,5-T and Silvex Suspensions (March 1, 1979).


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*/ Dow intends to ask agency counsel for stipulation on these documents as it does not intend to present a witness who will submit them. See also 40 C.F.R. § 164.82(e) (official notice)."


USDA, "Suspension of 2,4,5-T Products Bearing Certain Directions for Use," PR Notice 70-13 (May 1, 1979).


APPENDIX B

THE DOW CHEMICAL COMPANY'S REQUEST FOR ORAL TESTIMONY

Pursuant to the Panel's April 4, 1979, Order, Dow hereby requests the opportunity to present oral testimony with regard to the witnesses listed on its witness list. As Dow has explained previously, it is entitled to oral direct testimony as a matter of right under the Administrative Procedure Act and EPA's own hearing regulations. See Dow Procedural Memo (March 21) at 1-2; Dow Reply Memo (March 29) at 6. Moreover, the presentation of oral direct testimony will assist the Panel in understanding the evidence and will help to develop a more readable and understandable record.

With regard to each of the witnesses, unless future developments make it impossible*, written statements will be supplied which will contain in detail the witnesses' statements. Because witness statements have not been prepared, Dow is unable to forego oral testimony from many of its prospective witnesses. Nor can Dow predict confidently the amount of time needed for oral testimony. Nevertheless, Dow has responded with a good faith effort to comply with the

* For example, it may be impossible to secure a written statement from Dr. Tuchmann-Duplesis of Paris because of the difficulties with communications between the United States and France.
Hearing Panel's request. Dow anticipates that as written statements are developed, our requests will be more refined. Dow may be able to forego oral direct testimony altogether from some witnesses, and more or less time may be needed for other witnesses.

For each witness, Dow's oral direct testimony will be designed to explain, summarize, highlight and review written and documentary evidence, or, if necessary, make corrections in prepared statements. Of course, there may also be an occasional need to submit additional supplemental information not included in the written testimony for good cause.

In many instances the oral direct testimony will be helpful in relating a particular witness' views to those presented by another witness previously, but not included in the written statement. For example, witnesses in the same general subject area will have a need to refer to another witness's comments as forming part of the information on which the later witness is to testify. Because of the short time available and the fact that witnesses are all over the country, it simply will not be possible to coordinate the written statements of various related witnesses.

With this background in mind, Dow makes the following requests for oral direct testimony.

I. Risk
   1. Norman Akesson - one-half hour.
   2. R. W. Bovey - one-half hour.
3. Werner H. Braun - one-half hour.
4. Donald Crosby and/or Anthony Wong - one hour.
5. Fred Decker - one-half hour.
6. Thomas Downs - one-half hour.
7. Perry J. Gehring - two hours.
8. Milton Getzendarer and/or David Jensen - one hour.
9. Ray Harbison - one hour.
10. Benjamin Holder - one-half hour.
15. Steven H. Lamm - one hour.
17. Donald Morehouse - fifteen minutes.
18. Michael Newton - forty-five minutes.
20. Logan Norris - one hour.
22. John Ramsey - forty-five minutes.
23. Bernard A. Schwetz - one hour fifteen minutes.
24. Louis Shadoff - forty-five minutes.
25. H. Tuchmann-Duplessis - two hours.*/

*/ Professor Tuchmann-Duplessis is one of the leading teratologists in the world and has written extensively on the

(footnote continued on next page)
27. James M. Witt - forty-five minutes.
28. Alvin Young - one hour.

II. Benefit

1. William C. Bramble - one-half hour.
2. Boysie Day - two hours.
3. O. Hale Fletchall - one-half hour.
5. Dennis Holewinski - one-half hour each.
8. Dayton L. Klingman - one-half hour.
10. Robert A. Nosse - one-half hour.
11. Clark Row - one-half hour
12. Steven K. Shapiro - one-half hour.
15. Michael Towns - written only

{footnote continued from previous page}

Seveso incident. Because of his busy schedule and the difficulties of communicating with France, it may be impossible to present any written statement prior to his appearance. Therefore, Dow is asking for time sufficient to present his direct testimony entirely orally.
17. Clay Williams - one-half hour.

The above represents a total of approximately 32 1/4 hours, 20 1/4 for risk and 12 for benefit oral direct testimony.
CERTIFICATE OF SERVICE

I HEREBY CERTIFY that copies of the foregoing The Dow Chemical Company's Direct Evidence Submission were hand delivered or mailed Express Mail, Federal Express or Special Delivery prepaid on April 10, 1979, to the persons on the attached list.

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RESPONDENT ENVIRONMENTAL PROTECTION AGENCY'S STATEMENT OF DIRECT EVIDENCE

Pursuant to the Hearing Panel's Notice and Order dated April 4, 1979, respondent Environmental Protection Agency submits its list of witnesses who will present direct written evidence at the hearings.

A. General Discussion

Respondent intends to present its direct case by written evidence. This information may be presented either by sworn adoptions of the suspension order and/or rebuttal comments or by sworn witness statements developed for use in this proceeding. A particular witness may present direct evidence by either or both such formats.

To the extent possible, the Office of General Counsel intends to present its entire direct case through the submission of written materials. Therefore, our witness list does not include time limits for oral testimony. However, the Hearing Panel indicated it would be "sympathetic" to the use of oral direct testimony for the limited purposes of correcting mistakes in written statements and to add information which could not have reasonably been incorporated into the written statement when it was prepared. (March 30, 1979 Prehearing Conference transcript at 64). While the Office of General Counsel does not presently anticipate the need to present oral direct evidence, we reserve the right to request the panel's permission to present oral direct testimony, should such a need arise at a later time.
The desire to save time during the expedited suspension hearing was an important factor in the Administrator's decision to structure the hearing procedures to minimize the use of direct oral testimony. We agree with the Hearing Panel that "every effort should be made to limit direct testimony to allow for more time for cross-examination in particular" (March 30, 1979, Prehearing Conference at 65). Respondent recommends that in allocating time between respondent and the registrants, the Hearing Panel should treat time allowed a party for oral direct testimony as a set-off against the time allowed that party for oral cross-examination.

Respondent plans to present the witnesses whose names and subject areas are listed below. This list represents our very best estimate at this time. It may become necessary for respondent to supplement or prune this list in a limited fashion when we know more about the registrants' defenses. Dow Chemical Company and the other registrants who intend to be active participants at the hearing have been less precise than respondent in revealing their overall approach and specifying underlying factual support during the preliminary exchange of written information. The exchange of written material which is comprised of the suspension orders, the registrants counterstatements, and the Agency's rebuttal comments - is designed to identify genuine disputes of material fact which must be ventilated at the hearing. We trust that the registrants' description of proposed direct evidence will to some extent serve to clarify the nature of the registrants' case.
B. Witness List

Dr. Roy Albert, Chairman, Carcinogen Assessment Group
Environmental Protection Agency

Dr. Albert will testify concerning the carcinogenic potentials of 2,4,5-T and TCDD, including general principles, appropriate protocols and the Agency's specific assessments.

Dr. K. Diane Courtney, Pesticides and Toxic Substances Effects Laboratory, Environmental Protection Agency

Dr. Courtney will testify concerning the fetotoxicity and teratogenicity of 2,4,5-T, silvex and TCDD, including general principles and specific animal data. Dr. Courtney's testimony will also include general concepts of reproductive risk assessment, such as the determination and significance of no-effect levels and threshold effect levels.

Dr. Henry Spencer, Office of Pesticide Programs, Environmental Protection Agency

Dr. Spencer is a toxicologist who will testify concerning the Agency's analysis of the fetotoxicity and teratogenicity of 2,4,5-T, silvex and TCDD.

Dr. James R. Allen, University of Wisconsin Medical School, Department of Pathology and Regional Primate Research Center, Madison, Wisconsin

Dr. Allen will testify concerning the toxicity of TCDD in the rhesus monkey, with particular emphasis on adverse reproductive effects.
Dr. George Streisinger, Biologist, University of Oregon

Dr. Streisinger will discuss the relationship between data showing that TCDD, 2,4,5-T and/or silvex have toxic effects in test animals and the risk to humans resulting from the uses of these chemicals.

Dr. Arthur Galston, Biologist, Yale University

Dr. Galston will discuss the relationship between data showing that TCDD, 2,4,5-T and/or silvex have toxic effects in test animals and the risk to humans resulting from the uses of these chemicals.

Dr. Matthew Meselson, Biologist, Harvard University

Dr. Meselson will discuss the relationship between data showing that TCDD, 2,4,5-T and/or silvex have toxic effects in test animals and the risk to humans resulting from the uses of these chemicals.

Dr. Robert C. Duncan, Statistician University of Miami

Dr. Duncan will discuss the Alsea Study and the statistical analyses of data developed through the Alsea Study. Dr. Duncan performed the statistical analyses of data generated through the Alsea Study.

Dr. John Davies, Epidemiologist, University of Miami

Mr. Davies will discuss the meaning and importance of the Alsea Study.
Donald Marlowe, Biologist
Environmental Protection Agency

Mr. Marlowe will describe EPA's investigation of incidents in which the use of 2,4,5-T or silvex has led to human and/or environmental exposure to these chemicals.

Dr. Bernard Smale, Plant Pathologist
Environmental Protection Agency

Dr. Smale will describe EPA's investigation of incidents in which the use of 2,4,5-T or silvex has led to spray drift with resulting human and/or environmental exposure to these chemicals.

Thomas Ellwanger, Plant Physiologist
Environmental Protection Agency

Mr. Ellwanger will describe spray drift as a factor leading to human and environmental exposure to 2,4,5-T and/or silvex.

Dr. David Severn, Chemist
Environmental Protection Agency

Dr. Severn will discuss the environmental stability of 2,4,5-T, silvex and TCDD.
Ann Barton, Statistician, Environmental Protection Agency

Ms. Barton will discuss the statistical analyses of the data generated through the Alsea Study.

Dr. Jack Griffith, Epidemiologist, Environmental Protection Agency

Dr. Griffith will discuss the design and conduct of the Alsea Study

Dr. Thomas Keefe, Colorado State University

Dr. Keefe, a member of the EPA contract laboratory for the Alsea Study, will discuss the design and conduct of the Alsea Study.

Mr. Charles Poole, Epidemiologist, Environmental Protection Agency

Mr. Poole will discuss data and studies relating exposure to 2,4,5-T, silvex and/or TCDD to adverse reproductive effects in humans. Exhibits in the Record.*

Dr. Eldon Savage, Colorado State University

Dr. Savage, a member of the EPA contract laboratory for the Alsea Study, will discuss the design and conduct of the Alsea Study.

*/ Pursuant to revision, Mr. Poole will also testify concerning Seveso, Vietnam and other incidents of known exposure to TCDD.
Dr. Arnold Aspelin, Chief, Economic Analysis Branch, Environmental Protection Agency

Dr. Aspelin will testify about the economic benefits of 2,4,5-T and silvex and the economic impact of the suspension of the contested uses of these compounds. His direct statement will incorporate the entire benefits discussions of the 2,4,5-T and Silvex Decision and Order Documents. His exhibits will include all of the materials cited in the benefits sections of the decision and order documents which constitute the record in this proceeding.

Dr. Dudley Mattson, Economic Analysis Branch, Environment Protection Agency

Dr. Mattson will discuss the forestry uses of 2,4,5-T and silvex. He will also analyze and comment upon the data of Mr. Horowitz and other relating to the efficacy of 2,4,5-T and silvex treatments in forestry.

Mr. Howard Horowitz

Mr. Horowitz will present data relating to the use patterns and efficacy of 2,4,5-T in forestry.
Mr. Anderson will discuss studies on the deposition of silvex in water under ordinary use conditions.

Mr. Cameron will discuss studies on the deposition of silvex in water under ordinary use conditions.

Dr. Kutz will describe methods and studies relating to monitoring for 2,4,5-T, silvex and TCDD in environmental samples and human tissue samples.
Mr. Edwin Johnson, Deputy Administrator for Pesticide Program, Environment Protection Agency

Mr. Johnson will present an analysis of the risks and benefits of continued use of 2,4,5-T and silvex. His testimony will place the various benefits and risk issues into context and present an analytical framework for conducting a balancing of these issues.

The order used in listing these witnesses is not necessarily the order respondent will follow in presenting these witnesses at the hearing.

Respectfully submitted,

[Signature]

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April 10, 1979
CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing "Respondent Environmental Protection Agency's Statement of Direct Evidence" were hand-delivered or mailed express postage paid, on April 10, 1979, to the following persons:

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